You are embarking on a great educational journey at a world-class institution. McGill is Canada’s leading teaching and research-intensive university, and we offer more than 300 areas of study in 21 faculties and professional schools on two beautiful campuses.

This is a period of unprecedented growth and renewal at McGill. The university has recently been the grateful recipient of several of the largest educational donations in Canadian history, and we are in the midst of our most ambitious building program in over a century.

However, our greatest strengths rest not upon investments and new buildings, but upon the quality of the people who make up the McGill community. In addition to attracting extraordinarily bright and promising students, the university recently set itself the goal of recruiting at least 100 new faculty members per year for ten years. We recognize that the scope and depth of our research and academic programs, as well as our international reputation for excellence, are driven by McGill’s outstanding students, academics and staff. Likewise, McGill’s alumni – numbering over 170,000 – and our other friends around the world, have loyally and generously supported McGill’s educational mission and helped our students fulfill their own ambitions.

McGill University has been synonymous with first-class education since it was founded in 1821. We remain committed to the ideals that have guided us for the last 185 years and to the quest for the success of our institution, faculty, and students, which still guides us today.

Thank you for accompanying us.

Heather Munroe-Blum
Principal and Vice-Chancellor
This calendar is comprised of the following sections:

- **Calendar of Dates** – Official university calendar of key dates, such as registration, start of lectures, exam periods and various other deadlines.
- **General University Information and Regulations** – University regulations and policies, applicable to all students.
- **Program Information** – Generally organized by faculty, and by departments within each faculty, these sections contain faculty-specific regulations, as well as program and degree requirements.
- **Field Studies and Study Abroad Opportunities** – Information about various opportunities for studying outside of McGill, while registered at McGill.
- **Application Procedures, Admission Requirements (Appendix A)** – University policies and procedures on how to apply to McGill.
- **Course Information (Appendix B, yellow-coloured pages)** – Organized alphabetically within each faculty and containing course numbers, titles, credit weights, descriptions, prerequisites and additional course information.

For prospective students, counsellors, and academic advisers, this calendar highlights the myriad of programs and courses offered at McGill.

If you are a newly admitted or current McGill student, this calendar is your official guide to program and degree information, along with faculty-specific and university-wide rules and regulations that you will need to consult throughout your academic career at McGill.

**Your Academic Career at McGill**

**Regulations**

This calendar contains the regulations about your undergraduate academic career at McGill.

Regulations concerning when to register, when you can add or drop courses, the consequences of missing deadlines, how grading appears on your transcript, and other important pieces of information can be found in the **General University Information and Regulations** section.

You should also consult the appropriate section of the calendar for faculty-specific regulations that may not be covered in the **General University Information and Regulations** section.

When you are admitted to McGill, your offer letter indicates the degree and program to which you have been accepted, and the number of credits you need to complete for your degree. McGill has 11 faculties, and every student usually belongs to one of these faculties. For some degrees, such as the B.A. & Sc., you belong to two faculties and will need to consult the section on the Bachelor of Arts and Science as well as the sections on each of the two faculties. This calendar applies to undergraduate programs in all faculties: Agricultural and Environmental Sciences, Arts, Education, Engineering, Desautels Faculty of Management, Religious Studies, Schulich School of Music, and Science.

For Medicine (including Nursing, and Physical and Occupation Therapy), please consult the appropriate calendars.
Your Academic Program

You are registered in a degree, but for many degrees there are associated programs (a major, minor, major concentration, etc.). For some degrees, such as the Bachelor of Engineering, you will typically follow one program (such as Computer Engineering). For others, such as the Bachelor of Arts, you will typically follow more than one program (such as a major concentration in English, with a minor concentration in History).

A typical undergraduate degree at McGill is 120-140 credits (four years of study).

- Quebec CEGEP students typically receive 30 credits of advanced standing, so they will usually only have a further 90-110 credits (three years of study) to complete. This can vary by faculty, so consult your faculty section. In your first year, you will be placed in U1 (undergraduate year 1).
- Most other students typically have 120-140 credits to complete. This can vary by faculty, so consult your faculty section. In your first year, you will be placed in U0 (undergraduate year 0), which is often referred to in documentation, in this calendar and in other places on campus, as your freshman year.
- Many students at McGill come with other forms of advanced standing (International Baccalaureate, French Baccalaureate, advanced placement exams, or students admitted from other universities as transfer students). You will receive information during the admissions process.

You will find program requirements in your faculty section or in departmental sections within your faculty. In some cases, you may pursue one of your programs in a department that is outside the faculty to which you belong. For example, if you are enrolled in the Bachelor of Commerce degree, but are pursuing a minor concentration in Italian Civilization, you would consult the Desautels Faculty of Management section for the B.Com. requirements and the Italian Studies department section, under the Faculty of Arts, for the Italian Civilization program requirements.

Things you need to know about your academic program:
- The number of credits needed to complete your degree. Typically, three credits correspond to a one-term course, but there are many variations.
- Required courses: courses that must be completed to fulfill the requirements of a major, minor, etc., unless the student receives exemptions. Students have no choices among required courses.
- Complementary courses: A set of alternative courses that can be taken to fulfill the requirements of a major, minor, etc. Students choose a specified number of courses from the set.
- Elective courses: Courses that do not count toward the fulfillment of the requirements of a major, minor, etc. They are often, but need not be, selected from outside a student’s program of study. Some restrictions may apply, but students have the most choice in selecting elective courses. Some faculties also permit students to take elective courses using the satisfactory/unsatisfactory option. Consult your faculty regulations concerning elective courses.
- Often, the department will also provide you with a recommended list of courses (or streams), so that you know the typical term-by-term course pattern.

For more assistance in understanding program requirements, and for a list of advisers on campus, please see the Undergraduate Advising section at 3.4.
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<td>Social Studies of Medicine (B.A. - Minor)</td>
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<td>Statistics (B.Sc. - Minor)</td>
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<td>Theology (B.Th.)</td>
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<td>Women's Studies (B.A.)</td>
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<td>Zoology, Applied (B.Sc.(Ag.Env.Sc.))</td>
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1 The University

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1.1 History

The Hon. James McGill, a leading merchant and prominent citizen of Montreal, who died in 1813, bequeathed an estate of 46 acres called Burnside Place together with £10,000 to the "Royal Institution for the Advancement of Learning" upon condition that the latter erect "upon the said tract or parcel of land, an University or College, for the purpose of education and the advancement of learning in this Province"; and further upon condition that "one of the Colleges to be comprised in the said University shall be named and perpetually be known and distinguished by the appellation of "McGill College."

At the time of James McGill's death, the Royal Institution, although authorized by law in 1801, had not been created, but was duly instituted in 1819. In 1821 it obtained a Royal Charter for a university to be called McGill College. Further delay was occasioned by litigation, and the Burnside estate was not acquired until March 1829. The Montreal Medical Institution, which had begun medical lectures at the Montreal General Hospital in 1822, was accepted by the College as its Faculty of Medicine in June 1829. After further litigation, the College received the financial endowment in 1835 and the Arts Building and Dawson Hall were erected. The Faculty of Arts opened its doors in 1843.

Progress, however, was slow until the 1821 Charter was amended in 1852 to constitute the members of the Royal Institution as the Governors of McGill College. Since that time the two bodies have been one. It was first called "The University of McGill College" but in 1885 the Governors adopted the name "McGill University." Even after the amended charter was granted, little advance was made until 1855 when William Dawson was appointed Principal. When he retired 38 years later, McGill had over 1,000 students and Molson Hall (at the west end of the Arts Building), the Redpath Museum, the Redpath Library, the Macdonald Buildings for Engineering and Physics, and a fine suite of medical buildings had been erected.

Since then the University has continued to grow vigorously. In 1884 the first women students were admitted and in 1899 the Royal Victoria College was opened, a gift of Lord Dawson, which had begun medical lectures at the Montreal General Hospital in 1822, was accepted by the College as its Faculty of Medicine in June 1829. After further litigation, the College received the financial endowment in 1835 and the Arts Building and Dawson Hall were erected. The Faculty of Arts opened its doors in 1843.

Progress, however, was slow until the 1821 Charter was amended in 1852 to constitute the members of the Royal Institution as the Governors of McGill College. Since that time the two bodies have been one. It was first called "The University of McGill College" but in 1885 the Governors adopted the name "McGill University." Even after the amended charter was granted, little advance was made until 1855 when William Dawson was appointed Principal. When he retired 38 years later, McGill had over 1,000 students and Molson Hall (at the west end of the Arts Building), the Redpath Museum, the Redpath Library, the Macdonald Buildings for Engineering and Physics, and a fine suite of medical buildings had been erected.

Since then the University has continued to grow vigorously. In 1884 the first women students were admitted and in 1899 the Royal Victoria College was opened, a gift of Lord Strathcona, to provide separate teaching and residential facilities for women students. Gradually, however, classes for men and women were merged.

In 1905 Sir William Macdonald established Macdonald College at Sainte-Anne-de-Bellevue, as a residential college for Agriculture, Household Science, and the School for Teachers. Those components have since become the Faculty of Agricultural and Environmental Sciences, which includes the School of Dietetics and Human Nutrition, on the Macdonald Campus, and the Faculty of Education, located on the downtown campus. The University's general development has been greatly facilitated by the generosity of many benefactors, and particularly by the support of its graduates, as regular public funding for general and capital expenditures did not become available until the early 1950s. Since that time government grants have become a major factor in the University's financial operations, but it still relies on private support and private donors in its pursuit of excellence in teaching and research.

The University now comprises 11 faculties and 10 schools. At present over 30,000 students are taking credit courses; one in four is registered in Graduate Studies.

The University is also active in providing courses and programs to the community through the Centre for Continuing Education.

1.2 Incorporated and Affiliated Colleges

INCORPORATED COLLEGE
Royal Victoria College
3425 University Street, Montreal, QC H3A 2A8

The Royal Victoria College, a non-teaching college of McGill University, provides residential accommodation for women students.

AFFILIATED THEOLOGICAL COLLEGES
Montreal Diocesan Theological College
3473 University Street, Montreal, QC H3A 2A8
Principal: J. M. Simons; B.A.(Bishop's), S.T.B. (Trinity, Toronto), Ph.D.(Georgetown)

Presbyterian College of Montreal
3495 University Street, Montreal, QC H3A 2A8
Principal: J. Vissers; B.A.(Tor.), M.Div.(Knox, Toronto), Th.M.(Princeton), Th.D.(Knox, Toronto)

United Theological College of Montreal
3521 University Street, Montreal, QC H3A 2A9
Principal: P. Joudrey; B.A., M.Div.(Acadia), D.Min.(Andover Newton)

The above three colleges train students for the ministry and grant certificates for ordination but they have remitted their degree-granting powers, except with respect to the M.Div. and honorary doctorates, to the University.

1.3 University Government

McGill University is a corporation created by a Royal Charter granted by the Crown of the United Kingdom, a general supervisory power being retained by the Crown and exercised through the Governor General as Visitor.

The Governors of the University constitute the Royal Institution for the Advancement of Learning, a corporation existing under the laws of the Province of Quebec. In them is vested the management of finances, the appointment of professors, and other duties. Twelve of the governors are elected by the Board from amongst those nominated by its membership committee; three are elected by the Alumni Association; two are elected by Senate from amongst its members; two elected by the full-time administrative and support staff from amongst its members; two elected by the full-time academic staff; and four elected by students from amongst the student body. The Board elects the Chancellor of the University and also, from amongst its members, a chair to preside at its meetings, who may also be the Chancellor. The Chancellor, the Principal, and the President of the McGill Students' Society are ex officio members.

The Chancellor is presiding officer of Convocation and of joint sessions of the Board of Governors and the Senate.

The Chair of the Board of Governors is President of the Royal Institution for the Advancement of Learning.

The Principal and Vice-Chancellor is the academic head and chief administrative officer of the University, appointed by the Board of Governors after consultation with a Statutory Committee to Nominate a Principal. The Principal is, ex officio, Chair of Senate.

The Senate is the highest academic authority of the University and has control over admission, courses of study, discipline, and degrees. The regulations of Senate are executed.
by the various faculties and schools, which also carry primary responsibility for the educational work of the University.

1.4 Recognition of Degrees

The Royal Institution for the Advancement of Learning (McGill University) is a publicly funded institution and holds a Royal Charter dated 1821 (amended in 1852) as well as being incorporated under the laws of the Province of Quebec.

McGill University was a founding member of the organization which evolved into the current Association of Universities and Colleges of Canada (A.U.C.C.) in which it remains very active. In addition, McGill University is a member of the American Association of Universities (A.A.U.). It is also a member of the Association of Commonwealth Universities and the International Association of Universities. Its undergraduate, professional and graduate degrees, including doctorates in a full range of disciplines, have been recognized by educational, government and private organizations worldwide for decades.

All of McGill’s degree programs are approved by the Quebec Ministère de l’Education, du Loisir et du Sport (MELS) and the Conférence des recteurs et des principaux des universités du Québec (CREPUQ).

1.5 Board of Governors

(As of January 2006)

VISITOR

The Governor General of Canada
Her Excellency The Right Honourable Michaëlle Jean

BOARD OF GOVERNORS

Chair

Robert Rabinovitch
Heather Munroe-Blum

Principal and Vice-Chancellor

Richard W. Pound

Members

Roshi Chadha
Lili de Grandpré; B.A.(Western), M.B.A.(McG.)
Kappy Flanders
Trevor Garland; B.Sc.(McG.)
Marie Gigouère; B.A.(Mil.), B.C.L.(McG.)
Kohur GowriSankaran; B.A., M.A.(Madras), Ph.D.(Bombay)
Brian Levitt; B.Sc., LL.B.(Tor.)
Eric Maloff; B.A., B.C.L., LL.B.(McG.)
Sally McDougall; B.Sc., Dip.Ed.(McG.)
Michael Meighen; B.A.(McG.)
Morton J. Mendelson; B.Sc.(McG.), A.M., Ph.D.(Harv.)
Samuel Noumoff; B.A.(Clark), M.A., Ph.D.(N.Y.U.)
Jan Peeters; B.Eng.(McG.)
Adrien Pouliot; LL.L.(Sherbrooke)
Robert Rabinovitch; B.Com.(McG.), M.A., Ph.D.(Penn.)
Maria Ruocco; B.A., B.C.L.(McG.)
Michael Richards; B.A., B.C.L.(McG.)
Gerald Sheff; B.Arch., M.B.A.
James Wright; B.A., B.C.L.(McG.)

Student Representatives

Students’ Society of McGill (1)
Post-Graduate Students’ Society of McGill (1)
McGill Association of Continuing Education Students (1)
Macdonald Campus Students’ Society (1)

1.5.1 Members of Senate

EX-OFFICIO

The Chancellor
The Chair of the Board of Governors
The Principal and Vice-Chancellor

The Provost, Deputy Provost, and the vice-principals
The deans of faculties
The Dean of Continuing Education
The Dean of Graduate and Postdoctoral Studies
The Dean of Students
The Director of Libraries

Elected Members

63 members elected by the faculties, the University Libraries, the Board of Governors, and administrative and support staff.

Medical Residents or Postdoctoral Scholars Group (1)
Student Members (19)

1.5.2 Administrative Officers

Chancellor


Chair of the Board of Governors

Robert Rabinovitch; B.Com.(McG.), M.A., Ph.D.(Penn.)
Heather Munroe-Blum; O.C., B.A., B.S.W.(McM.), M.S.W.(W.Laur.), Ph.D.(N.Carolina)

Principal and Vice-Chancellor

Anthony Masi; A.B.(Colgate), Ph.D.(Brown)
Morty Yalovsky; B.Sc., M.Sc., Ph.D.(McG.)
Ann Dowsett-Johnston; B.A. (Queen’s)
Denis Thérien; B.Sc.(Montr.), M.Sc., Ph.D.(Wat.)
Janyne Hodder; B.A., M.A.(McG.)
Jennifer Robinson

Vice-Principal (Administration and Finance)

Ann Dowsett-Johnston; B.A. (Queen’s)

Vice-Principal (Development and Alumni Relations)

Denis Thérien; B.Sc.(Montr.), M.Sc., Ph.D.(Wat.)

Vice-Principal (Research and International Relations)

Janyne Hodder; B.A., M.A.(McG.)

Vice-Principal (Institutional Relations)

Jennifer Robinson

Associate Vice-Principal (Communications)

Johanne Pelletier; B.A., M.A.(McG.)

Interim Secretary-General

Morton Mendelson; B.Sc.(McG.), Ph.D.(Harv.)

Associate Provost (Academic Programs and Services)

Hudson Meadwell; B.A.(Man.), M.A., Ph.D.(Duke)

Associate Provost (Academic Staff and Planning)

James Nemes; B.Sc.(Md.), M.Sc., D.Sc.(GWU)

Interim Dean (Graduate and Postdoctoral Studies) and Associate Provost (Academic Programs)

Janusz Kozinski; B.A.(Wysinski), M.Eng., Ph.D.(Acad. M&M, Poland)

Associate Vice-Principal (Research)

Bruce Shore; B.Sc., M.A.(McG.), Ph.D.(Calg.)

Dean of Students

Sylvia Franke; LL.B., B.Sc.(Tor.)

Registrar and Executive Director of Admissions, Recruitment and Registrar’s Office

1.5.3 Deans, Directors of Schools and Libraries

Deans

Chandra Madramootoo; B.Sc., M.Sc., Ph.D.(McG.)

Agricultural and Environmental Sciences

John Galaty; B.A.(Trinity), M.A., Ph.D.(Chic.)

Arts - Interim

Robin H. Eley; C.A., M.B.A.(McG.)

Continuing Education

James Lund; B.D.S.(Adelaide), Ph.D.(W.Ont.)

Dentistry

Roger C. Slee; B.A.(Qld.), M.A., Ph.D.(La Trobe)

Education

Christophe Pierre; M.Sc.(Princ.), Ph.D. (Duke)

Engineering

2006-2007 Undergraduate Programs, McGill University
1.5.4 Student Government

All students registered in an undergraduate program on the downtown (McGill) campus are registered members of the accredited Student Society McGill University, affectionately known as SSMU (Sm OOO). Your student society acts as your representation on key issues inside and outside of the campus. There are 6 elected members of the society who represent all 18,000 plus students on the downtown campus. There is a legislative council which meets twice a month that is comprised of a councillor from all faculty associations. This council of 35 members meets to discuss Students' Society of McGill University business.

Each faculty and each department also have organizations dedicated to providing extra curricular involvement for their students.

The Student Society runs over 150 clubs and 14 services and provides a great deal of extra curricular opportunities for students to balance a life of study with a life of play and also an opportunity to meet other students.

Situated on the downtown campus the Students society operates a five floor building including an international lounge, cafeteria, reading room, club office space and a campus multipurpose venue.

The Students' Society of McGill University offices are located at 3600 McTavish Street suite 1200 and operate between the hours of 9-5 during the year and operate from 10-4 in the summer.

For more information regarding student government at McGill you can contact:
2 Calendar Of Dates 2006-07

The complete Calendar of Dates is available on the Web at www.mcgill.ca/student-records. The excerpt published herein was accurate as of February 2006. The information is subject to change and users are advised to verify important dates by checking the Web. Key dates for the faculties and schools included in this Calendar are given below. Unless otherwise specified, dates given for faculties apply to any schools therein.

- Agricultural and Environmental Sciences, including School of Dietetics and Human Nutrition and McGill School of Environment students registered in A&ES
- Arts, including School of Social Work, and McGill School of Environment students registered in Arts
- Education
- Engineering, including School of Architecture
- Desautels Faculty of Management
- Schulich School of Music
- Religious Studies
- Science, including School of Computer Science and McGill School of Environment students registered in Science

<table>
<thead>
<tr>
<th>FACULTY / SCHOOL LEGENDS</th>
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<tbody>
<tr>
<td>A&amp;ES Agricultural and Environmental Sciences</td>
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<tr>
<td>ARCH Architecture</td>
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<td>ART Arts</td>
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<tr>
<td>BSW Bachelor of Social Work</td>
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<tr>
<td>CE Continuing Education</td>
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<tr>
<td>DENT Dentistry</td>
</tr>
<tr>
<td>D&amp;HN Dietetics and Human Nutrition</td>
</tr>
<tr>
<td>EDUC Education</td>
</tr>
<tr>
<td>ENG Engineering</td>
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<tr>
<td>FMT Farm Management Technology</td>
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<tr>
<td>GRAD Graduate Studies</td>
</tr>
<tr>
<td>LAW Law</td>
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<tr>
<td>MED Medicine</td>
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<tr>
<td>MGMT Desautels Faculty of Management</td>
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</table>

<table>
<thead>
<tr>
<th>ACTIVITY CODE LEGENDS</th>
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<tbody>
<tr>
<td>ADV Academic Advising</td>
</tr>
<tr>
<td>APP Application</td>
</tr>
<tr>
<td>AUD Audition</td>
</tr>
<tr>
<td>AWRD Awards (including scholarships)</td>
</tr>
<tr>
<td>CONV Convocation</td>
</tr>
<tr>
<td>DEF Deferred—application and examination</td>
</tr>
<tr>
<td>EXAM Examinations</td>
</tr>
<tr>
<td>EXCH Exchange Deadlines</td>
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<tr>
<td>EVENT Event—reunion, carnival, presentation, etc.</td>
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<tr>
<td>FORM Forms</td>
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<tr>
<td>HOLIDAY Holiday</td>
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<tr>
<td>IFT Inter-faculty transfer</td>
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<tr>
<td>INFO Information</td>
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[Revised, March 2006: section begins.]
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<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
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<tbody>
<tr>
<td>Mar. 1, Wed.</td>
<td>APP</td>
<td>LAW</td>
<td>Deadline for applications for admission to Law for students applying from</td>
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<tr>
<td></td>
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<td></td>
<td>a Quebec CEGEP, from French Baccalaureate Programmes and for Law Visiting</td>
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<td></td>
<td>Applicants.</td>
</tr>
<tr>
<td>Mar. 1, Wed.</td>
<td>SUPP</td>
<td></td>
<td>Application deadline for supplemental exams in courses ending during the</td>
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<td></td>
<td>Fall term for Arts, Education, Nursing, Religious Studies, Science and</td>
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<td></td>
<td>Social Work (supplemental exams are not available for Agricultural and</td>
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<td></td>
<td>Environmental Sciences, Engineering [except freshman U0 courses] or</td>
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<td></td>
<td>Management courses).</td>
</tr>
<tr>
<td>Mar. 1, Wed.</td>
<td>APP</td>
<td>GRAD</td>
<td>Deadline for application for September admission to most departments in</td>
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<td>the GPSO. (Many departments have earlier deadlines. Please verify with</td>
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<td>the individual department or on the Web at <a href="http://www.mcgill.ca/applying/graduate).">www.mcgill.ca/applying/graduate).</a></td>
</tr>
<tr>
<td>Mar. 1, Wed.</td>
<td>APP</td>
<td>ALL</td>
<td>Deadline for applications for all applicants studying, or who last studied, in</td>
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<td></td>
<td>a CEGEP in Quebec (except applicants to Agricultural &amp; Environmental</td>
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<td></td>
<td></td>
<td>Sciences and Music).</td>
</tr>
<tr>
<td>Mar. 7, Tues. to Mar. 17, Fri.</td>
<td>EXAM</td>
<td>P&amp;OT</td>
<td>Examination period for 1ST year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 8, Wed.</td>
<td>INFO</td>
<td></td>
<td>Deadline for all Undergraduate students and Graduate students in all non-</td>
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<td>thesis programs (certificates, diplomas, master's non-thesis) who expect</td>
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<td>to complete their program requirements at the end of the Winter 2006 term</td>
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<td>(June 2006 convocation) to apply to graduate on Minerva.</td>
</tr>
<tr>
<td>Mar. 9, Thurs.</td>
<td>REG</td>
<td></td>
<td>Summer Session registration opens for Undergraduate students entering U3/U4 year; Continuing Education returning students; and Graduate students. Undergraduate students should refer to the summer course calendar for all Management course priority registration dates. Graduate students should confirm dates with individual departments.</td>
</tr>
<tr>
<td>Mar. 9, Thurs.</td>
<td>REG</td>
<td>LAW</td>
<td>Summer Session registration opens for Law Undergraduate and Law Graduate students.</td>
</tr>
<tr>
<td>Mar. 13, Mon.</td>
<td>ADV</td>
<td>A&amp;ES/ FMT</td>
<td>Academic advising begins for all returning undergraduate students in the Faculty of Agricultural &amp; Environmental Sciences &amp; FMT students.</td>
</tr>
<tr>
<td>Mar. 13, Mon.</td>
<td>ADV</td>
<td>ART/SCI/ BSW</td>
<td>Academic advising begins for returning students in Arts, Science and Social Work.</td>
</tr>
<tr>
<td>Mar. 13, Mon. &amp; Mar. 14, Tues.</td>
<td>ADV</td>
<td>ENG</td>
<td>Distribution of all registration information and calendars for returning Engineering students in the Student Affairs Office, Room 378, Macdonald Engineering Building.</td>
</tr>
<tr>
<td>Mar. 13, Mon. to Mar. 15, Wed.</td>
<td>ADV</td>
<td>MUS</td>
<td>Distribution of registration information and calendars for returning Music students in the lobby of the Strathcona Music Building.</td>
</tr>
<tr>
<td>Mar. 13, Mon. to Mar. 17, Fri.</td>
<td>ADV</td>
<td>ART/SCI/ BSW</td>
<td>Distribution of calendars for returning Arts and Science students in the corridor of the Leacock Building.</td>
</tr>
<tr>
<td>Mar. 13, Mon. to Mar. 17, Fri.</td>
<td>ADV</td>
<td>REL</td>
<td>Distribution of calendars for returning BTh students, BIRKS Building, Room 113.</td>
</tr>
<tr>
<td>Mar. 13, Mon. to Mar. 23, Thurs.</td>
<td>ADV</td>
<td>EDUC</td>
<td>Academic advising for returning students in Education. Appointments to be arranged by individual departments. Please consult the Student Affairs Website at <a href="http://www.mcgill.ca/edu-sao">www.mcgill.ca/edu-sao</a> for details.</td>
</tr>
<tr>
<td>Mar. 14, Tues.</td>
<td>REG</td>
<td></td>
<td>Summer Session registration opens for all Undergraduate students and</td>
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<td></td>
<td>Continuing Education newly admitted and special students. Undergraduate</td>
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<td></td>
<td>students should refer to the summer course calendar for all Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>course priority registration dates.</td>
</tr>
<tr>
<td>Mar. 16, Thurs.</td>
<td>REG</td>
<td></td>
<td>Summer Undergraduate Management courses open to all McGill students and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Special and Visiting students.</td>
</tr>
<tr>
<td>Mar. 16, Thurs. to Apr. 13, Thurs.</td>
<td>ADV</td>
<td>MUS</td>
<td>Academic advising for returning students in Music. Appointments to be arranged by individual departments.</td>
</tr>
<tr>
<td>Mar. 20, Mon. to Apr. 28, Fri.</td>
<td>STAGE</td>
<td>P&amp;OT</td>
<td>Clinical Affiliation for 1ST year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 22, Wed.</td>
<td>INFO</td>
<td></td>
<td>Deadline for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas, master's non-thesis) who expect to complete their program requirements at the end of the Summer 2006 term (November 2006 convocation) to apply to graduate on Minerva.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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<tr>
<td>Mar. 23, Thurs.</td>
<td>REG</td>
<td></td>
<td>Registration using Minerva begins for all students entering the graduating (U3/U4) year of their program (excluding Law and courses offered by the Desautels Faculty of Management, except as noted below), and all students in Graduate degree programs, except for Continuing Education.</td>
</tr>
<tr>
<td>Mar. 23, Thurs.</td>
<td>REG</td>
<td>MGMT</td>
<td>Registration in Management courses begins for undergraduate students entering their graduating (U3/U4) year: B.Com.; Minors in Management, Technological Entrepreneurship, Construction Engineering and Management; B.A. Joint Honours Economics and Finance; B.A. Faculty Program or Major in Industrial Relations; B.A. Major Concentration in Contemporary German Studies; Major in Agricultural Economics and B.Ed. in Kinesiology.</td>
</tr>
<tr>
<td>Mar. 23, Thurs.</td>
<td>REG</td>
<td>CE</td>
<td>Registration using Minerva begins for all returning Continuing Education-Education students only.</td>
</tr>
<tr>
<td>Mar. 28, Tues.</td>
<td>REG</td>
<td></td>
<td>Registration using Minerva begins for students in all programs entering their penultimate (U2) year of study (excluding Law and courses offered by the Desautels Faculty of Management except as noted below), except for Continuing Education.</td>
</tr>
<tr>
<td>Mar. 28, Tues.</td>
<td>REG</td>
<td>MGMT</td>
<td>Registration in Management courses begins for undergraduate students entering their penultimate (U2) year of study: B.Com.; Minors in Management, Technological Entrepreneurship, Construction Engineering and Management; B.A. Joint Honours Economics and Finance; B.A. Faculty Program or Major in Industrial Relations; B.A. Major Concentration in Contemporary German Studies; Major in Agricultural Economics and B.Ed. in Kinesiology.</td>
</tr>
<tr>
<td>Mar. 30, Thurs.</td>
<td>REG</td>
<td></td>
<td>Registration using Minerva begins for all returning students (excluding Law and courses offered by the Desautels Faculty of Management except as noted below), except for Continuing Education.</td>
</tr>
<tr>
<td>Apr. 2006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr. 4, Tues.</td>
<td>REG</td>
<td>MGMT</td>
<td>Registration in courses offered by the Desautels Faculty of Management opens for all returning students.</td>
</tr>
<tr>
<td>Apr. 6, Thurs.</td>
<td>REG</td>
<td>SPBSW</td>
<td>Summer session registration begins for Special B.S.W. students.</td>
</tr>
<tr>
<td>Apr. 10, Mon.</td>
<td>INFO</td>
<td></td>
<td>Last day for students to request fee exemptions from and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Admissions, Recruitment and Registrar’s Office for the Winter 2006 term. Students in Medicine or Continuing Education should submit their documents directly to their Faculty Student Affairs office or the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>Apr. 10, Mon.</td>
<td>LEC</td>
<td></td>
<td>Last day of lectures for Winter term 2006 for classes in Agricultural and Environmental Sciences (excluding FMT), Arts, Continuing Education, Education (non-blocked courses), Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy (second and third year), Religious Studies, Social Work (BSW &amp; MSW), Science.</td>
</tr>
<tr>
<td>Apr. 11, Tues.  to Apr. 28, Fri.</td>
<td>EXAM</td>
<td>ALL</td>
<td>Examination period for courses ending during the Winter term. (Physical and Occupational Therapy 2nd and 3rd year students only.)</td>
</tr>
<tr>
<td>Apr. 12, Wed.</td>
<td>STAGE</td>
<td>MSW</td>
<td>Last day of Field Practice for MSW students.</td>
</tr>
<tr>
<td>Apr. 14, Fri.</td>
<td>HOLIDAY</td>
<td></td>
<td>EASTER. No classes or exams. Administrative offices closed. Library hours to be announced.</td>
</tr>
<tr>
<td>Apr. 14, Fri.</td>
<td>LEC</td>
<td>FMT</td>
<td>Last day for lectures for FMT program.</td>
</tr>
<tr>
<td>Apr. 14, Fri.</td>
<td>EXAM</td>
<td>FMT</td>
<td>Winter term examination period for Farm Management and Technology program.</td>
</tr>
<tr>
<td>Apr. 28, Fri.</td>
<td>ORIENT</td>
<td>D &amp; HN</td>
<td>Orientation: NUTR 209, Professional Practice Stage 1B (Dietetics).</td>
</tr>
<tr>
<td>Apr. 28, Fri.</td>
<td>IFT</td>
<td>ARCH</td>
<td>School of Architecture application deadline for Fall term 2006 inter-faculty transfers.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity Code</td>
<td>Faculty/School</td>
<td>Activity</td>
</tr>
<tr>
<td>--------------</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>May 2006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>APP LAW</td>
<td></td>
<td>Deadline for Law Transfer and Quebec Bar applicants.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>APP REL</td>
<td></td>
<td>Application deadline for Fall admission of international students to Faculty of Religious Studies, BTh Program.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>EXCH LAW</td>
<td></td>
<td>Deadline for incoming undergraduate exchange applications from bilateral partners to the Faculty of Law with a Fall term (September) start or Winter term (January) start.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>EXCH REL</td>
<td></td>
<td>Deadline for incoming undergraduate exchange applications from bilateral partners with a Fall term (September) start. Please note that the Schulich School of Music has an earlier deadline.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>LEC SPBSW</td>
<td></td>
<td>First day of lectures for incoming Special B.S.W. students.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>LEC P&amp;OT</td>
<td></td>
<td>Classes reconvene for 1st year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>LEC/STAGE NURS</td>
<td></td>
<td>Classes reconvene and clinical courses commence for Nursing students.</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>ORIENT D &amp; HN</td>
<td></td>
<td>Orientation: NUTR 311, Professional Practice Stage 2B (Dietetics).</td>
</tr>
<tr>
<td>May 1, Mon.</td>
<td>DEF/SUPP</td>
<td></td>
<td>Deferred and supplemental examinations in courses ending in the Fall term in Arts, Education, Nursing, Physical and Occupational Therapy, Religious Studies, Science, Social Work and Engineering U0 courses.</td>
</tr>
<tr>
<td>May 2, Tues.</td>
<td>STAGE D &amp; HN</td>
<td></td>
<td>Site Placements begin for NUTR 311, Stage in Dietetics 2B.</td>
</tr>
<tr>
<td>May 2, Tues.</td>
<td>REG LAW</td>
<td></td>
<td>Registration (credits restricted) begins for returning U4 students in Faculty of Law.</td>
</tr>
<tr>
<td>May 2, Tues. &amp; May 3, Wed.</td>
<td>DEF A&amp;ES</td>
<td></td>
<td>Deferred examinations for courses ending in the Fall term in Agricultural and Environmental Sciences.</td>
</tr>
<tr>
<td>May 2, Tues. to May 4, Thurs.</td>
<td>REG SPSBSW</td>
<td></td>
<td>Summer session late registration for Special B.S.W. students (with late fee).</td>
</tr>
<tr>
<td>May 2, Tues. to May 7, Sun.</td>
<td>REG CE</td>
<td></td>
<td>Summer session late registration for all Continuing Education Students.</td>
</tr>
<tr>
<td>May 4, Thurs.</td>
<td>REG LAW</td>
<td></td>
<td>Registration (credits restricted) begins for returning U3 students in Faculty of Law.</td>
</tr>
<tr>
<td>May 9, Tues.</td>
<td>REG LAW</td>
<td></td>
<td>Registration (credits restricted) begins for returning U2 students in Faculty of Law.</td>
</tr>
<tr>
<td>May 11, Thurs.</td>
<td>REG LAW</td>
<td></td>
<td>Registration with credit limit raised for all returning students in Faculty of Law.</td>
</tr>
<tr>
<td>May 15, Mon.</td>
<td>DEF</td>
<td></td>
<td>Application deadline for deferred examinations for Winter term and multi-term courses ending in the Winter term 2006 in Agricultural and Environmental Sciences, Arts (including School of Social Work), Education and Science.</td>
</tr>
<tr>
<td>May 15, Mon.</td>
<td>W-- GRAD</td>
<td></td>
<td>Deadline for newly admitted students beginning their graduate thesis program in a Summer Term of Residence to withdraw from the University, with fee refund (less deposit or $100 minimum charge).</td>
</tr>
<tr>
<td>May 19, Fri.</td>
<td>LEC P&amp;OT</td>
<td></td>
<td>End of Winter term 2006 for Physical and Occupational Therapy students – Integration Block.</td>
</tr>
<tr>
<td>May 22, Mon.</td>
<td>HOLIDAY VICTORIA DAY</td>
<td>(Classes cancelled). Administrative offices closed.</td>
<td></td>
</tr>
<tr>
<td>May 23, Tues. to May 31, Wed.</td>
<td>EXAM P&amp;OT</td>
<td></td>
<td>Examination period for 1st year Physical and Occupational Therapy students-Integration Block.</td>
</tr>
<tr>
<td>May 29, Mon.</td>
<td>DEF/SUPP LAW</td>
<td></td>
<td>Law application deadline for deferred and supplemental examinations (Fall term, Winter term and full year courses).</td>
</tr>
<tr>
<td>May 29, Mon.</td>
<td>CONV</td>
<td></td>
<td>10:00 Education 14:00 Management 19:00 Continuing Education</td>
</tr>
<tr>
<td></td>
<td>NOTE</td>
<td></td>
<td>For additional information regarding Convocation, please consult <a href="http://www.mcgill.ca/convocations">www.mcgill.ca/convocations</a>.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
</tr>
<tr>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>May 30, Tues.</td>
<td>CONV</td>
<td></td>
<td>10:00 Engineering 15:00 Health Science</td>
</tr>
<tr>
<td>May 31, Wed.</td>
<td>CONV</td>
<td></td>
<td>10:00 Science “A” 14:00 Science “B” 18:00 Law</td>
</tr>
<tr>
<td>May-June-July-Aug.</td>
<td>STAGE</td>
<td>P&amp;OT</td>
<td>Clinical Affiliations for 2nd year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>June 2006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 1, Thurs.</td>
<td>APP</td>
<td>CE</td>
<td>Application deadline for Fall admission to Continuing Education Programs.</td>
</tr>
<tr>
<td>June 1, Thurs.</td>
<td>IFT</td>
<td>P&amp;OT</td>
<td>Physical and Occupational Therapy application deadline for Fall term 2006 inter-faculty transfers.</td>
</tr>
<tr>
<td>June 1, Thurs.</td>
<td>IFT</td>
<td></td>
<td>Agricultural and Environmental Sciences, Arts, Education, Engineering, Management, Nursing and Science application deadline for Fall term 2006 inter-faculty transfers. This deadline also applies to Continuing Education students wishing to transfer into Management.</td>
</tr>
<tr>
<td>June 1, Thurs.</td>
<td>PREXAM</td>
<td>MUS</td>
<td>Application deadline for September Music practical examinations. (Summer graduands only.)</td>
</tr>
<tr>
<td>June 1, Thurs.</td>
<td>CONV</td>
<td></td>
<td>10:00 Arts “A” 14:00 Arts “B”</td>
</tr>
<tr>
<td>June 2, Fri.</td>
<td>LEC/EXAM/</td>
<td>NURS</td>
<td>Last day of Clinical Placement (including examinations) for U3 Bachelor of Science (Nursing) students. Last day of lectures, Clinical Placement (including examinations) for U2 Bachelor of Science (Nursing) students.</td>
</tr>
<tr>
<td>June 5, Mon.</td>
<td>CONV</td>
<td></td>
<td>10:00 Music (Pollack Hall)</td>
</tr>
<tr>
<td>June 5, Mon.</td>
<td>THES</td>
<td>GRAD</td>
<td>Deadline to submit Doctoral theses with Nomination of Examiners forms to GPSO (Thesis Office) for students expecting to convocate in Fall 2006. Meeting this deadline does not guarantee a Fall graduation.</td>
</tr>
<tr>
<td>June 6, Tues.</td>
<td>CONV</td>
<td></td>
<td>14:30 Agricultural &amp; Environmental Sciences (Macdonald Campus)</td>
</tr>
<tr>
<td>June 15, Thurs. to</td>
<td>REG</td>
<td>NEW</td>
<td>Registration using Minerva for all newly admitted undergraduate students in the following faculties who have been admitted from Quebec CEGEPs (including those from College Marie de France and College Stanislas): Agricultural and Environmental Sciences, Arts, Education, Engineering including Architecture, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies, Science (including Medical Prep. and Dental Prep. students), and Social Work.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>IDCARD</td>
<td></td>
<td>Students from Quebec CEGEPs can avoid line-ups and get their ID cards early at the ARR Service Centre. Office hours are 9 a.m. to 5 p.m. weekdays. As of Monday, June 19 the office has a summer schedule: closed on Fridays and on Thursday, June 22 and Thursday, June 29. As of Monday, August 21, you can still get your card with everyone else – but you may have to wait longer in line.</td>
</tr>
<tr>
<td>June 15, Thurs. to</td>
<td>IDCARD</td>
<td>A&amp;ES</td>
<td>Agricultural and Environmental Science students admitted from Quebec CEGEPs can get their ID cards in the Student Affairs Office, Laird Hall, Room 106. Office hours are from 9:00 a.m. to 4:00 p.m., Monday through Thursday and 9:00 a.m. to 3:00 a.m. on Friday throughout the Summer. Please note that the Student Affairs Office will be closed on Thursday, June 22 and Thursday, June 29 followed by the statutory holidays of Friday, June 23rd and Friday, June 30th. The regular Monday through Friday schedule will resume with the week commencing July 3rd.</td>
</tr>
<tr>
<td>Aug. 17, Thurs.</td>
<td>APP</td>
<td>REL</td>
<td>Application deadline for Fall admission to Faculty of Religious Studies, B.Th. Program.</td>
</tr>
<tr>
<td>June 15, Thurs.</td>
<td>LEC</td>
<td>SPBSW</td>
<td>Last day of summer lectures for incoming Special B.S.W. students.</td>
</tr>
<tr>
<td>June 16, Fri.</td>
<td>STAGE</td>
<td>D&amp;HN NURS</td>
<td>Last day for NUTR 311, Stage in Dietetics 2B. Last day of lectures, Clinical Placement (including examinations) for U1 Bachelor of Science (Nursing) students.</td>
</tr>
<tr>
<td>June 19, Mon.</td>
<td>THES</td>
<td>GRAD</td>
<td>Deadline to submit Master's theses with Nomination of Examiners forms to GPSO (Thesis Office) for students expecting to convocate in Fall 2006. Meeting this deadline does not guarantee a Fall graduation.</td>
</tr>
<tr>
<td>June 22, Thurs.</td>
<td>EXAM</td>
<td>DENT/ MED</td>
<td>Last day of exams for 1st year Dentistry/Medicine students.</td>
</tr>
<tr>
<td>June 22, Thurs.</td>
<td>LEC</td>
<td>DENT</td>
<td>Last day of lectures for 2nd year Dentistry students.</td>
</tr>
<tr>
<td>June 22, Thurs.</td>
<td>NOTE</td>
<td></td>
<td>On Thursday, June 22 and Thursday, June 29 and all Fridays starting June 23 until August 18 (inclusive) most administrative offices will be closed. Students are urged to inquire in advance to ensure the office they wish to contact is open.</td>
</tr>
<tr>
<td>June 23, Fri.</td>
<td>HOLIDAY</td>
<td></td>
<td>Classes cancelled. Administrative offices closed (for La Fête Nationale du Québec).</td>
</tr>
<tr>
<td>June 24, Sat.</td>
<td>HOLIDAY</td>
<td></td>
<td>LA FÊTE NATIONALE DU QUÉBEC. Libraries closed.</td>
</tr>
</tbody>
</table>
## CALENDAR OF DATES

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 25, Sun.</td>
<td>LEC MED</td>
<td></td>
<td>Last day for activities for 2nd year Medicine Students.</td>
</tr>
<tr>
<td>June 26, Mon.</td>
<td>STAGE D &amp; HN</td>
<td></td>
<td>Site Placements begin for NUTR 209, Professional Practice Stage 1B (Dietetics).</td>
</tr>
<tr>
<td>June 27, Tues.</td>
<td>ADV NURS</td>
<td></td>
<td>Academic advising for undergraduate students entering the BN Integrated Nursing Program from 9:00 a.m. to 12:00 p.m. or 1:00 p.m. to 4:00 p.m.</td>
</tr>
<tr>
<td>June 29, Thurs.</td>
<td>NOTE</td>
<td></td>
<td>Administrative offices closed.</td>
</tr>
<tr>
<td>June 30, Fri.</td>
<td>HOLIDAY</td>
<td></td>
<td>Classes cancelled. Administrative offices closed (for Canada Day).</td>
</tr>
</tbody>
</table>

### July 2006

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1, Sat.</td>
<td>HOLIDAY</td>
<td></td>
<td>CANADA DAY. Libraries closed.</td>
</tr>
<tr>
<td>July 4, Tues.</td>
<td>REG CE</td>
<td></td>
<td>Registration using Minerva begins for returning students in Continuing Education for Fall courses and programs.</td>
</tr>
<tr>
<td>July 11, Tues.</td>
<td>REG CE</td>
<td></td>
<td>Registration using Minerva begins for newly admitted students in Continuing Education for Fall courses and programs.</td>
</tr>
<tr>
<td>July 13, Thurs.</td>
<td>REG MUS</td>
<td></td>
<td>Deadline for returning students to submit practical lesson assignment cards without a late fee.</td>
</tr>
<tr>
<td>July 15, Sat.</td>
<td>SUPP</td>
<td></td>
<td>Application deadline for supplemental examinations for courses ending in Winter term 2006 (including multi-term courses ending in Winter term) for Arts, Education, Nursing, Religious Studies, Science and Social Work (supplemental exams not available for Agricultural and Environmental Sciences, Engineering [except freshman U0 courses] or Management courses).</td>
</tr>
<tr>
<td>July 18, Tues. to Sept. 5, Tues.</td>
<td>REG NEW</td>
<td></td>
<td>Registration using Minerva for all newly admitted students in Law.</td>
</tr>
<tr>
<td>July 21, Fri.</td>
<td>STAGE D &amp; HN</td>
<td></td>
<td>Last day for activities for 1st year Dietetics (Stage) students (NUTR 209).</td>
</tr>
<tr>
<td>July 24, Mon.</td>
<td>LEC MED</td>
<td></td>
<td>Classes begin in the Faculty of Medicine for 3rd year students.</td>
</tr>
</tbody>
</table>

### August 2006

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 1, Tues.</td>
<td>REG RET</td>
<td></td>
<td>Last day for returning students in all faculties to register (except Continuing Education) without a late registration fee.</td>
</tr>
<tr>
<td>Aug. 2, Wed. to Sept. 5, Tues.</td>
<td>REG RET</td>
<td></td>
<td>Late registration and course change on Minerva for returning students in all faculties (except Continuing Education) with a $50 late registration fee ($20 for Special students and Graduate part-time students).</td>
</tr>
<tr>
<td>Aug. 2, Wed. to Sept. 5, Tues.</td>
<td>REG NEW</td>
<td></td>
<td>Registration using Minerva for all newly admitted undergraduate students in the following faculties. Note: Students admitted from Quebec CEGEPs have access to registration as of June 15. Agricultural and Environmental Sciences, Arts, Education, Engineering including Architecture, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies, Science, and Social Work.</td>
</tr>
<tr>
<td>Aug. 2, Wed. to Aug. 17, Thurs.</td>
<td>IDCARD</td>
<td></td>
<td>Canadian students can avoid line-ups and get their ID cards early on August 2, 3, 7, 8, 9, 10, 14, 15, 16 and 17 at the ARR Service Centre from 9 a.m. to 5 p.m. If you miss these dates, you can still get your card with everyone else -- but you may have to wait longer in line.</td>
</tr>
<tr>
<td>Aug. 3, Thurs. to Aug. 15, Tues.</td>
<td>REG MED/DENT</td>
<td></td>
<td>Registration using Minerva for 1st year Medicine and Dentistry students. Must confirm registration by attending mandatory (all day) in-faculty confirmation of registration and orientation on August 15th.</td>
</tr>
<tr>
<td>Aug. 3, Thurs. to Sept. 5, Tues.</td>
<td>REG NEW</td>
<td></td>
<td>Registration using Minerva for all newly admitted students in Graduate Studies.</td>
</tr>
<tr>
<td>Aug. 7, Mon. to Aug. 25, Fri.</td>
<td>IDCARD A&amp;ES</td>
<td></td>
<td>New students can avoid line-ups and get their ID cards early from August 7-11, 14-18, 21-25, at Laird Hall, Room 106, from 9 a.m. to 3 p.m. If you miss these dates, one will be worked in for you during Orientation activities.</td>
</tr>
<tr>
<td>Aug. 7, Mon. to Aug. 17, Thurs.</td>
<td>DEF/SUPP LAW</td>
<td></td>
<td>Deferred and supplemental examinations in Law.</td>
</tr>
<tr>
<td>Aug. 7, Mon. to Sept. 1, Fri.</td>
<td>ADV A&amp;ES</td>
<td></td>
<td>Academic advising for new students in Agricultural and Environmental Sciences and School of Dietetics and Human Nutrition. Refer to Orientation schedule and Website <a href="http://www.mcgill.ca/macdonald/orientation">www.mcgill.ca/macdonald/orientation</a> for specific details.</td>
</tr>
<tr>
<td>Aug. 15, Tues.</td>
<td>INFO</td>
<td></td>
<td>Last day for students to request fee exemptions and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Admissions, Recruitment and Registrar's Office for the Summer 2006 term. Students in Medicine or Continuing Education should submit their documents directly to their Faculty Student Affairs office or the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
</tbody>
</table>
### Calendar of Dates

<table>
<thead>
<tr>
<th>DATE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Aug. 15, Tues.</td>
<td>REG</td>
<td></td>
<td>Registration using Minerva begins for Fall term Continuing Education courses for all faculties except Dentistry, Law, Management, Medicine, Nursing and Physical and Occupational Therapy.</td>
</tr>
<tr>
<td>Aug. 15, Tues. to</td>
<td>REG</td>
<td>MED/DENT</td>
<td>Mandatory in-faculty confirmation of registration for 1st year Medicine and Dentistry students (all 3 days).</td>
</tr>
<tr>
<td>Aug. 16, Wed.</td>
<td>ORIENT</td>
<td>MED</td>
<td>Orientation for Medical Prep. students.</td>
</tr>
<tr>
<td>Aug. 20, Sun. to Sept. 1, Fri.</td>
<td>LEC</td>
<td>ART/SCI</td>
<td>Field course BIOL 331 begins and runs for 12 consecutive days. Students must contact the instructor well in advance for registration approval and instructions on getting to the field site.</td>
</tr>
<tr>
<td>Aug. 21, Mon.</td>
<td>LEC</td>
<td>DENT/MED</td>
<td>Lectures begin in the Faculty of Dentistry for 1st year students and in the Faculty of Medicine for 1st year students.</td>
</tr>
<tr>
<td>Aug. 21, Mon.</td>
<td>REG</td>
<td>DENT</td>
<td>In-faculty confirmation of registration for 3rd and 4th year Dentistry students.</td>
</tr>
<tr>
<td>Aug. 21, Mon. to Aug. 25, Fri.</td>
<td>ADV</td>
<td>ART/SCI</td>
<td>Academic advising for new students in Arts (including BSW) and Science. Refer to “Welcome to McGill” book and the Student Affairs Office Website at <a href="http://www.mcgill.ca/artscao">www.mcgill.ca/artscao</a> for details.</td>
</tr>
<tr>
<td>Aug. 21, Mon. to Aug. 31, Thurs.</td>
<td>ADV</td>
<td>EDUC</td>
<td>Academic advising for new students in Education. (Please consult the Student Affairs Website at <a href="http://www.mcgill.ca/edu-sao">www.mcgill.ca/edu-sao</a> for exact schedule).</td>
</tr>
<tr>
<td>Aug. 21, Mon. to Sept. 1, Fri.</td>
<td>IDCARD</td>
<td></td>
<td>IDs at the Trottier Building Cafeteria from 9 a.m. to 5 p.m. Including Saturday, August 26 and Sunday, August 27.</td>
</tr>
<tr>
<td>Aug. 22, Tues.</td>
<td>ADV</td>
<td>ENG</td>
<td>Transfer credit session for new students entering Year 0. Frank Dawson Adams Building, Room 5, 11:00 a.m.</td>
</tr>
<tr>
<td>Aug. 22, Tues. &amp; Aug. 23, Wed.</td>
<td>DEF</td>
<td>A&amp;ES</td>
<td>Deferred exams in Faculty of Agricultural and Environmental Sciences for Winter term 2006 courses.</td>
</tr>
<tr>
<td>Aug. 25, Fri. to Aug. 30, Wed.</td>
<td>ORIENT</td>
<td>ART/SCI</td>
<td>Arts and Science Departmental Orientation sessions and advising for newly admitted students in some departments. Students must check the Student Affairs Office Website for specific details: <a href="http://www.mcgill.ca/artscao">www.mcgill.ca/artscao</a>.</td>
</tr>
<tr>
<td>Aug. 28, Mon.</td>
<td>LEC</td>
<td>A&amp;ES</td>
<td>Students registering for PLNT 358 report for field excursion at 9:00 a.m. in R2-046 Raymond Building, Macdonald Campus. Field excursions continue on Aug. 29, 31 and September 1.</td>
</tr>
<tr>
<td>Aug. 28, Mon.</td>
<td>LEC</td>
<td>DENT/MED</td>
<td>Lectures begin in the Faculties of Dentistry and Medicine for 2nd year students.</td>
</tr>
<tr>
<td>Aug. 28, Mon.</td>
<td>LEC</td>
<td>FMT</td>
<td>First day of lectures in Farm Management and Technology Program (all years).</td>
</tr>
<tr>
<td>Aug. 28, Mon. to Sept. 1, Fri.</td>
<td>LEC</td>
<td>A&amp;ES</td>
<td>Students registering for WILD 401 report for class at 9:00 a.m. Field session lasts from Monday to Friday inclusive.</td>
</tr>
<tr>
<td>Aug. 28, Mon. to Sept. 1, Fri.</td>
<td>ORIENT</td>
<td>ALL</td>
<td>Orientation Week</td>
</tr>
<tr>
<td>Aug. 28, Mon. to Sept. 1, Fri.</td>
<td>ORIENT</td>
<td>A&amp;ES</td>
<td>“Discover Mac” in our Centenary year – Faculty Orientation for all new students (undergraduate and graduate) in the Faculty of Agricultural and Environmental Sciences. Refer to Orientation schedule and Website <a href="http://www.mcgill.ca/macdonald/orientation">www.mcgill.ca/macdonald/orientation</a> for details.</td>
</tr>
<tr>
<td>Aug. 28, Mon. to Sept. 15, Fri.</td>
<td>ORIENT</td>
<td>ALL</td>
<td>Orientation Centre opens daily at 9:00 a.m., Brown Student Services Building, 2nd floor, 3600 McTavish Street (closed weekends and Labour Day).</td>
</tr>
<tr>
<td>Date</td>
<td>Activity Code</td>
<td>Faculty/School</td>
<td>Activity</td>
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</tr>
<tr>
<td>Aug. 28, Mon. to Sept. 22, Fri.</td>
<td>ORIENT</td>
<td>ALL</td>
<td>First-Year Resource Room opens daily (9:00 a.m. to 5:00 p.m.) Brown Student Services Building, Room 2007, 3600 McTavish Street (closed weekends and Labour Day).</td>
</tr>
<tr>
<td>Aug. 29, Tues. to Aug. 31, Thurs. and Sept. 1, Fri.</td>
<td>PLEXAM</td>
<td>NEW</td>
<td>McGill Placement Examinations for newly admitted students in basic science courses in biology, chemistry, physics and math, including MATH 122 and MATH 123 for newly admitted Management students. See <a href="http://www.mcgill.ca/student-records/exam/placement">www.mcgill.ca/student-records/exam/placement</a> for more details.</td>
</tr>
<tr>
<td>Aug. 30, Wed.</td>
<td>ORIENT</td>
<td>NEW</td>
<td>&quot;Discover McGill&quot; - University and Faculty orientation for all new undergraduate students. Refer to &quot;Welcome to McGill&quot; book for details.</td>
</tr>
<tr>
<td>Aug. 30, Wed. to Sept. 15, Fri.</td>
<td>ADV</td>
<td>ENG</td>
<td>Compulsory academic advising and course approval required for ALL returning Engineering students (first two weeks of classes).</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>ADV</td>
<td>MGMT</td>
<td>Advising (compulsory) for new degree students in Management. See &quot;Welcome to McGill&quot; book for specific details.</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>ADV</td>
<td>MUS</td>
<td>Advising of new undergraduate students in Music at the Strathcona Music Building at 1:30 p.m. Please consult the Student Affairs Website at <a href="http://www.mcgill.ca/music/student/undergraduate/newstudent/advising">www.mcgill.ca/music/student/undergraduate/newstudent/advising</a> for specific details.</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>ADV</td>
<td>NURS</td>
<td>Academic advising for students entering the Bachelor of Science (Nursing) Program as U0 and mature students from 9h00 to 12h00. Academic advising for students transferring from other Universities into the Bachelor of Science (Nursing) Program in Nursing, from 13h00 to 16h00.</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>INFO</td>
<td>BSW</td>
<td>B.S.W. Field information session (all day).</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>INFO</td>
<td>MSW</td>
<td>M.S.W. information session (afternoon).</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>REG</td>
<td>ALL</td>
<td>Deadline for cancellation of registration for the Fall term except Continuing Education. (Deposit is non-refundable for new students.)</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>APP</td>
<td>ALL</td>
<td>Deadline to request deferral of Fall term admission to McGill for all undergraduate faculties (excluding Medicine, Dentistry, Law and Music). Further information about Medicine deferrals is available at <a href="http://www.medicine.mcgill.ca/admissions">www.medicine.mcgill.ca/admissions</a>.</td>
</tr>
<tr>
<td>Aug. 31, Thurs.</td>
<td>THES</td>
<td>GRAD</td>
<td>Registered students in 2005-2006 who have completed the residency in a thesis program and who submit their theses to GPSO (Thesis Office) on or before this date are not required to register for the 2006-2007 academic year. Students who have already registered for the year must ask the Graduate and Postdoctoral Studies Office, in writing, to delete their registration at the time of their thesis submission, by completing the “Request to Cancel Graduating Program Registration” form on the Web at <a href="http://www.mcgill.ca/gps/programs/dates">www.mcgill.ca/gps/programs/dates</a>.</td>
</tr>
</tbody>
</table>

**September 2006**

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity Code</th>
<th>Faculty/School</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 1, Fri.</td>
<td>ADV</td>
<td>MED</td>
<td>On-line application opens for undergraduate Medical program.</td>
</tr>
<tr>
<td>Sept. 1, Fri.</td>
<td>APP</td>
<td>DENT</td>
<td>On-line application opens for Dental Residency program.</td>
</tr>
<tr>
<td>Sept. 1, Fri.</td>
<td>ORIENT</td>
<td>D &amp; HN</td>
<td>Orientation for NUTR 510, Professional Practice–Stage 4 (Dietetics) (8:30 a.m. - 4:00 p.m.); placements commence September 5.</td>
</tr>
<tr>
<td>Sept. 1, Fri.</td>
<td>ORIENT</td>
<td>LAW</td>
<td>Faculty Orientation and in-faculty confirmation of registration for 1st year, special and visiting students in Law, Chancellor Day Hall.</td>
</tr>
<tr>
<td>Sept. 4, Mon.</td>
<td>HOLIDAY</td>
<td>LABOUR DAY</td>
<td>(Classes cancelled). Administrative offices closed.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>ORIENT</td>
<td>GRAD</td>
<td>University Orientation for new graduate students in Thomson House, 3650 McTavish Street, either 11:00 a.m. - 12:00 noon, OR 3:00 p.m. - 4:00 p.m., OR 5:00 p.m. – 6:00 p.m.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>STAGE</td>
<td>BSW</td>
<td>B.S.W. Field Practice commences.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>LEC</td>
<td>MSW</td>
<td>M.S.W. lectures begin.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>REG</td>
<td>CE</td>
<td>Deadline for students to register for Continuing Education courses without a late registration fee.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>REG</td>
<td>ALL</td>
<td>Deadline for new students to register without a late registration fee for all faculties and for returning students to register with a $50 late fee ($20 for Special students and Graduate part-time students).</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>LEC</td>
<td></td>
<td>Lectures begin in programs in Agricultural and Environmental Sciences, Arts, Continuing Education (all credit courses), Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies, and Science.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NOTE</strong> EDUC</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>LEC</td>
<td>CE</td>
<td>Lectures begin in non-credit courses in English and French Language programs at Continuing Education (except Special Intensive English and French).</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>ORIENT</td>
<td>P&amp;OT</td>
<td>Orientation for 1st, 2nd and 3rd year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Sept. 5, Tues.</td>
<td>AWRD</td>
<td>GRAD</td>
<td>Start of external and internal graduate fellowship competitions for 2007-2008 funding. Graduate and final year undergraduate students should inquire in their department and on the fellowships Website at <a href="http://www.mcgill.ca">www.mcgill.ca</a> gps fellowships regarding information session schedules and application procedures and deadlines.</td>
</tr>
<tr>
<td>Sept. 5, Tues. to Sept. 8, Fri.</td>
<td>REG</td>
<td>MUS</td>
<td>Auditions for students wishing to take Music Ensemble courses.</td>
</tr>
<tr>
<td>Sept. 5, Tues. to Sept. 15, Fri.</td>
<td>REG</td>
<td>MUS</td>
<td>Music (practical lessons) Course Change period in Fall term courses. Submit course change form to Performance Department. (No withdrawals from practical lessons after this period.)</td>
</tr>
<tr>
<td>Sept. 5, Tues. to Sept. 15, Fri.</td>
<td>REG</td>
<td>ALL</td>
<td>Late registration period with $100 late registration fee for all faculties; $40 for Special students and Graduate part-time students ($25 late registration fee for Continuing Education students).</td>
</tr>
<tr>
<td>Sept. 6, Wed.</td>
<td>LEC</td>
<td>BSW</td>
<td>Lectures begin for B.S.W. students.</td>
</tr>
<tr>
<td>Sept. 6, Wed.</td>
<td>STAGE</td>
<td>MSW</td>
<td>M.S.W. Field Practice commences.</td>
</tr>
<tr>
<td>Sept. 7, Thurs.</td>
<td>ORIENT</td>
<td>POSTDOC</td>
<td>University Orientation for new postdoctoral scholars in Thomson House, 3650 McTavish Street, 5:00 p.m. - 6:00 p.m.</td>
</tr>
<tr>
<td>Sept. 11, Mon. to Sept. 15, Fri.</td>
<td>PREXAM</td>
<td>MUS</td>
<td>Practical Examinations for Summer graduands in Music.</td>
</tr>
<tr>
<td>Sept. 15, Fri.</td>
<td>EXCH</td>
<td></td>
<td>Deadline for incoming undergraduate exchange applications form bilateral partners with a Winter term (January) start. Please note that the Schulich School of Music and the Faculty of Law have earlier deadlines.</td>
</tr>
<tr>
<td>Sept. 18, Mon.</td>
<td>LEC</td>
<td>CE</td>
<td>Lectures begin in Special Intensive English, Special Intensive French and General Studies non-credit courses at Continuing Education.</td>
</tr>
<tr>
<td>Sept. 19, Tues.</td>
<td>W</td>
<td></td>
<td>Deadline for Web withdrawing (grade of &quot;W&quot;) from multi-term courses (D1/D2, N1/N2) that started in Summer 2006 (with fee refund for Fall term) for students in Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Physical and Occupational Therapy, Religious Studies, Social Work, and Science (no withdrawals from Education Intensive courses).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NOTE</strong></td>
</tr>
<tr>
<td>Sept. 19, Tues.</td>
<td>REG</td>
<td></td>
<td>Course Change (drop/add) deadline for Fall term and first part of multi-term courses starting in September 2006 for Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music (except practical lessons), Nursing, Physical and Occupational Therapy, Religious Studies, Social Work, and Science. (No withdrawals from Music Ensembles after this date.)</td>
</tr>
<tr>
<td>Sept. 22, Fri.</td>
<td>AWRD</td>
<td>GRAD</td>
<td>Returning Master's and Doctoral level students should enquire of their departments or the GPSO (Graduate Fellowships and Awards) regarding precise deadlines for internal and external fellowship competitions; important deadlines normally fall during the months of October and November.</td>
</tr>
<tr>
<td>Sept. 24, Sun.</td>
<td>W</td>
<td>CE</td>
<td>Deadline to Web withdraw (grade of &quot;W&quot;) with refund from Continuing Education credit courses ($20 fee).</td>
</tr>
<tr>
<td>Sept. 24, Sun.</td>
<td>W/W--</td>
<td>ALL</td>
<td>Deadline to Web withdraw (grade of &quot;W&quot;) with full refund (less $100 minimum charge for returning students; less deposit or $100 minimum charge for new students, in case of complete withdrawal from the University).</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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</tr>
<tr>
<td>Sept. 30, Sat.</td>
<td>APP</td>
<td>DENT</td>
<td>Deadline for applications to the Oral and Maxillofacial Residency Program and the MDT Residency Program.</td>
</tr>
<tr>
<td><strong>October 2006</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct. 2, Mon.</td>
<td>APP</td>
<td>CE</td>
<td>Application deadline for Winter admission to Continuing Education Programs.</td>
</tr>
<tr>
<td>Oct. 2, Mon.</td>
<td>THES</td>
<td>GRAD</td>
<td>Deadline for submission of doctoral theses with Nomination of Examiners forms to GPSO (Thesis Office) for students expecting to graduate in February 2007. Meeting this deadline does not guarantee a Winter graduation.</td>
</tr>
<tr>
<td>Oct. 2, Mon. to Oct. 6, Fri.</td>
<td>VERIF</td>
<td></td>
<td>Verification period via Minerva for all students in all faculties except Faculty of Law; via printed form for Faculty of Law. It is especially critical that graduating students verify their records.</td>
</tr>
<tr>
<td>Oct. 2, Mon. to Oct. 7, Sat.</td>
<td>STAGE</td>
<td>FMT</td>
<td>Farm Practice 1 in Farm Management and Technology Program.</td>
</tr>
<tr>
<td>Oct. 9, Mon.</td>
<td>HOLIDAY</td>
<td></td>
<td>THANKSGIVING DAY. (Classes cancelled). Administrative offices closed. Continuing Education evening classes will be rescheduled. All lectures, labs, conferences, etc. that were not held on Monday, October 9, 2006 because of Thanksgiving Day have been rescheduled to Tuesday, October 10, 2006.</td>
</tr>
<tr>
<td>Oct. 10, Tues.</td>
<td>NOTE</td>
<td>ALL</td>
<td>October 10th does not follow the normal schedule. All lectures, labs, conferences, etc. that were not held on Monday, October 9, 2006 because of Thanksgiving Day have been rescheduled to Tuesday, October 10, 2006.</td>
</tr>
<tr>
<td>Oct. 16, Mon.</td>
<td>THES</td>
<td>GRAD</td>
<td>Deadline for submission of Master's theses with Nomination of Examiners forms to GPSO (Thesis Office) for students expecting to graduate in February 2007. Meeting this deadline does not guarantee a Winter graduation.</td>
</tr>
<tr>
<td>Oct. 16, Mon.</td>
<td>FORMS</td>
<td>ED</td>
<td>Deadline to submit Placement Form for Winter term 4th year Field Experience to the Office of Student Teaching.</td>
</tr>
<tr>
<td>Oct. 17, Tues.</td>
<td>AWRD</td>
<td>A&amp;ES</td>
<td>Scholastic Awards Reception and Presentation, Faculty of Agricultural and Environmental Sciences.</td>
</tr>
<tr>
<td>Oct. 21, Sat.</td>
<td>EVENT</td>
<td>A&amp;ES</td>
<td>Macdonald Centenary Homecoming.</td>
</tr>
<tr>
<td>Oct. 22, Sun.</td>
<td>W</td>
<td></td>
<td>Deadline for Web withdrawing (grade of &quot;W&quot;) from Fall term courses and Continuing Education Fall term courses (with no refund) for students in Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies, Social Work, and Science. (No withdrawals from Education Intensive or from ensembles or practical lessons in Music.)</td>
</tr>
<tr>
<td><strong>November 2006</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov. 1, Wed.</td>
<td>APP</td>
<td>REL</td>
<td>Application deadline for Winter admission to Faculty of Religious Studies, BTh Program.</td>
</tr>
<tr>
<td>Nov. 1, Wed.</td>
<td>APP</td>
<td>NURS</td>
<td>Application deadline for Winter admission to School of Nursing for 3 year Bachelor of Nursing Program and Bachelor of Science (Nursing) program.</td>
</tr>
<tr>
<td>Nov. 1, Wed.</td>
<td>APP</td>
<td></td>
<td>Application deadline for Winter admission to undergraduate programs. Verify which programs are open before applying. See <a href="http://www.mcgill.ca/applying/january">www.mcgill.ca/applying/january</a> for details.</td>
</tr>
<tr>
<td>Nov. 1, Wed.</td>
<td>IFT</td>
<td></td>
<td>Application deadline for Winter term 2007 inter-faculty transfers except Faculty of Agricultural and Environmental Sciences.</td>
</tr>
<tr>
<td></td>
<td>NOTE</td>
<td></td>
<td>The faculties of Arts, Education, Management, Science and certain programs in Engineering (see Website <a href="http://www.mcgill.ca/engineering/newstudents/admission">www.mcgill.ca/engineering/newstudents/admission</a> for details on programs open for January admission), do not accept Winter term inter-faculty transfers. Also, please contact the Schulich School of Music to determine which of their programs accept Winter term inter-faculty transfers.</td>
</tr>
<tr>
<td>Nov. 1, Wed.</td>
<td>REG</td>
<td>CE</td>
<td>Registration using Minerva for Winter courses and programs for returning students in Continuing Education.</td>
</tr>
<tr>
<td>Nov. 3, Fri.</td>
<td>LEC</td>
<td>P&amp;OT</td>
<td>Last day of lectures for 3rd year students in Physical and Occupational Therapy.</td>
</tr>
<tr>
<td>Nov. 6, Mon. to Nov. 10, Fri.</td>
<td>EXAM</td>
<td>P&amp;OT</td>
<td>Fall examination period for 3rd year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Nov. 7, Tues.</td>
<td>REG</td>
<td>CE</td>
<td>Registration using Minerva for Winter courses and programs for newly admitted students in Continuing Education.</td>
</tr>
<tr>
<td>Nov. 10, Fri.</td>
<td>EXCH</td>
<td>LAW</td>
<td>Deadline for students in the Faculty of Law to apply for faculty approval to participate in an exchange program during the 2007-2008 academic year.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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</tbody>
</table>
| Nov. 10, Fri.    | CONV     | ALL            | 10:00 Fall Convocation
14:30 Fall Convocation                                                   |
| Nov. 13, Mon. to Dec. 15, Fri. | STAGE    | P&OT           | Clinical Affiliation for 3rd year Physical and Occupational Therapy students. |
| Nov. 14, Tues.   | REG      | CE             | Registration using Minerva for Winter courses and programs for returning Continuing Education Special students. |
| Nov. 15, Wed.    | APP      | DENT           | Deadline for applications for Admission to Dentistry for all out-of-province and International students. |
| Nov. 15, Wed.    | APP      | MED            | Deadline for applications for admission to M.D., C.M. for all international and out-of-province of Quebec students; deadline for M.D., MBA and M.D., PHD applications. |
| Nov. 16, Thurs. to Dec. 6, Wed. | INFO     |               | MOLE Evaluation period for Fall term: McGill Online Evaluations available for completion on Minerva. |

**December 2006**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
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</thead>
<tbody>
<tr>
<td>Dec. 1, Fri.</td>
<td>IFT</td>
<td>A&amp;ES</td>
<td>Winter term deadline for Winter term 2007 inter-faculty transfers for the Faculty of Agricultural and Environmental Sciences.</td>
</tr>
<tr>
<td>Dec. 1, Fri.</td>
<td>REG</td>
<td>MBA</td>
<td>Deadline for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas [excluding Continuing Education] or master's non-thesis) who expect to complete their program requirements at the end of the Fall 2006 term (February 2007 graduation) to apply to graduate on Minerva.</td>
</tr>
<tr>
<td>Dec. 4, Mon.</td>
<td>INFO</td>
<td></td>
<td>Last day for students to request fee exemptions from and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Admissions, Recruitment and Registrar's Office for the Fall 2006 term. Students in Medicine or Continuing Education should submit their documents directly to their Faculty Student Affairs office or the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>Dec. 5, Tues.</td>
<td>INFO</td>
<td></td>
<td>Last day of lectures for courses in Agricultural and Environmental Sciences, Arts, Continuing Education, Education (except for 1st year students in Kind &amp; Elem &amp; Sec programs), Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy (1st &amp; 2nd year), Religious Studies, Science and Social Work (B.S.W and M.S.W.).</td>
</tr>
<tr>
<td>Dec. 6, Wed.</td>
<td>INFO</td>
<td></td>
<td>Study Day.</td>
</tr>
<tr>
<td>Dec. 6, Wed.</td>
<td>EVENT</td>
<td>MED</td>
<td>Faculty of Medicine White Coat Ceremony (2nd year students).</td>
</tr>
<tr>
<td>Dec. 8, Fri.</td>
<td>STAGE</td>
<td>BSW/ MSW</td>
<td>Last day of B.S.W. and M.S.W. Field Practice.</td>
</tr>
<tr>
<td>Dec. 8, Fri.</td>
<td>STAGE</td>
<td>EDUC</td>
<td>Last day of 3rd and 4th year field exp. in many B.Ed. programs.</td>
</tr>
<tr>
<td>Dec. 12, Tues.</td>
<td>LEC</td>
<td>FMT</td>
<td>Last day of lectures for Fall term, Farm Management and Technology program.</td>
</tr>
<tr>
<td>Dec. 13, Wed. to Dec. 21, Thurs.</td>
<td>EXAM</td>
<td>FMT</td>
<td>Fall term examination period for Farm Management and Technology program.</td>
</tr>
<tr>
<td>Dec. 15, Fri.</td>
<td>APP</td>
<td>MUS</td>
<td>Deadline for applications for admission to the Schulich School of Music for all graduate programs.</td>
</tr>
<tr>
<td>Dec. 15, Fri.</td>
<td>REG</td>
<td></td>
<td>Registration begins for Winter term Continuing Education courses via Minerva for all faculties except Dentistry, Law, Management, Medicine and Physical and Occupational Therapy.</td>
</tr>
<tr>
<td>Dec. 15, Fri.</td>
<td>LEC</td>
<td>DENT</td>
<td>Last day of Fall term for 3rd and 4th year students in Dentistry.</td>
</tr>
<tr>
<td>Dec. 18, Wed.</td>
<td>LEC</td>
<td>DENT/ MED</td>
<td>Last day of Fall term (exam day) for 2nd year students in Dentistry and Medicine.</td>
</tr>
<tr>
<td>Dec. 21, Thurs.</td>
<td>STAGE</td>
<td>D &amp;HN</td>
<td>Last day for NUTR 510, Professional Practice—Stage 4 (Dietetics).</td>
</tr>
</tbody>
</table>
**CALENDAR OF DATES**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 21, Thurs.</td>
<td>LEC</td>
<td>DENT/ MED</td>
<td>Last day of Fall term (exam day) for 1st year students in Dentistry and Medicine.</td>
</tr>
<tr>
<td>Dec. 25, Mon. to Jan. 2, Tues.</td>
<td>HOLIDAY</td>
<td></td>
<td>CHRISTMAS AND NEW YEAR’S. Administrative offices will be closed between December 23 and January 2 inclusive. Library hours available at Reference Desks.</td>
</tr>
<tr>
<td>Dec. 31, Sun.</td>
<td>REG</td>
<td>ALL</td>
<td>Deadline for cancellation of registration for the Winter term with Continuing Education. (Deposit is non-refundable for new students.)</td>
</tr>
<tr>
<td>Dec. 31, Sun.</td>
<td>APP</td>
<td>ALL</td>
<td>Deadline to request deferral of Winter term admission to McGill for all undergraduate faculties (excluding Medicine, Dentistry, Law and Music).</td>
</tr>
</tbody>
</table>

**January 2007**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 1, Mon. to Jan. 2, Tues.</td>
<td>HOLIDAY</td>
<td></td>
<td>NEW YEAR’S. Administrative offices will be closed. Library hours available at Reference Desks.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>ADV</td>
<td></td>
<td>Academic advising for new students in Arts and Science, Management.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>ORIENT</td>
<td>NURS</td>
<td>Orientation for new students in Nursing. (See Welcome Book and Website: <a href="http://www.nursing.mcgill.ca">www.nursing.mcgill.ca</a> for details).</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>REG</td>
<td>ALL</td>
<td>Deadline for new students to register for Winter term without a late registration fee for all faculties.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>REG</td>
<td>CE</td>
<td>Deadline for students to register for Continuing Education courses without a late registration fee.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>LEC</td>
<td>BSW</td>
<td>Lectures begin for B.S.W. students.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>STAGE</td>
<td>MSW</td>
<td>Field Practice resumes for M.S.W. students.</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>ORIENT</td>
<td>NEW</td>
<td>University Orientation for new undergraduate students (5:00 p.m. - 6:00 p.m., in Moyse Hall).</td>
</tr>
<tr>
<td>Jan. 3, Wed.</td>
<td>LEC</td>
<td></td>
<td>Winter term lectures begin in Agricultural and Environmental Sciences (including Farm Management and Technology program), Arts, credit courses and non-credit language courses at Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy (1st and 2nd year students), Religious Studies, Science, Dentistry (all programs) and Medicine students (1st and 2nd year students).</td>
</tr>
<tr>
<td>Jan. 3, Wed. to Jan. 12, Fri.</td>
<td>ADV</td>
<td>ENG</td>
<td>Compulsory academic advising and course approval required for ALL returning Engineering students. (First two weeks of classes).</td>
</tr>
<tr>
<td>Jan. 3, Wed. to Jan. 19, Fri.</td>
<td>ORIENT</td>
<td>NEW</td>
<td>First-Year Resource Room opens daily (9:00 a.m. to 5:00 p.m.) Brown Student Services Building, Room 2007, 3600 McTavish Street.</td>
</tr>
<tr>
<td>Jan. 3, Wed. to Feb. 6, Tues.</td>
<td>STAGE</td>
<td>P&amp;OT</td>
<td>Clinical Affiliation for 3rd year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Jan. 4, Thurs.</td>
<td>STAGE</td>
<td>BSW</td>
<td>Field Practice resumes for B.S.W. students.</td>
</tr>
<tr>
<td>Jan. 4, Thurs.</td>
<td>LEC</td>
<td>MSW</td>
<td>Lectures begin for M.S.W. students.</td>
</tr>
<tr>
<td>Jan. 4, Thurs.</td>
<td>ORIENT</td>
<td>A&amp;ES</td>
<td>Faculty Orientation and Macdonald Centenary Overview for new undergraduate and graduate students in the Faculty of Agricultural and Environmental Sciences (5:30 p.m. - 6:30 p.m.), Ceilidh Centennial Center.</td>
</tr>
<tr>
<td>Jan. 4, Thurs. to Jan. 16, Tues.</td>
<td>REG</td>
<td>NEW</td>
<td>Late registration for new students with $100 late registration fee for all faculties; $40 for Special students and Graduate part-time students, ($25 late registration fee for Continuing Education students).</td>
</tr>
<tr>
<td>Jan. 8, Mon.</td>
<td>LEC</td>
<td>CE</td>
<td>Lectures begin in non-credit General Studies courses at Continuing Education.</td>
</tr>
<tr>
<td>Jan. 9, Tues.</td>
<td>ORIENT</td>
<td>GRAD</td>
<td>University Orientation for new graduate students (5:00 p.m. - 6:00 p.m., Ballroom in Thomson House).</td>
</tr>
<tr>
<td>Jan. 11, Thurs.</td>
<td>ORIENT</td>
<td>POSTDOC</td>
<td>University Orientation for new postdoctoral scholars (5:00 p.m. - 6:00 p.m., Ballroom in Thomson House).</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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</tr>
<tr>
<td>Jan. 12, Fri.</td>
<td>REG MUS</td>
<td>Music (practical lessons) deadline for dropping Winter term courses. (Submit course change form to Performance Department. No withdrawals from practical lessons after this date.)</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>IFT MUS</td>
<td>Music application deadline for Fall term 2007 inter-faculty transfers.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>DEF MUS</td>
<td>Application deadline for deferred examinations for courses from the Fall term 2006 in Agricultural and Environmental Sciences, Arts (including School of Social Work), Education, Engineering (UQ courses only), Nursing and Science. (For details, see the Faculty Regulations in the Arts and Science sections of the UG Calendar.)</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>LEC CE</td>
<td>Lectures begin in Special Intensive English and French at Continuing Education.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>APP MUS</td>
<td>Deadline for applications for admission to the Schulich School of Music for all undergraduate applicants.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>APP DENT</td>
<td>Deadline for applications for Admission to Dentistry for all in-province applicants.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>APP MED</td>
<td>Deadline for application to M.D.,C.M. 4-year program for Quebec applicants.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon.</td>
<td>APP LAW</td>
<td>Deadline for non-CEGEP Law applications into 1st year and Advanced Standing Applicants.</td>
<td></td>
</tr>
<tr>
<td>Jan. 15, Mon. to Jan. 31, Wed.</td>
<td>APP MUS</td>
<td>Deadline for McGill students to obtain approval from their Faculty to participate in a student exchange in Fall 2007 and/or Winter 2008 term. Students must verify specific Faculty deadlines with their Faculty Student Affairs Office.</td>
<td></td>
</tr>
<tr>
<td>Jan. 16, Tues.</td>
<td>EXCH MGMT</td>
<td>Deadline for students in the Faculty of Management to apply for faculty approval to participate in an exchange program during the 2007-2008 academic year.</td>
<td></td>
</tr>
<tr>
<td>Jan. 16, Tues.</td>
<td>REG GRAD</td>
<td>Final Course Add/Drop deadline for Winter term courses and N1/N2 courses in Graduate Studies. After this date students receive a mark of &quot;W&quot; (withdrawn).</td>
<td></td>
</tr>
<tr>
<td>Jan. 16, Tues.</td>
<td>REG ALL</td>
<td>Course Change (drop/add) deadline for Winter term courses and Continuing Education Winter term courses for Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Law, Management, Music (except practical lessons), Nursing, Physical and Occupational Therapy, Religious Studies, Science and Social Work. (No withdrawals from Music Ensembles after this date.)</td>
<td></td>
</tr>
<tr>
<td>Jan. 22, Mon. to Jan. 27, Sat.</td>
<td>EVENT A&amp;ES</td>
<td>Carnival Week at Macdonald Campus. Classes as usual.</td>
<td></td>
</tr>
<tr>
<td>Jan. 21, Sun.</td>
<td>W/W--</td>
<td>Deadline to Web withdraw (grade of &quot;W&quot;) from Winter term courses with fee refund. Returning students - less $100 minimum charge in the case of complete withdrawal for students not registered in the fall. New students - less deposit or $100 minimum charge in case of complete withdrawal. (No withdrawals from Ed. intensive courses, or music ensembles and practical lessons.)</td>
<td></td>
</tr>
<tr>
<td>Jan. 21, Sun.</td>
<td>W CE</td>
<td>Deadline to Web withdraw (grade of &quot;W&quot;) with refund from Continuing Education credit courses ($20 fee).</td>
<td></td>
</tr>
<tr>
<td>Jan. 22, Mon.</td>
<td>EXCH</td>
<td>Deadline for students to apply for faculty approval to participate in an exchange program during the 2007-2008 academic year. Please note that the Faculty of Law and the Desautels Faculty of Management have earlier deadlines.</td>
<td></td>
</tr>
<tr>
<td>Jan. 29, Mon.</td>
<td>APP MGMT/SCI</td>
<td>Application deadline for Science students applying to the Minors in Management and Technological Entrepreneurship (Management Student Affairs Office).</td>
<td></td>
</tr>
<tr>
<td>Jan. 29, Mon. to Feb. 2, Fri.</td>
<td>VERIF</td>
<td>Verification period via Minerva for all students in all faculties except Faculty of Law; via printed form for Faculty of Law. It is especially critical that graduating students verify their records.</td>
<td></td>
</tr>
<tr>
<td>Jan. 31, Wed.</td>
<td>ORIENT D &amp; HN</td>
<td>Campus orientation for NUTR 409, Stage in Dietetics Level 3 (afternoon session).</td>
<td></td>
</tr>
<tr>
<td><strong>February 2007</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 1, Thurs.</td>
<td>APP CE</td>
<td>Application deadline for Spring admission to Continuing Education Programs.</td>
<td></td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Feb. 1, Thurs.</td>
<td>APP</td>
<td>MSW/PHD</td>
<td>Deadline for graduate students to apply for approval from the Graduate and Postgraduate Studies Office to participate in an exchange program during the 2007-2008 academic year.</td>
</tr>
<tr>
<td>Feb. 1, Thurs. to Feb. 4, Sun.</td>
<td>BREAK</td>
<td>D &amp; HN</td>
<td>Study break for NUTR 409, Stage in Dietetics Level 3.</td>
</tr>
<tr>
<td>Feb. 5, Mon.</td>
<td>EXCH</td>
<td></td>
<td>Application deadline at the Office of Student Exchanges and Study Abroad for McGill students wishing to participate in a student exchange in Fall 2007 and/or Winter 2008 term. Applications must include all supporting Faculty approval documentation at the time of submission.</td>
</tr>
<tr>
<td>Feb. 5, Mon.</td>
<td>THES</td>
<td>GRAD</td>
<td>Deadline to submit doctoral theses with Nomination of Examiners forms to GPSO (Thesis Office) for students expecting to convocate in Spring 2007. Meeting this deadline does not guarantee a Spring graduation.</td>
</tr>
<tr>
<td>Feb. 5, Mon.</td>
<td>STAGE</td>
<td>D &amp; HN</td>
<td>Site orientation for NUTR 409, Stage in Dietetics Level 3.</td>
</tr>
<tr>
<td>Feb. 5, Mon.</td>
<td>LEC</td>
<td>P&amp;OT</td>
<td>Macdonald College Founder's Day and Centenary celebration and activities. (Sir William C. Macdonald born Feb. 10, 1831; died June 9, 1917). Classes cancelled 10:00 a.m. to 1:00 p.m.</td>
</tr>
<tr>
<td>Feb. 8, Thurs.</td>
<td>REG</td>
<td>ED</td>
<td>Registration for Summer Field Experience courses for B.Ed. students begins.</td>
</tr>
<tr>
<td>Feb. 8, Thurs.</td>
<td>FORMS</td>
<td>ED</td>
<td>Deadline to submit Placement Forms to the Office of Student Teaching.</td>
</tr>
<tr>
<td>Feb. 15, Thurs.</td>
<td>APP</td>
<td>DENT</td>
<td>Deadline for applications to Dentistry for all in-province applications.</td>
</tr>
<tr>
<td>Feb. 17, Sat. to Feb. 25, Sun.</td>
<td>AUD</td>
<td>MUS</td>
<td>Entrance Auditions for all undergraduate and M. Mus. (Performance) and D. Mus. (Performance) applicants.</td>
</tr>
<tr>
<td>Feb. 18, Sun. to Feb. 24, Sat.</td>
<td>BREAK</td>
<td></td>
<td>STUDY BREAK (Classes cancelled for all faculties except Dentistry, Medicine, Continuing Education non-credit courses and English &amp; French credit courses, Stage in Dietetics Level 3). Study break for 2nd and 3rd year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 5, Thurs.</td>
<td>APP</td>
<td>DENT</td>
<td>Deadline for application to Dental prep. program for Quebec residents.</td>
</tr>
<tr>
<td>Mar. 1, Thurs.</td>
<td>SUPP</td>
<td></td>
<td>Application deadline for supplemental examinations in Fall term courses and N1/N2 courses from the Fall term 2006 for Arts, Education, Nursing, Religious Studies, Social Work, and Science (not available for Agricultural and Environmental Sciences, Engineering (except freshman courses) or Management courses).</td>
</tr>
<tr>
<td>Mar. 2, Fri.</td>
<td>LEC</td>
<td>P&amp;OT</td>
<td>Last day of lectures for 1st year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 5, Mon. to Mar. 16, Fri.</td>
<td>EXAM</td>
<td>P&amp;OT</td>
<td>Winter examination period for 1st year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 12, Mon.</td>
<td>ADV</td>
<td>ART/SCI</td>
<td>Academic advising begins for returning students in Arts and Science.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mar. 12, Mon.</td>
<td>ADV</td>
<td>A&amp;ES</td>
<td>Academic advising begins for all returning undergraduate and Farm Management and Technology students in the Faculty of Agricultural and Environmental Sciences.</td>
</tr>
<tr>
<td>Mar. 12, Mon. &amp; Mar. 13, Tues.</td>
<td>ADV</td>
<td>ENG</td>
<td>Distribution of all registration information and calendars for returning Engineering students in the Student Affairs Office, Room 378, Macdonald Engineering Building.</td>
</tr>
<tr>
<td>Mar. 12, Mon. to Mar. 14, Wed.</td>
<td>ADV</td>
<td>MUS</td>
<td>Distribution of registration information and calendars for returning students in the lobby of the Strathcona Music Building.</td>
</tr>
<tr>
<td>Mar. 12, Mon. to Mar. 16, Fri.</td>
<td>ADV</td>
<td>ART/SCI/ BSW</td>
<td>Distribution of calendars for returning Arts and Science students in the corridor of the Leacock Building.</td>
</tr>
<tr>
<td>Mar. 12, Mon. to Mar. 16, Fri.</td>
<td>ADV</td>
<td>MGMT</td>
<td>Distribution of all registration information and calendars for returning Management students.</td>
</tr>
<tr>
<td>Mar. 12, Mon. to Mar. 16, Fri.</td>
<td>ADV</td>
<td>REL</td>
<td>Distribution of calendars for returning BTh students, BIRKS Building, Room 113.</td>
</tr>
<tr>
<td>Mar. 12, Mon. to Mar. 22, Thurs.</td>
<td>ADV</td>
<td>EDUC</td>
<td>Academic advising and distribution of material for returning students in Education. Please consult the Student Affairs Website at <a href="http://www.mcgill.ca/educational-advising">www.mcgill.ca/educational-advising</a> for details.</td>
</tr>
<tr>
<td>Mar. 15, Thurs. to Apr. 12, Thurs.</td>
<td>ADV</td>
<td>MUS</td>
<td>Academic advising for returning students in Music. Appointments to be arranged by individual departments.</td>
</tr>
<tr>
<td>TBA</td>
<td>ADV</td>
<td>P&amp;OT</td>
<td>Registration counselling in Physical and Occupational Therapy for returning students.</td>
</tr>
<tr>
<td>TBA</td>
<td>ADV</td>
<td>NURS</td>
<td>Academic advising for U2 Bachelor of Science (Nursing) students entering U3.</td>
</tr>
<tr>
<td>Mar. 16, Fri.</td>
<td>EXAM</td>
<td>A&amp;ES</td>
<td>Deadline to report all exam conflicts to the Student Affairs Office (Laird Hall, Room 106) for Winter term exams.</td>
</tr>
<tr>
<td>Mar. 19, Mon. to Apr. 27, Fri.</td>
<td>STAGE</td>
<td>P&amp;OT</td>
<td>Clinical Affiliation for 1st year Physical and Occupational Therapy students.</td>
</tr>
<tr>
<td>Mar. 30, Fri.</td>
<td>FORM</td>
<td>EDUC</td>
<td>Deadline to submit waiver forms for Teacher Certification for Spring and Fall graduates to the Student Affairs Office.</td>
</tr>
<tr>
<td>Mar. 30, Fri.</td>
<td>FORM</td>
<td>EDUC</td>
<td>Placement forms due at the Office of Student Teaching for 3rd year Field Experience courses for returning students for 2007-2008.</td>
</tr>
<tr>
<td>Mar. 30, Fri.</td>
<td>LEC</td>
<td>DENT</td>
<td>Last day of lectures for Winter term for 4th year Dentistry students.</td>
</tr>
</tbody>
</table>

**April 2007**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>FACULTY/SCHOOL</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr. 2, Mon. to Apr. 20, Fri.</td>
<td>EXAM</td>
<td>DENT</td>
<td>Examination period for 4th year Dentistry students.</td>
</tr>
<tr>
<td>Apr. 6, Fri. and Apr. 9, Mon.</td>
<td>HOLIDAY</td>
<td></td>
<td>EASTER. No classes or exams. Administrative offices closed. Library hours to be announced.</td>
</tr>
<tr>
<td>Apr. 11, Wed.</td>
<td>INFO</td>
<td></td>
<td>Last day for students to request fee exemptions from and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Admissions, Recruitment and Registrar’s Office for the Winter 2007 term. Students in Medicine or Continuing Education should submit their documents directly to their Faculty Student Affairs office or the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>Apr. 11, Wed.</td>
<td>LEC</td>
<td></td>
<td>Last day of lectures for Winter term in Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy (2nd and 3rd year), Religious Studies, Social Work (BSW/MSW), Science.</td>
</tr>
</tbody>
</table>

**NOTE**

The last week of classes in the Winter term does not follow the normal schedule. All lectures, labs, conferences, etc. that were not held on Monday, April 9, 2007 because of Easter Monday have been rescheduled to Wednesday, April 11, 2007.

<table>
<thead>
<tr>
<th>DATE</th>
<th>STAGE</th>
<th>BSW/ MSW</th>
<th>Last day of Field Practice for B.S.W. (U2 &amp; U3) students &amp; for M.S.W students.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DATE</th>
<th>LEC</th>
<th>SPBSW</th>
<th>Lectures resume for Special B.S.W. students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr. 16, Mon.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr. 18, Wed.</td>
<td>STAGE</td>
<td>D &amp; HN</td>
<td>Last day for NUTR 409, Stage in Dietetics Level 3.</td>
</tr>
<tr>
<td>Apr. 19, Thurs.</td>
<td>LEC</td>
<td>FMT</td>
<td>Last day of lectures in the Farm Management and Technology program.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity Code</td>
<td>Faculty/ School</td>
<td>Activity</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>-----------------</td>
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</tr>
<tr>
<td>Apr. 20, Fri. to Apr. 27, Fri.</td>
<td>EXAM</td>
<td>FMT</td>
<td>Winter term examination period for Farm Management and Technology program.</td>
</tr>
<tr>
<td>Apr. 27, Fri.</td>
<td>IFT</td>
<td>ARCH</td>
<td>Application deadline School of Architecture for Fall term 2007 inter-faculty transfers.</td>
</tr>
<tr>
<td>Apr. 30, Mon.</td>
<td>LEC</td>
<td>P&amp;OT</td>
<td>Classes reconvene for 1st year Physical and Occupational Therapy students - Integration Block.</td>
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**May 2007**

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<th>Date</th>
<th>Activity Code</th>
<th>Faculty/ School</th>
<th>Activity</th>
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<tr>
<td>May 1, Tues.</td>
<td>APP</td>
<td>LAW</td>
<td>Deadline for Law Transfer and Quebec Bar applicants.</td>
</tr>
<tr>
<td>May 1, Tues.</td>
<td>APP</td>
<td>REL</td>
<td>Application deadline for Fall admission of International students to Faculty of Religious Studies, BTh Program.</td>
</tr>
<tr>
<td>May 1, Tues.</td>
<td>EXCH</td>
<td></td>
<td>Deadline for incoming undergraduate exchange applications from bilateral partners with a Fall term (September) start. Please note that the Schulich School of Music has an earlier deadline.</td>
</tr>
<tr>
<td>May 1, Tues.</td>
<td>EXCH</td>
<td>LAW</td>
<td>Deadline for incoming undergraduate exchange applications to the Faculty of Law from bilateral partners with a Fall term (September) and Winter term (January) start.</td>
</tr>
<tr>
<td>May 1, Tues.</td>
<td>EXCH</td>
<td></td>
<td>Deadline for incoming undergraduate exchange applications under the CREPUQ student exchange program with a Fall term (September) start and Winter term (January) start. Please note that the Schulich School of Music has an earlier deadline.</td>
</tr>
<tr>
<td>May 1, Tues.</td>
<td>ORIENT</td>
<td>D &amp; HN</td>
<td>Orientation for NUTR 209, Professional Practice Stage 1B (Dietetics) (mid-summer placements).</td>
</tr>
<tr>
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<td>NURS</td>
<td>Classes reconvene and clinical courses commence for U1, U2, and U3 Nursing students.</td>
</tr>
<tr>
<td>May 1, Tues. &amp; May 2, Wed.</td>
<td>DEF/SUPP</td>
<td></td>
<td>Deferred and supplemental examinations for Fall term courses in Arts, Education, Nursing, Physical and Occupational Therapy, Religious Studies, Science, Social Work and Engineering U0 courses.</td>
</tr>
<tr>
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<td>DEF</td>
<td>A&amp;ES</td>
<td>Deferred examination in the Faculty of Agricultural and Environmental Sciences for courses ending in the Fall term.</td>
</tr>
<tr>
<td>May 4, Fri.</td>
<td>STAGE</td>
<td>D &amp; HN</td>
<td>Orientation for NUTR 311, Stage in Dietetics 2B; placements begin May 7, Monday.</td>
</tr>
<tr>
<td>May 15, Tues.</td>
<td>DEF</td>
<td></td>
<td>Application deadline for deferred examinations for Winter term and multi-term courses ending in the Winter term 2007 in Agricultural and Environmental Sciences, Arts (including School of Social Work), Education, Engineering (U0 courses only) and Science.</td>
</tr>
<tr>
<td>May 15, Tues.</td>
<td>W--</td>
<td>GRAD</td>
<td>Deadline for newly admitted students beginning their graduate thesis program in a Summer Term of Residence to withdraw from the University, with fee refund (less deposit or $100 minimum charge).</td>
</tr>
<tr>
<td>May 18, Fri.</td>
<td>LEC</td>
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</tr>
<tr>
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<td></td>
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</tr>
<tr>
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<td>EXAM</td>
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<tr>
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</tr>
<tr>
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<td>Last day of lectures for outgoing Special B.S.W. students.</td>
</tr>
<tr>
<td>May-June-July-Aug.</td>
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**June 2007**

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</tr>
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<td>CE</td>
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</tr>
<tr>
<td>June 1, Fri.</td>
<td>IFT</td>
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<td>Physical and Occupational Therapy application deadline for Fall term, 2007 inter-faculty transfers.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>FACULTY/SCHOOL</td>
<td>ACTIVITY</td>
</tr>
<tr>
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</tr>
<tr>
<td>June 1, Fri.</td>
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<td></td>
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</tr>
<tr>
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<td>PREXAM</td>
<td>MUS</td>
<td>Application deadline for September practical examinations in Music. (Summer graduands only.)</td>
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<tr>
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</tr>
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<td>NOTE</td>
<td></td>
<td>Between June 22 and August 17 (inclusive) most administrative offices will be closed each Friday. Students are urged to inquire in advance to ensure the office they wish to contact is open.</td>
</tr>
<tr>
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<td>HOLIDAY</td>
<td></td>
<td>LA FÊTE NATIONALE DU QUÉBEC. Libraries closed.</td>
</tr>
<tr>
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<td></td>
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</tr>
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<td></td>
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</tr>
<tr>
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</tr>
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</tr>
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<td></td>
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</tr>
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</tr>
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</tr>
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</tr>
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[Revised, March 2006: section ends.]
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3.1 General Policies and Information

3.1.1 Authorization, Acknowledgement and Consent

When applying for admission to the University, all students acknowledge that they are bound by and undertake to observe the statutes, rules, regulations, and policies in place from time to time at McGill University and the faculty or faculties in which they are registered, including those policies contained in the University Calendars and related fee documents. Their obligation as a student commences with their registration and terminates in accordance with the University’s statutes, regulations, and policies.

Students should verify any information or statement provided as part of their application, realizing that an admission granted based on information in their application or supporting documents that is incorrect or untrue may be revoked at the sole discretion of the University.

3.1.2 Student Rights and Responsibilities

The Handbook of Student Rights and Responsibilities is published jointly by the Office of the Dean of Students and the University Secretariat. A compendium of regulations and policies governing student rights and responsibilities at McGill, it is distributed to new students at the Dean of Students’ Orientation Sessions. The Handbook is also available on the Web at www.mcgill.ca/secretariat/documents.

3.1.3 Language Policy

The main language of instruction at McGill is English. Every student has a right to write essays, examinations, and theses in English or in French except in courses where knowledge of a language is one of the objectives of the course.

It is recommended that students who lack proficiency in English avail themselves of the opportunity to take an intensive English as a second language course prior to, or early in, their program of studies. Information concerning second language course offerings can be found in the Faculty of Arts section of this Calendar and in the Summer Studies and Continuing Education Calendars. There are special language requirements for Faculty of Education students; please see Faculty of Education section 6.2.1, “Undergraduate Education Programs”.

3.1.4 Policy Concerning Access to Records

Statements of account and all other correspondence are sent directly to students who retain full control as to who has access to their records or accounts. (Officers and members of the University staff may also have access to relevant parts of such records for recognized and legitimate use.) No progress report or any other information is sent to parents and/or sponsors unless specifically requested by the student in writing.

In accordance with the Act Respecting Access to Documents held by Public Bodies and the Protection of Personal Information (the “Access Act”) personal information, including transcripts of academic records, may be released only with the authorization of the student. When a student applies to McGill, he/she authorizes the University to release certain personal information (name, address, telephone number, e-mail address, date of birth, program and student status) to the persons and bodies listed below.

The following persons and bodies are included in the authorization:

a. libraries of other Quebec universities with which McGill established reciprocal borrowing agreement (ID number and barcode may also be disclosed to such libraries)
b. the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS), in order to create, validate and/or modify the student’s Permanent Code
c. the appropriate authorities involved with the external or internal funding of the student’s fees (financial records may also be disclosed to such authorities)
d. the Association of Universities and Colleges of Canada
e. the Association of Registrars of Universities and Colleges of Canada and the Conférence des recteurs et des principaux des universités du Québec, or the member institutions of these organizations, for the purpose of admissions operations and the production of statistics
f. the school(s) or college(s) which the student attended
g. students and alumni who have volunteered to speak with admitted students
h. the Student Associations recognized by McGill University for the category(ies) of students to which the student belongs
i. the McGill Alumni Association
j. professional bodies or corporations (e.g., engineers, dentists)
k. McGill Network and Communications Services for the purposes of listing the student’s McGill e-mail address in an online e-mail directory.

Students who choose not to authorize the University to disclose personal information to the organizations mentioned above in h, i, j and k must complete and submit an opposition form. The opposition form is available at the Admissions, Recruitment and Registrar’s Office.

3.1.5 E-mail Communication

E-mail is one of the official means of communication between McGill University and its students. All students are assigned a Uniform E-mail Address (UEA). They should view and verify their UEA on Minerva, under the Personal menu. As with all official University communications, it is the student’s responsibility to ensure that e-mail is accessed, read, and acted upon in a timely fashion. If a student chooses to forward University e-mail to another e-mail mailbox, it is that student’s responsibility to ensure that the alternate account is viable.

It is a violation for any user of official McGill e-mail addresses to impersonate a University officer, a member of the faculty, staff or student body, in line with the McGill University “Code of Conduct for Use of McGill Computing Facilities” and relevant federal and provincial legislation.

More information about e-mail procedures is available at www.mcgill.ca/email-policy. E-mail support is provided by IST Customer Services (ICS), visit www.mcgill.ca/ics/tools/email for more information. Please see section 3.15 “Information Technology Resources”.

3.1.6 Academic Integrity

Communicating about academic integrity is an essential way to foster it. In submitting work in their courses, students must understand the meaning and consequences of plagiarism and cheating; these are considered to be extremely serious academic offences. Students who have any doubt as to what might be considered plagiarism in preparing an essay or term paper should consult the instructor of the course to obtain appropriate guidelines. There is a student guide to the meaning of plagiarism; students should consult the academic integrity Website at www.mcgill.ca/integrity. Strategies to prevent cheating are also provided on the Integrity Website. The possession or use of unauthorized materials in any test or examination constitutes cheating. Responses on multiple-choice examinations are normally checked by the exam security computer monitoring program. The program detects pairs of students with unusually similar answer patterns on multiple choice exams. Data generated by the exam security computer monitoring program can be used as admissible evidence either to initiate or corroborate an investigation or a charge of cheating under Section 16 of the Code of Student Conduct and Disciplinary Procedures. The Code of Student Conduct and Disciplinary Procedures includes sections on plagiarism and cheating. The Code is included in the Handbook of Student Rights and Responsibilities.
3.1.13 Minerva

Minerva is McGill's Web-based information system serving students, staff and faculty. Students view class schedules, including course descriptions and spaces available in course sections, register and make course changes using Minerva at www.mcgill.ca/minerva. Some of the other options available to students on Minerva include viewing their unofficial transcript and degree evaluation reports; viewing their Permanent Code, citizenship and Quebec residency status and fee information; updating their personal information such as address, telephone number and emergency contacts; for some faculties, changing their major or minor; applying to graduate and viewing their graduation status; viewing their McGill log-in information to access the Internet and e-mail; ordering official transcripts; retrieving tax receipts; submitting an on-line course evaluation; applying to McGill and viewing their application status.

3.2 Personal Information

3.2.1 Updating Personal Information

It is important that all students keep their official records up to date, especially their mailing or student billing address as these are used by the University year round. If all addresses on file are invalid or incomplete, a student's mail will be held. Once the addresses are updated, future mail will be sent.

Students must update their addresses and/or telephone number and emergency contact information using Minerva. Students who are away from campus and do not have access to the Internet may make the changes by writing to their Student Affairs Office or to the Admissions, Recruitment and Registrar's Office. A written request must include the student's signature.

Changes requiring verification of official documents, e.g., change of name or citizenship or correction of birth date, must be reported to the Admissions, Recruitment and Registrar's Office as soon as possible. Such changes can only be made in person.

3.2.2 Legal Documents

3.2.2.1 Why Do We Collect Legal Documents from You?

Your tuition fees at McGill will vary according to whether you are a Canadian citizen or permanent resident, a Quebec resident, or international student. Fee schedules are listed in section 3.5, “Fees”.

Some of the documents we ask from you help us obtain your Permanent Code from the government of Quebec. This code is obligatory, and is needed to comply with government legislation. The consequences of a missing Permanent Code are severe for the university, as the government funding for that student will be withheld. Furthermore, the university is subject to an annual audit by the Ministry to ensure that our document collection process is accurate.

If you have previously attended school in Quebec you already possess a Permanent Code - you can see it on your school report card or your CEGEP or university transcript. Students can also check if McGill has received their Permanent Code after they have accepted the University’s offer of admission on Minerva under the Personal menu.

Students can consult their citizenship and Quebec residency status on Minerva. Select Student Menu -> Student Accounts Menu -> View Your Citizenship and Quebec Residency Status.

3.2.2.2 What Documents Do We Need from You?

Follow instructions in the first row of this table that applies to you. Send clear, legible copies of documents (not originals).
### Canadian Citizens and Permanent Residents

| You have applied to McGill from CEGEP or a Quebec University or you already have a student record at McGill | • Usually no documents are required, unless there is a change or we cannot ascertain your status from these institutions. |
| You were born in Quebec | • Quebec birth certificate (note 1 & 5)  
• Permanent Code Data Form (note 2 & 6) |
| You qualify for Quebec residency status because you: Had residency status in the past and have resided in Quebec for 3 consecutive years in the last 5 years | • Canadian birth certificate or Canadian citizenship card (both sides) or Certificate of Indian status card or Record of Permanent Resident status (note 3)  
• Permanent Code Data Form (note 2 & 6)  
• Attestation of Residency in Quebec Form (note 6)  
• A copy of your VALID Quebec health insurance card—which may prove your Quebec residency under certain situations |
| You are a Quebec resident through one of the other situations outlined by the Ministry | • Canadian birth certificate or Canadian citizenship card (both sides) or Certificate of Indian status card or Record of Permanent Resident status (note 3)  
• Permanent Code Data Form (note 2 & 6)  
• Attestation of Residency in Quebec Form (note 6)  
• Other supporting documents, depending on which situation you checked on the above Attestation of Residency form |
| You are a resident of another province | • Canadian birth certificate or Canadian citizenship card (both sides) or Certificate of Indian status card or Record of Permanent Resident status (note 3)  
• Permanent Code Data Form (note 2 & 6) |

### International Students

| You will be in Canada for less than 6 months | • Visitors Permit issued by Citizenship and Immigration Canada at your port of entry into Canada  
• Photo page of your passport and the page stamped by Citizenship and Immigration Canada at your port of entry  
• Permanent Code Data Form (note 2 & 6) |
| You will be in Canada for more than 6 months | • Certificate of Acceptance of Quebec (CAQ)  
• Permanent Code Data Form (note 2 & 6)  
• Study Permit issued by Immigration Canada (note 4) |

**Note 1:** You may alternatively supply your Quebec baptismal certificate if it was issued prior to January 1, 1994 and clearly shows where you were born and that your baptism occurred no more than 4 months after your birth.

**Note 2:** Permanent Code Data Form (signed) is usually required. If the names of your parents appear on your birth certificate, or if you have already provided us with your Permanent Code, you do not need to supply this form.

**Note 3:** Proof of Permanent Resident status can be proved by an IMM 5292 document together with the Permanent Resident card (copy of both sides required). Alternatively, you may provide the IMM 1000 document along with the PR card (copy of both sides required).

**Note 4:** If you are a refugee, you should instead provide your Convention Refugee status document.

**Note 5:** Usually we need your birth certificate to prove your place of birth in Quebec. If you already have a valid MELS Permanent Code, but we are still showing you as being charged Canadian fees, we will accept a Canadian passport that shows our birth place in Quebec as proof that you qualify for Quebec residency.

**Note 6:** The links to download and print the Permanent Code Data and Attestation of Quebec Residency forms can be found at www.mcgill.ca/student-records/documents.

### Fee Exemptions

Exemptions from International Tuition Fees may be claimed by students in certain categories. As well, both international and non-Quebec Canadian students or permanent residents in certain language programs leading to a degree in French may be eligible for a fee exemption from international or the non-Quebec Canadian rate. Please note that the list of language programs is limited and subject to change by the Ministère de l'Éducation, du Loisir et du Sport. Students, if eligible for one of the exemption categories, are then assessed at the Quebec student rate. A list of categories and the required application forms are available at www.mcgill.ca/student-records/fees/exemption and also at the Admissions, Recruitment and Registrar's Office where the application forms must be submitted. An exemption will not be granted unless the application form is submitted.

**3.2.2.3 Have We Received Your Documents?**

### Quebec/Canadian/International Fees

It usually takes us about a week to receive and record your documents.

- Check your tuition status on Minerva student accounts menu: Student Menu->Student Accounts Menu->View your Citizenship and Quebec Residency Status.
- Check the phrase: Fees currently calculated according to rules for...
- This will tell you if you are assessed as: International student, Canadian student, or a Quebec student.
- The University has implemented e-billing as of the 2005-2006 academic year. A paper fee statement will no longer be mailed via Canada Post. For more information please refer to the following Website: www.mcgill.ca/student-accounts/e-bill.

If you do not agree with the assessment, notify us right away. We cannot accept changes or offer you a lower tuition rate after the last day of classes at the end of the term, as the government does not allow us to amend our files at that point.

### Permanent Code

It can take anywhere from one week to four weeks for the Ministry to verify or issue your Permanent Code.

Check your Permanent Code on Minerva: Personal Menu->Name Change Form or alternately on the student accounts menu: Student Menu->Student Accounts Menu->View your Citizenship and Quebec Residency Status. If the Permanent Code number appears there, your documents are in order. If not, you have not yet provided us with your documents listed above or we have not yet received confirmation from the Ministry that your documents are sufficient for creation of a Permanent Code.

**3.2.2.4 What Are the Consequences of Not Providing Your Documents?**

All proofs of citizenship, requests for Quebec residency, international fee exemption, and immigration status changes must be received by the end of the last day of classes of a current term to
take effect for that term. All documents received after that date will be updated and lower your fees for the following term only.

We cannot issue you an ID card without having received your documents. Your ID card is essential to use many services on campus, and to sit for your final exams.

If your Permanent Code has not been issued by October 15 (Fall term) or February 15 (Winter term) we will put a hold on your record, which will prevent you from registering or dropping any courses, and will prevent you from obtaining your official transcript, until our record has been put in order. For students in short programs, this action may be taken earlier in the term.

Any late payment and/or interest charges accumulated during the documentation evaluation period will not be waived.

### 3.2.2.5 Where Do I Send my Documents?

Send in all your documents after you have been accepted to McGill and before you arrive on campus. **Do not send us originals.** Please fax or mail a clear and legible photocopy. Write your McGill ID on the documents so that we can match them to your record. The sooner you submit your documents, the sooner we can update your status and ensure that your record is in order.

#### By Mail:

Admissions, Recruitment and Registrar's Office

Documentation Centre

688 Sherbrooke Street West, Suite 1460

Montreal, QC H3A 3R1 CANADA

By Fax:

(514) 398-3227

**In Person or by Courier:**

Admissions, Recruitment and Registrar's Office Service Centre

James Administration Building, Room 205

845 Sherbrooke St. West

Montreal, QC H3A 2T5 CANADA

If there is a problem with your documents, you may contact us at:

**Telephone:** (514) 398-4474

**E-mail:** admissions@mcgill.ca

### 3.2.3 Identification (ID) Cards

Students registered at McGill are required to present an ID card in all Campus Services, certain laboratories, and many residences.

An ID card cannot be issued until at least 3 hours after the student has registered. When requesting the card, new students must present Permanent Code information and proof of legal status in Canada (for a list of documents please see section 3.2.2.2 “Legal Documents”).

ID cards will not be issued if any of the legal documents are missing.

Registered students may obtain an ID card at these times and locations:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday June 15</td>
<td>9:00 a.m. to 5:00 p.m.</td>
<td>Admissions, Recruitment and Registrar's Office, James Administration Building, Room 205</td>
</tr>
<tr>
<td>Tuesday, August 17</td>
<td>9:00 a.m. to 5:00 p.m.</td>
<td>Admissions, Recruitment and Registrar's Office, James Administration Building, Room 205</td>
</tr>
<tr>
<td>Thursday August 17</td>
<td>9:00 a.m. to 5:00 p.m.</td>
<td>Admissions, Recruitment and Registrar's Office, James Administration Building, Room 205</td>
</tr>
</tbody>
</table>

**On the Macdonald Campus,** newly registered students entering from Quebec CEGEPs, may obtain an ID card from the Student Affairs Office, Room 106, Laird Hall. Office hours are from 9:00 a.m. to 4:00 p.m., Monday through Thursday and 9:00 a.m. to 3:00 p.m. on Friday throughout the Summer. (Please note that the Student Affairs Office will be closed on Thursday, June 22 and Thursday, June 29, followed by the statutory holidays of Friday, June 23rd and Friday, June 30th. The regular Monday through Friday schedule will resume with the week commencing July 3rd.)

ID cards will be issued to new Canadian and Quebec students during the weeks of August 7 - 11, 14 - 18, 21 - 25, in the Student Affairs Office, Room 106, Laird Hall. Those students missing any of the dates noted, will be able to obtain their ID cards during Orientation activities.

Please note that international students may obtain their ID cards as of August 21, 2006.

As of Tuesday, September 5th, 2006, ID cards may be obtained in the Student Affairs Office during normal office hours.

**Other notes:**

- students who do not register for consecutive terms should retain their ID card to avoid having to replace it when they re-register.
- if your card has expired there is no charge for a replacement as long as you hand in the ID card.
- if you change programs or faculties there is no charge as long as you hand in the ID card.
- if your card has been lost, stolen or damaged, there is a $20 replacement fee.

The Student Identification Card is the property of the University, is to be used by the cardholder only, and is not transferable. Students withdrawing from all of their courses must attach their ID card to the withdrawal form or return their ID card to the Admissions, Recruitment and Registrar's Office (or the Faculty of Agricultural and Environmental Sciences Student Affairs Office, Macdonald Campus).

Students who need security access to labs or other facilities should refer to www.mcgill.ca/security/access.

### 3.2.4 Legal Name

All students registered under their legal name as shown in one of the following documents:

1. Canadian birth certificate.
2. Canadian Immigration Record of Landing (IMM1000 or IMM5292 and Permanent Residence card, both sides).
3. Canadian Immigration Study or Work Permit document.
5. International passport (for Canadians, a Canadian citizenship card is acceptable).
6. Letter from the International Students’ consulate or embassy in Canada.
7. Marriage certificate translated into English or French by a sworn officer.

In the case of a variation in the spelling of the name among these documents, the University will use the name on the document that appears first on the above list.

Note: This is the name that will appear on the student's degree, diploma or certificate on graduation, and on the student's transcript, and used by the Ministère de l’Éducation, du Loisir et du Sport (MELS) to create a Permanent Code.

3.2.5 Verification of Name

Students should verify the accuracy of their name on McGill’s student records via Minerva and make any necessary corrections to formatting, e.g., upper/lower case letters, accents and spacing, using the Minerva Name Change Form under the Personal Menu.

Students cannot change the name on their record via Minerva. Requests for such changes must be made by presenting official documents (see section 3.2.4 “Legal Name”) in person at the Admissions, Recruitment and Registrar’s Office.

3.3 Registration

Once students have confirmed their intention to attend McGill on Minerva, they must register during the registration periods listed below by using Minerva, McGill's Web-based information system, to add courses to their record. They may continue to register throughout the registration period by adding and dropping courses until they have finalized their schedule. Registration is performed on-line at www.mcgill.ca/minerva.

Refer also to Registration information in each faculty section. All course descriptions are in a separate section at the back of the Calendar. New students in particular should refer to “Course Information, Regulations and Descriptions (Appendix B)” to familiarize themselves with McGill’s course numbering system, multi-term course rules, and course terminology.

For fee policies related to registration and withdrawal from courses or withdrawal from the University, please refer to all parts of section 3.5, “Fees”.

3.3.1 Registration Periods

The dates given below were accurate when this Calendar was published. Although changes are not anticipated, students are advised to confirm the dates on the Web at www.mcgill.ca/student-records.

Returning Students

Registration will take place between Thursday, March 23 and Tuesday, August 1, 2006.

Registration will be phased in, opening in the following order:

Year 3 and Year 4 students: Thursday, March 23
Year 2 students: Tuesday, March 28
All other returning students: Thursday, March 30

Some faculties and departments set their own schedules for advising and registration within these dates. Further information is distributed from the faculty Student Affairs Offices.

Successful completion of registration is contingent upon acceptable academic standing in the previous session and payment of any previous outstanding fees and fines.

Newly Admitted Students Entering in September 2006

Registration will take place between Thursday, June 15 and Tuesday, September 5.

Registration will be phased in, opening in the following order:

Thursday, June 15, registration opens for students admitted from CEGEPs.

Wednesday, August 2, registration opens for all other new students and continues for students admitted from CEGEPs.

A newly admitted student entering in September 2006 who wishes to register for courses in the Summer of 2006 may do so on Minerva. Please check the Summer Studies calendar for further information or refer to www.mcgill.ca/summer.

Newly Admitted Students Entering in January 2007

Registration will take place between Tuesday, December 5, 2006 and Wednesday, January 3, 2007.

Some faculties and departments require that students be advised before registration and set specific dates for advising and registration within these dates. Please refer to the Faculty sections of this Calendar, as well as to the Welcome to McGill booklet or the Essential Guide For New Students, Macdonald Campus, which are included with the acceptance package.

3.3.1.1 Late Registration

Students who fail to register during the normal registration period may do so within the period designated by the University for late registration. They will be assessed a late registration fee as listed below:

Returning Students: May register late from Wednesday, August 2 until and including Tuesday, September 5 with the payment of a late registration fee of $50 ($20 for Special Students).

New and Returning Students (Fall): Students may register late via Minerva from Wednesday, September 6 until Tuesday, September 19 with the payment of a late registration fee of $100 ($40 for Special Students).

New and Readmitted Students (Winter): May register late via Minerva from Thursday, January 4 until Tuesday, January 16 with the payment of a late registration fee of $100 ($40 for Special Students).

Special Late Registration: Students whose records are not available for registration on-line during the late registration period, usually due to late admission, may receive special permission to register in person. This information is included with their letter of acceptance.

3.3.2 Class Schedule

The Class Schedule for the upcoming Fall and Winter terms normally becomes available in mid-March at www.mcgill.ca/courses. (The Summer term schedule is normally made available in January.)

The Class Schedule includes the days and times when courses are offered, class locations, names of instructors, and informational remarks and comments. The calendar entries of scheduled courses can be accessed by clicking on the CRN (course reference number) that appears with each course section shown.

Students should make special note of any pre-registration requirements for a course, such as placement tests, or departmental approval/permission required.

Class Schedule information is subject to change and is updated as courses are added, cancelled, rescheduled or relocated.

It is the responsibility of all students to consult the Class Schedule at the time of registration, and again before classes begin, to ensure that changes have not resulted in conflicts in their schedule.

3.3.3 Course Load

It is the student’s responsibility to follow the faculty regulations listed below. When registering on Minerva, students must not exceed the maximum credits permitted by their faculty.

For information on course load requirements for entrance scholarships renewal and in-course awards refer to section 3.9.1, “Awards to McGill Students in Course”.

44  2006-2007 Undergraduate Programs, McGill University
The normal course load in most undergraduate faculties is 15 credits per term. For students in the Faculty of Engineering, Faculty of Education, and Schulich School of Music, however, the normal course load is 15 to 18 credits per term.

Students in satisfactory standing may take up to 17 credits per term (18, in Music and Engineering).

Students in Arts, Management, Religious Studies, or Science whose CGPA is above 3.00 may take 18 credits per term. Such students who wish to do so are strongly urged to consult an adviser.

Students in probationary standing take a maximum of 12 credits per term, with the following exceptions:

- Agricultural and Environmental Sciences: 14 credits.
- Arts and Science: up to 14 credits, with special approval of the Associate Dean.
- Engineering: 13 credits, including repeated courses.
- Music: 14 credits.
- Management: 12 credits maximum of new material.

In some cases they may add a repeated course in which a grade of D or F was obtained.

Note: Students who carry fewer than 12 credits per term are considered to be part-time in that term.

### 3.3.3.1 Course Information and Regulations

For information regarding course information and regulations, students are advised to refer to “Course Information, Regulations and Descriptions (Appendix B)”.

### 3.3.4 Changing Programs within Selected Faculties

Students admitted to programs in Arts, Science, Arts and Science, and to certain programs in Management, Education and Engineering may add or change programs within their faculty using Minerva. Certain restrictions apply. In all cases students should consult the appropriate adviser for approval before making any changes and for faculty specific regulations concerning program changes.

Students in the faculties of Arts, Science and the Bachelor of Arts and Science degree may change major/major concentrations, minor/minor concentrations or faculty programs using Minerva. These students may also change into, or out, of an honours program. Some restrictions apply.

Note that students in the Arts, Science or B.A. & Sc. freshman programs (97 or more credits) cannot change program, but may change options within their freshman program.

Students in the Desautels Faculty of Management may add or change majors and concentrations within certain programs using Minerva. Students may not add an honours program or change a major or concentration within an honours program. Other restrictions may be verified with the faculty.

Students in the Faculty of Education, registered in the B.Ed. Secondary program, may change subjects or options on Minerva and students in the B.Sc. Kinesiology program may add, drop or change minors.

In the Faculty of Engineering, students who have confirmed their admission to the B.Eng. Electrical/Computer/ESE program may select their specific program option using Minerva. These students cannot use Minerva to change programs once their initial selection is made. To make a further change, students must consult an adviser in the Department of Electrical and Computer Engineering. Students in other programs in the Faculty of Engineering cannot make any program changes using Minerva.

Students are not permitted to use Minerva to change degree (with the exception of Engineering, as above) or to select a program in another faculty or school.

### 3.3.5 Quebec Inter-University Transfer Agreement (IUT)

The IUT Agreement permits concurrent registration at McGill and another Quebec institution.

### 3.3.5.1 McGill Students

Regular undergraduate and graduate degree, diploma or certificate candidates registered at McGill may, with the written permission of the Dean of their faculty or delegate, register at any university in the province of Quebec for three (3), or exceptionally six (6), credits per term in addition to their registration at McGill. These courses, subject to faculty regulations, will be recognized by McGill for the purpose of the degree for which the student is registered up to the limit imposed by the residency requirements of the program. (Normally, a minimum residency requirement of 60 credits must be completed at McGill in order to qualify for a McGill degree — students should check with their faculty.) This privilege will be granted if there are valid academic reasons.

Students wishing to take advantage of this agreement should consult their Student Affairs Office for details, and are informed that this agreement is subject to the following conditions:

- The other universities concerned may, at their discretion, refuse the registration of a student for any of their courses.
- Students must complete their faculty and program requirements.
- The student is responsible for ensuring that the McGill Class Schedule permits these courses to be taken without conflict.
- The universities concerned are not responsible for special arrangements in cases of examination or class schedule conflicts.
- Marks earned at the host university will not appear on McGill transcripts or be included in McGill grade point averages.
- Students who are attending McGill as exchange students from outside Quebec are not eligible to take courses at another Quebec institution through the IUT agreement.

Students should be aware that late results received from host universities may delay their graduation.

Scholarship holders should consult with their Student Affairs Office and the Scholarships Coordinator concerning eligibility for continuation or renewal of their awards.

### 3.3.5.2 On-line IUT Application — McGill and Visiting IUT Students

Students must initiate an on-line Inter-University Transfer (IUT) application to request the required authorizations. McGill students are advised to access the IUT application via the Web at www.mcgill.ca/student-records/register/iut. Students may also find additional information posted at their faculty Website.

Note: Once the IUT application is approved by both the home and host universities, the student remains responsible for registering in the same course for which they have obtained electronic approval. The method of registration of the host university will vary (e.g., Web, in-person, phone, etc.). The student is advised to initiate the electronic application allowing enough time to meet the host university’s registration deadlines. Furthermore, the student is responsible for adhering to all registration deadlines of the host institution.

### 3.3.6 Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option

Where permitted by faculty and program regulations, students may take one elective course per term to be graded under the Satisfactory/Unsatisfactory option, to a maximum of 10% of the student’s credits taken at McGill to fulfill the degree requirements.

The decision to have an elective course graded as S/U must be made by the student before the Course Change deadline on Minerva as part of the course add/drop menu. **No change can be made thereafter** even if the student selected the option in error. If the course is a multi-term course, the S/U option must be selected by the course change deadline of the first part of the course.

Grades will be reported in the normal fashion by the instructor. Grades of A through C will be converted to “Satisfactory” (S), and grades of D and F will become “Unsatisfactory” (U). The courses taken under the S/U option will be excluded from the grade point average calculations, but they will be included in the attempted
Credits for courses with a final grade of S will also be included in the number of credits earned.

Notes:
1. Desautels Faculty of Management students: The S/U option is not available on Minerva for Management students. Please contact the B.Com. Office for details on the conditions that apply.
2. Faculty of Engineering students: If the S/U option is selected for a core course and not removed by the Course Change deadline, the Student Affairs Office will remove the option and notify the student of the change.
3. Schulich School of Music students: The S/U Option is only applicable to non-music electives.
4. To be considered for in-course awards, including Dean’s Honour List designations, and/or the renewal of entrance scholarships, students must complete at least 27 graded credits in the regular academic session, exclusive of courses completed under the S/U option.
5. The S/U option is not available via Minerva to Visiting, Exchange and Quebec Inter-University Transfer Agreement (IUT) students. These students must consult with their faculty Students Affairs Office for approval. Also, visiting students are responsible for ensuring that a course taken under the S/U option is acceptable by their home university and that the credits are transferable.
6. Special Students are not eligible to use the S/U grade mode. For further information, students should contact their Departmental Adviser or Student Affairs Office, as appropriate.

3.3.7 Course Change Period

During the initial Registration Periods, see section 3.3.1 “Registration Periods”, students may make changes to their course registrations (add or drop courses), subject to the requirements and restrictions of their program and of individual courses.

The Course Change deadline coincides with the deadline for late registration. Please refer to the Calendar of Dates, section 2, “Calendar Of Dates 2006-07”.

Students who drop their last Fall course after the end of August or their last Winter course after the end of December are considered to be withdrawn from the University. They must follow the procedures for readmission.

Students who are registered in the Fall term may continue to add and drop courses that will begin in the Winter term throughout the Fall term until the deadline for course change/late registration in the Winter term.

After the Course Change deadline, courses may be added according to each faculty’s regulations and only with written permission of the instructor and the Office of the Associate Dean of the student’s faculty. A fee will be charged for each course added.

3.3.8 Regulations Concerning Course Withdrawal

Following the Course Change deadline there is a period of a few days during which students may withdraw, with a grade of W and full refund of course fees, from courses that start in that term.

After the Withdrawal (with refund) deadline, there is a period during which withdrawal from a course will also result in a grade of W but no course fees will be refunded.

Courses that begin in the Fall Term
Deadline for withdrawal (grade of 'W') with refund:
Sunday, September 24, 2006
Deadline for withdrawal (grade of 'W') without refund:
- Single-term courses: Sunday, October 22, 2006
- Multi-term courses: Tuesday, January 16, 2007

Courses that begin in the Winter Term
Deadline for withdrawal (grade of 'W') with refund: Sunday, January 21, 2007
Deadline for withdrawal (grade of 'W') without refund:
- Single-term courses: Tuesday, May 15, 2007
- Multi-term courses: Tuesday, May 15, 2007

*Please note that students in multi-term courses with course numbers ending in N1 and N2 (begin in the winter, skip the summer, are completed in the subsequent Fall term) may withdraw after May 15 and until the end of the Fall term course change period by contacting their faculty Student Affairs Office.

After the withdrawal (without refund) deadline, but before the end of term, the student may, under exceptional circumstances, be granted permission to withdraw from a course. (Permission will not be granted merely because a student is doing unsatisfactory work.) A grade of W or WF, as appropriate, will appear on the transcript but will not be calculated in the GPA. For further information students should consult their faculty Student Affairs Office.

Note:
1. Students who wish to withdraw from required or complementary courses should also secure permission from their adviser. A course withdrawal form is available from the faculty Student Affairs Office. (Additional restrictions for Music courses are indicated in the Schulich School of Music section.)
2. The responsibility for initiating withdrawal rests solely with the student. Neither notification of the course instructor nor discontinuance of class attendance will suffice. The date on which a student’s withdrawal is entered on Minerva is the official date of withdrawal, even if the student stopped attending lectures earlier.
3. Fee refunds, if any, will be in accordance with section 3.5.7, “Refunds and Withdrawal from the University”.

3.3.9 Regulations Concerning University Withdrawal

Students considering University withdrawal are strongly urged to consult with their adviser and Student Affairs Office before making a final decision.

Student’s responsibility

The responsibility for initiating University withdrawal rests solely with the student. Neither notification of the course instructor nor discontinuance of class attendance will suffice. The date on which a student drops or withdraws from all courses on Minerva or the date the request for withdrawal is submitted to the Student Affairs Office is the official date of withdrawal, even if the student stopped attending lectures earlier.

3.3.9.1 Deadlines for University Withdrawal

All students who have accessed Minerva to register must officially withdraw within deadlines if they decide not to attend the term(s) for which they have registered. See Withdrawal (W) deadline dates in the Calendar of Dates. Students who drop their last Fall or Winter course by the end of the add/drop period of that term are considered withdrawn from the University. They must follow the procedures for readmission.

Students who wish to withdraw from the University by the deadlines indicated below must drop or withdraw from all courses on Minerva.

Fall Term:
Deadline for University withdrawal with refund (minus $100 for returning and $200 for new students): Sunday, September 24, 2006
Deadline for University withdrawal without refund: Sunday, October 22, 2006

Winter Term:
Deadline for University withdrawal with refund (minus $100 for returning and $200 for new students): Sunday, January 21, 2007
Deadline for University withdrawal without refund: Sunday, February 18, 2007

Students who are blocked from dropping or withdrawing from their last course on Minerva are required to contact their Student Affairs Office. The Student Affairs Office will supply any forms necessary
to complete the University withdrawal where the deadline for University withdrawal has not been passed.

Special Note for Faculties of Arts, Science, and Management: Students who wish to withdraw after the deadlines indicated above may under exceptional circumstances be granted permission to withdraw from the University. Such students should contact the Student Affairs Office for further information.

Special Note for Faculty of Agricultural and Environmental Sciences: In addition to the above procedures, all students in the Faculty of Agricultural and Environmental Sciences must contact their Student Affairs Office for further information on University withdrawal procedures.

Special Note for Faculty of Engineering: Students who wish to withdraw after the deadlines indicated above may under exceptional circumstances be granted permission to withdraw from the University.

3.3.9.2 Consequences of University Withdrawal

Fee refunds, if any, for the term in which the student withdraws will be in accordance with section 3.5.7, “Fees and Withdrawal from the University.”

Upon withdrawal, students are required to return their ID card to the University as stated in section 3.2.3, “Identification (ID) Cards.” Students who withdraw from the University and wish to re-register in a subsequent term must follow the procedures for readmission, section 3.3.13, “Readmission.”

Students who withdraw during the Fall term are considered withdrawn from the entire academic year, regardless of whether Winter term courses are dropped. If they wish to return for the Winter term, they must follow the procedures for readmission.

3.3.10 Deferred Admission

Students wishing to defer admission to McGill must make an official request no later than August 31 for the Fall term, and December 31 for the Winter term to:

Deferral Coordinator
Admissions, Recruitment and Registrar’s Office
James Administration Bldg.
Fax: 398-5544
E-mail: deferral@mcgill.ca

Please note that several conditions apply for deferral. These conditions and deadlines will be communicated to the student once the official request for deferral has been received.

If you have accepted the offer of admission and registered for courses and now wish to defer your admission, you must withdraw from McGill by dropping those via Minerva by the above deadlines and before submitting a deferral request. If your request for deferral is granted, your deposit of $200 will be transferred to the Deferred Session.

If students do not request a deferral by the deadline, they will be required to re-apply for the next available admission cycle. Registered students who withdraw after the deadline must request readmission through their Faculty. See section 3.3.13, “Readmission” for more details.

Note: applicants to the Schulich School of Music are not eligible to apply for deferred admission.

3.3.11 Summer Term/Summer Studies

The Summer term at McGill covers the months of May to August. During that period a wide array of credit courses from McGill degree programs is offered. Most are month-long courses with lectures every day. These courses are usually accepted for transfer credit by other universities. For more details, consult the Summer Studies Calendar or Website at www.mcgill.ca/summer or the Summer Studies Office at (514) 398-5212.

Students taking Summer Studies courses to complete their graduation requirements at McGill will receive their degrees at the Fall Convocation (normally held in November).

It is the student’s responsibility to follow the University and faculty regulations. When registering, students must not exceed the maximum credits permitted by their faculty.

Students may register in no more than 12 credits (Management or Music students, 18 credits) during the summer at McGill or at other universities, except by special permission of their Associate Dean.

Students registering under the "Quebec Inter-University Transfer Agreement (IUT)", see section 3.3.5, are limited to 6 credits.

3.3.12 Inter-Faculty Transfer

McGill students who have not graduated and wish to transfer into another undergraduate faculty may now apply using the Minerva Faculty Transfer/Readmission Menu, unless otherwise indicated in the table below.

Students must also refer to the Faculty Website for faculty-specific rules and to determine what supporting documents must be submitted for their application. To access the Faculty Web sites and find more information on Faculty Transfers please refer to www.mcgill.ca/student-records/inter-faculty-transfers.

<table>
<thead>
<tr>
<th>Faculty/School</th>
<th>Notes</th>
<th>Fall Term Application Deadline</th>
<th>Winter Term Application Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Environmental Sciences, Dietetics and Human Nutrition</td>
<td>Interested students must contact the Student Affairs Advisor of Architecture at 398-6702 or e-mail <a href="mailto:mary.lanni@mcgill.ca">mary.lanni@mcgill.ca</a></td>
<td>June 1</td>
<td>November 1</td>
</tr>
<tr>
<td>Architecture</td>
<td>Interested students must contact the Student Affairs Advisor of Architecture at 398-6702 or e-mail <a href="mailto:mary.lanni@mcgill.ca">mary.lanni@mcgill.ca</a></td>
<td>May 1</td>
<td></td>
</tr>
<tr>
<td>Arts and Science</td>
<td>There are no Winter term transfers into Arts, Science, or the B.A. &amp; Sc. program.</td>
<td>May 1 (BSW program) June 1</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>There are no Winter term transfers into Education.</td>
<td>June 1</td>
<td></td>
</tr>
<tr>
<td>Engineering (except Architecture)</td>
<td></td>
<td>June 1</td>
<td>November 1</td>
</tr>
</tbody>
</table>
### 3.3.13 Readmission

Students wishing to return after an absence of a portion of an academic year can now submit an application for readmission using the Minerva Faculty Transfer/Readmission menu. In their application they would state the reasons for their absence from the University and give a summary of their activities during that period.

Students who withdrew because of illness should provide their Faculty Student Affairs Office with a medical note stating that they are ready to resume studies as a supporting document to their application.

Students should also note time limits for the completion of degrees.

Students wishing to return to a different faculty after an absence can apply for readmission using the Minerva Faculty Transfer/Readmission menu. In their application they would state the reasons for their absence from the University and give a summary of their activities during that period.

For more details on the readmission process you can refer to the following Website:


### Table: Faculty/School Application Deadlines

<table>
<thead>
<tr>
<th>Faculty/School</th>
<th>Fall Term Application Deadline</th>
<th>Winter Term Application Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Environmental Sciences, Dietetics and Human Nutrition</td>
<td>August 15</td>
<td>December 1</td>
</tr>
<tr>
<td>Architecture</td>
<td>Not applicable</td>
<td>November 1</td>
</tr>
<tr>
<td>Arts, Science, and B.A. &amp; Sc.</td>
<td>July 15</td>
<td>November 15</td>
</tr>
<tr>
<td>Education</td>
<td>June 1</td>
<td>Not open for Winter term</td>
</tr>
<tr>
<td>Engineering (except Architecture)</td>
<td>June 1</td>
<td>November 1</td>
</tr>
<tr>
<td>Management</td>
<td>August 15</td>
<td>December 15</td>
</tr>
<tr>
<td>Music</td>
<td>March 1</td>
<td>November 1</td>
</tr>
<tr>
<td>Religious Studies*</td>
<td>June 15 (May 1 for International Students)</td>
<td>November 1</td>
</tr>
</tbody>
</table>

* Students in Religious Studies cannot apply on Minerva and must go through the Religious Studies Student Affairs Office.

## 3.4 Undergraduate Advising

### 3.4.1 Advising and the University Mission

The Mission Statement of the University expresses the commitment to offer students "the best education available". An essential component of this is the advising process. Because advising takes place in many ways and locations at McGill, it is important that students learn about the different types of advisers (see below) and how each of them can provide students with assistance in reaching their goals.

### 3.4.2 The Role of the Student in Advising

The active participation of students in the advising process is essential in order for them to access the full range of academic opportunities during their studies. They must be proactive in seeking meetings with various advisers, professors, counsellors, and such to ensure that they receive the advice they need to formulate a personal plan of study and to meet their academic goals. It should be noted that, while advisers are there to provide students with guidance, students are ultimately responsible for meeting the requirements of their degree or diploma. It is their responsibility to inform themselves about the rules and regulations of the University, their faculty, and their program. With the students’ cooperation, all advisers and counsellors will work together to help students throughout their undergraduate studies.

### 3.4.3 Types of Advising and Advisers

While at McGill, students have access to a variety of advisers, mentors, and counsellors who have different skills, expertise, and levels of authority. Students should ensure that they seek academic and personal advice from the adviser most closely attuned to their academic needs or personal situations. All advisers provide an atmosphere of trust where students can talk about their situation in complete confidentiality. Typical types of advisers are described below. Students should refer to their faculty's section of the University Undergraduate Programs Calendar for additional advising information specific to their degree program. It should be noted that some academic matters require approval of more than one adviser, e.g., the faculty adviser and the department/school academic adviser.

**Faculty Advisers** are normally located in the Student Affairs Office of each faculty and are available throughout the calendar year.

Faculty Advisers:
- are experts in the rules, regulations, and requirements pertaining to specific degree programs;
- will provide ongoing advice and guidance on program selection, course registration, credit load, deadlines, and majors and minors;
- will offer help managing academic situations during periods of personal, financial, or medical problems, by working with students to identify various possibilities and strategies for making informed decisions;
- will communicate with other advisers within the University and, with a student's permission, serve as a direct link to other University resources.

**Department/School Academic Advisers** are normally located closer to the offices of professors in a student's particular area of study and may only be available during specific times of year (e.g., prior to registration for the next session or during the drop/add period) or during regularly scheduled office hours. Students who are completing a major or minor in more than one unit will often have an adviser in each unit. The academic adviser may be either a professor or member of the administrative staff.
Students should contact their department administrative offices to determine the identity and availability of their academic adviser. Students should ensure that they check their progress with their academic adviser from time to time — and certainly before their final year.

The academic adviser:
- will guide students through course selection to meet the subject matter requirements of the major or minor;
- will consider requests for course equivalencies, recommend prior approval for inter-university transfer credits, or explain the rationale for the design of a department/school program;
- may assist in planning for, and applying to, university exchange programs, and may also provide, or direct students to, information about scholarships, awards, research fellowships, and opportunities within a given field;
- is a valuable source of information about the various resources available at McGill;
- can provide support, guidance, and appropriate referrals for students experiencing academic or personal difficulties while studying at McGill;
- will often be responsible for confirming that students have met major or minor program requirements for graduation.

Professors/Lecturers may act in a voluntary capacity to mentor students as they progress through their program. The faculty adviser or department/school academic adviser may be able to help students identify a good resource person in their area of study.

Professors/lecturers:
- may provide advice on the latest trends in a specific field of study and make recommendations on related advanced readings;
- may discuss opportunities for a student research experience and help students connect with a professor or lecturer who best suits their interests or learning style;
- will refer a student back to the faculty adviser or academic adviser for signatures and permission related to program requirements.

Peer Advisers are student volunteers who have been trained by faculty advisers or department/school academic advisers. They often offer drop-in hours for advice on University life and will help students find the information they need in the University Undergraduate Calendar or through other University resources.

Peer advisers are only available in some faculties or departments.

Related Services

The First-Year Office (FYO) (Brown Student Services Building; firstyear@mcgill.ca) can help new students navigate their way through the Undergraduate Course Calendar and the information contained in the Welcome to McGill book. They will help students prepare for the course registration period when the Minerva registration system opens for newly admitted students. To maximize this help, it is strongly recommended that students first read the sections in the Welcome to McGill book specific to their faculty. The FYO staff are always available to provide advice and referrals to the many support mechanisms at McGill.

Student Services Counselling Service (Brown Student Services Building; counselling.service@mcgill.ca) has professional counsellors who are available to discuss personal, academic and career goals or problems. They can provide individual or group study skills sessions or guide students through financial, or other, crises by means of interventions or referrals.

Career and Placement Service (Brown Student Services Building; careers.caps@mcgill.ca) provides career education, guidance, and individual advising to students in their search for permanent, part-time, or summer jobs and internships.

Admissions, Recruitment and Registrar's Office (James Administration Building; (514) 398-3910) is the place to start for questions related to credits on entrance or advanced standing based on previous studies.

On the Macdonald Campus, information will be provided by the Student Affairs Office, Laird Hall, Room 106.

3.4.3.1 Contact Information for Advising

In general, newly admitted and returning students contact their faculty student affairs office with any questions on programs.

Faculty Student Affairs Offices

Faculty of Agricultural and Environmental Sciences
Tel.: (514) 398-7925
E-mail: studentinfo.macdonald@mcgill.ca
www.mcgill.ca/macdonald

Faculty of Arts
Tel.: (514) 398-4210
E-mail: newstudentadvising.artsci@mcgill.ca
E-mail: adviser.artsci@mcgill.ca
www.mcgill.ca/artsciaso

Students in U1 or above should also see the contact information for advisers under the heading “Contact Information for Departments, Schools and Programs for Students in the Faculty of Arts (or the B.A. & Sc. Degree)” below.

Faculty of Education
Tel.: (514) 398-7042
E-mail: sao.education@mcgill.ca
www.mcgill.ca/edu-sao

Faculty of Engineering
Tel.: (514) 398-7257
E-mail: information@engineering.mcgill.ca
www.mcgill.ca/engineering

Desautels Faculty of Management
Tel.: (514) 398-4068
E-mail: bcom.mgmt@staff.mcgill.ca
www.mcgill.ca/management

Schulich School of Music
Tel.: (514) 398-4541
E-mail: studentaffairs.music@mcgill.ca
www.mcgill.ca/music/student/undergraduate

Faculty of Science
Tel.: (514) 398-4210
E-mail: newstudentadvising.artsci@mcgill.ca
E-mail: adviser.artsci@mcgill.ca
www.mcgill.ca/artsciaso

Students in U1 or above should also see the contact information for advisers under the heading “Contact Information for Departments, Schools and Programs for Students in the Faculty of Science (or the B.A. & Sc. Degree)” below.

Contact Information for Departments, Schools and Programs for Students in the Faculty of Arts (or the B.A. & Sc. Degree)

Students admitted to U0 contact the Faculty of Arts Student Affairs Office for advising on the Arts freshman programs or the B.A. & Sc. freshman program.

Students admitted to U1 or above contact the department (school or program) directly for academic advising. Additional contact information will be found in the relevant section of the calendar.

African Studies (program)
Tel.: (514) 398-4804
Email: ines.scharnweber@mcgill.ca

Anthropology (Department of)
Tel.: (514) 398-4300
E-mail: undergraduate.anthropology@mcgill.ca

Art History & Communication Studies (Department of)
Tel.: (514) 398-6541
E-mail: ahcs@mcgill.ca
Canadian Ethnic Studies (program)
Tel.: (514) 398-6853
E-mail: morton.weinfeld@mcgill.ca

Canadian Studies (program)
Tel.: (514) 398-3705
E-mail: nathalie.cooke@mcgill.ca

Catholic Studies (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Classics (program)
Tel.: (514) 398-3975
E-mail: undergrad.history@mcgill.ca

Computer Science (School of)
Tel.: (514) 398-7071 ext. 00118
E-mail: liette@cs.mcgill.ca

East Asian Studies (Department of)
Tel.: (514) 398-6742
E-mail: asian.studies@mcgill.ca

Economics (Department of)
Tel.: (514) 398-4850
E-mail: jagdish.handha@mcgill.ca

Education for Arts Students (program)
Tel.: (514) 398-7042
E-mail: Sao.education@mcgill.ca

Educational Psychology (program)
Tel.: (514) 398-4260
E-mail: selma.abumerhy@mcgill.ca

English (Department of)
Tel.: (514) 398-6550 or 398-6557
E-mail: dorothy.alleyne@mcgill.ca

Environment (School of)
Tel.: (514) 398-4306
E-mail: pete.barry@mcgill.ca

French Language and Literature (Department of)
Tel.: (514) 398-6885
E-mail: marie.robillard@mcgill.ca

Geography (Department of)
Tel.: (514) 398-4951 or 398-4111
E-mail: gakman@geog.mcgill.ca

German Studies (Department of)
Tel.: (514) 398-3850
E-mail: german.studies@mcgill.ca

Hispanic Studies (Department of)
Tel.: (514) 398-6683
E-mail: hispanic.studies@mcgill.ca

History (Department of)
Tel.: (514) 398-3975
E-mail: undergrad.history@mcgill.ca

History and Philosophy of Science (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Humanistic Studies (program)
Tel.: (514) 398-4301
E-mail: faye.scrim@mcgill.ca

Industrial Relations (program)
Tel.: (514) 398-4301
E-mail: faye.scrim@mcgill.ca

International Development Studies (program)
Tel.: (514) 398-4804
E-mail: ids@mcgill.ca

Italian Studies (Department of)
Tel.: (514) 398-3953
E-mail: italian.studies@mcgill.ca

Jewish Studies (program)
Tel.: (514) 398-6543
E-mail: undergrad.jewishst@mcgill.ca

Latin American and Caribbean Studies (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Linguistics (Department of)
Tel.: (514) 398-4222
E-mail: lise.vinette@mcgill.ca

Mathematics & Statistics (Department of)
Tel.: (514) 398-3800
E-mail: advisor@math.mcgill.ca

Middle East Studies (program)
Tel.: (514) 398-7108
E-mail: laila.parsons@mcgill.ca

Music (program)
Tel.: (514) 398-6333
E-mail: bruce.minorgan@mcgill.ca

North American Studies (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Philosophy (Department of)
Tel.: (514) 398-6060
E-mail: info.philosophy@mcgill.ca

Philosophy and Western Religions (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Political Science (Department of)
Tel.: (514) 398-4800
E-mail: effie.poulis@mcgill.ca

Psychology (Department of)
Tel.: (514) 398-6121
E-mail: info@psych.mcgill.ca

Québec, études sur le (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Religious Studies (program)
Tel.: (514) 398-5320
E-mail: info.relgstud@mcgill.ca

Russian & Slavic Studies (Department of)
Tel.: (514) 398-3639
E-mail: russian.slavicstudies@mcgill.ca

Science for Arts Students (program)
Tel.: (514) 398-4109
E-mail: anne.comeau@mcgill.ca

Sexual Diversity Studies (program)
Tel.: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Social Studies of Medicine (program)
Tel.: (514) 398-6033
E-mail: ssom@mcgill.ca
Tuition Fees

3.5 Fees

The University reserves the right to make changes without notice in the published scale of fees. (Note: The information in this section was prepared in early December 2005. Fees for the 2006-07 year will only be finalized in the late spring.)

Further information regarding fees can be found on the Student Accounts Website: www.mcgill.ca/student-accounts.

For information on financial support, see section 3.9, "Scholarships and Financial Aid".

3.5.1 Fee Information Booklet

The Fee Information booklet, published in June of each year by the Student Accounts Office, contains additional information as well as any fee adjustments that may have been made after the publication of this Calendar. Students are bound by the policies and procedures contained therein. In the event of any discrepancy, the Fee Information booklet supersedes the Calendar.

A copy of the booklet will be sent to all new students. The contents are also available on the Student Accounts Website at www.mcgill.ca/student-accounts.

3.5.2 Access to Fee Information

Students can view their Account Summary by Term on Minerva. The Fall 2006 term fees will be accessible as of August 1.

3.5.3 Tuition Fees (2005-2006 rates)

Tuition fees vary according to the residence and citizenship status of the student. The rates described below only refer to credit activities.

Quebec Students

Tuition fees for Quebec students who are Canadian citizens or Permanent Residents are $155.61 per credit or $4,650.90 for 30 credits.

In accordance with provincial government requirements, students must provide proof that they qualify for assessment of fees at the Quebec rate; see section 3.2.2.2 “What Documents Do We Need from You?” for details.

Non-Quebec Students (Canadian or Permanent Resident)

Tuition fees for non-Quebec students who are Canadian citizens or Permanent Residents are $155.03 per credit or $4,650.90 for 30 credits.

In accordance with provincial government requirements, students must provide proof that they qualify for assessment of fees at the non-Quebec Canadian rate; see section 3.2.2.2 “What Documents Do We Need from You?” for details.
Note: Students who do not submit appropriate documentation by the stipulated deadline will be billed at the international rate. If proof of status is submitted after a student has been billed, but before the document submission deadline, the tuition supplement will be waived. Any late payment and/or interest charges accumulated during the documentation evaluation period will not be waived.

International Students
Tuition fees for undergraduate international students range from $399 to $500 per credit ($11,970 - $15,000).

The international fees listed in section 3.5.10, “Yearly Fees and Charges by Faculty” are representative of fees that students could expect to be charged in each degree program. Exemption from International Tuition Fees may be claimed by students in certain categories. Such students, if eligible, are then assessed at the Quebec student rate.

A list of these categories and the required application forms can be obtained from the Admissions, Recruitment and Registrar’s Office. Information is also available on the Web at www.mcgill.ca/students.

3.5.4 Compulsory Fees (2005-2006 rates)

3.5.4.1 Student Services Fees
Student Services fees are governed by the Senate Committee on the Coordination of Student Services, a parity committee composed equally of students and University staff.

The fee, complemented by revenue from the Quebec government, the University, and the generosity of donors, supports Student Health (including Dental), Mental Health, Counselling and Tutorial, Chaplaincy, Career and Placement, Student Aid and International Student Services, the Office for Students with Disabilities, First-Year Office (including the Francophone Assistant), Off-Campus Housing, and the First Peoples’ House. The Office of the Dean of Students also administers the academic integrity process as described in the Handbook of Student Rights and Responsibilities.

3.5.4.2 Athletics Fee
The Athletics fee covers athletics facilities, campus recreation (intramurals, fitness & recreation courses, drop-in recreation, etc.), and intercollegiate sports at both the Downtown and Macdonald campuses.

3.5.4.3 Student Society Fees
Student Society fees are compulsory fees collected on behalf of student organizations. Fees must be approved by the student body through fee referenda according to the constitutional rules of the association or society.

Changes to Student Society fees are voted upon by the students during the Spring referendum period.

For Canadian students, the Student Society fees include Health and Dental Insurance of $184.60 (SSMU - Downtown campus) or $144.60 (MCSS - Macdonald campus).

Note: For international students, the Student Society fee includes a Dental Insurance Plan of $98.20 (SSMU - Downtown campus) or $76.92 (MCSS - Macdonald campus). International students will be obliged to participate in the University’s compulsory International Health Insurance Plan, which, at the 2005-06 rate, costs $678 for single coverage. For more information, please contact International Student Services: (514) 398-6012.

3.5.4.4 Registration Charge
The University charges a per-credit registration charge to all students in courses and programs. This is assessed as follows: $6.63 per credit to a maximum of $99.45 per term.

The fee is assessed as follows: $5.95 per credit to a maximum of $89.25 per term.

3.5.4.5 Information Technology Charge
The purpose of the information technology charge is to enhance certain technology services provided to students as well as to provide training and support to students in the use of new technology.

3.5.4.6 Transcript Charge
The University charges a per credit transcript charge to all students. This entitles students to order transcripts free of charge and is assessed as follows: $6.60 per credit to a maximum of $9.00 per term.

3.5.4.7 Copyright Fee
All Quebec universities pay a per credit fee to Copibec (a consortium that protects the interests of authors and editors) for the right to photocopy material protected by copyright. The fee is assessed as follows: $6.32 per credit to a maximum of $9.45 per term.

3.5.5 Other Fees

International Student Health and Accident Plan (compulsory) (based on 2005-06 rates)

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>$678</td>
</tr>
<tr>
<td>Dependant (one student with one dependant)</td>
<td>$1,782</td>
</tr>
<tr>
<td>Family (one student with two or more dependants)</td>
<td>$3,384</td>
</tr>
</tbody>
</table>

Application for Admission

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>All faculties except MBA</td>
<td>$60</td>
</tr>
<tr>
<td>MBA</td>
<td>$100</td>
</tr>
<tr>
<td>Admission appeals charge</td>
<td>$100</td>
</tr>
</tbody>
</table>

Late Registration

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>After regular registration deadline: All eligible returning students, except Special students and Graduate part-time and additional session students.</td>
<td>$50</td>
</tr>
<tr>
<td>Special students and Graduate part-time and additional session students.</td>
<td>$20</td>
</tr>
<tr>
<td>As of the second day of classes: All students except Special students and Graduate part-time and additional session students.</td>
<td>$100</td>
</tr>
<tr>
<td>Special students and Graduate part-time and additional session students.</td>
<td>$40</td>
</tr>
</tbody>
</table>

Late Course Change Fee $25
Minimum charge upon withdrawal $100
Rereading Examination Paper (refundable if the letter grade is increased) $35
Supplemental Examinations, each written paper $35
Graduation Fee (charged at the end of the first term of the student’s U3 year) $60
Duplicate ID Card $20
Late Payment charged on balances >$50 as of the end of October (end of February for the Winter term) $25
Interest on outstanding balances (rate determined in February, to be applicable on June 1) $25
Returned cheque charge $20
Schulich School of Music Fees:
Audition Fee $60
Late Music Placement Examination Fee $50
Late application fee for Music Performance examination (requires permission from Chair, Performance Dept.) $25
Supplemental Practical Examination in Music, $150

3.5.6 Billings and Due Dates

Confirmation of Acceptance Deposit
Students admitted to the University will be required to confirm their acceptance of the offer of admission on www.mcgill.ca/minerva/applicants and pay the required $200 deposit by credit card (Visa or MasterCard) at that time.

Invoicing of Fees
Electronic billing is the official means of delivering fee statements to all McGill University students. The University has replaced
PAYMENT OF FEES

registered deposit fee, whichever is higher) to cover administrative costs of registration.

Interest will not be cancelled due to non-receipt of fee invoices. Students should access the Student Accounts Website at www.mcgill.ca/student-accounts for information on payment due dates.

<table>
<thead>
<tr>
<th>Term</th>
<th>Payment Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall term</td>
<td></td>
</tr>
<tr>
<td>Returning students</td>
<td>August 30, 2006</td>
</tr>
<tr>
<td>Students new to the University in Fall</td>
<td>September 28, 2006</td>
</tr>
<tr>
<td>Winter Term</td>
<td></td>
</tr>
<tr>
<td>Returning students</td>
<td>January 5, 2007</td>
</tr>
<tr>
<td>Students new to the University in Winter</td>
<td>January 31, 2007</td>
</tr>
</tbody>
</table>

Late Payment Fees: Students who still have an outstanding balance greater than $100 on their account as of October 30th (February 28th for the Winter term) will be charged a late payment fee of $25 over and above interest.

3.5.7 Fees and Withdrawal from the University

All students who have accessed Minerva to register must officially withdraw in accordance with section 3.3.9, “Regulations Concerning University Withdrawal” if they decide not to attend the term(s) for which they have registered. Otherwise they will be liable for all applicable tuition and other fees.

Students who have accessed Minerva and who drop their last course from September 1 through to the withdrawal period with full refund will be deemed to have withdrawn from the University. They will be automatically charged a minimum charge of $100 (or their registration deposit fee, whichever is higher) to cover administrative costs of registration.

Students who discontinue their classes without taking steps to drop their courses will be liable for all applicable tuition and other fees.

3.5.7.1 Fee Refund Deadlines

The deadline dates for course refunds are independent of the deadline dates given for withdrawal from courses.

Fall Term – up to and including September 24: Returning students – 100%* refund (less minimum charge of $100 in the case of complete withdrawal)
New students – 100%* refund (less registration deposit or $100, whichever is higher)

Fall Term – after September 24: No refund.

Winter Term – up to and including January 21: Returning students – 100%* refund (less minimum charge of $100 in the case of complete withdrawal)
New students – 100%* refund (less registration deposit or $100, whichever is higher)

Winter Term – after January 21: No refund.

* Includes tuition fees, society and other fees, student services, registration and transcripts charges, and information technology charge.

If students wish to discuss the refund policy applicable to a special case, they must contact Student Records in the Admissions, Recruitment and Registrar’s Office.

Music students who, in special circumstances such as illness or injury, are given permission to withdraw from practical instruction after the end of the Course Change period will be charged $65 per week for 1-hour lessons ($97.50 for 1½ hours) up to a maximum equivalent to the total fees charged for the course.

Full refunds for practical instruction will be given up to the last Friday of the Course Change period.

3.5.8 Other Policies Related to Fees

3.5.8.1 Impact of Non-Payment

The University shall have no obligation to issue any transcript of record, award any diploma or re-register a student in case of non-payment of tuition fees, library fees, student housing fees or loans on their due date. Access to Minerva for registration functions will be denied until these debts are paid in full or arrangements made to settle the debt.

Students who register for a given term who have amounts owing from previous terms must make payment arrangements with the Student Accounts Office or request a fee deferral or financial aid through the Student Aid Office by the end of the course add/drop period. Failure to do so will lead to the current term’s registration being cancelled.

3.5.8.2 Acceptance of Fees vs Academic Standing

Acceptance of fees by the University in no way guarantees that students will receive academic permission to pursue their studies. If it is subsequently determined that the academic standing does not permit the student to continue, all fees paid in advance will be refunded on application to the Student Accounts Office.

3.5.8.3 Fees for Students in Two Programs

Students in two programs normally are billed additional fees for their second program. Depending on the level of the two programs, e.g., one at the undergraduate vs one at the graduate level, students may incur both society and faculty fees and/or additional tuition fees. Consult the Student Accounts Website for further details.

Students in two programs may consult the Admissions, Recruitment and Registrar’s Office for information on tuition fees. Adjustments to bills will be made throughout the term when fees cannot be automatically calculated.

3.5.9 Deferred Fee Payment

Students with Sponsors

Students whose fees will be paid by an outside agency such as the Department of Veterans Affairs, CIDA, a foreign government, or their University department (i.e., teaching assistants or demonstrators), must have written evidence to that effect. Sponsors and students alike must inform the University that a sponsorship is taking place so that the contract may be initiated and the student’s fee account affected. Notification to the University should occur at least one month prior to the beginning of the term in which the contract is to take effect. Full documentation on the procedure as well as the forms required to be completed are found at www.mcgill.ca/student-accounts/third.

When a third party has agreed to pay fees on behalf of a student, payment will be recorded on the fee account, thereby reducing the balance the student must pay. The University reserves the right to insist upon payment. If the third party does not pay the promised fees within 90 days of invoicing, the student will be responsible for paying the fees plus the late payment fee and accrued interest.

Students Receiving McGill Scholarships/Awards

Fall Term: McGill scholarships or awards normally are credited to the recipient’s fee account by mid-August. These awards have the effect of reducing the student’s outstanding balance.

Winter Term: Students can view upcoming Winter term scholarships or awards on Minerva once processed by the Student Aid System for students to view their account statement on Minerva. All charges to the student’s account, including tuition, fees, health insurance and other miscellaneous charges are on your e-bill. E-bills are generally produced in the first few days of the month and an e-mail notification that the e-bill is ready to be viewed on Minerva is sent to the student’s official McGill e-mail address. Charges or payments that occur after the statement date will appear on the next month’s statement, but may be immediately viewed on the Account Summary by Term on Minerva (this is the on-line dynamic account balance view).

Students who discontinue their classes without taking steps to drop their courses will be liable for all applicable tuition and other fees.
Students Receiving Government Aid

Students are encouraged to pay their tuition promptly upon receipt of their government assistance. Interest on outstanding tuition is charged monthly for all students who neglect to pay by the payment due dates. Students who have applied for government assistance for full-time studies by June 30 are entitled to apply for a tuition fee deferral (which exempts you from interest and/or late payment charges on tuition and ancillary fees) by logging into Minerva and accessing the Financial Aid menu. Students should do this as soon as possible to avoid interest charges which would result from non-payment of fees by the stated payment deadlines.

Students are reminded that tuition and student housing fees have first call upon financial aid received from any source.

### 3.5.10 Yearly Fees and Charges by Faculty

Tuition fees at the undergraduate level are based on the number of credits taken. The following tables reflect the 2005-06 fees for a normal full-time course load of 30 credits per year.

Part-time students will be charged tuition fees at the per-credit rate and will be subject to society fees, student services fees, registration and transcripts charges, and information technology charges.

Any changes to these charges will be updated as they become known via the Student Accounts Website: [www.mcgill.ca/student-accounts](http://www.mcgill.ca/student-accounts).

### 3.5.11 Faculty of Agricultural and Environmental Sciences, and School of Dietetics and Human Nutrition – B.Sc.(Ag.Env.Sc.) and B.Eng.(Bioresource), B.Sc.(F.Sc.), B.Sc.(Nutr.Sc.)

<table>
<thead>
<tr>
<th>Fees / Charges</th>
<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>1,668.30</td>
<td>4,650.90</td>
<td>13,230.00</td>
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<tr>
<td>Society and Other Fees</td>
<td>503.02</td>
<td>503.02</td>
<td>416.86</td>
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<tr>
<td>Student Services and Athletics Fees</td>
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</tr>
<tr>
<td>Registration and Transcripts Charges</td>
<td>216.90</td>
<td>216.90</td>
<td>216.90</td>
</tr>
<tr>
<td>Copyright Fee</td>
<td>18.90</td>
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<tr>
<td>Information Technology Charge</td>
<td>178.50</td>
<td>178.50</td>
<td>178.50</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$2,728.20</strong></td>
<td><strong>$5,710.80</strong></td>
<td><strong>$14,222.22</strong></td>
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</tbody>
</table>

### 3.5.12 Faculty of Arts – B.A.

<table>
<thead>
<tr>
<th>Fees / Charges</th>
<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
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<td>11,970.00</td>
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<tr>
<td>Society and Other Fees</td>
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<td>Registration and Transcripts Charges</td>
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<td>216.90</td>
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</tr>
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<td>Copyright Fee</td>
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<tr>
<td>Information Technology Charge</td>
<td>178.50</td>
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<tr>
<td><strong>TOTAL</strong></td>
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### 3.5.13 Faculty of Arts and Science – B.A. & Sc.

<table>
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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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</thead>
<tbody>
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<td>4,650.90</td>
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<td>Society and Other Fees</td>
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<tr>
<td>Student Services and Athletics Fees</td>
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<td>178.50</td>
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<td><strong>$13,814.92</strong></td>
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### 3.5.14 Faculty of Arts, School of Social Work – B.S.W.

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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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<td>178.50</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>$5,881.46</strong></td>
<td><strong>$13,114.16</strong></td>
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### 3.5.15 Faculty of Education – B.Ed. & B.Sc. (Kinesiology)

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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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### 3.5.16 Faculty of Engineering – B.Eng. and B.S.E.

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<tr>
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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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<td>$14,682.16</td>
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### 3.5.17 Faculty of Engineering, School of Architecture – B.Sc.(Arch.)

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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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</thead>
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<td>384.00</td>
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<td>Registration and Transcripts Charges</td>
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### 3.5.18 Desautels Faculty of Management – B.Com.

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<th>International Students</th>
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<td>384.00</td>
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<tr>
<td>Registration and Transcripts Charges</td>
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<td>216.90</td>
<td>216.90</td>
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<td>Copyright Fee</td>
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<td>Information Technology Charge</td>
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<td><strong>TOTAL</strong></td>
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### 3.5.19 Schulich School of Music – B.Mus.

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<th>Quebec Students</th>
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<th>International Students</th>
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<td>735.26</td>
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<td>384.00</td>
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<tr>
<td>Registration and Transcripts Charges</td>
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<td>216.90</td>
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<td>Copyright Fee</td>
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<td>Information Technology Charge</td>
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### 3.5.20 Faculty of Religious Studies – B.Th.

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<td>384.00</td>
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<td>Registration and Transcripts Charges</td>
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<td>216.90</td>
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<td>Copyright Fee</td>
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<td>18.90</td>
</tr>
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### 3.5.21 Faculty of Science – B.Sc.

<table>
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<th>Quebec Students</th>
<th>Non-Quebec Canadians</th>
<th>International Students</th>
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<td>Registration and Transcripts Charges</td>
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<td>216.90</td>
<td>216.90</td>
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<tr>
<td>Copyright Fee</td>
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<tr>
<td>Information Technology Charge</td>
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<td>$5,956.96</td>
<td>$14,449.66</td>
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### 3.6 Student Records

#### 3.6.1 Academic Standing

Students enter the University in satisfactory standing and their academic standing is determined soon after the end of a term in accordance with the regulations of their faculty. Standing codes are generated in January for the Fall term, in May for the Winter term, and in September for the Summer term. Students who are placed in unsatisfactory standing must apply to the faculty for re-admission. Consult the appropriate section of this Calendar for the Regulations on Academic Standing that apply to a particular faculty.

#### 3.6.2 Credit System

The faculties listed in this Calendar use the credit system, where each course is assigned a credit rating reflecting the number of weekly contact hours. In general, a three-credit course indicates three hours of lectures per week for one term. Laboratory contact hours usually count for fewer credits. Credits also reflect the amount of effort required of students and generally assume two hours of personal study for each contact hour.

Note: Credit for multi-term courses (courses with the suffix sets: D1, D2; N1, N2; J1, J2, J3) is granted only after successful completion of all components in the specified time frame. For example, a student would have to take D1 and D2 components in consecutive terms and successfully complete them both in order to obtain credit.

Some faculties have specific policies on course credit, so students should consult the faculties' sections of the Calendar for...
more information (e.g., Engineering: see section 7.3.5.4 "Course Credits"; Science: see section 11.3.8.7 "Course Credit Weight").

3.6.3 Grading and Grade Point Averages (GPA)

Courses can be graded either by letter grades or in percentages, but the official grade in each course is the letter grade. Effective with the Fall term of 2002, all verification forms, transcripts and other documents show only letter grades for all subsequent terms. Where appropriate, a class average will be calculated and appear on transcripts expressed as the letter grade most representative of the class performance.

Grades A through C are termed satisfactory passes, D a conditional (non-continuation) pass, and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading. Students may also designate elective courses to be graded under the S/U option; see section 3.6.7 “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”.

Students must obtain grades of C or better in courses used to fulfill program requirements. Students may not register in a course for which they have not passed all the prerequisite courses with a grade of C or better, except by written permission of the Department-Chair concerned.

<table>
<thead>
<tr>
<th>Grades</th>
<th>Grade Points</th>
<th>Numerical Scale of Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>85 - 100%</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td>80 - 84%</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>75 - 79%</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>70 - 74%</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>65 - 69%</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td>60 - 64%</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>55 - 59%</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>50 - 54%</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0 - 49%</td>
</tr>
</tbody>
</table>

Letter grades are assigned grade points according to the table shown above. A student's academic standing will be determined on the basis of a grade point average (GPA), which is calculated by dividing the sum of the course credit times the grade points by the total course GPA credits.

GPA credits are the credits of courses with grades that are assigned grade points.

\[
\text{GPA} = \frac{\sum \text{(course credit \times grade points)}}{\sum \text{(GPA course credits)}}
\]

The term grade point average (TGPA) will be the GPA for a given term calculated using all the applicable courses at the same level in that term. The cumulative grade point average (CGPA) will be the GPA calculated using the student's entire record of applicable courses at McGill at the same level; if the level is changed, e.g., from undergraduate to graduate, the CGPA starts again. This policy took effect January 2003. Prior to January 2003, if a student's degree program had changed, e.g., from B.Sc. to B.A., the CGPA started again. For students with academic information prior to Fall 2002, who are registered in a different program or in a different level post-Fall 2002, the transcript displays a special message regarding the CGPA restarting. If courses are repeated, all results are included in the GPA calculation. Therefore, grades of D or F continue to be used in the CGPA calculation even after the course is repeated or if a supplemental examination is taken. Students should note that credits are only granted once for a repeated course regardless of the passing grade.

3.6.3.1 Other Grades

J – unexcused absence (failed): the student is registered for a course but does not write the final examination or do other required work; calculated as a failure in the TGPA and CGPA (see note below).

K – incomplete; deadline extended for submission of work in a course (see section 3.6.4 "Incomplete Courses").

KE or K* – further extension granted (see section 3.6.4 "Incomplete Courses").

KF – failed to meet the extended deadline for submission of work in a course; calculated as a failure in TGPA and CGPA.

KK – completion requirement waived. Not calculated in TGPA or CGPA.

L – deferred examination.

LE or L* – permitted to defer examination for more than the normal period.

NR – no grade reported by the instructor (recorded by the Registrar).

P – pass; not calculated in TGPA or CGPA.

Q – course continued in next term (applicable only to courses taken pre-Fall 2002).

S – satisfactory; equivalent to C or better in an elective course; not calculated in TGPA or CGPA. (See section 3.6.7, “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”)

U – unsatisfactory; equivalent to D or F in an elective course; not calculated in TGPA or CGPA. (See section 3.6.7, “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”)

W – withdrew; a course dropped, with permission, after the Course Change deadline; not calculated in TGPA or CGPA.

WF – withdrew failing; a course dropped, with special permission in an exceptional case, after faculty deadline for withdrawal from course, the student’s performance in the course at that stage being on the level of an F; not calculated in TGPA or CGPA. (Not used in Music.)

WL – faculty permission to withdraw from a deferred examination; not calculated in TGPA or CGPA.

NA or && – grade not yet available.

W- or W -- – no grade; student withdrew from the University, not calculated in TGPA or CGPA.

Note re J grade: All students who miss a final exam will be given a grade of J. The student will then have the following options:

a) ask to be assigned a grade based only on the grades earned for the work submitted up to, but not including, the final exam.

The grade earned will be calculated by adding the grades obtained on the individual pieces of work and a grade of 0 for the portion of the final grade allocated to the final exam. This option is not available if the professor has stipulated in the course outline that the final exam is a required part of the evaluation;

b) request a deferred exam, if the student has the appropriate reasons and documentation.

Students must make their request for option a) no later than four months after the end of the examination period of the original course. Requests for deferred exams (option b) must be made by the faculty deadlines as indicated in the faculty sections of this Calendar. Students wishing to appeal a J grade should write to the Associate Dean of their faculty.

3.6.4 Incomplete Courses

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of the deadline after the end of the course may be granted to the student. In this case, the instructor will submit a grade of K (incomplete). If a grade of K is submitted, the instructor will also indicate the portion of the final grade allocated to the final exam. This is not calculated in TGPA or CGPA. (Not used in Music.)

If a grade of K is submitted, the instructor will also indicate the portion of the final grade allocated to the final exam. This is not calculated in TGPA or CGPA. (See section 3.3.6, “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”)

If the required work is not completed before the deadline, a grade of WF will be assigned. If the required work is completed before the deadline, a grade of W will be assigned. If a student is not satisfied with the grade of W, the student may request a deferred exam, but the grade of W will remain on the student’s official transcript the new grade will replace the K.

If the required work is not completed before the deadline, a grade of WF will be updated on the student's record. A WF denotes a failed course and is calculated in the TGPA and CGPA the same as an F.
GRADING AND GRADE POINT AVERAGES (GPA)

In exceptional circumstances, and with the approval of the Associate Dean, the deadline may be extended further, in which case the grade of KE (further extension granted) will appear. If the extended deadline is not met, a grade of KF will replace the KE. Music students who have marks of K not cleared by mid-May are ineligible for scholarships.

Students who have not, without a valid excuse, participated in or written a final examination or submitted required term work for any courses they were registered in shall be assigned a final grade of J (unexcused absence). For more information, see note regarding J grade above.

3.6.5 Transfer Credits

Students may be granted credit for courses passed with a grade of C or better at other universities, as long as they are within the number of credits imposed by McGill's residency requirements and program requirements in some faculties. In general, a maximum of 30 transfer credits may be granted. Students must be in satisfactory standing in order to be granted the transfer credits. Courses with grades of C-, P, and S will not be considered for transfer credits. The letter grades applied by the host institution take precedence over the numerical grades if both are provided. Students should note that a minimum of 60 credits must be completed at McGill in order to qualify for a McGill degree.

Students must obtain approval from their Student Affairs Office. In some faculties approval must be obtained from the Student Affairs Office as well as the academic adviser prior to taking the course, especially if the course is taken as part of a student's program requirements.

Grades earned at the host university for transfer courses are not entered on the student's McGill transcript and are not included in the calculation of the TGPA or CGPA. For universities outside Quebec, it is the student's responsibility to ensure that an official transcript is sent from the host institution to the Senior Adviser, Student Affairs Office (Arts, Education, Engineering, Music, Science) the Students Affairs Office, Laird Hall, Room 106, Macdonald Campus (Agric. & Envir. Sc.) or the Office of the Associate Dean (all other faculties). It is the student's responsibility to process the request for transfer of credits with their home faculty at McGill within six months of return from the exchange program or study away. Students studying at another Quebec university on an Inter-University Transfer Agreement (IUT) will have their grade(s) sent to McGill automatically by the host university. For additional information, please refer to section 3.3.5, "Quebec Inter-University Transfer Agreement (IUT)".

Transcripts for transfer courses must meet the following deadlines:

- April 30, if term of graduation is to be Winter (Convocation in Spring)
- September 15, if term of graduation is to be Winter (Convocation in Fall)
- January 15, if term of graduation is to be Fall (degree granted February, Convocation in Spring)

Transcripts not received by the appropriate date will be considered for the next graduation period only.

3.6.6 Verification of Student Record

3.6.6.1 Unofficial Transcripts

Subject to section 3.6.7, "Changes to Student Records after Normal Deadlines", students are responsible for verifying their academic record on Minerva using the unofficial transcript to ensure that they are registered in the proper courses, and that the correct program information and expected term of graduation is appearing on their record.

Graduating students must make sure to verify their record on Minerva prior to the end of term in which they are graduating to ensure that the correct expected term of graduation is indicated on their unofficial transcript; if not, the student may be overlooked for graduation. Any questions or problems with their record should be directed to the Student Affairs Office.

3.6.6.2 Degree Evaluation

Degree Evaluation is a Minerva tool to help students and advisers compare the student's academic record with the requirements of a specific program. Students with access to Degree Evaluation can review their progress within their current program. Also, if considering a change in program, students can generate a "what-if" comparison of their academic record with the requirements of another program.

Though program requirements are based on the most recent calendar, the presentation in the degree evaluation report may have a different appearance. For example, a long listing of courses in the calendar may be grouped into one course "attribute" on the report.

Degree Evaluation also provides a central record of adviser/faculty-approved adjustments to a student's program of study, e.g., the replacement of one specified course with another or acceptance of a non-McGill course for credit.

Students using Degree Evaluation are reminded that it is an advising tool only. A Degree Evaluation Report that indicates program requirements have been satisfied does NOT constitute approval to graduate.

For details regarding Degree Evaluation including "reading a degree evaluation report," please consult the Registration, student records and exams Website at: www.mcgill.ca/student-records/degree-evaluation.

3.6.7 Changes to Student Records after Normal Deadlines

3.6.7.1 Student Record Changes

Student record changes include: course add or course drop, course withdrawal, university withdrawal, program change (including changing minors or concentrations).

3.6.7.2 Registrar Deadlines

Fall term - January 31
Winter term - June 1
Summer term - October 1

3.6.7.3 Before Registrar Deadlines

For record changes after the normal deadlines published in the calendar, but before the Registrar deadlines above, the student must make a request in writing to the Associate Dean of their faculty, clearly explaining the reasons why the change could not have been requested prior to these dates. The Associate Dean will then review the request and render a decision. If permitted, the change will then be processed according to existing faculty and ARR student record procedures.

3.6.7.4 After Registrar Deadlines

A change that is requested after the Registrar deadlines above will not normally be considered. In situations where there are "extraordinary personal" or "extraordinary academic" circumstances that could not have been foreseen prior to these deadlines, students may formally request a student record change from the Associate Dean of their faculty. If the Associate Dean of the faculty approves the request, the change will then be processed according to faculty and ARR student record procedures. For all changes other than grade changes, full documentation supporting extraordinary circumstances will be filed by the faculty with the Registrar's office.

3.6.7.5 Fee Assessment Consequences

When a change to the student record is made, the revised fee assessment will be reflected on the next fee statement.

If a student wishes to contest the fee assessment, he or she must make a request in writing to Admissions, Recruitment and Registrar's office. The ARR, upon reviewing the extraordinary circumstances described in the supporting documentation provided by the faculty, and upon consultation with the Student Accounts
Office if necessary, will decide whether or not to consider the request and will advise the student in writing of the outcome.

3.6.7.6 Student's Citizenship and/or Immigration or Fee Exemption Status

Changes related to student's citizenship and/or immigration or fee exemption status are not handled by the Faculty and are dealt with in section 3.2.2, "Legal Documents".

3.6.8 Transcript of Academic Record

3.6.8.1 Unofficial Transcripts

Students who require a copy of their student record can view and print their own unofficial transcript by accessing Minerva. This applies to records from 1976 to present. For pre-1976 records, an official transcript must be ordered.

3.6.8.2 Official Transcripts

Official transcripts can be ordered on-line via Minerva by going to Student Menu->Student Records Menu->Request Printed/Official Transcript. Students who cannot access Minerva should fill out the “Request for Release of Official Document” form available on-line at www.mcgill.ca/student-records/transcripts or in person at the Admissions, Recruitment and Registrar's Office at the address below. Transcript requests may be submitted by mail, by fax, or in person but must be signed by the student. To protect privacy, we do not accept telephone or e-mail requests.

Admissions, Recruitment and Registrar's Office
James Administration Building
845 Sherbrooke Street West, Room 205
Montreal, Quebec H3A 2T5
Fax: (514) 398-8939

3.6.8.3 General Information

Transcripts are free of charge.

Official transcripts are sent directly to the addresses provided by the student. Official transcripts in sealed envelopes can be given to those requesting them.

Requests are processed in 3 to 5 working days, somewhat longer for pre-1976 records and at peak times.

ARR is not responsible for transcripts that are lost or delayed in the mail.

The University will issue only complete transcripts recording all work attempted and results obtained in any and all programs. In no circumstances will partial transcripts be issued.

Official transcripts will NOT be issued for students registered on or after September 2001 who have failed to provide the information and/or documents necessary to obtain or verify their Permanent Code.

Transcripts will not be issued if you owe fees or fines over $30. Official transcripts are produced on secure paper that cannot be copied.

3.6.8.4 Course Numbering on the Transcript

Prior to September 2002, course numbers had a seven-character designation beginning with the three-number code for the teaching unit/department. The next three digits specified the course, with the first of these indicating its level. The final character was a letter indicating the term, or terms, during which the course was offered. For example:

107-200A = Philosophy (107) course (200) in Fall term (A);
301-202B = Architecture (301) course (202) in Winter term (B);
154-230D = Economics (154) course (230) extending for two terms, Fall and Winter (D).

A list of the former Teaching Unit Codes and their Subject Code equivalents is available on the Web at www.mcgill.ca/student-records/transcripts.

3.7 Examinations

3.7.1 Examinations – General Information

In addition to the general policies listed here, students should consult the faculty sections of this Calendar for particular regulations. Students will be informed by the end of the change of course period of the evaluation method to be used in each course.

Every student has a right to write term papers, examinations and theses in English or in French except in courses where knowledge of a language is one of the objectives of the course.

Students will not be permitted to write an examination in any course unless they have fulfilled the requirements of the course to the satisfaction of the instructor and the Associate Dean. Once students have presented themselves for an examination or test, they must submit all written work to the invigilator before leaving.

Students writing examinations must have with them their valid McGill student ID card. Forgetfulness cannot be considered an acceptable excuse.

Students are reminded that cheating in any examination is considered a serious offence which could lead to expulsion from the University. Students are not permitted to have in their possession, or to use, any unauthorized materials during an examination.

Responses on multiple choice examinations are normally checked by the Exam Security Computer Monitoring Program. The program detects pairs of students with unusually similar answer patterns on multiple-choice examinations. Data generated by the program can be used as admissible evidence either to initiate or corroborate an investigation or a charge of cheating under Section 16 of the Code of Student Conduct and Disciplinary Procedures.

All students are responsible for knowing the University Examination Regulations and the Code of Student Conduct and Disciplinary Procedures. The former are normally posted during the examination period and both may be obtained from the Office of the Associate Dean.

Information about issues related to academic integrity can be found at www.mcgill.ca/integrity.

Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Special Facilities

Students with visual or other disabilities should consult the Coordinator, Office for Students with Disabilities, Brown Building, about the possibility of special examination facilities.

Credit by Examination

In certain exceptional cases and in certain faculties, students may apply to the Associate Dean to write a final examination in order to obtain credit in a course for which they were not registered. This is possible only in those courses where there is no other assessment except the final examination.

3.7.2 Final Examinations

Formal final examinations are held during an examination period following the term in which the course is given. The dates of the examination periods are listed in the Calendar of Dates. Students are warned not to make travel arrangements to leave Montreal prior to the scheduled end of any examination period. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

3.7.2.1 University Regulations Concerning Final Examinations

Preamble

The objectives of these regulations are as follows:

1) to protect students from excessive workloads;
2) to use the full 15-week term to maximum advantage.
Regulations

1. These regulations shall apply to undergraduate courses up to and including the 500 level that are evaluated by the use of written examinations. They shall not apply to clinical, laboratory, performance, and seminar courses, or to other courses that are evaluated solely by means of a design, paper, program, or project.

2. Written examinations (including take-home examinations) shall not be held during the last two weeks of scheduled classes during the Fall and Winter terms, except where a pattern of continuous evaluation has been established, in which case the total value of examinations given in this period shall comprise no more than 10% of the final mark.

3. If the written examinations in a course constitute 50% or more of the final mark, one of these shall be given as a final written examination; and it shall take place during the examination period after the last day of scheduled lectures in December or April.

4. A final examination given during the examination period shall be worth at least 25% of the final mark.

5. Students shall be informed of all course requirements by the end of the course change period. All term work shall be assigned early enough in the term for students to complete the assignment(s) by the last day of class.

6. The date for term work in courses to which these regulations apply shall be no later than the last day of classes.

7. In courses that span the Fall and Winter terms (course pairs with numbers ending D1 and D2), instructors who wish to give a mid-year examination in December must schedule it in the formal examination period.

8. The principles enunciated in these regulations shall be applied, appropriately modified, to courses given during the summer, to other courses of less than a 13-week duration, and to courses in the Faculties of Law, Medicine, Dentistry, and Education that do not follow the normal University Timetable.

9. Individual faculties may propose variations in these regulations to the Academic Policy and Planning Committee in order to meet their special needs.

10. These regulations, and any variations to them, shall be made known to students by each faculty.

Instructors are not permitted to grant any special treatment regarding examinations to any student. Students who believe there are circumstances which might justify making special examination arrangements for them or which might legitimately be taken into account in evaluating their performance should apply to the Associate Dean of their faculty.

It is the responsibility of the student to confirm the date, time and place of the examination by checking examination schedules posted on notice boards on campus and on the Web at www.mcgill.ca/students. This information is not available by telephone. No student will be allowed to enter an examination later than one hour after it has started.

3.7.2 Deferred Examinations

Students who, for serious reasons such as illness or family affliction, have not written one or more examinations, may receive the permission of their own faculty Student Affairs Office to defer the examination to the next supplemental examination period, except in the Faculties of Engineering and Management (where students write the examination the next time the course is given). Students should be aware that deferred examinations are granted only for compelling reasons, verified and accepted by the Student Affairs Office. Supporting evidence such as an appropriate medical report is required. The Student Affairs Office must be informed as soon as possible after the examination of the reason for their absence from the examination.

Final application deadline in Arts, and Science, Education, and Engineering for deferred examinations is January 15, for Fall term courses, and May 15, for Winter term courses and courses that span the Fall and Winter terms. The Faculty of Agricultural and Environmental Science (FAES) also offers deferred exams for the Fall and Winter period. FAES students should verify dates in the Calendar of Dates and consult their Student Affairs Office for procedures.

If the request is approved, an L will appear in place of a grade in such courses. The grade obtained in the deferred examination after it has been written will replace the grade of L on the student's official transcript.

No supplemental examinations are available for students who receive a grade of D, F, J, or U in a course after a deferred examination. Such students must either re-register in the same course the following term or in an approved course substitute.

A Music student who has a mark of L not cleared by mid-May is ineligible for scholarships.

If deferred status is not granted, the student will receive a grade of J in the course, which will count as a failure in the GPA and CGPA. The student may, however, be allowed to write a supplemental examination. Please note there are no supplemental exams in Agricultural and Environmental Sciences, Architecture, Engineering, or Management courses.

Students in Summer term courses should check with their Student Affairs Office on the availability and restrictions on deferred and supplementary examinations in such courses.

In the event of illness, it is recommended that students consult the McGill Health Service. A medical note is required in support of a request to the Associate Dean of a faculty or a Program Director of a school, as appropriate, for deferred examinations.

Students who have already written an examination may not subsequently request that the exam be deferred. Such students should consult their faculty office regarding the availability of supplemental examinations.

3.7.2.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. If, after such discussion, students want to have a formal final examination reread, they must apply in writing to the Student Affairs Office (the Department Chair in Music and the Associate Dean Students Affairs in the Faculty of Agricultural and Environmental Sciences). Students should check with that office regarding application deadlines for formal rereads.

For more detailed regulations concerning reassessments and rereads, students should consult their faculty section in the appropriate University Calendar.

3.7.3 Invigilation (Exams from Other Universities)

Upon request, McGill will offer an invigilation service enabling students to write exams given by other universities. Exams must be scheduled on weekdays at 9:30 a.m., and cannot be scheduled on evenings, weekends, statutory holidays, McGill holidays, or Fridays during the months of July and August.

The Cost

The cost for invigilation and administration is $50 per student per exam plus $10 for courier charges to Canada and $20 to the USA and $30 courier charges to overseas.

The home university should confirm in advance of the exam date if it is paying; otherwise, the student will be charged.

Setting Up

Please confirm the exam date and time well in advance of the scheduled exam and also provide your phone number and e-mail address.

Exams and examination booklets, along with full instructions, should be sent to the address provided in advance of the scheduled exam.
3.8 Internships, Exchanges and Co-op Programs

3.8.1 Internships and Co-op Programs

Several faculties at McGill offer undergraduate students the opportunity to participate in an internship or co-op program. Faculty of Agricultural and Environmental Sciences students, see section 12.1.3.1, “Internship Opportunities and Co-op Experience”.

Desautels Faculty of Management students, see section 8.2.4, “International Student Exchange Program”.

Faculty of Engineering students, see section 7.2.8, “IYES: Internship Year for Engineering and Science”. The Department of Mining, Metals and Materials Engineering also offers Co-op programs in Metallurgical and Mining Engineering.

Students in the Faculty of Science should refer to section 11.3.5.6, “Internship Program for Engineering and Science (IYES)” for a listing of programs available with an Internship component.

Students in the Faculty of Arts should refer to the Arts Internships Website: www.mcgill.ca/arts-internships.

3.8.2 Exchange Programs

For information on Exchange Programs, see section 14.4, “Exchange Programs”.

3.8.3 Field Studies

For information on Field Studies, see section 14.1.3, “Field Studies”.

3.8.4 Canadian University Study Abroad Program (CUSAP)

For information on Canadian University Study Abroad Program (CUSAP), see section 14.4.7, “Canadian University Study Abroad Program (CUSAP)”.

3.8.5 Quebec Government Ministère de l’Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents

For information on Quebec Government Ministère de l’Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents, see section 14.4.3.2, “Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents”.

3.9 Scholarships and Financial Aid

Refer to www.mcgill.ca/studentaid for information on entrance scholarships, federal and provincial student assistance, McGill loans and bursaries, and loans available to U.S. citizens.

3.9.1 Awards to McGill Students in Course

Faculty scholarships and awards are made by the individual Faculty Scholarships Committees, and students should consult the appropriate section of this Calendar for regulations and information concerning these awards.

Most undergraduate scholarships and awards are granted on the basis of the combined GPA for the Fall and Winter terms and applications are not required unless specifically indicated in the terms of an award.

To be considered for in-course awards and/or the renewal of entrance scholarships, students must complete at least 27 graded credits in the regular academic year exclusive of courses completed under the Satisfactory/Unsatisfactory option. Summer courses are not considered. Courses taken at other Quebec universities through the Inter-University Transfer Agreement may be counted towards the requirements for scholarship renewal or for consideration for other academic awards. Eligibility will be based on all courses taken during the regular academic year and on both the McGill GPA as well as the global GPA, which will include the IUT credits.

To receive full payment of an award, students must be registered as full-time (i.e., at least 12 credits per term) in a McGill undergraduate degree program for the entire academic year; otherwise, the award, or part of it, may be cancelled. For instance, a student who is registered full-time for only one-half of the academic year will receive only one-half of the value of the award.

A maximum of the top 10% of the students in each faculty based on the combined GPA for the Fall and Winter terms are named to the Dean’s Honour List. This designation, while carrying no monetary reward, is an official University recognition of the student’s achievements and is recorded on the transcript. Outstanding students, who rank in a maximum of the top 5% of their faculties, may also be considered for the J.W. McConnell and James McGill Awards, which range in value from $500 to $5,000. These awards are made by the University Committee on Scholarships and Student Aid to top students as ranked and recommended by each faculty. In making such recommendations, faculties may consider program content, number of credits, etc., in addition to GPA.

A maximum of the top 10% of the graduating students in each faculty are named to the Dean’s Honour List. This honorary designation is based upon the cumulative academic record and the minimum required CGPA is determined annually by each individual faculty. Individual faculties should be consulted regarding any additional criteria which may be used. These designations may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the McGill GPA as well as the global GPA.

Awards are made to students who do not return to McGill the following year are considered relinquished. However, students who pursue studies at another university for credit towards a McGill degree may be granted permission to retain their scholarships and/or awards for a maximum of one academic year away from McGill. Students holding renewable scholarships granted by the University Committee on Scholarships and Student Aid will be eligible for renewal if they meet the McGill standards for renewal, i.e., the equivalent of a 3.50 on the combined GPA for the Fall and Winter terms and at least 27 graded credits.

Students who have relinquished their awards may, upon their return to McGill, request reinstatement. Such students requesting reinstatement should be sure that the Scholarships Office receives a copy of the letter of readmission.

Full information concerning undergraduate awards and bursaries is contained in the Undergraduate Scholarships and Awards Calendar available on the Web at www.mcgill.ca/courses or from the Scholarships Office.
3.10 Graduation

In order to graduate, a student must complete faculty and program requirements. It is the student’s responsibility to ensure that all faculty requirements are met before graduation. All students should contact their advisers (Senior Student Adviser, in Music) early in the graduating year with any questions as to whether they will meet the necessary program requirements by graduation time.

3.10.1 Apply to Graduate

Students must indicate their expected graduation term on Minerva using the “apply for graduation” option under the Student Records menu and should verify this information on unofficial transcripts and verification forms. For more information, see section 3.6.6, “Verification of Student Record”. The Student Affairs Office should be notified immediately when a final-year student changes his/her expected graduation term. Failure to do so may result in the postponement of a student’s graduation.

A student must complete a minimum residency requirement of 60 credits at McGill in order to qualify for a McGill degree. The minimum CGPA required to graduate is 2.00.

3.10.2 Graduation Approval Query

Graduating students may view the status of their graduation record on Minerva as part of the Faculty review and approval process. The menu option called “Student Graduation Query” is accessed via the Student Records menu option on Minerva, and becomes available to graduating students approximately 3-4 weeks before the “degree awarded” notation is updated on their records.

If all requirements for graduation are met, the student’s record on Minerva will be updated with the “degree awarded” notation at the appropriate time:
- late February, if term of graduation is Fall
- late May, if term of graduation is Winter
- late October, if term of graduation is Summer

Note: Information regarding the Convocation ceremonies can be obtained on the McGill Website at www.mcgill.ca/convocations.

3.10.3 Replacement Diploma

There are several instances when students might request a replacement diploma: if your diploma was lost, damaged, or if the name on the diploma should be changed. Students must make a request in writing and should also include a certified cheque or money order for the amount of CDN $60 made payable to McGill University. Students should refer to the sections below to determine which situation applies to them. All requests should be sent to:

Admissions, Recruitment and Registrar's Office Service Centre
McGill University
James Administration Building, Room 205
Montreal QC H3A 2T5

E-mail: registration.arr@mcgill.ca

Please note that requests made on behalf of a student must be accompanied by a signed letter of authorization from the student. To replace a lost diploma: Students must provide a sworn affidavit from a notary, a lawyer or a commissioner of oaths certifying that the diploma is lost. The affidavit should include: full name; student number; address; phone number; date of birth; degree granted/year granted; reason for a replacement diploma. To replace a damaged diploma or change the name on the diploma: Students must send or deliver the original diploma. Include clear and complete photocopies of legal documents supporting the name change. Please refer to section 3.2.4, “Legal Name” for the list of acceptable documents. Please note that the name change must be processed in the system before a duplicate diploma can be issued. Students must enclose a letter containing the following important information: full name; student number; address; phone number; date of birth; reason for a replacement diploma; new spelling/grammar changes.

3.11 Professional and Graduate Studies

Students intending to proceed into Dentistry, Law or Medicine should consult the faculties concerned about their prerequisites for admission.

3.11.1 Language Requirements for Professions

Quebec law requires that candidates seeking admission to provincially recognized professional corporations* must possess a working knowledge of the French language, that is, be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of full-time instruction in a French post-primary school have been completed. Candidates who have completed their secondary education in Quebec in 1986 or later and have received their certificate from secondary school are exempt from writing the examination. The professional corporation will require this certificate, proof of attendance or of successful completion of the Office examination.

The examination may be attempted by registered students during the two years prior to the date they receive a degree giving access to a professional corporation. Application forms for sitting the exam while still a student may be obtained from the Admissions, Recruitment and Registrar’s Office. Priority will be given to
those closest to graduation. Examinations take place every three months and may be attempted an unlimited number of times.

More information may be obtained from the Office de la langue française, 125 Sherbrooke Street West, Montréal, Québec, H2X 1X4. Telephone: (514) 873-4833.

Students who need to acquire a functional level of proficiency in French may take courses from either the English and French Language Centre, Faculty of Arts, or the Centre for Continuing Education, 688 Sherbrooke Street West, telephone (514) 398-6200.

Students already proficient in French but who wish to keep up practice might consider courses in the Department of French Language and Literature, Faculty of Arts.

**Note:** Non-credit language courses, and in some cases credit language courses, completed at the Centre for Continuing Education may not be applied to program/degree requirements. Consult your Faculty for clarification.

* McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:

- Agrologists
- Architects
- Chartered Accountants
- Chartered Appraisers
- Chemists
- Dentists
- Dietitians
- Engineers
- Geologists
- Industrial Administration Accountants
- Industrial Relations Counsellors
- Lawyers
- Licensed General Accountants
- Occupational Therapists
- Physicians
- Physiotherapists
- Psychologists
- Social Workers
- Speech Therapists and Audiologists
- Urbanists
- Vocational Guidance Counsellors

### 3.11.2 Graduate Studies

Please note that students who intend to pursue graduate studies at McGill are not automatically admitted. Further information is available at [www.mcgill.ca/applying/graduate](http://www.mcgill.ca/applying/graduate), and in the Graduate and Postdoctoral Studies Calendar also available on the Web at [www.mcgill.ca/courses](http://www.mcgill.ca/courses).

Additional information regarding postgraduate awards is available at [www.mcgill.ca/gps](http://www.mcgill.ca/gps), or from the Graduate and Postdoctoral Studies Office, James Administration Building, Room 400, 845 Sherbrooke Street West, Montreal, QC H3A 2T5.

Inquiries about graduate assistantships should be directed to the individual departments.

### 3.12 Student Services

#### 3.12.1 Office of the Dean of Students

William and Mary Brown Student Services Building
3600 McTavish Street, Suite 4100
Montreal, QC H3A 1Y2

Telephone:
General Information: (514) 398-3825
Website: [www.mcgill.ca/deanofstudents](http://www.mcgill.ca/deanofstudents)
Dean/Associate Dean: (514) 398-4990

The Dean and the Associate Dean of Students coordinate all student services at McGill to promote student success. They are available to provide assistance and/or information on almost all aspects of non-academic student life. Concerns of an academic nature will be directed to the proper individual, office or department.

#### 3.12.2 Student Services – Downtown Campus

Unless otherwise indicated, on the Downtown Campus all student services offered by the Office of the Dean of Students are located in the William and Mary Brown Student Services Building, 3600 McTavish Street, Montreal, Quebec H3A 1Y2.

A list of services available is given below. For further information refer to the Student Services Website: [www.mcgill.ca/studentservices](http://www.mcgill.ca/studentservices) or the address indicated above.

**Student Services**

- **General Information:** (514) 398-8238
- **Website:** [www.mcgill.ca/studentservices](http://www.mcgill.ca/studentservices)

**Career and Placement Service (CAPS):** provides a range of services to McGill students, and recent graduates, in the field of student and graduate employment.

- **Brown Building, Suite 2200** (514) 398-3304
- **E-mail:** careers.caps@mcgill.ca
- **Website:** [www.caps.mcgill.ca](http://www.caps.mcgill.ca)

**Chaplaincy Service:** concerned with the spiritual and mental well-being of all students.

- **Brown Building, Suite 4400** (514) 398-4104
- **E-mail:** chaplaincy@mcgill.ca
- **Website:** [www.mcgill.ca/chaplaincy](http://www.mcgill.ca/chaplaincy)

**Counselling Service:** assistance for personal, social, and emotional problems as well as vocational and academic concerns.

- **Brown Building, Suite 4200** (514) 398-3601
- **E-mail:** counselling.service@mcgill.ca
- **Website:** [www.mcgill.ca/counselling](http://www.mcgill.ca/counselling)

**First Peoples’ House:** fosters a sense of community for Aboriginal students studying at McGill.

- **3505 Peel Street** (514) 398-3217
- **E-mail:** firstpeopleshouse@mcgill.ca
- **Website:** [www.mcgill.ca/fph](http://www.mcgill.ca/fph)

**First-Year Office:** helps ease the transition of all students new to McGill. Coordinates “Discover McGill”, a one-day, campus-wide University and faculty orientation.

- **Brown Building, Suite 2100** (514) 398-6913
- **E-mail:** firstyear@mcgill.ca
- **Website:** [www.mcgill.ca/firstyear](http://www.mcgill.ca/firstyear)

**Health Services and Dental Clinic:** provides access to experienced physicians, nurses and health educators who offer health care services and information in a confidential atmosphere. Also operates a laboratory offering a wide array of testing, and a dental clinic.

- **Brown Building, Suite 3300** (514) 398-6017
- **Website:** [www.mcgill.ca/studenthealth](http://www.mcgill.ca/studenthealth)

**International Student Services:** offers support to international students on non-academic matters (immigration, health insurance, etc.), runs a Buddy Program and an orientation program.

- **Brown Building, Suite 3215** (514) 398-4349
- **E-mail:** international.students@mcgill.ca
- **Website:** [www.mcgill.ca/internationalstudents](http://www.mcgill.ca/internationalstudents)

**Mental Health Service:** a psychiatric clinic which offers easily accessible treatment for mental health problems.

- **Brown Building, Suite 5500** (514) 398-6019
- **Website:** [www.mcgill.ca/mentalhealth](http://www.mcgill.ca/mentalhealth)

**Student (Financial) Aid Office:** provides assistance in the form of loans, bursaries, and work study programs to students requiring financial aid.

- **Brown Building, Suite 3200** (514) 398-6013 /6014
- **E-mail:** student.aid@mcgill.ca
- **Website:** [www.mcgill.ca/studentsaid](http://www.mcgill.ca/studentsaid)
3.12.3 Student Services – Macdonald Campus

While students who study on the Macdonald Campus may make full use of all Student Services available at McGill, the Office of the Dean of Students offers students direct access to the services listed below.


Unless otherwise indicated, Macdonald Campus services are located in the Centennial Centre, Room CC1-124, 21,111 Lakeshore Road.

Telephone: (514) 398-7992 Fax: (514) 398-7610

Career and Placement Service (CAPS): This service brings together potential employers and students seeking permanent, summer and part-time career-related work.

Telephone: (514) 398-7582

Counselling Services: A professional counsellor is available twice a week offering counselling for personal, social and emotional concerns as well as for academic and vocational concerns. Appointments are required.

Telephone: (514) 398-7992

Health Service: A referral service is available Monday through Friday. A nurse/health educator is on campus Mondays, Tuesdays and Wednesdays and a physician may be seen by appointment on specified dates.

Telephone: (514) 398-7565

Off-Campus Housing: The Macdonald Campus service is available from June 1 to August 31 each year.

Telephone: (514) 398-7992

Student (Financial) Aid Office: Information about government loans, McGill loans and bursaries, and the Work Study Program can be obtained at the Centre. During the academic year (September to April) a counsellor visits the campus every Wednesday to help students with financial problems.

Telephone: (514) 398-7992

3.12.4 Extra-Curricular Activities

There are over 250 activities and clubs which students may join. These include international clubs; religious groups; political clubs; fraternities; communications groups such as Radio McGill, the McGill Tribune, and the McGill Daily; and some 50 miscellaneous groups (e.g., science clubs; literary, theatrical and musical societies; a chess club; and the McGill Outing Club).

The University Centre, 3480 McTavish Street, provides club rooms for these activities in a four-storey building with cafeterias, a ballroom, lounges and an experimental theatre. Activities for graduate students are centred in David Thompson House at 3650 McTavish Street. On the Macdonald Campus facilities are located in the Centennial Centre (refer to FAES section).

3.12.5 Ombudsperson for Students

The position of Ombudsperson for Students is filled on a half-time basis by an academic staff member. The Ombudsperson receives complaints from students and assists in the resolution of those complaints through informal means including information, advice, intervention, and referrals with a view to avoiding the more formal grievance procedures that already exist in the University.

The Office of the Ombudsperson is a confidential, independent, and neutral dispute resolution service for all members of the student community. Please call (514) 398-7059 for an appointment.

Office of the Ombudsperson, Brown Building, Room 5202
Website: www.mcgill.ca/ombudsperson

3.12.6 Bookstore

The McGill University Bookstore stocks new and used textbooks, a full range of books for the academic and professional community, stationery supplies, and McGill insignia clothing and gift items.

3420 McTavish Street
Website: www.mcgill.ca/bookstore
Macdonald Bookstore
Centennial Centre
Telephone: (514) 398-8300

3.12.7 Computer Store

The McGill Computer Store, located on the second floor of the University Bookstore, sells a full range of PC, Macintosh and Unix hardware, computer software and consumer electronics at educational prices.

3420 McTavish Street
Website: www.mcs.mcgill.ca
sales.mcs@mcgill.ca

3.12.8 Day Care

The McGill Childcare Centre is an independently run centre which can accommodate approximately 100 children, ranging in age from 4 months to 5 years. As placements are limited, especially for certain age groups, early application is suggested.

The Centre is located at:
3491 Peel Street, Montreal, QC H3A 1W7
Telephone: (514) 398-6943

A Campus Day Care Centre, located adjacent to the Macdonald Campus, is an independently run centre which can accommodate approximately 60 children, ranging in age from 4 months to 5 years. In addition, 50 children can be accommodated in Home Day Care within the neighbourhood. Preference is given to the Campus community. Early application is recommended. The Centre is located at:
1 Maple Avenue, Ste. Anne de Bellevue H9X 2E3
Telephone: (514) 398-7951

For Home Day Care information:
Telephone: (514) 457-7953
3.13 Residential Facilities

3.13.1 University Residences – Downtown

Residence Admissions Office
3641 University Street
Montreal, QC H3A 2B3
Telephone: (514) 398-6368
Fax: (514) 398-2305
E-mail: housing.residences@mcgill.ca
Website: www.mcgill.ca/residences

McGill Residences collectively house approximately 2,200 undergraduate students in dorms, apartments and shared-facilities houses. McGill offers six dormitory-style residences with full meal service. These more traditional residences house, almost exclusively, first-year students. McGill’s apartment-style residences and shared-facilities houses are popular with first-year and upper-year students seeking a different style of residence living. Student Animators (Floor Fellows) and Academic Staff (Directors) provide support to all undergraduate residents and live in or nearby all McGill Residences. An elected Residence Council serves as the voice of students. All dorm rooms have telephone and high-speed network access jacks, which are available at extra cost.

3.13.1.1 Dormitory-style Residences

McGill offers six dormitory-style residences with full meal service. The Bishop Mountain Residences (Gardner, McConnell, Molson and Douglas Halls) are located on the slope of Mount Royal, overlooking the campus, and house both male and female students. Royal Victoria College (RVC), the all-women’s residence, is located one block from the McGill gates. McGill’s newest residence hall is fully co-ed and is located a short walk from the main campus.

Rooms at RVC and the Bishop Mountain Residences are mostly single occupancy. The New Residence Hall offers mostly double rooms. Each student is provided a bed, a desk, chair, chest of drawers, closet and small fridge (one fridge per double room). In all halls residents are responsible for the cleanliness of their rooms. Common bathrooms and showers are located on each floor, except in the New Residence Hall where there are private bathrooms in each room. Each hall has card-operated automatic washers and dryers, as well as ironing facilities. Pay telephones are located in each building. In addition, all rooms are wired for a private telephone and Internet service. There is limited storage space for ski equipment, trunks, and suitcases in every hall. All halls have TV and recreation rooms.

There are on-site cafeterias and the meal plan is compulsory for students living in the dormitory-style residences.

3.13.1.2 Apartment-style Residences

Solin Hall is a modern award-winning apartment-style residence that has two-, three- and four-bedroom apartments. Located four short Metro stops west of the main campus, Solin features large common areas (TV and games rooms) and a computer lab and houses undergraduate students. Each apartment has its own living room, dining room, kitchen and bathroom(s), with basic furniture such as stove, fridge, table, chairs, sofa, lamps and drapes. Bedrooms are furnished with bed, desk, chair and chest of drawers. All apartments and public area floors are carpeted. There is electric heating with individual thermostats in each room. Shopping areas are within walking distance from the Hall. Limited indoor parking is available.

The Greenbriar Apartments residence building is located one block from the main campus. It houses first-year and upper-year undergraduate students in self-contained studio and double-occupancy, one-bedroom apartments. Apartments have fully equipped kitchens (stove, fridge, sink) and are furnished with bed, desk, table, chairs, drawers and blinds. Although these residences do not offer meal plans, residents may purchase one at the residence cafeterias.

3.13.1.3 Shared-facilities Houses

McGill Residences also offers a number of beautifully renovated older buildings, each housing between 13 and 30 first-year students. These shared-facilities houses are all located within a few blocks of the main campus and have single- and double-occupancy bedrooms with shared kitchens, bathrooms and common areas. Bedrooms are furnished with desks and chairs, beds (many are loft beds), chest of drawers, closet and blinds. Common areas are also fully furnished. Although these residences do not offer meal plans, residents may purchase one at the residence cafeterias.

3.13.1.4 Residence Fees

Residence fees for the 2006-2007 session had not been set at the time this Calendar went to print. Fees for the 2005-2006 session were as follows:

Rates for Gardner, McConnell, Molson and Douglas Halls ranged from $8,486 to $9,258 for a single room. Rates include the mandatory 5-day per week meal plan. The rates at Royal Victoria College include a mandatory 7-day per week meal plan and range from $9,976 to 10,136 for single rooms and $9,416 for double rooms. These rates are for the regular session, September 1 to April 30.

At the New Residence Hall room rates, including mandatory meal plan, were $9,744 per person for double rooms and $10,062 for a single room. These rates are for the regular session, September 1 to April 30.

The rooms in Solin Hall and the Greenbriar apartments are leased on an 11-month basis (September 1 to July 31). The room rates were $6,930 for a single room and $5,368 for a double room in a multi-bedroom apartment at Solin Hall. Single-occupancy studio apartments at Greenbriar were $7,997 and double-occupancy one-bedroom apartments were $5,500 per person. Rates do not include meal plan.

Shared facilities houses are also leased on an 11-month basis (September 1 to July 31). Room rates ranged from $7,007 to $7,546 for a single room and from $4,851 to $5,368 for a double room, depending on the dimensions of the room. Rates do not include meal plan.

3.13.1.5 Meal Plans

Residents at Molson, McConnell and Gardner Halls take their meals together in a large centrally located dining hall. Douglas Hall and RVC have their own dining areas. RVC offers 19 meals per week (7 days per week), while the Bishop Mountain Residences offer 15 meals per week (Monday to Friday). Bag lunches and bag dinners are available. There are kitchenettes in all the Halls where residents may keep food and prepare snacks or meals at any time. Residents of the New Residence Hall have access to the on-site cafeteria with extended hours, 7 days per week. The meal plan allows them to eat at certain on-campus cafeterias as well. There are kitchenettes on each floor where residents may prepare hot or cold snacks at any time.

Solin Hall, the Greenbriar Apartments and the shared-facilities houses do not offer meal plans. The apartments and houses have fully equipped kitchens where students prepare their own meals. However, residents are welcome to purchase a meal plan at the residence cafeterias.

3.13.1.6 Student Government

Each hall has a Residence Council, elected at the start of the academic year. It is the job of Council to gather hall opinions, supervise financial affairs, and organize sporting and recreational activities within the residences. McGill’s residences are run for the convenience and advantage of the students living in them. Rules and regulations are decided upon and administered by the students themselves. Note: All fees include an activity fee of $20 collected by the University on behalf of the Residence Council of each hall, and is included in the residence fees.
3.13.2 University Residences – Macdonald Campus

Campus Housing Office
P.O. Box 188,
Macdonald Campus of McGill University
Sainte-Anne-de-Bellevue, QC H9X 3V9
Telephone: (514) 398-7716 Fax: (514) 398-7953
E-mail: residences.macdonald@mcgill.ca
Website: www.mcgill.ca/macdonald-residences

For more than 90 years, residence life has been an integral part of Macdonald Campus activities. Laird Hall, with a capacity 253 students, is arranged on a co-educational basis and provides accommodation for undergraduate, graduate, and Farm Management Technology students. Residents enjoy comfortable rooms, modern kitchens, cozy lounge facilities, and other amenities that help make their residence life a complete and meaningful part of their university experience. All dorm rooms have telephone and high-speed network access jacks, which are available at extra cost.

The EcoResidence, Canada’s first ecologically friendly student residence and winner of the Prix d’excellence from the Ordre des architectes du Québec, accommodates 100 students. The EcoResidence is a unique initiative that recycled two buildings and incorporated ecological construction technology. This type of accommodation will appeal to students who enjoy independent living in self-contained apartments of two or six single-bedroom units. Each unit is built on a split-level concept with large, airy common living areas and fully equipped kitchens.

3.13.2.1 Residence Fees – Macdonald Campus

Residence fees are paid separately from tuition in accordance with regulations of the Fee Payment Option selected at the time of signing a Residence Lease.

The residence fees for the 2006-07 session had not been set at the time this Calendar went to print. The 2005-06 session rates for Laird Hall are (double occupancy) $2,336 and (single occupancy) $2,600. Rates for the EcoResidence vary from $378 to $389 per month. An updated fee sheet will be available with the residence application forms when an offer of accommodation is made.

There is no meal plan offered on the Macdonald Campus. Meals are available on a cash basis from the Centennial Centre cafeteria. The cafeteria is open for breakfast and lunch only, 5 days per week, exclusive of Saturday, Sunday, and holidays designated by the University.

Meals may be obtained from the Snack Bar facility of the Centennial Centre. The Snack Bar is open for breakfast and lunch only, 5 days per week, exclusive of Saturday, Sunday, and holidays designated by the University.

Note: Non-resident students may not stay overnight in any residence without permission of the Campus Housing Office.

3.13.2.4 Student Parking – Macdonald Campus

Students who hold parking permits will be allowed to park automobiles on Macdonald Campus provided they observe the parking regulations and other applicable rules. Permits must be obtained from the Campus Security Office, Laird Hall, Room 101, during regular office hours.

3.14 Athletics

Downtown Campus

Athletics: offers programs in recreational, intercollegiate, intramural and sports clubs.
Athletics Complex, 475 Pine Avenue West
E-mail: athletics@mcgill.ca
Website: www.athletics.mcgill.ca

Macdonald Campus

Athletics: Athletics offices are located in the Stewart Athletic Complex, just west of the Centennial Centre. Available at no charge to Macdonald students is a wide selection of activities, as well as the use of an excellent array of equipment. Facilities include a gymnasium, pool, weight room (with monitors on hand four evenings per week), arena, tennis courts, playing fields and large expanses of green space.

In addition to providing many open times for your enjoyment, there are also instructional, recreational, intramural and intercollegiate activities. There are nominal fees for instructional courses.

Stewart Athletic Complex
E-mail: athletics@mcgill.ca
Website: www.athletics.mcgill.ca

3.15 Information Technology Resources

3.15.1 IST Customer Services (ICS)

McGill ICS provides technical support for the following student services: E-mail, Virtual Private Network (VPN), Wireless Network Dialup Access Service (DAS), REZ Voice and Data Service (post-installation), and WebCT.

Visit ICS on the Web at www.mcgill.ca/ics. For technical support, contact them on-line via the Virtual Help Desk at www.mcgill.ca/ics/vhd, or by phone at (514) 398-3398, or in person at Burnside Hall in room 112.

3.15.2 Network and Communications Services (NCS)

McGill NCS provides data services including access to Local Area Networks (LANs), the Internet, e-mail, McGill central systems, and the McGill University Website — all from virtually anywhere on campus (wired or wireless) and remotely. They also provide voice service (with long distance and voice mail) to students in McGill Residences. The Website at www.mcgill.ca/ncs lists products and services offered by McGill NCS.

3.15.3 Computer Labs

The computer labs are provided by many faculties and departments for students in their programs. A list of these labs can be found at www.mcgill.ca/index/computer. Check the unit listings or contact the unit directly for information concerning facilities and accessibility.
### 3.16 Libraries

The Library consists of 13 branch libraries, primarily disciplinary in focus, and several affiliated locations on the Montreal downtown campus city library and at the MacDonald campus on the shores of Lac St. Louis. The Library provides vast print collections, ranging from Audubon’s Birds of America to J.K. Rowling's Harry Potter and the Chamber of Secrets, and extensive electronic resources, including early English texts, scientific treatises and e-journals on topics ranging from philosophy to psychiatry. A wide range of services and a comprehensive Website (www.library.mcgill.ca) link the resources held to people who need them for teaching, learning, research and scholarship.

Expert and friendly staff are available in each branch library to provide assistance in locating information for course work, assignments or research topics. Training is provided at all levels to ensure effective access to quality information through efficient database and internet searching with information skills programs undertaken as part of course curricula. Liaison librarians in specific disciplinary areas assist students and staff. Staff and students may borrow from the University using their ID cards.

Opening hours vary for each library but most are open up to 84 hours per week and around examination time have extended opening hours, with the Humanities and Social Sciences Library open for 24 hours. Assistance is provided by phone, in person and online. Hundreds of computers in e-zones are available in all branch libraries in a secure environment and are used for accessing online courses, reading library materials, e-mail, word processing for assignments and the internet. Facilities for plugging in laptops are available in a wireless network. There are individual study carrels and group study rooms which can be booked for use. Printing and copying facilities, operated by a card system, are conveniently located. Special facilities are available for the vision and hearing impaired.

The Collection contains over 6 million items, with over 1 million e-books. There are 9,000 print journals and almost 30,000 e-journals. Hundreds of databases on topics ranging from art history to zoology guide users to relevant journal articles and research materials. Thousands of videos and sound recordings enrich the collections. All items held are listed in the Library's online catalogue. Materials are arranged on the shelves according to the Library of Congress Classification system. Electronic data resources support empirical and statistical research and a digitization program makes available unique scholarly materials on topics like Napoleon and Canadian military history. Copies of textbooks and some items on reading lists are held in Course Reserve collections for short term use. Links are made from the university’s online learning management system, WebCT to library resources. Past examination papers, McGill theses and newspapers from all over the world are also available online.

### 3.16.2 University Archives

The McGill University Archives (MUA) acquires, preserves and makes available to researchers (including students) of all disciplines more than 5,000 metres of records dating from 1797 to the present. These records document the history of McGill University faculty research, alumni and student organizations, and select Montreal-based organizations, all in a variety of media (including textual records, photographs, slides, audio-tapes, film, video, University publications, and artifacts). The MUA acquires private records to support historical research and manages the University's corporate memory and information assets through its Records Management Program. The Records Management Program regulates the flow of administrative records and protects vital evidence of University functions and activities according to Quebec archives and records legislation.

The MUA Reading Room is open to the public Monday-Friday, 9:00-12:30 and 1:45 to 4:45; however, appointments are recommended. The MUA Website includes virtual exhibitions, on-line searching of the MUA holdings, digital collections including the largest campus database of digitized images, and access to the McGill History Portal (focusing on historical information about McGill University and its community).

**McGill University Archives**

McLennan Library - Ground Floor
Telephone: (514) 398-3772
Fax: (514) 398-8456
Website: www.archives.mcgill.ca

### 3.16.3 Museums

#### 3.16.3.1 Redpath Museum

The Redpath Museum exists to foster the study of the history and diversity of the natural world. Its mandate includes geological, biological and cultural diversity. Its collections have been growing for over a century, and provide resources for research and for graduate and undergraduate education in biology, geology, anthropology and other fields. Among the largest collections are fossils from the ancient sea floor of eastern Quebec, the oldest land plants, a vast range of minerals, molluscs from around the world, Egyptian and classical antiquities, and artifacts from Central Africa. The Museum also houses research laboratories and classrooms.

The Museum welcomes McGill students and staff to visit its new permanent exhibit, which presents the history of life through the ages illustrated by material from Quebec and neighbouring regions, besides displays that feature the mineral and molluscan collections. A new ethnology gallery devoted to cultures throughout the world, including ancient Egypt, classical Greece and Rome, Asia, and Africa, has recently been installed.

859 Sherbrooke Street West
Telephone: (514) 398-4086
E-mail: redpath.museum@mcgill.ca
Website: www.mcgill.ca/redpath

#### 3.16.3.2 McCord Museum of Canadian History

The McCord Museum is home to one of the finest historical collections in North America. It possesses some of Canada’s most significant cultural treasures, including the most comprehensive collection of clothing - comprised of over 16,000 garments or accessories - made or worn in Canada; an extensive collection of First Nations artifacts - the most important of its kind in Quebec with a corpus of over 13,000 objects from across Canada; and the renowned Natoman Photographic Archives, which contain over 1,000,000 historical photographs and offer a unique pictorial record of Canada from pre-Confederation to the present. The McCord also houses paintings by renowned artists such as Théophile Hamel, Cornelius Krieghoff, James Pattison Cockburn and George Heriot.

The Museum’s Textual Archives include some
185 linear metres of documents relating to Canadian history. Finally, the McCord’s Website (www.mccord-museum.qc.ca) features award-winning virtual exhibitions, innovative learning resources and a vast, searchable database of information on the Museum's collections.

Exhibitions at the McCord provide inspirational and innovative interpretations of the social and cultural history of Montréal, Quebec and Canada. In addition to guided tours, school programs, cultural activities and lectures, the McCord offers a range of services including the Museum Café and the boutique. Researchers welcome by appointment.

690 Sherbrooke Street West  
Telephone: (514) 398-7100  
Email: info@mccord.mcgill.ca  
Website: www.mccord-museum.qc.ca

3.16.3.3  Lyman Entomological Museum and Research Laboratory  
Located on the Macdonald Campus, this institution has the largest insect collection of any Canadian university, and is second in both numbers of species and specimens only to the Canadian National Collection of Insects, Ottawa. As its main function is research and teaching, and not exhibition, it is not generally open to the public, but tours are available, by appointment, to interested parties.  
Telephone: (514) 398-7914.

3.16.3.4  Other Historical Collections  
In addition to the above, there are other collections and exhibits of a specialized nature, ordinarily open only to students but to which access may be gained by application to the department concerned. These include the Anatomical and Pathological Museums.

The Physics Department has two specialized collections which may be viewed by appointment. The Rutherford Museum contains original apparatus and other items used by Professor Ernest Rutherford in his Nobel Prize-winning research on radioactivity at McGill University, 1898-1907. The McPherson Collection comprises a wide range of historical apparatus and instruments used for measurements and investigations, with special emphasis on 19th-century physics.
# Faculty of Arts, including School of Social Work

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4.1 The Faculty

4.1.1 Location

Dawson Hall
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Canada

Telephone: (514) 398-4210
Faculty Website: www.mcgill.ca/arts
Student Affairs Office Website: www.mcgill.ca/artscisao

The Student Affairs Office and the Office of the Associate Dean (Student Affairs) of the Faculty of Arts are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both the Faculty of Arts and the Faculty of Science.

4.1.2 Administrative Officers

John Galaty; B.A.(Trinity), M.A., Ph.D.(Chic.)  Interim Dean
Uli Locher; Ph.D.(Yale)  Associate Dean (Research and Graduate Studies)

Enrica Quaroni; B.A., Ph.D.(McG.)  Associate Dean (Student Affairs)

Susan Sharpe  Assistant to the Dean
Sharon Bezeau; B.A.(Tor.), M.A.(C'dia)  Recorder
Donald Sedgwick; B.Sc., M.Sc.(McG.)  Senior Adviser

4.1.3 Programs and Teaching in Arts

Established in 1843, the Faculty of Arts is one of the oldest in Canada and remains the largest at McGill. With over 6,000 full-time students and over 250 full-time professors, the Faculty offers several hundred courses in many disciplines.

The Faculty of Arts permits students great program flexibility. Students may concentrate on one Arts discipline while obtaining Minor Concentrations in different Arts disciplines as well as in other faculties, such as, for example, Science. McGill's historic Arts building is the centrepiece of the University's downtown campus. It houses classrooms, offices and Moyse Hall – an elegant and well-equipped performance theatre. The Faculty maintains bilateral exchange programs with many universities around the world and encourages students to spend a term or two studying abroad.

McGill Arts graduates are valued for their ability to think critically and communicate effectively, often in more than one language. Their skills in research and analysis are applicable in a wide spectrum of professional fields, such as law, education, business, government, and public service.

The Faculty of Arts offers programs leading to the degrees of B.A. and B.S.W. Admission is selective; fulfillment of the minimum Concentrations in different Arts disciplines as well as in other faculties, such as, for example, Science. McGill's historic Arts building is the centrepiece of the University's downtown campus. It houses classrooms, offices and Moyse Hall – an elegant and well-equipped performance theatre. The Faculty maintains bilateral exchange programs with many universities around the world and encourages students to spend a term or two studying abroad.

The Faculty of Arts offers programs leading to the degrees of B.A. and B.S.W. Admission is selective; fulfillment of the minimum Concentrations in different Arts disciplines as well as in other faculties, such as, for example, Science. McGill's historic Arts building is the centrepiece of the University's downtown campus. It houses classrooms, offices and Moyse Hall – an elegant and well-equipped performance theatre. The Faculty maintains bilateral exchange programs with many universities around the world and encourages students to spend a term or two studying abroad.

The Faculty of Arts offers programs leading to the degrees of B.A. and B.S.W. Admission is selective; fulfillment of the minimum Concentrations in different Arts disciplines as well as in other faculties, such as, for example, Science. McGill's historic Arts building is the centrepiece of the University's downtown campus. It houses classrooms, offices and Moyse Hall – an elegant and well-equipped performance theatre. The Faculty maintains bilateral exchange programs with many universities around the world and encourages students to spend a term or two studying abroad.

The Faculty of Arts also offers a Diploma in Environment under the McGill School of Environment, a 30-credit program available to holders of a B.Sc. or B.A. or equivalent. All credits for the Diploma must be completed at McGill. For more information on the "Diploma in Environment", see section 13.11.

Finally, the Faculties of Arts and of Science jointly offer the Bachelor of Arts and Science (B.A. & Sc.), which is described in the Arts & Science section of the Calendar.

4.1.4 Student Affairs Office

The Student Affairs Office provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and programs, degree requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.

Special requests can be made, in writing, to the Associate Dean (Student Affairs). For more information, please refer to our Website at www.mcgill.ca/artscisao.

4.2 Faculty Admission Requirements

For information about admission requirements to the B.A. or B.S.W., please refer to "2006-07 Undergraduate Admissions Guide (Appendix A)".

For information about inter-faculty transfers, please refer to section 3.3.12, "Inter-Faculty Transfer", as well as to the relevant information posted on the Students Affairs Office Website at www.mcgill.ca/artscisao and in the Student Affairs Office.

4.3 Faculty Degree Requirements

Each student in the Faculty of Arts must be aware of the Faculty regulations as stated in this Calendar and on the McGill and Arts and ARTSCI Websites. While departmental and Faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration is with, and completion of, program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student's responsibility to seek guidance from the Student Affairs Office if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

To be eligible for a B.A. degree, students must fulfill all Faculty and program requirements as indicated below:

"Minimum Credit Requirement", see section 4.3.1
"Residency", see section 4.3.2
"Cumulative Grade Point Average (CGPA)", see section 4.3.3
"Time and Credit Limit for Completion of the Degree", see section 4.3.4
"Program Requirements", see section 4.3.5
"Course Requirements", see section 4.3.6

4.3.1 Minimum Credit Requirement

Students must complete the minimum credit requirement for the degree as specified in the letter of admission.

Students are normally admitted to a four-year degree requiring the completion of 120 credits, but advanced standing of up to 30 credits may be granted to students who obtain satisfactory results in the Diploma of Collegial Studies, International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests.

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new GPA will be calculated. The Associate Dean (Student Affairs), in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.
Students who are readmitted after a period of absence are normally subject to the program and degree requirements in effect at the time of readmission.

### 4.3.2 Residency

To obtain a B.A. degree, students must complete satisfactorily a minimum of 60 credits at McGill University towards the fulfillment of the B.A. degree requirements. At least two-thirds of all program requirements (Multi-track, Honours, Faculty) must normally be completed at McGill. In addition, some departments may require that their students complete specific components of their program at McGill.

Exceptionally, and subject to departmental approval, students in a Minor Concentration who pursue an approved exchange or study abroad program may complete up to half of the Minor Concentration requirements elsewhere.

The residency requirement for the Diploma in Environment is 30 credits completed at McGill.

### 4.3.3 Cumulative Grade Point Average (CGPA)

Each candidate for a degree must achieve a minimum cumulative grade point average (CGPA) of 2.00.

### 4.3.4 Time and Credit Limit for Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their degree in no more than eight terms after their initial registration for the degree. Students in the Freshman Program become subject to these regulations one year after their initial registration. Students who need or wish to exceed this time limit must apply to the Associate Dean (Student Affairs) for permission to continue their studies.

Students who wish to exceed the minimum credit requirement for their degree must also seek permission of the Associate Dean (Student Affairs) to continue their studies.

Permission for exceeding the time and/or credit limit will normally be granted only for valid academic reasons, such as a change of program (subject to departmental approval) and part-time status.

### 4.3.5 Program Requirements

#### 4.3.5.1 Freshman Program

Students who need to complete 97-120 credits to complete their degree requirements must complete the Freshman program, which is designed to provide a basic foundation prior to selecting a departmental program. Students may select one of the following Freshman program options:

**General Option**

- 6 credits in each of three of the following areas: social sciences, languages, humanities, or mathematics and science, with a maximum of 18 credits per area and 12 credits per department.

**Arts Legacy (Freshman) Option: Making Modernities**

- 24 credits of prescribed courses that will be taught in four consecutive units of six and a half weeks. Courses will be thematically linked and deal in an interdisciplinary way with the Ancient Worlds of China and Greece/Rome, Medieval Mediterranean Worlds, Early Modern Atlantic Worlds, and Global Modern Worlds. Each course features lectures, seminars, tutorials and performances. Enrollment is on a first-come first-served basis. Students should register for six additional credits, preferably from the areas of language or of mathematics and science. For more information, please contact Professor G. Vanekerberghen (Department of History).

#### French Option

- 18 credits of courses conducted in French. Depending on degree of language proficiency attained, this could include a maximum of 12 credits of intensive French language courses.

For further details, refer to the Arts Freshman information on the Web at [www.mcgill.ca/arts cisao](http://www.mcgill.ca/arts cisao).

#### 4.3.5.2 Departmental Programs

Arts students, other than those registered in the Freshman Program, are required to have an approved program (Multi-track, Honours, Faculty), and to select their courses in each term with a view to timely completion of their degree and program requirements. Students must complete one of the following program streams:

**MULTI-TRACK SYSTEM**

To recognise the diversity of student backgrounds and interests and the multiple routes to understanding provided by a modern university, the Faculty of Arts offers a 90-credit multi-track system that includes a Major Concentration complemented by at least a Minor Concentration and that may be completed in one of the following ways:

**Options**

- **A:** Major Concentration (36) + Minor Concentration (18) + 36 credits of electives
- **B:** Major Concentration (36) + Major Concentration (36) + 18 credits of electives
- **C:** Major Concentration (36) + Minor Concentration (18) + Minor Concentration (18) + 18 credits of electives

**Regulations:**

- Within option A and option B, all Concentrations must be in different academic units. (For students completing a second degree in the Faculty of Arts, this regulation is waived.)
- Within option C, one of the Minor Concentrations may be in the same unit as the Major Concentration. Students who pursue a same-unit Minor Concentration will substitute additional complementary (non-required) courses to a total of 18 credits for any courses completed as a part of their Major Concentration within that unit.
- Students will include within the 36 or 18 credits of their Major or Minor Concentration any university-level (200 or above) prerequisites to required courses within their Concentrations.
- No course may fulfill the requirements for more than one program or concentration requirement.

**Definitions:**

- **Units:** academic departments or administrative equivalents.
- **Programs:** lists of required and complementary courses (including prerequisites for required courses) prepared and maintained by units.
- **Major Concentration:** 36 credits taken from a unit’s Major program.
- **Minor Concentration:** 18 credits taken from a unit’s Minor program. Expandable Minor Concentrations are those which can, on the completion of 18 additional approved credits, be expanded into a Major Concentration within the appropriate unit.

**HONOURS PROGRAM**

Honours programs demand a high degree of specialisation, and require students to satisfy specific departmental and Faculty Honours requirements while maintaining a good academic standing. They are designed to prepare students for graduate study.

**Regulations:**

- To be registered in an Honours program after the first year, students must have attained a GPA and CGPA of at least 3.00 in the previous year, unless they have special permission from the department and the Associate Dean (Student Affairs).
- To complete an Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required
and complementary courses taken at McGill which constitute the Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their program GPA.

- In addition to the completion of the Honours requirements, students must complete at least a Minor Concentration in an academic unit other than the one in which the Honours requirements are satisfied. (For students completing a second degree in the Faculty of Arts, this regulation is waived.)

JOINT HONOURS PROGRAM

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program Components from any two Arts disciplines; see section 4.11.4 ‘Joint Honours Programs’ for a list of available programs. Each Joint Honours component consists of a maximum of 36 required and complementary credits (not including program prerequisites). In cases where a minimum of 24 credits are in courses normally restricted to Honours students, the total of required and complementary credits may be as few as 30.

To complete a Joint Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required and complementary courses taken at McGill which constitute the Joint Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their component of the program GPA.

FACULTY PROGRAM

A Faculty program is an approved selection of courses constituting a concentration in an intellectually coherent and inter-faculty field of studies. These courses must include approved selections from one of the following:

- The Faculties of Arts and of Science, and at least one other faculty.
- The Faculty of Arts, and at least one faculty other than the Faculty of Science.
- The Faculty of Arts currently recognises the following Faculty Programs:
  - Industrial Relations
  - McGill School of Environment

4.3.6 Course Requirements

All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do additional work for a supplemental grade if these options are available, or repeat the course. Course substitution will be allowed only in special cases; students should consult their academic adviser.

Normally, students are permitted to repeat a failed course only once. (Failure is considered to be a grade of less than C or the administrative failures of J and KF.) If a required course is failed a second time, a student must appeal to the Associate Dean (Student Affairs) for permission to take the course a third time. If permission is denied by the Associate Dean and/or by the Committee on Student Standing, on appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs offered are given in each unit's section together with the locations of departmental advisory offices, program directors and telephone numbers should further information be required.

4.3.6.1 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, CEGEP, at another university, or Advanced Placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate. It is the student's responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

Credit for statistics courses will be given with the following stipulations:

1. Credit will be given for ONLY ONE of the following introductory statistics courses: AEMA 310, BIOL 373, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, EPSC 215, GEOG 202, MATH 203, MGCR 271, PSYC 204, SOCI 350.

2. Credit will be given for ONLY ONE of the following intermediate statistics courses: AEMA 411, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, GEOG 351, MATH 204, MGCR 272, PSYC 305, SOCI 461.

3. Students who have already received credit for MATH 324 or MATH 357 will NOT receive credit for any of the following: AEMA 310, AEMA 411, BIOL 373, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, EPSC 215, GEOG 202, GEOG 351, MATH 203, MATH 204, MGCR 271, MGCR 272, PSYC 204, PSYC 305, SOCI 350.

4. For 500-level statistics courses not listed above, students must consult a program adviser to ensure that no significant overlap exists. Where such overlap exists with a course for which the student has already received credit, credit for the 500-level course will not be allowed.

5. Credit for statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean (Student Affairs).

6. PSYC 204 may not be taken if a grade of 75% was received in an equivalent course completed at CEGEP.

Credit for computer courses will be subject to the following restrictions:

a) Credit for Arts Educational Technology ARET 150, which is offered by the Faculty of Arts Computer Laboratory, will not be given if taken concurrently with or after COMP 100, COMP 102, COMP 202, COMP 203, COMP 208, COMP 250, EDPT 200 or MGCR 331. For more information, please refer to section 4.12.2, “General Faculty Courses”.

b) Credit for courses offered by the School of Computer Science is governed by rules specified as “Notes” in the School’s entry in the Faculty of Science section of the Calendar.

c) Credit for computer courses offered by faculties other than Arts or Science requires the permission of the Associate Dean (Student Affairs).

4.3.6.2 Courses Outside the Faculties of Arts and of Science

The following regulations apply to students in the Faculty of Arts who wish to take courses outside the Faculties of Arts and of Science:

- Regardless of their minimum credit requirement towards their B.A. degree, students are allowed a maximum of 12 credits in ELECTIVE and/or COMPLEMENTARY courses taken in faculties other than the Faculties of Arts and of Science.

- Students in certain designated programs that include a number of REQUIRED and COMPLEMENTARY courses in other faculties are permitted a maximum of 30 credits outside the Faculties of Arts and of Science. These programs are the Faculty Programs in Industrial Relations and in Environment, the Joint Honours in Economics and Finance, the Minor in Management for students in programs in Economics, the Major and Minor Concentrations in Music, the Major Concentration in Geography (Urban Systems), the Minor Concentration in Educational Psychology, and the Minor in Education for Arts Students.
• Students who combine any two or more of the programs listed above may not exceed 40 credits outside the Faculty of Arts and of Science.

Any courses taught at McGill University may be used towards the maximum allowed with the following exceptions:

• Continuing Education: Continuing Education courses with a teaching unit that starts with C are not for credit (except for CHEM).

• Distance Education: Refer to the "Policy on Distance Education Courses", see section 4.3.6.4.

• For the purpose of this policy, courses taught in other faculties and specifically listed in the Arts or Science section of the printed Calendar are considered as courses taught in the Faculties of Arts and of Science.

• The maximum number of credits allowed will be strictly enforced.

4.3.6.3 Transfer Credit Policy for Courses Taken Outside the Faculties of Arts and of Science

Students who transfer from faculties outside the Faculties of Arts and of Science either at McGill or at another institution may transfer up to a maximum of 30 credits under the following conditions:

• Only courses passed with a grade of C or better will be transferred. Grades of C- are not acceptable. Grades of P or S are acceptable only if transferred from faculties within McGill. The letter grades applied by the former home institution take precedence over the numerical grades if provided.

• Decisions on whether a course is outside the Faculties of Arts and of Science will be based on the original faculty in which the course was taken.

• Refer to the "Policy on Distance Education Courses" in section 4.3.6.4.

• Transfer credits for Continuing Education courses will be granted only if the courses can be used towards a degree program in a faculty other than Continuing Education at the original university.

• Transfer students will be allowed to take courses outside the Faculties of Arts and of Science at McGill only if they have transferred fewer than 12 credits, and then only up to a maximum of 12 credits.

• Transfer students who register for a Faculty of Arts program that requires additional credits outside the Faculties of Arts and of Science will be allowed to take only the number of credits outside the Faculties of Arts and of Science required to complete the program. These programs are the Faculty Programs in Industrial Relations and Environment, the Joint Honours in Economics and Finance, the Minor in Management for students in programs in Economics, the Major and Minor Concentrations in Music, the Major Concentration in Geography (Urban Systems), the Minor Concentration in Educational Psychology, and the Minor in Education for Arts Students.

4.3.6.4 Policy on Distance Education Courses

A maximum of 6 credits of elective courses taught through distance education may be used towards the B.A. degree at McGill. Courses taught through distance education from institutions other than McGill will be approved as transfer credits under the following conditions:

• the course is given by a government-accredited, degree-granting institution acceptable to McGill;

• the course counts for credit towards degrees granted at the institution giving the course;

• prior approval for the course is obtained from the Student Affairs Office of the Faculty of Arts.

The combined total of regular course credits and distance education course credits may not exceed the permitted maximum number of credits per term according to Faculty regulations. Courses taught through distance education may not be used to complete program requirements, except on an individual basis when serious, documented circumstances warrant it. In such cases, prior approval must be obtained from the student's program adviser and the Associate Dean (Student Affairs).

4.3.6.5 Internship Courses

The Faculty of Arts offers internship courses for credit. For more information refer to section 4.12.3, “Faculty of Arts Internship Program”.

4.3.6.6 Courses Taken Under the Satisfactory/Unsatisfactory Option

Students may take one elective course per term that is graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of their credits taken at McGill to fulfill their degree requirements. The decision to have an elective course graded as Satisfactory/Unsatisfactory must be made by students before the end of the Drop/Add period. This option is not open to Special, Visiting, Exchange, or IUT students. For more information and restrictions, please consult “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option” in section 3.3.6.

4.3.6.7 Courses in English as a Second Language

ESL courses are only open to students whose primary language is not English and who have studied for fewer than five years in English-language secondary institutions. Students in the Faculty of Arts may take a maximum of 12 credits, including academic writing courses for non-anglophones.

4.3.6.8 Auditing of Courses

No auditing of courses is allowed at McGill University.

4.4 Advising

Fall term academic advising for newly admitted students takes place during the week prior to the beginning of classes. Students newly admitted to the Winter term should consult the Calendar of Dates for exact advising dates.

Students who need 96 or fewer credits to complete their degree requirements must consult an academic adviser in their proposed department of study to obtain advice and approval of their course selection. To facilitate program planning, they must present their transcripts and letters of admission. For a detailed description of advising and registration procedures, students should refer to Welcome to McGill, which they receive from the Admissions, Recruitment and Registrar’s Office upon their acceptance, as well as the Student Affairs Website, www.mcgill.ca/artsci.

Students who need 97-120 credits to complete their degree requirements will normally be registered in a Freshman Program until they complete their first year. They must consult an adviser in the Student Affairs Office to obtain advice and approval of their course selection. For a detailed description of advising and registration procedures, Freshman students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as the Student Affairs Website, www.mcgill.ca/artsci.

Academic advising for all returning students takes place in March for the upcoming academic year. For more information, students should refer to the Student Affairs Website, www.mcgill.ca/artsci.

Advising is also available by e-mail: adviser.artsci@mcgill.ca.

4.5 Registration

All students register by Minerva, McGill’s Web-based registration system.

Students who fall into unsatisfactory standing at the end of the academic year will have their registration cancelled. They may not re-register in the Faculty. However, students who can provide proof of extenuating circumstances that affected their academic performance may appeal to the Associate Dean (Student Affairs) for readmission. For more information, students should consult the Student Affairs Office or the Student Affairs Website, www.mcgill.ca/artscisao.

Students who have an outstanding fee balance from a previous term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but who subsequently take summer courses without paying the fees, will have their registration cancelled. Registration will be denied until these debts are paid in full. Students must pay all debts before the end of the registration period to be permitted to register. Students with financial problems should consult the Student Aid Office, Brown Student Services Building.

Students who decide not to return to McGill after initiating registration must withdraw from all of their courses on Minerva or inform the Student Affairs Office in writing. The deadline for withdrawal from the University is the same deadline as for a course withdrawal; see the Calendar of Dates. After the deadline, students may, under exceptional circumstances, be granted permission to withdraw from the University. Such students should contact the Student Affairs Office for further information.

4.5.1 Program Registration

Students should refer to Welcome to McGill or to the Arts and Science Registration information on how to register for programs on the Student Affairs Website, www.mcgill.ca/artscisao, and to the Minerva Website, www.mcgill.ca/minerva. See section 4.11, “Programs in the Faculty” for a list of programs that can be taken by Arts students.

4.5.2 Course Registration

All courses have limited enrolment.

Students in the Faculty of Arts may register for and take for credit any course, unless otherwise indicated, in the sections of the Calendar applicable to the Faculties of Arts and of Science, subject to the course restrictions listed in this section.

Since the registration system is unable to verify whether or not Faculty regulations are respected, it is technically possible to register for courses that may not be credited towards the B.A. When students' records are manually verified, however, any courses taken that violate the Faculty regulations will be flagged after the end of course change period as “not for credit towards the B.A.” As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and/or the Class Schedule well in advance of the Course Change period to determine if permission is required by the instructor, the department, or the Faculty for any course they wish to take.

Students who believe they have valid reasons to take a course that may not be credited towards the B.A. must obtain the permission of the Associate Dean (Student Affairs).

4.5.2.1 Registration for First-Year Seminars

Registration for First-Year Seminars is limited to students in their first year of study at McGill, i.e., newly admitted students in U0 or U1. These courses are designed to provide a closer interaction with professors and better working relations with peers than is available in large introductory courses. These seminars endeavour to teach the latest scholarly developments and expose participants to advanced research methods. Registration is on a first-come, first-served basis. The maximum number of students in any seminar is 25, although some are limited to even fewer than that.

Students may take only one First-Year Seminar. Students who register for more than one will be obliged to withdraw from all but one of them. For a complete listing, please see “First-Year Seminars” in section 4.12.1.

The First-Year Seminars offered by the Faculty of Science are also open to Arts students. For a complete listing, please see “Registration for First-Year Seminars” in section 11.5.2.1.

4.5.2.2 Registration in Multi-Term Courses

Students who select a multi-term course are making a commitment to that course for its entirety. Students MUST register in the same section in all terms of a multi-term course. Credit will be jeopardized if students deliberately register in different sections of a multi-term course. A drop of the Winter term portion of a multi-term course in order to change sections is considered a withdrawal from the course. In exceptional cases, when circumstances are beyond the student’s control, the Student Affairs Office may grant permission to change sections mid-way through a multi-term course. Students must make their request in writing to the Associate Dean (Student Affairs), citing their reason for the request. The request must also have the written support of the instructors of the sections involved and of the coordinator of the course (if applicable).

4.5.3 Registration for Graduation

Students in their final year must indicate the expected date of graduation on Minerva and verify this date on unofficial transcripts. When final-year students change their expected date of graduation, they must notify the Student Affairs Office immediately. Failure to do so may postpone graduation.

Students who complete their degree requirements elsewhere at any time after their last registered term at McGill must apply to the Associate Dean (Student Affairs) to graduate. Application to graduate must be made sufficiently in advance of the expected graduation date to allow the Faculty to verify the student’s record. For further information, students should contact the Student Affairs Office.

4.6 Grading and Credit

During the first week of lectures, each instructor will provide students with a written course outline. This information should include, where appropriate:

- whether there will be a final examination in the course;
- how term work will affect the final mark in the course;
- how term work will be distributed through the term;
- whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses with formal final examinations must have supplementals);
- whether students with marks of D, F, J, or U will have the option of submitting additional work, and, if so, how the supplemental mark will be calculated with the extra work.

4.6.1 Incomplete Grades

An instructor who believes that there is justification for a student to delay submitting term work may extend the deadline until after the end of the course. In this case, the instructor will submit a grade of “K” (incomplete), indicating the date by which the work is to be completed. The maximum extensions for the submission of grades to the Student Affairs Office are as follows:

- students graduating in June:
  - Fall, Winter, and multi-term courses: April 30
- non-graduating students:
  - Fall courses: April 30
  - Winter and multi-term courses: July 30
4.7 Examinations

Students should refer to "Examinations" in section 3.7 for information about final examinations and deferred examinations. The exam schedules are posted on the McGill Website, www.mcgill.ca, normally one month after the start of classes for the Tentative Exam Schedule, and two months after the start of classes for the Final Examination Schedule. Students should also refer to the Student Affairs Website at www.mcgill.ca/artscisao for more information.

4.8 Supplemental Assessments

4.8.1 Supplemental Examinations

Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• special permission is required if students wish to write supplemental exams totalling more than 8 credits in any supplemental exam period;
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the course change period;
• the format of the supplemental examination (e.g., multiple-choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;
• students must apply to write a supplemental exam; the deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter; a non-refundable fee is payable for each course at the time of application; additional work applications and further information are available in the Student Affairs Office;
• the mark resulting from the revised or additional work will be recorded as a supplemental mark;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental mark will count in calculating the CGPA;
• the weight of the additional work, in calculating the supplemental mark, will be equal to the weight given the work revised or replaced when the original mark was submitted;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional work in courses outside the Faculty of Arts is subject to the deadlines, rules, and regulations of the relevant faculty.

4.8.2 Additional Work

Instructors of courses that include graded written term work may choose to provide the option of additional work to eligible students. The following conditions apply:

• if there is an option for additional work, it must be announced in the course outline at the beginning of the course;
• additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;
• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• students must apply for additional work; the deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter; a non-refundable fee is payable for each course at the time of application; additional work applications and further information are available in the Student Affairs Office;
• the mark resulting from the revised or additional work will be recorded as a supplemental mark;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental mark will count in calculating the CGPA;
• the weight of the additional work, in calculating the supplemental mark, will be equal to the weight given the work revised or replaced when the original mark was submitted;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional work in courses outside the Faculty of Arts is subject to the deadlines, rules, and regulations of the relevant faculty.

4.8.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. The Faculty of Arts recognises two types of reassessments or rereads:

• reassessment of coursework (term papers, mid-terms, assignments, quizzes, etc.);
• reread of a final exam.

In both cases, rather than re-correct the work and then grade it as they would have done themselves, reviewers assess the appropriateness of the original grade based, for example, on the application of the grading key to the student's work. If a grade is deemed unfair, it is changed, whether the new grade is higher or lower than
the original - i.e. the reviewer's grade takes precedence over the original grade.

**Reassessment of Coursework**
These reassessments are administered and conducted solely by the units involved according to procedures specified by the units and made available to staff and students. Requests for such reassessments must be made within 10 working days of the date of return of the graded materials. Reassessments should normally be completed within 20 working days of the request.

**Rereads of Final Exams**
These rereads are administered by the Student Affairs Office, but conducted by the units involved. Students must apply in writing to the Student Affairs Office by March 31 for courses in the Fall term and by September 30 for courses in the Winter or Summer terms (these deadlines are strictly enforced and no requests will be accepted past them). Students are assessed a fee of $35.00 for such rereads. It is strongly recommended, but not required, that students consult with the instructor of the course before requesting a reread of a final exam.

Reassessments and rereads in courses not in the Faculty of Arts are subject to the deadlines, rules, and regulations of the relevant faculty.

### 4.9 Academic Standing

Academic standing is based primarily on students' cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the Fall term, in May for the Winter term, and in September for the Summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the Fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and Fall-term grades for courses that span the Fall and Winter terms do not affect academic standing for the Fall term, even though they will ultimately affect students' Fall TGPA. Therefore, academic standings for the Fall term that are designated as “interim” should be interpreted as advisory. Note that interim standings will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

**Interim Satisfactory/Satisfactory Standing**
Students in interim satisfactory or satisfactory standing:
- may continue in their program;
- have a CGPA of 2.00 or greater.

**Interim Probationary/Probationary Standing**
Students in interim probationary standing (at the end of the Fall term):
- may continue in their program;
- should evaluate their course load and reduce it as appropriate;
- are strongly advised to consult a departmental adviser, before withdrawal deadlines, about their course selection.

Students in probationary standing:
- may continue in their program;
- must carry a reduced load (maximum 14 credits per term);
- must raise their CGPA to return to satisfactory standing (see above);
- should see their departmental adviser to discuss their course selection.

Students will be placed in probationary standing:
- if their CGPA falls between 1.50 and 1.99 and if they were previously in satisfactory standing;
- if their CGPA falls between 1.50 and 1.99 and their TGPA in Fall or Winter is 2.50 or higher, and if they were previously in probationary or interim unsatisfactory standing;
- if their CGPA is less than 2.00, and if they were previously in unsatisfactory readmitted standing and have satisfied the relevant conditions specified in their letter of readmission.

**Unsatisfactory Readmitted Standing**
Students in unsatisfactory readmitted standing:
- were previously in unsatisfactory standing and were readmitted to the B.A. by the Associate Dean (Student Affairs) or the Committee on Student Standing;
- must meet the conditions specified in their letter of readmission to be allowed to continue in their program;
- should see their departmental adviser to discuss their course selection.

**Interim Unsatisfactory/Unsatisfactory Standing**
Students in interim unsatisfactory standing (at the end of the Fall term):
- may continue in their program;
- should evaluate their course load and reduce it as appropriate;
- are strongly advised to consult an academic adviser, before the withdrawal deadlines, about their course selection for the Winter term.

Students in unsatisfactory standing:
- have failed to meet the minimum standards set by the faculties;
- may not continue in their program, and their registration will be cancelled.

Students will be placed in unsatisfactory standing:
- if their CGPA falls or remains below 1.50.
- if their TGPA in the Fall of Winter falls below 2.50 and their CGPA is below 2.00 and if they were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing;
- if they were previously in unsatisfactory standing and were readmitted to the Faculty by the Associate Dean (Student Affairs) or the Committee on Student Standing but have not satisfied the conditions specified in the letter of readmission.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Student Affairs) no later than July 15 for readmission to the Fall term and November 15 for the Winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean (Student Affairs) for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

**Incomplete Standings**
- Standing awaits deferred exam.
- Must clear K’s, L’s or Supplementals.
- Standing Incomplete.

Students with incomplete standings (in the Winter or Summer term):
- may register for the Fall term, but their standing must be resolved by the end of the course change period for that term.
Students:
• may continue in the program if incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing;
• may not continue in their program and their registration will be cancelled if standing changes to unsatisfactory standing.

Students whose standing changes to unsatisfactory:
• may ask for permission to continue in their program;
• must make a request to the Associate Dean (Student Affairs) as soon as they are placed in unsatisfactory standing;
• must provide proof of extenuating circumstances that affected academic performance (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

Standing decisions will be made only once incomplete marks have been cleared. However, at the end of the Winter term, students with a mark of K or L will be placed in the appropriate standing in June, if the outstanding mark in the course will not affect their result. For more information about incomplete grades, please refer to “Incomplete Grades” in section 4.6.1.

4.10 Awards and Honorary Designations

4.10.1 Honours and First-Class Honours

Departments may recommend to the Faculty that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:
• students must complete all requirements imposed by the department;
• for Honours, the CGPA at graduation must be at least 3.00;
• for First-Class Honours, the CGPA at graduation must be 3.50 or better;
• some departments have additional requirements which must be met before students are recommended for Honours or First-Class Honours (see the departmental entries).

Students in an Honours program whose program GPA or CGPA is below 3.00, or who did not satisfy certain additional program requirements, must consult their adviser to determine if they are eligible to graduate in a program other than Honours.

4.10.2 Distinction and Great Distinction

Students in the Faculty or the Multi-track programs may be awarded their degrees with Distinction or Great Distinction under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;
• for Distinction, the CGPA at graduation must be 3.30 to 3.49;
• for Great Distinction, the CGPA at graduation must be at least 3.50:
• these designations may be withdrawn in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Arts.

4.10.3 Dean’s Honour List

The designation Dean’s Honour List may be awarded to a graduating student under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;
• students must be among the top 10% of the Faculty’s graduating class of students; this calculation is based on the CGPA;
• this designation may be withdrawn in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Arts.

The designation Dean’s Honour List may be awarded at the end of each academic year to continuing students under the following conditions:
• students must have completed at least 27 graded credits during the academic year to be considered;
• students must be among the top 10% of the Faculty. This calculation is based on the sessional GPA (i.e. the combined GPA for the Fall and Winter terms).

4.10.4 Medals and Prizes

Various medals, scholarships, and prizes are open to continuing and graduating students. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available from the Admissions, Recruitment and Registrar’s Office or on the Web, www.mcgill.ca. Application may be required for some scholarships.

4.11 Programs in the Faculty

4.11.1 Major Concentrations

African Studies, page 79
Anthropology, page 81
Art History, page 83
Canadian Studies, page 85
Classics, page 89
Computing, Foundations of [see Computer Science], page 91
East Asian Studies, page 93
Economics, page 97
English – Literature, page 100
English – Drama and Theatre, page 101
English – Cultural Studies, page 101
Geography, page 107
Geography (Urban Systems), page 108
German Language and Literature, page 111
German Literature and Culture, page 111
German Studies, Contemporary, page 110
Hispanic Languages, page 114
Hispanic Literature and Culture, page 114
History, page 115
Humanistic Studies, page 117
International Development Studies, page 118
Italian Civilization, page 121
Italian Language and Literature, page 120
Jewish Studies, page 122
Latin-American Studies, page 125
Linguistics, page 127
Mathematics, page 129
Middle East Studies, page 131
Music, page 132
North American Studies, page 134
Philosophy, page 136
Philosophy and Western Religions, page 138
Political Science, page 144
Psychology, page 146
Quebec Studies, page 148
There are two types of Joint Honours Programs available in the Faculty of Arts:

1. fully integrated programs such as Mathematics and Computer Science, and Economics and Finance;
2. programs that are created by combining the Joint Honours Program components from two Arts disciplines. Students must register for both Joint Honours Program components. Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Students can choose Joint Honours Program components from any two of the following disciplines:

- Anthropology, page 82
- Art History, page 83
- Canadian Studies, page 88
- Classics, page 89
- East Asian Studies, page 96
- Economics, page 98
- English – one of: Cultural Studies, page 103; Drama and Theatre, page 102; or Literature, page 102
- Geography, page 109
- German Studies, page 112
- Hispanic Studies, page 114
- History, page 115
- International Development Studies, page 118
- Italian Language and Literature, page 121
- Jewish Studies, page 123
- Langue et littérature françaises – one of: Lettres, page 106; or Lettres et traduction, page 106
- Linguistics, page 128
- Mathematics, page 130
- Middle East Studies, page 131
- Philosophy, page 137
- Philosophy and Western Religions, page 139
- Political Science, page 144
- Psychology, page 147
- Religious Studies, page 153
- Russian, page 157
- Sociology, page 164
- Women’s Studies, page 166
Langue et littérature françaises – Théorie et critique littéraires, page 105
Linguistics, page 127
Mathematics, page 129
Middle East Studies, page 130
Middle East Languages, page 131
Music, page 132
Music Technology, page 132
North American Studies, page 134
Philosophy, page 136
Philosophy and Western Religions, page 138
Political Science, page 141
Political Science: Canada/Québec, page 142
Political Economy [see Political Science], page 143
Politics, Law and Society [see Political Science], page 143
Psychology, page 145
Quebec Studies, page 148
Russian, page 155
Russian Civilization, page 155
Science for Arts Students, page 157
Scriptural Languages [see Religious Studies], page 151
Sexual Diversity Studies, page 160+ new
Social Studies of Medicine, page 160
Sociology, page 164
South Asia [see Political Science], page 143
Statistics [see Mathematics and Statistics], page 129
Women’s Studies, page 165
World Religions [see Religious Studies], page 150

4.12 Academic Programs

4.12.1 First-Year Seminars
See Course section for descriptions.
ECON 199 FYS: Aspects of Globalization
FREN 199 FYS: Littérature française
GERM 197 FYS: Images of Otherness
JWST 199 FYS: Images - Jewish Identities
SSMD 199 FYS: Mind-Body Medicine

4.12.2 General Faculty Courses

4.12.2.1 Arts Educational Technology (ARET)
The Faculty of Arts Computer Services (FACS) offers an elementary computing course, ARET 150 (1 credit).
FACS also operates the Faculty of Arts Computer Laboratory, which offers a wide range of services to the Faculty. The labs provide access to the Internet, the library catalogue and Canadian Census data, and some other electronic data stored in various locations on campus. The Teaching Lab provides a venue for training in specialized graphic and statistical software, and for other course-related computerized teaching tools. Standard word-processing, statistical and spreadsheet software is available, as well as specialized desk-top publishing software. Laser printing, scanning and colour printing are available for nominal fees.

NB: ARET 150 is not open to Science, Management or Engineering students, or to Arts students registered in Computer Science programs, or in Mathematics and Computer Science programs. Credit will not be given for ARET 150 if taken concurrently with or after COMP 100, COMP 102, COMP 202, COMP 203, COMP 208, COMP 250, EDPT 200 or MGCR 331.

4.12.3 Faculty of Arts Internship Program
Several departments in the Faculty of Arts offer undergraduate students the opportunity to earn university credit while gaining experience in areas relevant to their fields of study. Open to U2 and U3 students, normally after completing 30 credits of a 90 credit program or 45 credits of a 96 to 120 credit program, normally with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. Arts internships involve a minimum of 150 hours of work with an approved host institution or organization. Students are required to submit a major topical paper that discusses an aspect of the internship from an academic perspective.

For more information about the Faculty of Arts Internship Program, please refer to www.mcgill.ca/arts-internships.

4.12.4 Field Studies and Study Abroad Programs
The Faculty of Arts offers students many field studies and study abroad opportunities. For more information, please refer to section 14, "Field Studies and Study Abroad Opportunities" of this calendar.

4.12.5 African Studies Program (AFRI)
General Inquiries:
3715 Peel Street, Room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ines.scharwweber@mcgill.ca
Website: www.mcgill.ca/africanstudies

Program Chair — M. Echenberg (History)
Program Committee:
K. Fallon (Sociology), J. Galaty (Anthropology), J. Jorgensen (Desautels Faculty of Management), T. Meredith (Geography)

MINOR CONCENTRATION IN AFRICAN STUDIES (Expandable) (18 credits)
A Minor Concentration in African Studies is available for those students majoring in a discipline of the Faculty of Arts who wish to acquire interdisciplinary knowledge of Africa.

Required Course (3 credits)
AFRI 598 Research Seminar in African Studies

Complementary Courses (15 credits)
To be selected from the courses listed below. Priority should be given to key African courses, designated with an asterisk (*), whenever they are offered.

MAJOR CONCENTRATION IN AFRICAN STUDIES (36 credits)
The Major Concentration in African Studies provides students with an interdisciplinary approach to the study of the African continent.

Students wishing to major in African Studies should consult the Program Coordinator at the beginning of their first academic year. In the African Studies Major Concentration, students will be encouraged to identify an area within a discipline of the Faculty, taking as many relevant courses as possible in that field.

Required Course (3 credits)
AFRI 596 Research Seminar in African Studies

Complementary Courses (33 credits)
To be selected from the courses listed below. Priority should be given to key African courses, designated with an asterisk (*), whenever they are offered.

COMPLEMENTARY COURSE LIST
These courses are either on African subjects or have significant African content.

If courses listed below are not available in any particular year, modifications to the Programs may be made with the approval of the Program Coordinator.

Students who wish program credit for other courses with African content, or in which they have pursued individual research or written papers on African topics, should seek approval from the Program Coordinator. African content may be found in certain courses offered in Islamic Studies and Religious Studies.
AFRICAN STUDIES
AFRI 480 Special Topics
AFRI 481 Special Topics

ANTHROPOLOGY
ANTH 212 Anthropology of Development
ANTH 301 Nomadic Pastoralists
ANTH 321* People and Cultures of Africa
ANTH 322* Social Change in Modern Africa
ANTH 335 Ancient Egyptian Civilization
ANTH 345 Prehistory of Africa
ANTH 412 Topics: Anthropological Theory
ANTH 415 Problems in African Anthropology
ANTH 439 Theories of Development
ANTH 445 Property and Land Tenure

ECONOMICS
ECON 208 Microeconomic Analysis and Applications
ECON 313 Economic Development 1
ECON 416 Topics in Economic Development 2

ENGLISH
ENGL 352 Theories of Difference
ENGL 421* African Literature

FRENCH
FREN 312 Francophonie 2

GEOGRAPHY
GEOG 216 Geography of the World Economy
GEOG 408 Geography of Development
GEOG 410 Geography of Underdevelopment: Current Problems

HISTORY
HIST 200* Introduction to African History
HIST 201* Modern African History
HIST 374 West Africa Since 1800
HIST 381 Colonial Africa: Health/Disease
HIST 382 History of South Africa
HIST 396 Disease in Africa Since 1960
HIST 444 British Colonies: Africa and Asia
HIST 486D1 Topics: African Social History
HIST 486D2 Topics: African Social History

ISLAMIC STUDIES
ISLA 410 History: Middle-East 1798-1918
ISLA 521D1 Introductory Arabic
ISLA 521D2 Introductory Arabic

POLITICAL SCIENCE
POLI 227 Developing Areas/Introduction
POLI 300D1 Developing Areas/Revolution
POLI 300D2 Developing Areas/Revolution
POLI 471 Democracy in the Modern World
POLI 472 Developing Areas/Social Movements
POLI 522 Seminar: Developing Areas

SOCILOGY
SOCI 370 Sociology: Gender & Development
SOCI 484 Emerging Democratic States
SOCI 550 Developing Societies

AFRICAN FIELD STUDY SEMESTER

See “African Field Study Semester” in section 14.2.1 for details of the 15-credit interdisciplinary AFSS.

4.12.6 Anthropology (ANTH)

Stephen Leacock Building, Room 717
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-4300
Fax: (514) 398-7476
Website: www.mcgill.ca/anthropology

Chair — Michael S. Bisson

Professors
Donald W. Attwood; B.A.(Calif.), Ph.D.(McG.)
Laurel Bossen; B.A.(Barnard), M.A., Ph.D.(SUNY, Albany) (on leave 2006-07)
Colin Chapman; B.Sc., M.A., Ph.D.(Alta.) (joint appoint. with McGill School of Environment)
Margaret Lock; B.Sc.(Leeds), M.A., Ph.D.(Calif.), F.R.S.C. (joint appoint. with Social Studies of Medicine)
Jérôme Rousseau; B.Sc., M.A.(Montr.), Ph.D.(Cant.)
Philip Carl Salzman; B.A.(Ariz.), M.A., Ph.D.(Chic.)
Bruce G. Trigger; B.A.(Tor.), Ph.D.(Yale), F.R.S.C. (James McGill Professor)
Allan Young; B.A.(Penn.), M.A.(Wash.), Ph.D.(Penn.) (joint appoint. with Social Studies of Medicine)

Associate Professors
Michael S. Bisson; B.A., Ph.D.(Calif.)
John G. Galaty; B.A.(Trin. Coll., Tor.), M.A., Ph.D.(Chic.) (on leave 2006-07)
Carmen Lambert; B.A.(Montr.), M.A., Ph.D.(McG.)
Ronald W. Niezen; B.A.(Br. Col.), M.Phil., Ph.D.(Camb.)
Kristin Norgat; B.A.(Vic., BC), M.Phil., D.Phil.(Cant.)
James M. Savelle; B.Sc., M.Sc.(Ott.), M.A.(Ark.), Ph.D.(Alta.)
Colin H. Scott; B.A.(Regina), M.A., Ph.D.(McG.) (on leave 2006-07)

Assistant Professors
André Costopoulos; B.A.(McG.), M.A.(Montr.), Ph.D.(Oulu)
Nicole C. Couture; B.A.(Trent), M.A., Ph.D.(Chic.)
Sandra T. Hyde; B.A.(Calif.-Santa Cruz), M.P.H.(Hawaii), Ph.D.(Calif., Berk.)

Setrag Manoukian; B.A.(Venezia), M.A., Ph.D.(Mich.) (joint appoint. with Islamic Studies)

Associate Members
Ellen Corin; Ph.D.(Louvain)
Vinh-Kim Nguyen; B.Sc.(McG.), M.D.(Montr.), M.A., Ph.D.(McG.)

The Honours Program and Major Concentration in Anthropology emphasize the similarity and diversity of human behaviour, understanding of social and cultural systems, and the processes of socio-cultural change from human origins to the present day. Within Anthropology, the Department concentrates on the fields of Archaeology and Socio-Cultural Anthropology.

Our programs serve as a useful background for those who are planning a career in law, foreign service, community organization, public administration, journalism, and teaching and research in social sciences and humanities. The Multi-track Major and Minor Concentrations provide students with a solid grounding in anthropology as a whole, or in selected topical or sub-disciplinary areas, while allowing students to follow programs in other departments that suit their needs and interests. The Honours program provides a greater focus on Anthropology with substantial breadth and depth. The completion of an Honours program is an asset when applying to graduate or professional schools.

Students should have a CGPA of at least 3.00 to register in an Honours or Joint Honours Program after their first year, and maintain it to graduate with an Honours Degree. Graduation with a First Class Honours or Joint Honours Degree requires a CGPA of 3.50 or better.

CORE COURSES

Core courses in Anthropology (350 level) provide students with essential knowledge of method and theory. They are more intensive than other 300-level courses, and are restricted to Anthropology program students in U2 standing or above.

ANTHROPOLOGY MINOR CONCENTRATIONS

The Minor Concentration in Anthropology consists of 18 credits (six 3-credit courses) in the discipline and is designed to complement students’ study in related disciplines or in interdisciplinary programs. The degree may enhance the employment profile of graduating students wishing to work in social services, in multicultural or multiethnic settings, in international development, aborig-
Students should register in the Minor Concentration prior to their second year of study at McGill. No credits taken in a Minor may overlap with another degree program. The Minor Concentration may be expanded into the single Anthropology Major Concentration.

The Minor Concentration in Anthropological Archaeology and the Minor Concentration in Socio-Cultural Anthropology were retired at the end of 2004. Students enrolled in either one at that time should consult with a Departmental adviser.

MINOR CONCENTRATION IN ANTHROPOLOGY (Expandable) (18 credits)
The Minor Concentration in Anthropology permits students to explore the development and diversity of human beings and human society and culture through courses in human evolution, prehistoric archaeology and socio-cultural anthropology. Students may include courses in all of these fields, or may focus on one or two.

Complementary Courses (18 credits)
6 to 9 credits from the following list:

**Anthropology**
- ANTH 201 (3) Prehistoric Archaeology
- ANTH 202 (3) Comparative Cultures
- ANTH 203 (3) Human Evolution
- ANTH 204 (3) Symbol Systems and Ideologies
- ANTH 205 (3) Cultures of the World
- ANTH 206 (3) Environment and Culture
- ANTH 207 (3) Ethnography through Film
- ANTH 208 (3) Evolutionary Anthropology
- ANTH 209 (3) Anthropology of Religion
- ANTH 212 (3) Anthropology of Development
- ANTH 214 (3) Violence, Warfare, Culture
- ANTH 221 (3) Introduction to Urban Anthropology
- ANTH 222 (3) Legal Anthropology
- ANTH 227 (3) Medical Anthropology

3 credits from either one of the following area groups:

**Ethnography**
- ANTH 306 (3) Native Peoples' History in Canada
- ANTH 315 (3) Society/Culture: East Africa
- ANTH 321 (3) People and Cultures of Africa
- ANTH 322 (3) Social Change in Modern Africa
- ANTH 326 (3) Peoples of Central and South America
- ANTH 327 (3) Peoples of South Asia
- ANTH 337 (3) Mediterranean Society and Culture
- ANTH 340 (3) Middle Eastern Society and Culture
- ANTH 348 (3) Environment/Development: Africa
- ANTH 422 (3) Contemp. Latin Amer Cult & Soc
- ANTH 427 (3) Social Change in South Asia
- ANTH 436 (3) North American Native Peoples
- ANTH 440 (3) Chinese Culture & Diaspora

**Archaeology**
- ANTH 305 (3) Arctic Prehistory
- ANTH 309 (3) Prehistory of Northern Europe
- ANTH 317 (3) Prehistory of North America
- ANTH 319 (3) Inka Arch. & Ethnohistory
- ANTH 331 (3) Prehistory of East Asia
- ANTH 335 (3) Ancient Egyptian Civilization
- ANTH 345 (3) Prehistory of Africa
- ANTH 347 (3) Paleolithic Cultures
- ANTH 348 (3) Early Prehistory: New World

6 to 9 credits from any 300-, 400-, or 500-level Anthropology courses.

MAJOR CONCENTRATION
The Major Concentration is especially appropriate for students who aim to take courses across several sub-disciplinary or topical concentrations, and for whom specialization is premature. There are no prerequisites for admission to the Major Concentration in Anthropology. Students are encouraged to take a course in quantitative methods (listed under the Honours program below), but this course cannot count as part of this Concentration.

MAJOR CONCENTRATION IN ANTHROPOLOGY (36 credits)
[Addition to course lists under consideration for September 2006. Go to www.mcgill.ca (Course Calendars) in July for details.]

Complementary Courses (36 credits)
6 credits selected from the 200-level courses in Anthropology
6 credits, two Core courses (350-level) selected from:
- ANTH 352 (3) History of Anthropological Theory
- ANTH 355 (3) Theories of Culture and Society
- ANTH 357 (3) Archaeological Methods
- ANTH 358 (3) The Process of Anthropological Research
- ANTH 359 (3) History of Anthropology

6 credits, two Area courses selected from:

**Ethnography**
- ANTH 306 (3) Native Peoples' History in Canada
- ANTH 315 (3) Society/Culture: East Africa
- ANTH 321 (3) People and Cultures of Africa
- ANTH 322 (3) Social Change in Modern Africa
- ANTH 326 (3) Peoples of Central and South America
- ANTH 327 (3) Peoples of South Asia
- ANTH 337 (3) Mediterranean Society and Culture
- ANTH 338 (3) Native Peoples of North America
- ANTH 340 (3) Middle Eastern Society and Culture
- ANTH 415 (3) Problems in African Anthropology
- ANTH 416 (3) Environment/Development: Africa
- ANTH 422 (3) Contemp. Latin Amer Cult & Soc
- ANTH 427 (3) Social Change in South Asia
- ANTH 436 (3) Native Peoples of North America
- ANTH 500 (3) Chinese Culture & Diaspora

**Archaeology**
- ANTH 305 (3) Arctic Prehistory
- ANTH 309 (3) Prehistory of Northern Europe
- ANTH 317 (3) Prehistory of North America
- ANTH 319 (3) Inka Arch. & Ethnohistory
- ANTH 331 (3) Prehistory of East Asia
- ANTH 335 (3) Ancient Egyptian Civilization
- ANTH 345 (3) Prehistory of Africa
- ANTH 347 (3) Paleolithic Cultures
- ANTH 348 (3) Early Prehistory: New World
- ANTH 552 (3) Problems: Prehistory North Eastern America

6 credits, two 400-level Anthropology courses
12 credits of additional Anthropology courses of which no more than 6 credits may be at the 200 level

HONOURS IN ANTHROPOLOGY (60 credits)

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honours thesis</td>
<td>6</td>
</tr>
<tr>
<td>300- and 400-level courses in other departments (subject to departmental approval)</td>
<td>max. 9</td>
</tr>
<tr>
<td>200-level courses</td>
<td>max. 21</td>
</tr>
<tr>
<td>Core courses (350-level)</td>
<td>max. 9</td>
</tr>
<tr>
<td>400-level courses in Anthropology</td>
<td>9</td>
</tr>
<tr>
<td>Honours thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Nine of the 60 credits of the Honours program can be courses at the 300 level or above given by other departments, if they are directly related to the student's focus of study within Anthropology.
and are approved by the student’s adviser on the Undergraduate Committee of the Anthropology Department.

The following guidelines represent a program recommended, though not required, for Honours students. It is recommended that students gain a comprehensive background in anthropological methods and theory by taking one history of theory course (ANTH 352 or ANTH 359), two courses dealing with social and cultural theory (ANTH 308, ANTH 314, ANTH 320, ANTH 324, ANTH 333, ANTH 355 or ANTH 412), one course in anthropological research (ANTH 358), one course in research methods (ANTH 357 or ANTH 461) and one course in quantitative methods (SOCI 350, PSYC 204, ECON 317, GEOG 202, or MATH 203) for credit as an Anthropology course. In order to acquire a desirable regional background, students are encouraged to take two area courses, ideally pertaining to two distinct geographical concentrations.

Each student has the opportunity to construct within the Honours program a concentration focused on a particular field of interest, such as prehistory and evolution, cultural systems, social and political organization, or on a particular geographical area, such as Africa, North America, Central and South America, Mediterranean, Middle East, South, East or Southeast Asia. A single paper may be submitted for two courses at the 300-level or above, provided that prior written permission has been received from the professors teaching both courses. It is expected that such papers would be more substantial than one submitted for either course.

In the first year of the program, students should take introductory courses from a range of topics available at the 200-level. Some 300-level courses may also be taken. The objective of the first year is the development of a grasp of the anthropological discipline, and an exposure to a broad selection of topics.

In the second year of the program, students should acquire knowledge of anthropological theories and methods, primarily by taking core courses and other relevant offerings. They should also begin to consider a substantive topic and geographical region of specialization.

The third year of the program should advance the process of specialization within the discipline, through 400-level seminars and preparing an Honours Thesis, based on independent research. Permission of an adviser is necessary in order to register for an Honours Thesis in the fall, so students should approach staff before that time to discuss possible topics and gain approval. The required thesis must be a six-credit course. It may be completed in a single term (ANTH 490 or ANTH 491) or in two consecutive terms (ANTH 492D1/ANTH 492D2).

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – ANTHROPOLOGY COMPONENT (36 credits)

<table>
<thead>
<tr>
<th>Minimum number of credits (unless otherwise stated)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint Honours program (Anthropology portion)</td>
<td>36</td>
</tr>
<tr>
<td>Courses above 200-level, Anthropology portion</td>
<td>24</td>
</tr>
<tr>
<td>Core courses in Anthropology (350-level)</td>
<td>9</td>
</tr>
<tr>
<td>400-level courses in Anthropology</td>
<td>6</td>
</tr>
<tr>
<td>Honours thesis (of which 3 credits are normally in the other Joint Honours Program)</td>
<td>6</td>
</tr>
</tbody>
</table>

Students interested in Joint Honours should consult an adviser in the other department for specific course requirements. A form will be supplied by the Anthropology department to keep track of courses required by both departments for the program selected. Students who wish to study Anthropology in two disciplines can combine Joint Honours Program components from two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

For the Honours project, students register for a 3 credit “Special Topic” course (e.g., ANTH 480, ANTH 481, ANTH 482, ANTH 483, ANTH 484, or ANTH 485) in Anthropology, and a similar course (“Honours Thesis” or “Special Topic”) in the other department. For information on the requirements for the other discipline making up the Joint Honours program, consult the department concerned.

For more information on these programs, consult an appropriate adviser on the Undergraduate Committee of the Department, through the Department Office at (514) 398-4300.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

AFRICAN FIELD STUDY SEMESTER The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1 “African Field Study Semester”.

4.12.7 Art History and Communication Studies (ARTH and ENGC)

Arts Building, W-225 (West Wing, top floor)
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Telephone: (514) 398-6541
Fax: (514) 398-7247
Website: www.arts.mcgill.ca/programs/AHCS

Chair — Darin Barney
Director of Graduate Programs in Communication Studies — Jonathan Sterne
Director of Graduate Programs in Art History — Angela Vanhaelen
Director of Undergraduate Programs in Art History — Charmaine Nelson
Director of Undergraduate Programs in Communication Studies — Carrie Rentschler

Emeritus Professors
George Szanto; B.A. (Dart.), Ph.D. (Harv.)

Professors
Marc Raboy; B.Sc., M.A., Ph.D. (McG.)

Associate Professors
Darin Barney; B.A., M.A. (S. Fraser), Ph.D. (Tor.)
Cornelius Borck; M.A., M.D. (Free Univ. Berlin), Ph.D. (Lond.)
David Crowley; B.A. (Johns Hop.), M.Sc. (Penn.), Ph.D. (McG.)
Christine Ross; M.A. (C’dia), Ph.D. (Paris I)
Jonathan Sterne; B.A. (Minn.), A.M., Ph.D. (Ill.-Urbana-Champaign)
Will Straw; B.A. (Car.), M.A., Ph.D. (McG.)
Bronwen Wilson; B.A., M.A. (Br. Col.), Ph.D. (N’western)

Assistant Professors
Jennifer Burman; B.A., C’dia), M.A., Ph.D. (York)
Ting Chang; B.A. (McG.), M.A.(Tor.), Ph.D. (Sussex)
Hajime Nakatani; B.L.A. (Tokyo), M.A. (Lond.), Ph.D. (Chic.)
Charmaine Nelson; B.F.A., M.A. (C’dia), Ph.D. (Manc.)
Carrie Rentschler; B.A. (Minn.), M.A., Ph.D. (Ill.-Urbana-Champaign)
Angela Vanhaelen; B.A. (W. Ont.), M.A., Ph.D. (Br. Col.)

Adjunct Professors
David W. Booth; B.A., M.A., M.Phil, Ph.D. (Tor.)
Johanne Lamoureux; B.A., M.A (Montr.), Ph.D. (E.H.E.S.S., Paris)
Louis De Moura Sobral; M.A., Ph.D. (Louvain)
Constance Naubert-Riser; B.A., M.A. (Ott.), Ph.D. (Lyon III)

In the field of Art History the Department offers comprehensive programs of courses and seminars on the history of the visual arts, material culture, and architecture from antiquity to the present,
focusing primarily on Europe and North America. The works of art and architecture are discussed within their cultural, political, historical, religious, philosophical and social context.

Major and Minor Concentrations, and Honours, Joint Honours and graduate programs are available in Art History. For the most up-to-date information on Department requirements and detailed course descriptions, please visit our Department's website or consult an appropriate Undergraduate adviser through the Departmental Office, Arts Building, Room W-225, (514) 398-6541.

The Department offers two introductory undergraduate courses in the Communication Studies area, as well as programs at the graduate level as described in the Graduate and Postdoctoral Studies Calendar.

Orientation Session for New Students

All new students entering the Art History undergraduate programs are required to attend an information session prior to registration. In 2006, this session will be held on Wednesday, August 30 at 13:30 hours in Arts W-220.

At the meeting, the Academic Adviser will explain the requirements of the Department's programs. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. Afterwards, students will meet individually with an adviser in order to fill out their Minerva Course Selection Form for registration. Students should sign up for advising appointments after the orientation session.

MINOR CONCENTRATION IN ART HISTORY (Expandable)

There are no pre-university requirements for this program.

Required Courses (6 credits)

- ARTH 208 (3) Introductory Seminar in Art History
- ARTH 305 (3) Methods in Art History

Complementary Courses (12 credits)

- 3 credits in Art History at the 200 level
- 9 credits in Art History at the 300 and 400 levels, selected in consultation with the departmental adviser.

Note: courses in studio practice cannot be counted towards the Minor Concentration.

MAJOR CONCENTRATION IN ART HISTORY (36 credits)

There are no pre-university requirements for this program.

Required Courses (6 credits)

- ARTH 208 (3) Introductory Seminar in Art History
- ARTH 305 (3) Methods in Art History

Complementary Courses (30 credits)

- Maximum of 6 credits in Art History at the 200 level, and at least 24 credits in Art History at the 300 and 400 levels to be chosen in the following manner:
  - Minimum 3 credits in Architectural History (II)
  - Minimum 3 credits in Medieval & Renaissance Art (III)
  - Minimum 3 credits in Baroque to 19th Century European Art (IV)
  - Minimum 3 credits in Contemporary Art, Media and Visual Culture (V)

The remaining 12 credits can be chosen from any of the Art History course fields: Methodologies (I), Architectural History (II), Medieval and Renaissance Art (III), Baroque to 19th Century European Art (IV), Contemporary Art, Media and Visual Culture (V).

Note: courses in studio practice cannot be counted towards the Major Concentration.

HONOURS IN ART HISTORY (60 credits)

There are no pre-university requirements for this program.

Students are encouraged to apply for this program after their first year of study at the University and after completion of no less than 12 credits in Art History. Admission is on a competitive basis, since the Department can only accommodate a limited number of students in any given year.

To qualify for the Honours degree, the student must complete the following 60 credits:

**Required Courses (9 credits)**

- ARTH 208 (3) Introductory Seminar in Art History
- ARTH 305 (3) Methods in Art History
- ARTH 400 (3) Selected Methods: Art History

**Complementary Courses (51 credits)**

- 36 credits in Art History courses (ensuring that a wide range of courses are taken)
- 9 credits in Art History at the 400 level
- 6 credits in a foreign language or in courses in one or two related disciplines and selected in consultation with the Honours adviser.

Students are encouraged to take courses in non-Western art when offered. (Note: courses in studio practice cannot be counted toward the Honours requirements.)

The remaining credits of the degree program are chosen by the student in consultation with the Honours adviser.

Honours students must maintain a GPA of 3.30 in their program courses, and according to Faculty regulations, a minimum CGPA of 3.00 in general. In addition to the above requirements, Honours students, according to Faculty regulations, also must complete at least a Minor Concentration (18 credits) in another academic unit.

NB: For students accepted into the Honours program for 1999/2000 and later: Faculty regulations state that Honours students who have not met the Honours requirements at graduation will not be able to graduate with a Major Concentration unless they have completed the requirements for both a Major Concentration and a Minor Concentration in another discipline.

Honours students who plan to proceed to graduate work are strongly encouraged to study a third language other than English and French.

**JOINT HONOURS – ART HISTORY COMPONENT** (36 credits)

There are no pre-university requirements for this program.

Qualified students may submit proposals for Joint Honours in Art History and other related subjects to the Chairs of the departments concerned.

**Required Courses (6 credits)**

- ARTH 208 (3) Introductory Seminar in Art History
- ARTH 305 (3) Methods in Art History

**Complementary Courses (30 credits)**

- 24 credits in Art History to be chosen in the following manner:
  - Minimum 3 credits in Architectural History (II)
  - Minimum 3 credits in Medieval & Renaissance Art (III)
  - Minimum 3 credits in Baroque to 19th Century European Art (IV)
  - Minimum 3 credits in Contemporary Art, Media and Visual Culture (V)

- 6 credits in Art History at the 400 level

Note: courses in studio practice cannot be counted towards the Joint Honours requirements.

Joint Honours students must maintain a GPA of 3.30 in their program courses and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their research project (if applicable).

**ART HISTORY COURSE FIELDS**

Art History courses are divided into five fields:

I. Methodologies
II. Architectural History
III. Medieval and Renaissance Art
IV. Baroque to 19th Century European Art
V. Contemporary Art, Media and Visual Culture
I. Methodologies
ARITH 208 (3) Introductory Seminar in Art History
ARITH 305 (3) Methods in Art History
ARITH 351 (3) Vision and Visuality in Art History
ARITH 352 (3) Feminism in Art and Art History
ARITH 400 (3) Selected Methods: Art History

II. Architectural History
ARITH 204 (3) Introduction to Medieval Art and Architecture
ARITH 207 (3) Early Modern Art (1400-1700)
ARITH 223 (3) Introduction to Italian Renaissance Art
ARITH 312 (3) Medieval Art
ARITH 324 (3) Sixteenth-Century Art in Italy
ARITH 325 (3) Visual Culture Renaissance Venice
ARITH 343 (3) Northern Renaissance Art

III. Medieval and Renaissance Art
ARITH 204 (3) Introduction to Medieval Art and Architecture
ARITH 207 (3) Early Modern Art (1400-1700)
ARITH 312 (3) Medieval Art
ARITH 324 (3) Sixteenth-Century Art in Italy
ARITH 325 (3) Visual Culture Renaissance Venice
ARITH 343 (3) Northern Renaissance Art

IV. Baroque to 19th Century European Art
ARITH 204 (3) Introduction to Medieval Art and Architecture
ARITH 207 (3) Early Modern Art (1400-1700)
ARITH 223 (3) Introduction to Italian Renaissance Art
ARITH 312 (3) Medieval Art
ARITH 324 (3) Sixteenth-Century Art in Italy
ARITH 325 (3) Visual Culture Renaissance Venice
ARITH 343 (3) Northern Renaissance Art

V. Contemporary Art, Media & Visual Culture
ARITH 400 (3) Selected Methods: Art History
ARITH 352 (3) Feminism in Art and Art History
ARITH 351 (3) Vision and Visuality in Art History
ARITH 352 (3) Feminism in Art and Art History
ARITH 400 (3) Selected Methods: Art History

Special Courses
ARITH 209 (3) Introduction to Ancient Art and Architecture
ARITH 215 (3) Introduction to Chinese Art
ARITH 353 (3) Selected Topics in Art History 1
ARITH 354 (3) Selected Topics in Art History 2
ARITH 374 (3) Studies in Later 18th and 19th Century Art
ARITH 379 (3) Studies: Modern Art and Theoretical Problems
ARITH 420 (3) Selected Topics in Art and Architecture 1
ARITH 421 (3) Selected Topics in Art and Architecture 2
ARITH 422 (3) Selected Topics in Art and Architecture 3
ARITH 447 (3) Independent Research Course
ARITH 457 (3) Brushwork in Chinese Painting
ARITH 473 (3) Studies in 17th and Early 18th Century Art
ARITH 474 (3) Studies in Later 18th and 19th Century Art
ARITH 479 (3) Studies: Modern Art and Theoretical Problems

ARTH 490 (3) Museum Internship

Note: In addition to architectural courses given by the Department, Program students are encouraged to consider courses given in the School of Architecture and the Departments of East Asian Studies and Philosophy which may, upon consultation with the Department, be regarded as fulfilling part of the requirements.

ARTH 252 Introduction to Architectural History 1 [II]
ARTH 253 Introduction to Architectural History 2 [II]
EAST 303 Current Topics: Chinese Studies 1 [III]
PHIL 336 Aesthetics [I]
PHIL 436 Aesthetics 2 [II]

4.12.8 Canadian Ethnic Studies Minor Concentration

Chair — Morton Weinfeld
Department of Sociology
E-mail: morton.weinfeld@mcgill.ca
Leacock 714, (514) 398-6853

Advisory Committee
G. Burgos (Sociology), Ian H. Henderson (Religious Studies), A. Hsia (German Studies), S. T. Saideman (Political Science), J. Torczyner (Social Work), U. Turgay (Islamic Studies)

The Minor Concentration in Canadian Ethnic Studies is an interdisciplinary program administered by the Faculty of Arts. It is affiliated with the McGill Institute for the Study of Canada. The Concentration can be taken in conjunction with any primary program in Arts or Science. It offers to undergraduate students a structured framework in which to appreciate the range of social scientific approaches to the study of ethnic diversity in Canada. The term "ethnic" is used in a very broad sense, to include the full spectrum of ethnic, cultural, aboriginal, linguistic, and racial groups in Canada.

The Minor Concentration is open to Arts students with the consent of the Chair. Students pursuing further graduate and professional training or employment in a variety of areas will find familiarity with issues relating to cultural diversity to be an asset. These include the fields of health, social services, education, law, law enforcement, human resources and personnel; occupations in government agencies, in ethnocultural and other non-governmental organizations; and graduate work in all the social sciences.

The Canadian Ethnic Studies Concentration will also sponsor programs of interest for the McGill Community during the course of the year. Students interested in registering in this program should contact the Chair.

MINOR CONCENTRATION IN CANADIAN ETHNIC STUDIES
(18 credits)

Required Courses (9 credits)
SOCI 210 (3) Sociological Perspectives
SOCI 230 (3) Sociology of Ethnic Relations
SOCI 476 (3) Canadian Ethnic Studies Seminar

Of the 18 credits, selected with due regard to Faculty guidelines and course prerequisites, at least 9 must be above the 200 level.

Complementary Courses (9 credits)
9 credits, at least 6 of which must be 300-level or higher, selected from two of the following departmental lists.

Anthropology
ANTH 202 (3) Comparative Cultures
ANTH 205 (3) Cultures of the World
ANTH 306 (3) Native Peoples’ History in Canada
ANTH 320 (3) Social Evolution
ANTH 333 (3) Class and Ethnicity
ANTH 338  (3)  Native Peoples of North America
ANTH 436  (3)  North American Native Peoples

**Geography**
GEOG 301  (3)  Geography of Nunavut
GEOG 331  (3)  Urban Social Geography
GEOG 424  (3)  Europe: Places and Peoples

**History**
HIST 203  (3)  Survey: Canada since 1867
HIST 371  (3)  Race/Ethnicity: U.S. since 1800
HIST 408  (3)  Colonialism and Native Peoples
HIST 423  (3)  Topics: Migration and Ethnicity
HIST 424  (3)  Asian Diaspora: Chinese Overseas
HIST 471D1  (3)  Canadian Immigration History
HIST 471D2  (3)  Canadian Immigration History

**Political Science**
POLI 226  (3)  La vie politique québécoise
POLI 321  (3)  Issues: Canadian Public Policy
POLI 336  (3)  Le Québec et le Canada
POLI 370  (3)  Révolution tranquille/changements politiques/Nouveau Québec de 1960

**Sociology**
SOCI 234  (3)  Population and Society
SOCI 327  (3)  Jews in North America
SOCI 333  (3)  Social Stratification
SOCI 353  (3)  Inequality and Social Conflict
SOCI 366  (3)  Social Change in the Caribbean
SOCI 519  (3)  Sociology of Ethnic Conflict
SOCI 520  (3)  Migration and Immigrant Groups
SOCI 529  (3)  Social Inequality and Public Policy

**Social Work**
SWRK 400  (3)  Policy and Practice for Refugees

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**4.12.9 Canadian Studies Program (CANS)**

McGill Institute for the Study of Canada
3463 Peel Street
Montreal, QC H3A 1W7
Telephone: (514) 398-8346
Fax: (514) 398-7336
Website: www.misc-iecm.mcgill.ca

**Director — Antonia Maioni**

**Curriculum and Program Sub-Committee:**
- Nathalie Cooke (English)
- Victoria Dickenson (McCord Museum)
- Jane Everett (French Language and Literature)
- Antonia Maioni (MISC)
- Christopher Manfredi (Political Science)
- David McKnight (Libraries)
- Gail Schmura (Geography)
- Bruce Trigger (Anthropology)
- One representative from CSAUS
- One representative from GSGSA

**Program Director and Student Adviser — Nathalie Cooke**

Canadian Studies will be of value to any student considering a career in education, law, business, government, social service, human resources, journalism and the media, and graduate work in the social sciences and humanities.

The Canadian Studies Major and Minor Concentrations seek to provide students with a comprehensive multidisciplinary view of the nature and growth of Canada. Students completing a Major Concentration in Canadian Studies are encouraged to complete a second Major Concentration in a discipline such as Anthropology, Economics, English Literature, History, Political Science or Sociology as a complement to their Canadian Studies requirements. The Minor Concentration may be taken in conjunction with any primary program in Arts or Science.

Students interested in pursuing Canadian Studies at the graduate level should consider the Joint Honours Concentration, which includes the Canadian Studies Component or the Honours Concentration.

**MINOR CONCENTRATION IN CANADIAN STUDIES (Expandable) (18 credits)**

**Required Course** (3 credits)
- CANS 200  (3)  Introduction to the Study of Canada

**Complementary Courses** (15 credits)
9 credits chosen from Canadian Studies (CANS) courses
6 credits selected from another discipline

**MAJOR CONCENTRATION IN CANADIAN STUDIES (36 credits)**

**Required Course** (3 credits)
- CANS 200  (3)  Introduction to the Study of Canada

**Complementary Courses** (33 credits*)
9 credits chosen from Canadian Studies (CANS) courses
3 credits in History
6 credits in Anthropology, Economics, Geography, Political Science or Sociology

6 additional credits from the Complementary Courses at the 300 level or above

* at least 3 of the 33 credits must be at the 400 level

**COMPLEMENTARY COURSE LIST**

**Anthropology**
- ANTH 306  (3)  Native Peoples’ History in Canada
- ANTH 336  (3)  Ethnohistory: North Eastern North America

**Art History**
- ARTH 479  (3)  Studies: Modern Art and Theoretical Problems

**Economics**
- ECON 219  (3)  Current Economic Problems: Topics
- ECON 223  (3)  Political Economy of Trade Policy
- ECON 305  (3)  Industrial Organization
- ECON 306D1  (3)  Labour Economics and Institutions
- ECON 306D2  (3)  Labour Economics and Institutions
- ECON 405  (3)  Natural Resource Economics
- ECON 406  (3)  Topics In Economic Policy
- ECON 408D1  (3)  Public Sector Economics
- ECON 408D2  (3)  Public Sector Economics
- ECON 434  (3)  Current Economic Problems
- ECON 440  (3)  Health Economics
- ECON 480  (3)  Research Project
- ECON 481  (3)  Research Project

**English**
- ENGL 229  (3)  Canadian Literature 2
- ENGL 328  (3)  Development of Canadian Poetry 1
- ENGL 339  (3)  Canadian Prose Fiction 2
- ENGL 345  (3)  Literature and Society
ENGL 409 (3) Studies in a Canadian Author
ENGL 410 (3) Theme or Movement Canadian Literature
ENGL 415 (3) Studies in 20th Century Literature 2
ENGL 419 (3) Studies in 20th Century Literature
ENGL 499 (3) Departmental Seminar

French as a Second Language
FRSL 207 (6) Elementary French
FRSL 208 (6) Intensive Elementary French
FRSL 211 (6) Oral and Written French 1
FRSL 212 (3) Oral and Written French 1
FRSL 215 (6) Oral and Written French 1 - Intensive
FRSL 216 (3) Découvrions Montréal en français
FRSL 302 (3) Listening Comprehension and Oral Expression 1
FRSL 303 (3) Listening Comprehension and Oral Expression 2
FRSL 321 (6) Oral and Written French 2
FRSL 322 (3) Oral and Written French 2
FRSL 325 (6) Oral and Written French 2 - Intensive
FRSL 326 (3) Découvrions le Québec en français
FRSL 332 (3) Intermediate French: Grammar
FRSL 333 (3) Intermediate French: Grammar
FRSL 407 (3) Compréhension et expression orales
FRSL 408 (3) Français oral: Textes et expressions
FRSL 431 (6) Français fonctionnel avancé
FRSL 432 (3) Français fonctionnel
FRSL 445 (3) Français fonctionnel, écrit 1
FRSL 446 (3) Français fonctionnel, écrit 2
FRSL 449 (3) Le Français des médias
FRSL 455 (3) Grammaire et création

French Language and Literature
FREN 252 (3) Littérature québécoise
FREN 315 (3) Le cinéma québécois
FREN 375 (3) Théâtre québécois
FREN 382 (3) Le roman québécois 2
FREN 487 (3) L'essai québécois

Geography
GEOG 217 (3) The Canadian City
GEOG 272 (3) Earth's Changing Surface
GEOG 301 (3) Geography of Nunavut
GEOG 309 (3) Geography of Canada
GEOG 311 (3) Canada - A Geo-Economic Perspective
GEOG 494 (3) Urban Field Studies
GEOG 495 (3) Field Studies – Physical Geography
GEOG 497 (3) Ecology of Coastal Waters
GEOG 499 (3) Subarctic Field Studies
GEOG 502 (3) Geography of Northern Development

History
HIST 202 (3) Survey: Canada to 1867
HIST 203 (3) Survey: Canada since 1867
HIST 303 (3) History of Quebec
HIST 322 (3) Canada: American Presence since 1939
HIST 333 (3) History of New France: Part 1
HIST 334 (3) History of New France: Part 2
HIST 363 (3) Canada 1870-1914
HIST 370 (3) Canadian Party Politics 1867-2000
HIST 395 (3) Canadian Military Experience
HIST 403 (3) History of Quebec Institutions
HIST 423 (3) Topics: Migration and Ethnicity
HIST 429 (3) Topics: Canadian Family History
HIST 483D1 (3) Topics: Canadian Social History
HIST 483D2 (3) Topics: Canadian Social History

Linguistics
LING 320 (3) Sociolinguistics 1
LING 350 (3) Linguistic Aspects of Bilingualism
LING 521 (3) Dialectology

Music
MUHL 391 (3) Canadian Music

Political Science
POLI 221 (3) Government of Canada
POLI 222 (3) Political Process and Behaviour in Canada
POLI 226 (3) La vie politique québécoise
POLI 378 (3) The Canadian Judicial Process
POLI 411 (3) Immigration and Multiculturalism in Canada
POLI 412 (3) Canadian Voting/Public Opinion
POLI 446 (3) Les politiques publiques au Québec
POLI 447 (3) Canadian Constitutional Politics
POLI 478 (3) The Canadian Constitution

Québec, Études sur le
QCST 300 (3) Études sur le Québec
QCST 440 (3) Aspects du Québec contemporain/
         Aspects de Contemp. Quebec

Sociology
SOCI 210 (3) Sociological Perspectives
SOCI 217 (3) Canadian Mass Communications
SOCI 225 (3) Medicine and Health in Modern Society
SOCI 230 (3) Sociology of Ethnic Relations
SOCI 318 (3) Television in Society
SOCI 327 (3) Jews in North America

HONOURS IN CANADIAN STUDIES (57 credits)

Students planning to pursue an Honours Program option are
reminded that they must complete a Major Concentration (18 cred-
its) in another Arts discipline to graduate.

Students with a GPA of 3.30 in their program courses and, in
keeping with Faculty regulations, a minimum CGPA of 3.00 in gen-
eral, are eligible to apply to the Honours Program in Canadian
Studies; application deadlines are December 15 and May 15.
Forms are available from the MISC Office.

Required Courses (18 credits)
CANS 501 (3) Professional Development Seminar 1
HIST 202 (3) Survey: Canada to 1867
HIST 203 (3) Survey: Canada since 1867

Complementary Courses (39 credits)

6 credits in Political Science, including one of the following
courses:
POLI 221 (3) Government of Canada
POLI 222 (3) Political Process and Behaviour in Canada

3 credits in Canadian History

3 credits: French as a Second Language or courses given in
French

3 credits: French-Canadian Literature or Quebec Literature in
French

3 credits: English-Canadian Literature

3 credits: Canadian Geography

12 credits: Canadian Studies (CANS) courses, with a minimum of
6 credits at the 400 level or above

6 credits from the Complementary Courses list, with a minimum of
3 credits at the 400 level or above

CANADIAN STUDIES HONOURS COMPLEMENTARY

COURSE LIST

Anthropology
ANTH 306 (3) Native Peoples’ History in Canada
ANTH 317 (3) Prehistory of North America
ANTH 333 (3) Class and Ethnicity
ANTH 336 (3) Ethnohistory: North Eastern North America
ANTH 338 (3) Native Peoples of North America
ANTH 436 (3) North American Native Peoples
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<td>(3)</td>
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<td>FREN 487</td>
<td>L'essai québécois</td>
<td>(3)</td>
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<tr>
<td>FREN 480</td>
<td>Roman québécois 3</td>
<td>(3)</td>
</tr>
<tr>
<td>FREN 497</td>
<td>Ecology of Coastal Waters</td>
<td>(3)</td>
</tr>
<tr>
<td>GEOG 499</td>
<td>Subarctic Field Studies</td>
<td>(3)</td>
</tr>
<tr>
<td>GEOG 502</td>
<td>Geography of Northern Development</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL 527</td>
<td>Canadian Literature</td>
<td>(3)</td>
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<tr>
<td>ECON 434</td>
<td>Current Economic Problems</td>
<td>(3)</td>
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<tr>
<td>ECON 408D1</td>
<td>Public Sector Economics</td>
<td>(3)</td>
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<tr>
<td>ECON 408D2</td>
<td>Public Sector Economics</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 407</td>
<td>Compréhension et expression orales</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 406</td>
<td>Development of Canadian Prose Fiction 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL 411</td>
<td>Studies in Canadian Fiction</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL 527</td>
<td>Canadian Literature</td>
<td>(3)</td>
</tr>
<tr>
<td>ENGL 532</td>
<td>British North America 1760-1867</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 321D1</td>
<td>Oral and Written French 2</td>
<td>(3)</td>
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<tr>
<td>FRSL 321D2</td>
<td>Oral and Written French 2</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 322</td>
<td>Oral and Written French 2</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 326</td>
<td>Découvrions Montréal en français</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 332</td>
<td>Intermediate French: Grammar</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 333</td>
<td>Intermediate French: Grammar</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 407</td>
<td>Compréhension et expression orales</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 408</td>
<td>Français oral: Textes et expressions</td>
<td>(3)</td>
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<tr>
<td>FRSL 431D1</td>
<td>Français fonctionnel avancé</td>
<td>(3)</td>
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<tr>
<td>FRSL 431D2</td>
<td>Français fonctionnel avancé</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 445</td>
<td>Français fonctionnel, écrit 1</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 446</td>
<td>Français fonctionnel, écrit 2</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 449</td>
<td>Le Français des médias</td>
<td>(3)</td>
</tr>
<tr>
<td>FRSL 455</td>
<td>Grammaire et création</td>
<td>(3)</td>
</tr>
<tr>
<td>FREN 480</td>
<td>Oral and Written French 2</td>
<td>(3)</td>
</tr>
<tr>
<td>FREN 480</td>
<td>Roman québécois 3</td>
<td>(3)</td>
</tr>
<tr>
<td>FREN 487</td>
<td>L’essai québécois</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**Geography**

- GEOG 217: The Canadian City

**History**

- HIST 202: Survey: Canada to 1867
- HIST 203: Survey: Canada since 1867
- HIST 303: History of Quebec
- HIST 332: Constitutional History: Canada - 1867
- HIST 333: History of New France: Part 1
- HIST 334: History of New France: Part 2
- HIST 342: Canada: External Relations since 1867
- HIST 343: Women in Post-Confederation Canada
- HIST 357: Religion and Canadian Society in Historical Perspective
- HIST 361: The Canadian West to 1905
- HIST 362: The Canadian West since 1905
- HIST 363: Canada 1870-1914
- HIST 364: Canada 1914-1945
- HIST 370: Canadian Party Politics 1867-2000
- HIST 373: Canadian Labour History
- HIST 395: Canadian Military Experience
- HIST 397: Canada: Ethnicity, Migration
- HIST 403: History of Quebec Institutions
- HIST 423: Topics: Migration and Ethnicity
- HIST 429: Topics: Canadian Family History
- HIST 432: The Atlantic Provinces
- HIST 434: British North America 1760-1867
- HIST 462D1: Topics: Canadian Conservatism
- HIST 462D2: Topics: Canadian Conservatism
- HIST 463D1: Topics: History of Women in Canada
- HIST 463D2: Topics: History of Women in Canada
- HIST 469D1: Topics in Canadian Religious History
- HIST 469D2: Topics in Canadian Religious History
- HIST 483D1: History of Montreal
- HIST 483D2: History of Montreal
- HIST 493D1: Topics: Canadian Social History
- HIST 493D2: Topics: Canadian Social History

**Linguistics**

- LING 320: Sociolinguistics 1
- LING 350: Linguistic Aspects of Bilingualism
- LING 520: Sociolinguistics 2
- LING 521: Dialectology

**Music**

- MUHL 391: Canadian Music

**Political Science**

- POLI 221: Government of Canada
- POLI 222: Political Process and Behaviour in Canada
- POLI 226: La vie politique québécoise
- POLI 378: The Canadian Judicial Process
- POLI 379: Topics in Canadian Politics
- POLI 411: Immigration and Multiculturalism in Canada
- POLI 412: Canadian Voting/Public Opinion
- POLI 446: Les politiques publiques au Québec
- POLI 447: Canadian Constitutional Politics
- POLI 478: The Canadian Constitution

**Québec, Études sur le**

- QCST 300: Études sur le Québec
- QCST 440: Aspects du Québec contemporain/Aspects of Contemp. Québec

**Sociology**

- SOCI 210: Sociological Perspectives
- SOCI 217: Canadian Mass Communications
JOINT HONOURS – CANADIAN STUDIES COMPONENT
(36 credits)

Students with a minimum program GPA of 3.30 in Canadian Studies Required and Complementary courses may apply to the Joint Honours Program in Canadian Studies. Forms are available from the MISC. There are two application deadlines, January 31 and the last day of classes for the Winter term.

Required Courses (9 credits)
CANS 200 (3) Introduction to the Study of Canada
CANS 492 (3) Joint Honours Thesis
CANS 501 (3) Pro-Seminar 1

Complementary Courses (27 credits)
3 credits, one of the following:
POLI 221 (3) Government of Canada
POLI 222 (3) Political Process and Behaviour in Canada

9 credits: Canadian Studies (CANS) courses
3 credits: French as a Second Language or courses given in French

3 credits: French-Canadian or English-Canadian literature
3 credits: History

6 credits at the 400-level or above, chosen from the Complementary Courses list above, with the addition of:
ANTH 436 (3) North American Native Peoples
FREN 480 (3) Roman québécois 3
LING 520 (3) Sociolinguistics 2

Joint Honours students must maintain a GPA of 3.30 in their program courses and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 4.11.4 "Joint Honours Programs" for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

4.12.10 Catholic Studies Program (CATH)

Office of Interdisciplinary Programs
3715 Peel Street, Room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ines.scharnweber@mcmillan.ca
Website: www.mcmillan.ca/catholicstudies

Program Adviser — Ines Scharnweber

Advisory Committee Chair — Professor Filippo Sabetti (Political Science)

Advisory Committee
M. Dorsinville (English), J. Fumo (English), J. Hellman (History), P. Kirkpatrick (Religious Studies), J. Schmidt (German Studies)

The Minor Concentration in Catholic Studies seeks to broaden the intellectual experience and academic options available to students, to broaden the course offerings across the disciplines, and to complement the visibility given to other programs such as Jewish Studies, Islamic Studies, and North American Studies.

The Minor Concentration consists of 18 credits. Core and complementary courses provide students an opportunity to deepen their understanding of Catholicism in an increasingly pluralistic world. The program offers a systematic and critical exploration of the diverse ways in which the Catholic tradition informs culture, institutions, and identity.

MINOR CONCENTRATION IN CATHOLIC STUDIES (18 credits)

Required Course (3 credits)
CATH 200 (3) Introduction to Catholicism

Complementary Courses (15 credits)
9 credits chosen from:
CATH 310 (3) Catholic Intellectual Traditions
CATH 315 (3) Catholicism and Moral Culture
CATH 320 (3) Scripture and Catholicism
CATH 325 (3) The Religious Sense
CATH 340 (3) Catholic Social Thought
CATH 370 (3) Topics in Catholic Studies
CATH 460 (3) Catholic Studies Seminar

6 credits chosen from the Complementary Course Lists below:

3 credits from Group I: Catholicism and the Arts
3 credits from Group II: Catholic Social and Intellectual Traditions

COMPLEMENTARY COURSE LISTS

Group I: Catholicism and the Arts

Art History and Communication Studies
ARTH 320 (3) Seventeenth Century Art of Court and Church
ARTH 340 (3) The Gothic Cathedral
ARTH 415 (3) Late Medieval & Renaissance Architecture in Northern Europe

Education
EDER 203 (3) Philosophy of Religion
EDER 204 (3) Man Before Reality
EDER 207 (3) "Who is Christ?"
EDER 209 (3) Search for Authenticity
EDER 394 (3) Philosophy of God
EDER 396 (3) Seminar: Contemporary Theology
EDER 491 (3) Theological Themes
EDER 495 (3) The Eucharist

English
ENGL 204 (3) English Literature and the Bible
ENGL 357 (3) Chaucer - Canterbury Tales
ENGL 424 (3) Irish Literature

French Language and Literature
FREN 252 (3) Littérature québécoise
FREN 312 (3) Francophonie 2
FREN 329 (3) Civilisation québécoise 2
FREN 455 (3) La littérature médiévale 1

Hispanic Studies
HISP 432 (3) Literature - Discovery and Exploration Spain New World

Italian Studies
ITAL 320 (3) Manzoni: Novel and Nationhood
ITAL 410 (3) Modern Italian Literature
ITAL 461 (3) Dante: The Divine Comedy

Music
MUHL 399 (3) Church Music

Religious Studies
RELG 203 (3) Bible and Western Culture
RELG 210 (3) Jesus of Nazareth
RELG 311 (3) New Testament Studies 1
RELG 312 (3) New Testament Studies 2
RELG 341 (3) Introduction: Philosophy of Religion
RELG 377 (3) Religious Controversies

Group II: Catholic Social and Intellectual Traditions

East Asian Studies
EAST 385 (3) Society and Community in Korea

Education
EDER 208 (3) Philosophy of Human Nature
EDER 394 (3) Philosophy of God
EDER 395 (3) Moral Values and Human Action
EDER 494 (3) Ethics in Practice

History
HIST 319 (3) The Scientific Revolution
HIST 320 (3) European Thought and Culture 1
HIST 321 (3) European Thought and Culture 2
HIST 324 (3) History of Ireland
HIST 325 (3) Renaissance-Reformation Europe
HIST 336 (3) France, 1789 to 1914
HIST 357 (3) Religion and Canadian Society in Historical Perspective
HIST 360 (3) Latin America since 1825
HIST 401 (3) Topics: Medieval Culture and Society
HIST 405 (3) European Cultural History 1
HIST 469D1 (3) Topics in Canadian Religious History
HIST 469D2 (3) Topics in Canadian Religious History

**Philosophy**

PHIL 334 (3) Ethics 1
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 474 (3) Phenomenology

**Political Science**

POLI 226 (3) La vie politique québécoise
POLI 318 (3) Comparative Local Government
POLI 319 (3) Politics of Latin America
POLI 321 (3) Issues: Canadian Public Policy
POLI 370 (3) Révolution tranquille/changements politiques/Québec de 1960
POLI 414 (3) Society and Politics in Italy

**Religious Studies**

RELG 320 (3) History of Christian Thought 1
RELG 322 (3) The Church in History 1
RELG 323 (3) The Church in History 2
RELG 327 (3) History of Christian Thought 2
RELG 340 (3) Religion and the Sciences

**Sociology**

SOCI 315 (3) Sociology of Religion

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### 4.12.11 Classics Program (CLAS)

Stephen Leacock Building, Room 608
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-3975
Fax: (514) 398-8365
Website: www.arts.mcgill.ca/programs/history/classics
E-mail: undergrad.history@mcgill.ca

**Professors**

Hans Beck; Ph.D.(Erlangen)(John MacNaughton Professor of Classics)
T. Wade Richardson; B.A.(McG.), M.A., Ph.D.(Harv.)

**Assistant Professor**

Michael Fronda; B.A.(C’nell), M.A., Ph.D.(Ohio St.)

Modern Greek Language and Literature courses bear the CLAS designation and are included in the listings for Classics.

The Classics Program offers courses and the full range of degree concentrations and programs (Minor Concentration, Major Concentration, Joint Honours Component and Honours) in the study of the language, history and culture of Ancient Greece and Rome. In general the Minor and Major concentrations provide an intellectual background in humanist perspectives for the enrichment of the undergraduate degree, while the Joint Honours and Honours programs in addition offer students in highest standing the prospect of favourable consideration for graduate and professional schools (such as Law), and other relevant career training. All the Classics concentrations and programs require regular advising for course selection and degree audit.

All courses in the Classics Program belong to one of three areas: Ancient Greek, Latin, and Ancient Greek and Roman History and Civilization.

The following outlines represent Departmental requirements only. Each student's program must also satisfy the regula-

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**MINOR CONCENTRATION IN CLASSICS**

(18 credits)

In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses”.

**Complementary Courses** (18 credits)

12 credits, 6 credits in each of two Classics areas at the 200 level; 6 credits in one of the two areas chosen.

**MAJOR CONCENTRATION IN CLASSICS**

(36 credits)

In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses.”

**Complementary Courses** (36 credits)

12 credits, 6 credits in each of two Classics areas at the 200 level; 18 credits, 9 credits in each of two Classics areas at the 300+ level; 6 credits in any of the three Classics areas at the 300+ level.

**HONOURS IN CLASSICS**

(60 credits)

In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses.”

**Classical Languages and Literatures**

**Complementary Courses** (60 credits)

21 credits in Ancient Greek or Latin;
12 - 21 credits in the other classical languages;
6 credits for completion of a Reading List in one of the two languages (CLAS 515D1/CLAS 515D2 or CLAS 525D1/CLAS 525D2)
6 credits in Ancient Greek and Roman History;
6 - 15 credits in Classics or related courses.

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

**JOINT HONOURS – CLASSICS COMPONENT**

(36 credits)

Thirty-six credits in Classics and related courses selected with the approval of the appropriate Undergraduate Adviser and 36 credits in the courses of another department. The 36 credits in Classics and related courses must include a sequence of at least 18 credits in Ancient Greek or Latin language and literature in the original, with a minimum of 3 credits at the 400 or 500 levels.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable). For Classics, see the Undergraduate Adviser, L821, (514) 398-6206.

**Notes:**

1. Students who intend to pursue graduate studies in Classics are advised to follow an Honours program.
2. Honours students must maintain a CGPA of 3.00 or higher.
3. Courses considered to be related to Classics are those given in Ancient Greek or Latin language and literature in the original, and related courses must include a sequence of at least 18 credits in Ancient Greek or Latin language and literature in the original.
COURSES IN ANCIENT GREEK AND ROMAN HISTORY

Where courses in History are required for Classics programs, they must be taken from the following list:

- HIST 205 Ancient Greek History
- HIST 209 Ancient Roman History
- HIST 366 History of Roman Law
- HIST 368 Greek History: Classical
- HIST 369 Greek History: Archaic
- HIST 375 History of the Early Roman Empire
- HIST 376 History of the Later Roman Empire
- HIST 379 Classical Greek Democracy
- HIST 391 History of the Roman Republic
- HIST 404 Greek History: Hellenistic Period
- HIST 422 Roman Greece

RELATED COURSES

The following are "related courses" for the purpose of programs in Classics. Requests for other courses should be addressed to the Adviser.

Art History
- ARTH 209 Introduction to Ancient Art and Architecture

English
- ENGL 347 Great Writings of Europe 1
- ENGL 370 History of the Theatre 1
- ENGL 447 Crosscurrents/English Literature and European Literature 1

French
- FREN 481 Littérature et antiquité

History
- HIST 205 Ancient Greek History
- HIST 209 Ancient Roman History
- HIST 366 History of Roman Law
- HIST 368 Greek History: Classical
- HIST 369 Greek History: Archaic
- HIST 375 History of the Early Roman Empire
- HIST 376 History of the Later Roman Empire
- HIST 379 Classical Greek Democracy
- HIST 391 History of the Roman Republic
- HIST 404 Greek History: Hellenistic Period
- HIST 422 Roman Greece

Philosophy
- PHIL 345 Greek Political Theory
- PHIL 353 The Presocratic Philosophers
- PHIL 354 Plato
- PHIL 355 Aristotle
- PHIL 452 Later Greek Philosophy
- PHIL 453 Ancient Metaphysics and Natural Philosophy
- PHIL 454 Ancient Moral Theory
- PHIL 551 Seminar: Ancient Philosophy 2

Political Science
- POLI 333 Western Political Theory 1

Religious Studies
- RELG 280 Elementary New Testament Greek
- RELG 381 Advanced New Testament Greek

4.12.13 Computing Course for Arts

See section 4.12.2.1, "Arts Educational Technology (ARET)".

4.12.14 Computer Science (COMP)

McConnell Engineering Building, Room 318
Telephone: (514) 398-7071
Fax: (514) 398-3883
E-mail: liette.chin@mcgill.ca
Website: www.cs.mcgill.ca

Students must have completed MATH 133, MATH 140, MATH 141 or equivalents in order to begin taking courses in this program.

For a list of teaching staff, an outline of the nature of computer science and the opportunities for study in this discipline, see the Science entry "Computer Science (COMP)" in section 11.12.9.

The School also offers programs in the Faculties of Engineering, Management and Music.

MINOR CONCENTRATION IN COMPUTER SCIENCE
(Non-expandable) (18 credits)

This Minor Concentration may be taken in conjunction with any program in the Faculty of Arts with the approval of the adviser of the student’s main program and the School of Computer Science. At the time of registration in the penultimate year, students must declare their intent to receive the Minor, and approval must be given by the School for the particular sequence of courses the student wishes to use for the Minor Concentration.

Required Courses (12 credits)
- COMP 202 (3) Introduction to Computing 1
- COMP 203 (3) Introduction to Computing 2
- COMP 206 (3) Introduction to Software Systems
- COMP 302 (3) Programming Languages and Paradigms

Complementary Courses (6 credits) selected from:
- COMP 273 (3) Introduction to Computer Systems
- COMP 310 (3) Computer Systems and Organization
- COMP 335 (3) Software Engineering Methods
- COMP 350 (3) Numerical Computing or MATH 317 (3) Numerical Analysis
- COMP 360 (3) Algorithm Design Techniques
- COMP 402 (3) Secondary Storage Algorithms and Data Structures
- COMP 421 (3) Database Systems
- COMP 424 (3) Topics: Artificial Intelligence 1
- COMP 426 (3) Automated Reasoning
- COMP 435 (3) Basics of Computer Networks
- COMP 462 (3) Computational Biology Methods
- COMP 505 (3) Advanced Computer Architecture
- COMP 506 (3) Advanced Analysis of Algorithms
- COMP 507 (3) Computational Geometry
- COMP 520 (4) Compiler Design
- COMP 523 (3) Language-based Security
- COMP 524 (3) Theoretical Foundations of Programming Languages
- COMP 533 (3) Object-Oriented Software Development
- COMP 534 (3) Team Software Engineering
- COMP 535 (3) Computer Networks 1
- COMP 537 (3) Internet Programming
- COMP 538 (3) Person-Machine Communication
- COMP 540 (3) Matrix Computations
- COMP 547 (4) Cryptography and Data Security
- COMP 557 (3) Fundamentals of Computer Graphics
- COMP 560 (3) Graph Algorithms and Applications
- COMP 563 (3) Molecular Evolution Theory
- COMP 564 (3) Computational Gene Regulation
- COMP 566 (3) Discrete Optimization 1
- COMP 575 (3) Fundamentals of Distributed Algorithms

or courses outside of the School approved by the adviser

4.12.12 Minor in Cognitive Science

Students with an interest in cognition may want to consider the Minor in "Cognitive Science" in section 11.12.8, under Science.
Note: COMP 251 Data Structures and Algorithms is a prerequisite for many of these complementary courses, and MATH 240 Discrete Structures 1 is a prerequisite for COMP 251.

MINOR CONCENTRATION IN COMPUTER SYSTEMS
(Combinable) (18 credits)

This Minor Concentration may be taken only by students registered in the Major Concentration in Foundations of Computing. Taken together, these constitute a program very close to the Major in Computer Science offered by the Faculty of Science. Students who are interested in a career as a computing professional should take this combination in order to match the traditional expectations of employers.

Students with two programs in the same department must have a third in a different discipline to be eligible to graduate. Please refer to the Faculty of Arts Degree Requirements, departmental programs.

Required Courses (9 credits)
COMP 206 (3) Introduction to Software Systems
COMP 273 (3) Introduction to Computer Systems
COMP 310 (3) Computer Systems and Organization

Complementary Courses (9 credits)
selected from:
COMP 303 (4) Programming Techniques
COMP 304 (3) Object-Oriented Design
COMP 335 (3) Software Engineering Methods
COMP 409 (3) Concurrent Programming
COMP 417 (3) Introduction Robotics and Intelligent Systems
COMP 420 (3) Secondary Storage Algorithms and Data Structures
COMP 421 (3) Database Systems
COMP 423 (3) Data Compression
COMP 424 (3) Topics: Artificial Intelligence 1
COMP 435 (3) Basics of Computer Networks
COMP 462 (3) Computational Biology Methods
COMP 490 (3) Introduction to Probabilistic Analysis of Algorithms
COMP 505 (3) Advanced Computer Architecture
COMP 506 (3) Advanced Analysis of Algorithms
COMP 507 (3) Computational Geometry
COMP 512 (3) Distributed Systems
COMP 520 (4) Compiler Design
COMP 522 (4) Modelling and Simulation
COMP 523 (3) Language-based Security
COMP 524 (3) Theoretical Foundations of Programming Languages
COMP 526 (3) Probabilistic Reasoning and AI
COMP 529 (4) Software Analysis
COMP 531 (3) Theory of Computation
COMP 533 (3) Object-Oriented Software Development
COMP 534 (3) Team Software Engineering
COMP 535 (4) Computer Networks 1
COMP 537 (3) Internet Programming
COMP 547 (4) Cryptography and Data Security
COMP 557 (3) Fundamentals of Computer Graphics
COMP 558 (3) Fundamentals of Computer Vision
COMP 563 (3) Molecular Evolution Theory
COMP 564 (3) Computational Gene Regulation
COMP 575 (3) Fundamentals of Distributed Algorithms
COMP 577 (3) Distributed Database Systems

Note: COMP 251 Data Structures and Algorithms is a prerequisite for many of these complementary courses, and MATH 240 Discrete Structures 1 is a prerequisite for COMP 251.

MINOR CONCENTRATION IN FOUNDATIONS OF COMPUTING
(Expandable) (18 credits)

Required Courses (18 credits)
COMP 202 (3) Introduction to Computing 1
COMP 250 (3) Introduction to Computer Science
COMP 251 (3) Data Structures and Algorithms
COMP 330 (3) Theoretical Aspects: Computer Science
MATH 222 (3) Calculus 3
MATH 240 (3) Discrete Structures 1

MAJOR CONCENTRATION IN FOUNDATIONS OF COMPUTING (36 credits)

Students with two programs in the same department must have a third in a different discipline to be eligible to graduate. Please refer to the Faculty of Arts Degree Requirements, departmental programs.

Required Courses (36 credits)
COMP 202 (3) Introduction to Computing 1
COMP 250 (3) Introduction to Computer Science
COMP 251 (3) Data Structures and Algorithms
COMP 302 (3) Programming Languages and Paradigms
COMP 330 (3) Theoretical Aspects: Computer Science
COMP 350 (3) Numerical Computing
COMP 360 (3) Algorithm Design Techniques
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 240 (3) Discrete Structures 1
MATH 323 (3) Probability
MATH 340 (3) Discrete Structures 2

JOINT HONOURS IN MATHEMATICS AND COMPUTER SCIENCE, see "Mathematics and Statistics (MATH)" in section 11.12.18, Faculty of Science.

Admission to the program is based on a strong performance in CEGEP-level mathematics courses. Students must consult an Honours adviser in both departments.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

4.12.15 East Asian Studies (EAST)
3434 McTavish Street
Montreal, QC H3A 1X9
Telephone: (514) 398-6742
Fax: (514) 398-1882
E-mail: asian.studies@mcgill.ca
Website: www.mcgill.ca/eas

Chair — Grace Fong

Professors
Kenneth Dean; B.A.(Brown), M.A., Ph.D.(Stan.)
Robin D.S. Yates; B.A., M.A.(Ox.), M.A.(Calif.), Ph.D.(Harv.)

Associate Professors
Grace S. Fong; B.A., M.A.(Tor.), Ph.D.(Br. Co.)
Thomas LaMarre; B.A.(G’town), M.A., Ph.D.(Chic.), D.Sc.(d’Aix-Marseille II)

Assistant Professors
Peter Button; B.A.(Col.), M.A., Ph.D.(C’nell)
Anne McNknight; B.A.(Welles.), M.A., Ph.D.(Calif., Berk.)

Lecturers
Jennie Chang; B.A.(Taiwan), M.A.(Harv.)
Sumi Hasegawa; M.A.(Montr.)
Myung Hee Kim; B.A., M.A.(Montr.)

Associate Members
Laurel Bossen (Anthropology)
Sandra Hyde (Anthropology)
Victor Hori (Religious Studies)
Margaret Kuo (History)
Margaret Lock (Anthropology and Social Studies of Medicine)
Lorencz Lüthi (History)
Mark Manger (Political Science)
Junko Shimoyama (Linguistics)
Yuzo Ota (History)
Sarah Turner (Geography)
Heirs to ancient cultures and traditions that are rich, complex, and too little known in the West, East Asian societies are among the most dynamic and rapidly developing in the world today and are having an increasing impact on the international scene, both economically and politically. The study of the languages and cultures of East Asia, whether at the Major or Minor Concentration or Honours level, offers the student an intellectually challenging and personally stimulating educational experience. As well as offering a different perspective on the human condition, it provides excellent preparation for a future career in the professions, international business management, education, law, journalism and communications, in addition to the necessary training for advanced study at the graduate level.

For the courses in the East Asian field that may be used as complementary, please refer to the Departmental listing and the list of courses offered by other departments and in other faculties.

**MINOR CONCENTRATION IN EAST ASIAN LANGUAGE AND LITERATURE (Expandable) (18 credits)**

**Complementary Courses** (18 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>EAST 211</td>
<td>Introduction: East Asian Culture: China</td>
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<td>EAST 212</td>
<td>Introduction: East Asian Culture: Japan</td>
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<tr>
<td>EAST 213</td>
<td>Introduction: East Asian Culture: Korea</td>
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</table>

9 credit Language Component:

Students may meet this requirement by passing with a grade of "C" the First level language (EAST 200D1/EAST 220D2, EAST 230D1/EAST 230D2, EAST 240D1/EAST 240D2); students with prior knowledge of an Asian language may substitute a Second level language (EAST 300D1/EAST 300D2, EAST 330D1/EAST 330D2, EAST 340D1/EAST 340D2); or with 6 credits of either Classical Chinese (EAST 433; EAST 434), or Classical Japanese (EAST 543; EAST 544); or with Third or Fourth level language (EAST 420D1/EAST 420D2; EAST 430D1/EAST 430D2, EAST 440D1/EAST 440D2; EAST 520D1/EAST 520D2; EAST 530D1/EAST 530D2; EAST 540D1/EAST 540D2); or with 6 credits of Chinese for Business (EAST 535; EAST 536) or China Today through Translation (EAST 537D1/EAST 537D2) and an additional 3-credit course in East Asian Area Studies. (Admission to language courses is subject to placement tests.)

6 credits at the 300-level or above in the Department of East Asian Studies course offerings:

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<tr>
<td>EAST 305</td>
<td>Current Topics: Japanese Studies 1</td>
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<td>Current Topics: Japanese Studies 2</td>
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<tr>
<td>EAST 307</td>
<td>Topics: Chinese Language and Literature</td>
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<td>EAST 308</td>
<td>Topics: Chinese Language and Literature</td>
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<tr>
<td>EAST 309</td>
<td>Pacific Asia in the 20th Century</td>
<td>3</td>
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<tr>
<td>EAST 310</td>
<td>Current Topics: Korean Studies 1</td>
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<td>EAST 311</td>
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<td>EAST 312</td>
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<td>EAST 313</td>
<td>Survey: Modern Korean Literature in Translation</td>
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<td>EAST 351</td>
<td>Women in Chinese Literature</td>
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<td>EAST 352</td>
<td>Critical Approaches to Chinese Literature</td>
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<td>EAST 353</td>
<td>Approaches to Chinese Cinema</td>
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<td>EAST 354</td>
<td>Taoist and Buddhist Apocalypses</td>
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<td>EAST 355</td>
<td>Modern &amp; Contemporary Chinese Art</td>
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<td>EAST 356</td>
<td>Aesthetics and Politics of Vision Premodern Japan</td>
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<td>EAST 357</td>
<td>Mass Culture and Postwar Japan</td>
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<td>Comparative Socioeconomic History Japan</td>
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<td>EAST 360</td>
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<td>EAST 367</td>
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**MINOR CONCENTRATION IN EAST ASIAN CULTURAL STUDIES (Expandable) (18 credits)**

**Complementary Courses** (18 credits)

6 credits in Introduction to East Asian Culture courses:

<table>
<thead>
<tr>
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<tr>
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12 credits chosen from the following East Asian Literature, Culture and Society courses.

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<td>Introduction to Chinese Art</td>
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<td>EAST 303</td>
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<td>Technologies of Self in Early China</td>
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<td>China: Science-Medicine-Technology</td>
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<td>History of Women in China</td>
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<td>China in the Modern World</td>
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<td>POLI 323 (3)</td>
<td>Developing Areas/China and Japan</td>
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<td>POLI 349 (3)</td>
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<td>Religions of East Asia</td>
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<td>RELG 264 (3)</td>
<td>Introductory Tibetan 1</td>
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<td>Mahâyâna Buddhism</td>
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<td>RELG 464 (3)</td>
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<td>RELG 557 (3)</td>
<td>Asian Ethical Systems</td>
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</table>

**MINOR CONCENTRATION IN ADVANCED EAST ASIAN STUDIES**

(Non-expandable) (18 credits)

**Complementary Courses** (18 credits)

18 credits in Second, Third or Fourth level language or a combination of advanced language and other courses in East Asian culture, literature, or area studies, at the 400-level or above chosen in consultation with the Minors adviser.

**MAJOR CONCENTRATION IN EAST ASIAN STUDIES**

(36 credits)

**Complementary Courses** (36 credits)

6 credits, two of the following introductory East Asian courses

**EAST 211 (3) Introduction: East Asian Culture: China**

**EAST 212 (3) Introduction: East Asian Culture: Japan**

**EAST 213 (3) Introduction: East Asian Culture: Korea**

6 - 9 credits to be chosen from the following East Asian language courses:

**EAST 220D1(4.5) First Level Korean**

**EAST 220D2(4.5) First Level Korean**

**EAST 230D1(4.5) First Level Chinese**

**EAST 230D2(4.5) First Level Chinese**

**EAST 240D1(4.5) First Level Japanese**

**EAST 240D2(4.5) First Level Japanese**

**EAST 320D1(4.5) Second Level Korean**

**EAST 320D2(4.5) Second Level Korean**

**EAST 330D1(4.5) Second Level Chinese**

**EAST 330D2(4.5) Second Level Chinese**

**EAST 340D1(4.5) Second Level Japanese**

**EAST 340D2(4.5) Second Level Japanese**

**EAST 420D1(3) Third Level Korean**

**EAST 420D2(3) Third Level Korean**

**EAST 430D1(3) Third Level Chinese**

**EAST 430D2(3) Third Level Chinese**

**EAST 433 (3) Classical Chinese 1**

**EAST 434 (3) Classical Chinese 2**

**EAST 440D1(3) Third Level Japanese**

**EAST 440D2(3) Third Level Japanese**

**EAST 520D1(3) Fourth Level Korean**

**EAST 520D2(3) Fourth Level Korean**

**EAST 530D1(3) Fourth Level Chinese**

**EAST 530D2(3) Fourth Level Chinese**

**EAST 537D1(3) China Today Through Translation**

**EAST 537D2(3) China Today Through Translation**

**EAST 540D1(3) Fourth Level Japanese**

**EAST 540D2(3) Fourth Level Japanese**

**EAST 543 (3) Classical Japanese 1**

**EAST 544 (3) Classical Japanese 2**

**EAST 547 (3) Advanced Reading and Translation in Japanese**

(Admission to language courses is subject to placement tests.)
21-24 credits chosen from the following East Asian Literature, Culture and Society courses. At least 6 credits must be at the 400 or 500 level,

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<th>Course Title</th>
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<td>Japanese Animation and New Media</td>
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<td>Current Topics: Chinese Studies 1</td>
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<td>(3)</td>
<td>Pacific Asia in the 20th Century</td>
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<td>EAST 313</td>
<td>(3)</td>
<td>Current Topics: Korean Studies 1</td>
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<td>Classical Chinese Poetry Themes and Genres</td>
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<td>Technologies of Self in Early China</td>
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<td>EAST 335</td>
<td>(3)</td>
<td>The Yi Jing (Book of Changes)</td>
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<td>EAST 336</td>
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<td>Japanese Literary Theory and Practice</td>
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<td>EAST 337</td>
<td>(3)</td>
<td>Structures of Modesty: Japan</td>
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<td>EAST 338</td>
<td>(3)</td>
<td>Advanced Topics: Japanese Literature</td>
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<td>EAST 339</td>
<td>(3)</td>
<td>Japanese Culture and Society</td>
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<td>EAST 410</td>
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<td>Multiple Narratives of &quot;Oriental&quot;</td>
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**Anthropology**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ANTH 328</td>
<td>(3)</td>
<td>Peoples and Cultures of South-East Asia</td>
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<tr>
<td>ANTH 329</td>
<td>(3)</td>
<td>Modern Chinese Society and Change</td>
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<tr>
<td>ANTH 331</td>
<td>(3)</td>
<td>Prehistory of East Asia</td>
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<tr>
<td>ANTH 431</td>
<td>(3)</td>
<td>Problems in East Asian Archaeology</td>
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<td>ANTH 500</td>
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<td>Chinese Diversity and Diaspora</td>
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**Economics**

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<tr>
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<td>The Japanese Economy</td>
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<tr>
<td>ECON 411</td>
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<td>Economic Development: A World Area</td>
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**Geography**

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<tr>
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<tr>
<td>GEOG 508</td>
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<td>Resources, People and Power</td>
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**History**

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<tr>
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<td>Introduction to East Asian History</td>
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<tr>
<td>HIST 218</td>
<td>(3)</td>
<td>Modern East Asian History</td>
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<tr>
<td>HIST 308</td>
<td>(3)</td>
<td>Formation of Chinese Tradition</td>
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<td>HIST 318</td>
<td>(3)</td>
<td>History of Japan 1</td>
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<td>(3)</td>
<td>China in Revolution 1: 1840-1921</td>
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<td>(3)</td>
<td>Japanese Intellectual History 1</td>
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<td>HIST 338</td>
<td>(3)</td>
<td>China in Revolution 2: 1921-1997</td>
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<td>(3)</td>
<td>China: Science-Medicine-Technology</td>
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<td>(3)</td>
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<tr>
<td>HIST 358</td>
<td>(3)</td>
<td>Medieval to Early Modern China</td>
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<td>HIST 359</td>
<td>(3)</td>
<td>History of Japan 2</td>
</tr>
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<td>HIST 439</td>
<td>(3)</td>
<td>History of Women in China</td>
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<tr>
<td>HIST 441</td>
<td>(3)</td>
<td>Topics: Culture and Ritual in China</td>
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<td>Asian Diaspora: Chinese Overseas</td>
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<tr>
<td>HIST 443</td>
<td>(3)</td>
<td>China in the Modern World</td>
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<tr>
<td>HIST 445</td>
<td>(3)</td>
<td>Late Imperial China</td>
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**Management**

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<tr>
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**Political Science**

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<td>POLI 323</td>
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<td>Developing Areas/China and Japan</td>
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<td>POLI 349</td>
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<td>Foreign Policy: Asia</td>
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**Religious Studies**

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<td>RELG 253</td>
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<td>Religions of East Asia</td>
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<tr>
<td>RELG 264</td>
<td>(3)</td>
<td>Introductory Tibetan 1</td>
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<tr>
<td>RELG 265</td>
<td>(3)</td>
<td>Introductory Tibetan 2</td>
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<td>RELG 339</td>
<td>(3)</td>
<td>Hindu and Buddhist Images of Femininity</td>
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<td>RELG 344</td>
<td>(3)</td>
<td>Mahayana Buddhism</td>
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<td>RELG 364</td>
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<td>Intermediate Tibetan 1</td>
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<td>Intermediate Tibetan 2</td>
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<tr>
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<td>(3)</td>
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<td>(3)</td>
<td>Japanese Esoteric Buddhism</td>
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<td>RELG 451</td>
<td>(3)</td>
<td>Zen: Maxims and Methods</td>
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<td>RELG 452</td>
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<td>East Asian Buddhism</td>
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<td>RELG 464</td>
<td>(3)</td>
<td>Advanced Tibetan 1</td>
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<td>RELG 465</td>
<td>(3)</td>
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<tr>
<td>RELG 549</td>
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<td>East Asian Buddhist Philosophy</td>
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<td>RELG 557</td>
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<td>Asian Ethical Systems</td>
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**HONOURS IN EAST ASIAN STUDIES** (60 credits)

**Required Courses (6 credits)**

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<tbody>
<tr>
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<td>Honours Thesis: East Asian Studies</td>
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<tr>
<td>EAST 498D2</td>
<td>(3)</td>
<td>Honours Thesis: East Asian Studies</td>
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**Complementary Courses (54 credits)**

24 credits of an East Asian language chosen from:

<table>
<thead>
<tr>
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<tr>
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<td>First Level Korean</td>
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<td>EAST 230D1</td>
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<td>First Level Chinese</td>
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<tr>
<td>EAST 240D1</td>
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</tr>
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<td>(4.5)</td>
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</tr>
<tr>
<td>EAST 320D1</td>
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EAST 320D2 (4.5) Second Level Korean
EAST 330D1(4.5) Second Level Chinese
EAST 330D2(4.5) Second Level Chinese
EAST 340D1(4.5) Second Level Japanese
EAST 340D2(4.5) Second Level Japanese
EAST 420D1(3) Third Level Korean
EAST 420D2 (3) Third Level Korean
EAST 430D1(3) Third Level Chinese
EAST 430D2(3) Third Level Chinese
EAST 433 (3) Classical Chinese 1
EAST 434 (3) Classical Chinese 2
EAST 440D1(3) Third Level Japanese
EAST 440D2(3) Third Level Japanese
EAST 520D1(3) Fourth Level Korean
EAST 520D2(3) Fourth Level Korean
EAST 530D1(3) Fourth Level Chinese
EAST 530D2(3) Fourth Level Chinese
EAST 535 (3) Chinese for Business 1
EAST 536 (3) Chinese for Business 2
EAST 537D1(3) China Today Through Translation
EAST 537D2(3) China Today Through Translation
EAST 540D1(3) Fourth Level Japanese
EAST 540D2(3) Fourth Level Japanese
EAST 543. (3) Classical Japanese 1
EAST 544 (3) Classical Japanese 2
EAST 547 (3) Advanced Reading and Translation in Japanese

(Admission to language courses is subject to placement tests.)

30 credits in East Asian Culture, Literature and Society courses.
6 credits from:
EAST 211 (3) Introduction: East Asian Culture: China
EAST 212 (3) Introduction: East Asian Culture: Japan
EAST 213 (3) Introduction: East Asian Culture: Korea

24 credits chosen from the following courses, of which 6 credits must be at the 400 level or above, one 400-level course must be taken before commencing the thesis.
EAST 214 (3) Japanese Animation and New Media
EAST 215 (3) Introduction to Chinese Art
EAST 303 (3) Current Topics: Chinese Studies 1
EAST 304 (3) Current Topics: Chinese Studies 2
EAST 305 (3) Current Topics: Japanese Studies 1
EAST 306 (3) Current Topics: Japanese Studies 2
EAST 307 (3) Topics: Chinese Language and Literature
EAST 308 (3) Topics: Chinese Language and Literature
EAST 309 (3) Pacific Asia in the 20th Century
EAST 313 (3) Current Topics: Korean Studies 1
EAST 314 (3) Current Topics: Korean Studies 2
EAST 315 (3) Survey: Modern Korean Literature in Translation
EAST 351 (3) Women in Chinese Literature
EAST 352 (3) Critical Approaches to Chinese Literature
EAST 353 (3) Approaches to Chinese Cinema
EAST 354 (3) Taoist and Buddhist Apocalypses
EAST 356 (3) Modern & Contemporary Chinese Art
EAST 362 (3) Japanese Cinema
EAST 363 (3) Aesthetics and Politics of Vision Premodern Japan
EAST 364 (3) Mass Culture and Postwar Japan
EAST 370 (3) History of Sexuality in Japan
EAST 384 (3) Comparative Socioeconomic History Japan and Korea
EAST 385 (3) Society and Community in Korea
EAST 390 (3) The Chinese Family in History
EAST 453 (3) Topics: Chinese Literature
EAST 454 (3) Topics: Chinese Cinema
EAST 456 (3) Chinese Drama and Popular Culture
EAST 457 (3) Brushwork in Chinese Painting
EAST 461 (3) Inventing Modern Japanese Novel
EAST 462 (3) Japan in Asia
EAST 464 (3) Image, Text, Performance
EAST 466 (3) Feminism and Japan
EAST 467 (3) Topics: Japanese Cinema
EAST 490 (3) Confucius and the Classics
EAST 491 (3) Tutorial: East Asian Languages and Literatures
EAST 492 (3) Tutorial: East Asian Languages and Literatures
EAST 493 (3) Special Topics: East Asian Studies 1
EAST 494 (3) Special Topics: East Asian Studies 2
EAST 501 (3) Advanced Topics in Japanese Studies 1
EAST 502 (3) Advanced Topics in Japanese Studies 2
EAST 503 (3) Advanced Topics in Chinese Studies 1
EAST 504 (3) Advanced Topics in Chinese Studies 2
EAST 515 (3) Seminar: Beyond Orientalism
EAST 550 (3) Classical Chinese Poetry Themes and Genres
EAST 551 (3) Technologies of Self in Early China
EAST 552 (3) The Yijing (Book of Changes)
EAST 562 (3) Japanese Literary Theory and Practice
EAST 563 (3) Advanced Topics: Chinese Literature
EAST 564 (3) Structures of Modernity: Japan
EAST 569 (3) Advanced Topics: Japanese Literature
EAST 582 (3) Japanese Culture and Society
EAST 590 (3) Multiple Narratives of “Orient”

Anthropology
ANTH 328 (3) Peoples and Cultures of South-East Asia
ANTH 329 (3) Modern Chinese Society and Change
ANTH 331 (3) Prehistory of East Asia
ANTH 431 (3) Problems in East Asian Archaeology
ANTH 500 (3) Chinese Diversity and Diaspora

Economics
ECON 335 (3) The Japanese Economy
ECON 411 (3) Economic Development: A World Area

Geography
GEOG 408 (3) Geography of Development
GEOG 508 (3) Resources, People and Power

History
HIST 208 (3) Introduction to East Asian History
HIST 218 (3) Modern East Asian History
HIST 308 (3) Formation of Chinese Tradition
HIST 318 (3) History of Japan 1
HIST 328 (3) China in Revolution 1: 1840-1921
HIST 337 (3) Japanese Intellectual History 1
HIST 338 (3) China in Revolution 2: 1921-1997
HIST 348 (3) China: Science-Medicine-Technology
HIST 352 (3) Japanese Intellectual History 2
HIST 358 (3) Medieval to Early Modern China
HIST 359 (3) History of Japan 2
HIST 439 (3) History of Women in China
HIST 441 (3) Topics: Culture and Ritual in China
HIST 442 (3) Asian Diaspora: Chinese Overseas
HIST 443 (3) China in the Modern World
HIST 445 (3) Late Imperial China
HIST 485D1 (3) Seminar in Japanese History
HIST 485D2 (3) Seminar in Japanese History
HIST 497D1 (3) Topics in Chinese History
HIST 497D2 (3) Topics in Chinese History
HIST 579 (3) The Arts of Healing in China
HIST 581 (3) The Art of War in China

Management
ORGB 380 (3) Cross Cultural Management

Political Science
POLI 323 (3) Developing Areas/China and Japan
POLI 349 (3) Foreign Policy: Asia
Religious Studies
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RELG 344 (3) Mahāyāna Buddhism
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RELG 443 (3) Japanese Esoteric Buddhism
RELG 451 (3) Zen: Maxims and Methods
RELG 452 (3) East Asian Buddhism
RELG 464 (3) Advanced Tibetan 1
RELG 465 (3) Advanced Tibetan 2
RELG 549 (3) East Asian Buddhist Philosophy
RELG 557 (3) Asian Ethical Systems

Honours students are required to maintain a CGPA of 3.00 or above and a program GPA of 3.00 or above.

JOINT HONOURS – EAST ASIAN STUDIES COMPONENT

Required Courses
(36 credits)

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

4.12.16 Economics (ECON)
Room 443, Stephen Leacock Building
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-4850
Fax: (514) 398-4938
E-mail: undergraduate.economics@mcgill.ca
Website: www.mcgill.ca/economics

Chair — William Watson

Professors Emeritus
Irving Brecher; B.A.(McG.), M.A., Ph.D.(Harv.)
Karl Leviitt; B.Sc.(Lond.), M.A.(Tor.)

Professors
Robert B. Cairns; B.Sc.(Tor.), Ph.D.(MIT)
Russell Davidson; B.Sc., Ph.D.(Glas.), Ph.D.(Br. Col.) (Canada Research Chair)
Antal Deutsch; B.Com.(Sir G.Wms.), Ph.D.(McG.)
John Galbraith; B.A.(Qu.), M.Phil., D.Phil.(Oxf.) (James McGill Professor)
George Grantham; B.A.(Antioch), M.A., Ph.D.(Yale)
Christopher Green; M.A.(Conn.), Ph.D.(Wis.)
Joseph Greenberg; B.A., M.A., Ph.D.(Hebrew) (Dow Professor of Political Economy)
Jagdish Handa; B.Sc.(Lond.), Ph.D.(Johns H.)
Ngo Van Long; B.Ec.(LaT.), Ph.D.(A.N.U.) (James McGill Professor)

Associate Professors
Myron Frankman; B.Mgt.E.(Renss.), Ph.D.(Texas)
Franque Grimard; B.A.(York), Ph.D.(Princ.)
Jennifer Hunt; I.B.(International School of Geneva), S.B.(MIT), Ph.D.(Harv.)
C. John Kurien; B.A.(Kerala), M.A., Ph.D.(Vanderbilt)

EAST 490 (3) Confucius and the Classics
EAST 491 (3) Tutorial: East Asian Languages and Literatures
EAST 492 (3) Tutorial: East Asian Languages and Literatures
EAST 493 (3) Special Topics: East Asian Studies 1
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EAST 569 (3) Advanced Topics: Japanese Literature
EAST 582 (3) Japanese Culture and Society
EAST 590 (3) Multiple Narratives of “Orientalism”
ARTS – ECONOMICS

Daniel Parent; B.A., M.A.(Laval), Ph.D.(Montr.) (William Dawson Scholar)
Christopher T.S. Ragan; B.A.(Vic., BC), M.A.(Qu.), Ph.D.(MIT)
Lee Soderstrom; B.A., Ph.D.(Calif.)
Thomas Velk; M.S., Ph.D.(Wis.)
Alexander Vicas; B.Com.(McG.), M.A., Ph.D.(Princ.)
William Watson; B.A.(McG.), Ph.D.(Yale)

Assistant Professors
Francisco Alvarez-Cuadrado; B.Sc.(Pontifica Comillas), M.A., Ph.D.(Wash.)
Hassan Benchekroun; Diplôme d’ingénieur d’état (Ecole Mohamedia des Ingénieurs, Morocco), Ph.D.(Laval)
Leah Brooks; B.A. (Chic.), Ph.D.(Calif.-LA)
James Engle-Warnick; B.S.(Akron), MBA(Carnegie), Ph.D.(Pitts.)
Takashi Kunimoto; B.A.(Doshisha), M.A.(Kyoto), M.A.(Brown), Ph.D.(Brown)
Sonia Laszlo; B.A.(Ott.), M.A.(W. Ont.), Ph.D.(Tor.)
Maxim Sinitsyn; B.A.(Central Methodist), M.S.(Southern Illinois), M.A.
Dhanoos Sulthiphsial; B.Eng.(Chulalonghorn), MBA, M.S. (Lehigh), Ph.D.(Calif.-LA)
Nurlan Turdaliev; B.Sc.(Moscow), M.A.(Ark.), Ph.D.(Minn.)
Licun Xue; B.Eng., M.Eng.(Tianjin), M.A., Ph.D.(McG.)

LECTURERS
Paul Dickinson, Kenneth MacKenzie

GENERAL
For more up-to-date, detailed information about the Department and its programs, please visit our Websites as follows: www.mcgill.ca/economics/undergraduates/majors for information on the Major and Minor programs.

www.mcgill.ca/economics/undergraduates/honours for information on the Honours programs

U0 students interested in economics should take ECON 208 and ECON 209. These courses provide good preparation for the Honours and Major programs, although neither course is a prerequisite for either program.

The first year of microeconomics courses for the Honours Program (ECON 250D1/ECON 250D2) and for the Majors Program (ECON 230D1/ECON 230D2) should not be taken in the U0 year. For information on Economics Internships please see this Website: www.mcgill.ca/arts-internships/departments/economics.

PRGRAMS IN ECONOMICS

MINOR CONCENTRATION IN ECONOMICS
The Minor Concentration in Economics is offered in four streams:

• Stream I – Expandable
• Stream II – Non-expandable
• Stream III – for Management students
• Stream IV – Combinable, for students already registered in a Major Concentration in Economics.

In general, 200-level courses have no prerequisites, ECON 208 and ECON 209. These courses provide good preparation for the Honours and Major programs, although neither course is a prerequisite for either program.

The first year of microeconomics courses for the Honours Program (ECON 250D1/ECON 250D2) and for the Majors Program (ECON 230D1/ECON 230D2) should not be taken in the U0 year.

Students who are registering for the first time with the Department should attend the orientation meeting (check the Website for details) before seeing an adviser.

MINOR CONCENTRATION IN ECONOMICS – STREAM I
(Expandable) (18 credits)
For students whose primary interest is in a field other than Economics but who wish to keep the option of upgrading to a Major Concentration in future.

Required Course (6 credits)
ECON 230D1 (3) Microeconomic Theory
ECON 230D2 (3) Microeconomic Theory

Complementary Courses (12 credits)
12 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400-level courses.

MINOR CONCENTRATION IN ECONOMICS – STREAM II
(Non-expandable) (18 credits)
Required Courses (6 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 209 (3) Macroeconomic Analysis and Applications

Complementary Courses (12 credits)
12 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400-level courses.

MINOR CONCENTRATION IN ECONOMICS – STREAM III
For Management Students (18 credits)

Required Courses (6 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 209 (3) Macroeconomic Analysis and Applications

Complementary Courses (12 credits)
12 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400-level courses.

MINOR CONCENTRATION IN ECONOMICS – STREAM IV
(Combinable – for students already registered in a Major Concentration in Economics) (18 credits)
Prerequisites: None

Students who are registered in a Major Concentration in Economics and a Minor Concentration in another unit may complete a second Minor Concentration in Economics with the following structure.

Complementary Courses (18 credits)
18 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400-level courses.

Note: ECON 295, ECON 227 and ECON 257D1/ECON 257D2 will not count as part of this Minor Concentration.

MANAGEMENT MINOR
A limited enrolment Management Minor is available to selected Economics Majors and Honours students. Applications are entertained only early in the calendar year, usually February. Students intending to complete a Minor in Management should consult the handout available in the Economics Department (Leacock 443) for further details and restrictions.

MAJOR CONCENTRATION IN ECONOMICS (36 credits)
The Major Concentration in Economics is a planned sequence of courses designed to permit the student a degree of specialization in economics. It consists of 36 credits in courses approved by the Economics Department.

All students who wish to begin (or continue) a Major Concentration in Economics should see a Majors adviser in the Department in each of their university years. Further information may be obtained from the Department’s Website, or from any Major adviser; consult the Departmental office for a list of advisers.

Students who are registering for the first time with the Department should attend the orientation meeting (check the Website for details) before seeing an adviser.

A student choosing a Major Concentration in Economics must take 36 credits in Economics. The Economics courses will normally be taken at McGill and will be selected from the courses shown below. Economics Major Concentration students entering University at the U1 year in September should directly proceed to ECON 230D1/ECON 230D2 without taking ECON 208 and ECON 209.
Required Courses (18 credits)
ECON 227D1 (3) Economic Statistics
ECON 227D2 (3) Economic Statistics
ECON 230D1 (3) Microeconomic Theory
ECON 230D2 (3) Microeconomic Theory
ECON 330D1 (3) Macroeconomic Theory
ECON 330D2 (3) Macroeconomic Theory

Complementary Courses (18 credits)
18 credits in Economics selected from other 200- (with numbers above 209), 300-, 400- and 500-level courses. At least 6 of these credits must be in 400- or 500-level courses. No more than 6 credits may be at the 200 level.

Prerequisites: in general 200-level courses have no prerequisites; 300-level courses have ECON 230D1/ECON 230D2 (or the lower level courses ECON 208 and ECON 209, or the combination of MGCR 293 and ECON 295) as prerequisites; and 400-level courses have ECON 230D1/ECON 230D2 as a prerequisite.

Mathematics: it is recommended, but not required, that students acquire mastery of elementary calculus and matrix algebra in their undergraduate years. (See courses listed under the Honours section.)

HONOURS PROGRAM
The Economics Honours program is offered to both B.A. and B.Com. students. All Honours students should consult the handout describing the Honours programs in Economics, available in the Economics Department Office, 443 Leacock Building. All Honours students must meet with a Department Honours adviser in each year of their Honours program.

HONOURS IN ECONOMICS (42 credits)
The Honours program in Economics (B.A. and B.Com.) consists of 30 specified credits of Honours courses and a further 12 credits of approved Economics courses. Honours students are also required to complete courses in basic calculus and linear algebra.

Required Courses (24 credits)
ECON 250D1 (3) Introduction to Economic Theory: Honours
ECON 250D2 (3) Introduction to Economic Theory: Honours
ECON 257D1 (3) Economic Statistics - Honours
ECON 257D2 (3) Economic Statistics - Honours
ECON 352D1 (3) Macroeconomics - Honours
ECON 352D2 (3) Macroeconomics - Honours
ECON 450D1 (3) Advanced Economic Theory - Honours
ECON 450D2 (3) Advanced Economic Theory - Honours

Complementary Courses (18 credits)
6 credits selected from:
ECON 460 (3) History of Thought 1 - Honours
and ECON 461 (3) History of Thought 2 - Honours
or ECON 467D1 (3) Econometrics - Honours
and ECON 467D2 (3) Econometrics - Honours

12 credits of Economics courses at the 300-, 400- or 500-level, approved by an Honours adviser. Normally at least 9 of the 12 will be at the 400- or 500-level. (NB: Honours students are not permitted to register for general Economics courses where an Honours course in the same field is offered.) ECON 450D1/ ECON 450D2 is the capstone course for the Honours program.

Normally, ECON 250D1/ECON 250D2 is taken in the U1 year, ECON 352D1/ECON 352D2 in U2, and ECON 450D1/ ECON 450D2 in U3. ECON 257D1/ECON 257D2 can be taken in U1 or U2: ECON 460, ECON 461, ECON 467D1/ECON 467D2 can be taken in U2 or U3. Students who have taken an equivalent statistics course prior to entering the program may be waived from the ECON 257D1/ECON 257D2 requirement. These students will normally be required to take ECON 467D1/ECON 467D2. The remaining 12 credits of Economics courses are usually taken in U2 or U3.

Mathematics Courses
All Honours students must complete the following three courses with a grade of C or higher (normally by the end of U1):
MATH 139 Calculus (students without high school calculus) or MATH 140 Calculus 1 (students with high school calculus)
MATH 141 Calculus 2
MATH 133 Vectors, Matrices and Geometry

These requirements can be met by having passed equivalent courses at CEGEPI or elsewhere. Honours students are encouraged, but not required, to take MATH 222 Calculus 3.

JOINT HONOURS – ECONOMICS COMPONENT (30 credits)
The Economics Joint Honours programs offered with the Desautels Faculty of Management are B.Com. Joint Honours in Economics and Accounting; B.Com. Joint Honours in Economics and Finance (these programs are available only to B.Com students); and a B.A. Joint Honours in Economics and Finance (available only to B.A. students).
Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Joint Honours students are required to complete the 30 specified credits of Honours courses listed in the Honours Program as well as the mathematics courses. The additional requirements for the two B.Com. Joint Honours programs are described in the Desautels Faculty of Management section. The B.A. Joint Honours in Economics and Finance requires 30 credits in Management. These are also described in the booklet on the Honours programs available from the Department of Economics.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

HONOURS STANDING
To remain in Honours in the U2 year, students are expected to obtain at least a B in ECON 250D1/ECON 250D2. Students who narrowly miss this grade may apply for “redemptive” status. They must submit their request by July 15 to the Department of Economics. They will normally be required to write an examination in Microeconomic Theory, given by the Department in August.

Only students who have met the mathematics requirements of the Honours program may apply for transfer from Major Concentration to Honours. Students who obtain an A in ECON 250D1/ECON 250D2 may enter the Honours program in their U2 year. Other students who have taken ECON 250D1/ECON 250D2 and obtained a grade of B+ or A- may sit an examination in Microeconomic Theory, comparable to the supplemental examination in ECON 250D1/ECON 250D2 given by the Department in August. They must submit a request to write this exam by July 15 to the Department of Economics. If they pass this examination with a grade of B, they may enter the Honours program in their U2 year, and need not take ECON 250D1/ECON 250D2. Students transferring from Major Concentration to Honours must take a minimum of 24 credits from 30 creditshonours-core and do an additional 12 credits in approved courses.

Normally, to be awarded an Honours Degree a student must obtain a 3.00 program GPA in the 42 required and complementary credits in Economics including a 3.00 average GPA in the 30 specified credits of Honours level courses and must also obtain a 3.00 CGPA. For a First Class Honours degree, the minimum requirements are normally a 3.50 program GPA, a 3.50 GPA for the 30 specified credits of Honours level courses, and a CGPA of 3.50.

Please see the following Website to access the document on credit for economics courses taken elsewhere:

For information on Economics Internships please see this Website: www.mcgill.ca/arts-internships/departments/economics.
4.12.17 Education for Arts Students Minor Concentration

Student Affairs Office —
Faculty of Education, 3700 McTavish Street
E-mail: sao.education@mcgill.ca
Website: www.mcgill.ca/edu-sao/minors

This Minor Concentration allows Arts students to develop and explore an interest in education. It will give students a solid footing in the basics of pedagogy and may provide a starting point towards a B.Ed. degree.

Completion of the Minor Concentration does not qualify a student for certification to teach in the province of Quebec. Students interested in a teaching career should consult the Faculty of Education, “Faculty Programs” in section 6.2.

MINOR CONCENTRATION IN EDUCATION FOR ARTS
STUDENTS (18 credits)

Required Courses (12 credits)
EDEM 262 (3) Media, Technology and Education
EDEM 220 (3) Contemporary Issues in Education
EDPE 300 (3) Educational Psychology
EDPI 309 (3) Exceptional Students

Complementary Courses (6 credits)
3 credits, one of:
EDEC 260 (3) Philosophical Foundations
EDEC 261 (3) Philosophy of Catholic Education

3 credits, one of:
EDEC 233 (3) First Nations and Inuit Education
EDEC 248 (3) Multicultural Education

4.12.18 Educational Psychology Minor Concentration

Program Director — Professor Alenoush Saroyan
Department of Educational and Counselling Psychology
Faculty of Education
(514) 398-4248

Program Coordinator — Mrs. B. Koester
Faculty of Education, 3700 McTavish Street, Room 513
(514) 398-4248
Fax: (514) 398-6968
Website: www.mcgill.ca/edu-ecp

Educational Psychology encompasses: (a) the theoretical and applied study of learning, cognition, and instruction in a variety of educational settings across ages and domains; (b) instructional technology and computers as cognitive tools in learning; (c) cognitive and social processes in learning; (d) evaluation and enhancement of learning and teaching; (e) education of learners with special needs or difficulties; (f) relationships of these or related phenomena to issues in human development, especially for children and adolescents; and (g) the impact of family and community on children’s learning and development.

Completion of this Minor Concentration does not qualify a student to enter the teaching profession. Students interested in a teaching career should consult the Faculty of Education, "Faculty Programs", see section 6.2.

In respect of Faculty of Arts multi-track regulations, students registering for the Major Concentration in Psychology and the Minor Concentration in Educational Psychology must complete an additional Minor Concentration in Arts in a unit other than Psychology.

Students should consult section 4.3.5, “Program Requirements” for additional information on course restrictions, credit counting, etc.

For further information on the Department of Educational and Counselling Psychology, see section 6.4.

4.12.19 English (ENGL)

Departmental Office: Room 155, Arts Building
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Telephone: (514) 398-6550
Fax: (514) 398-8146
Website: www.arts.mcgill.ca/english

Chair — P. Yachnin
Emeritus Professors
M. Puhvel; B.A., M.A.(McG.), Ph.D.(Harv.)
D. Suvin; B.A., M.Sc., Ph.D.(Zabreb), F.R.S.C.
W.C. Wees; B.A., N(western), M.A.(Roch.), Ph.D.(N’western)

Professors
K. Borris; B.A.(Vic., BC), Ph.D.(Edin.)
M. Dorsinville; B.A., M.A. (Sher.), Ph.D.(CUNY)
M. A. Kilgour; B.A.(Tor.), Ph.D.(Yale)
R. Lecker; B.A., M.A., Ph.D.(York)
K. McSweeney; B.A., Ph.D.(Tor.) (Molson Professor of English)
P. Sabor; B.A.(Camb.), M.A.(Qu.), Ph.D.(Lond.) (Canada Research Chair in 18th Century Studies)
M. Stenbaek; B.A.(Copen.), M.A., Ph.D.(Montr.)
B. Trehearn; B.A., M.A., Ph.D.(McG.)

P. Yachnin; B.A.(Mcg.), M.Litt.(Edin.), Ph.D.(Tor.) (Tomlinson Chair in Shakespeare Studies)

Associate Professors
D. A. Bray; B.A.(Mcg.), Ph.D.(Edin.)
M.Y. Cooke; B.A.(Qu.), M.A.(C’nell), M.A., Ph.D.(Tor.)
P. Gibian; B.A.(Yale), M.A.(N.Y.), M.A., Ph.D.(Stan.)
D. C. Hensley; B.A., M.A.(Cant, ab.), B.A., Ph.D.(Yale)

MINOR CONCENTRATION IN EDUCATIONAL PSYCHOLOGY
(18 credits - Non-expandable)

Required Course (3 credits)
EDPE 335 (3) Instructional Psychology
This required course has a prerequisite of an introductory course in psychology taken at either CEGEP or university level (e.g., PSYC 100 or EDPE 300). Students who do not have this prerequisite prior to entry into this Minor Concentration may take either PSYC 100 or EDPE 300 and count EDPE 300 as one of the complementary courses for this Minor Concentration.

Complementary Courses (15 credits)
3 credits (to be taken near the end of the sequence), one of:
EDPE 355* (3) Cognition and Education
or EDPE 555(3) Applied Cognitive Science
12 credits selected from
EDPI 309 (3) Exceptional Students
EDPI 526 (3) Talented and Gifted Students
EDPI 527 (3) Creativity and Its Cultivation
EDPI 543 (3) Family, School and Community
EDPE 208** (3) Personality and Social Development
EDPE 304 (3) Measurement and Evaluation
EDPE 355 (3) Cognition and Education
EDPE 377 (3) Adolescence and Education
EDPE 510 (3) Learning and Technology
EDPE 515** (3) Gender Identity Development
EDPE 535 (3) Instructional Design
EDPE 555 (3) Applied Cognitive Science

* Students with a background in psychology should normally select
EDPE 355. Note: EDPE 355 has a prerequisite, either PSYC 213 or permission of the instructor.
** Students may not receive credit for both EDPE 208 and
PSYC 304. EDPE 208 is not open to students registered in a Major
or Minor Concentration in Psychology.
*** EDPE 515 is also a complementary course in the B.A. Minor
Concentration in Women’s Studies (Social Sciences Option).
The Department of English offers a wide variety of courses covering three linked and overlapping areas: literature written in English; drama, including both courses in dramatic literature and courses in film and video production; and cultural studies, including analysis of a variety of media. These three areas are integrally related, and all students in English Department programs are invited to do work in all three, while concentrating in one of them.

The Literature option provides a grounding in the basic texts and methods of the discipline as well as wide acquaintance with substantial areas of the field.

The Drama and Theatre option tries to place its subject in as broad a social and philosophical context as possible. The Drama and Theatre program is not designed to provide professional theatre training. The aim is rather to encourage students to explore the subject as a liberal arts discipline.

The Cultural Studies option concentrates on analysis of forms of cultural expression and symbolic interaction, and of the various media through which these may be disseminated and transformed. Such study concerns symbolic form, aesthetically based forms of analysis, and the various modes of criticism and theory relevant to media which contain both verbal and non-verbal elements. The aim is above all to hone students' analytical and interpretive skills while introducing them to specific critical approaches to cultural studies. This is not a major in journalism or mass media. Such study concerns symbolic form, aesthetically based forms of analysis, and the various modes of criticism and theory relevant to media which contain both verbal and non-verbal elements. The aim is above all to hone students' analytical and interpretive skills while introducing them to specific critical approaches to cultural studies. This is not a major in journalism or mass media. Each student must choose one of these options.

The Faculty policy states that, after or while taking a 36-credit Major Concentration in the English Department and an 18-credit Minor Concentration in another department, students may take an additional 18-credit Minor Concentration in English.

For the current lists of complementary courses referred to in the Major Concentrations:

- Major Authors/Major Figures,
- courses with Canadian content,
- Period courses/Courses with a historical dimension

see the Department's Website or consult the Departmental Office.

MINOR CONCENTRATION IN ENGLISH – LITERATURE

(18 credits) (Expandable to the Major Concentration in English - Literature)

**Required Courses** (6 credits)

ENGL 202  (3)  Departmental Survey of English Literature 1
ENGL 203  (3)  Departmental Survey of English Literature 2

**Complementary Courses** (12 credits)

3 credits from a list of courses on Major Authors
3 credits from a list of pre-1800 courses
6 additional credits from the option's offerings

MINOR CONCENTRATION IN ENGLISH – DRAMA AND THEATRE

(18 credits) (Expandable to the Major Concentration in English - Drama and Theatre)

**Required Courses** (6 credits)

ENGL 230  (3)  Introduction to Theatre Studies
ENGL 269  (3)  Introduction to Performance

**Complementary Courses** (12 credits)

3 credits from a list of courses on Major Figures in Drama/Theatre
3 credits from a list of courses in Drama and/or Theatre with an historical dimension
6 additional credits from the option's offerings

MINOR CONCENTRATION IN ENGLISH – CULTURAL STUDIES

(18 credits) (Expandable to the Major Concentration in English - Cultural Studies)

**Required Courses** (6 credits)

ENGL 275  (3)  Introduction to Cultural Studies
ENGL 276  (3)  Methods of Cultural Analysis

**Complementary Courses** (12 credits)

3 credits from a list of courses on Major Figures in Cultural Studies
3 credits from a list of courses in Cultural Studies with an historical dimension
6 additional credits from the option's offerings

MAJOR CONCENTRATIONS

Major Concentration students are required to take a 36-credit program, the specific content of which differs in the three options available. Each student must choose one of these options. See the Department's Website or consult the Departmental Office.

**Required Courses** (9 credits)

ENGL 202*  (3)  Departmental Survey of English Literature 1
ENGL 203*  (3)  Departmental Survey of English Literature 2
ENGL 311*  (3)  Poetics

*to be taken in the first two terms of the program

**Complementary Courses** (27 credits)

3 credits from a list of Literature courses
3 credits in Theory or Criticism:
ENGL 317  (3)  Theory of English Studies 1
or ENGL 318  (3)  Theory of English Studies 2
or ENGL 319  (3)  Theory of English Studies 3
or ENGL 322  (3)  Theories of the Text
or ENGL 346  (3)  Materiality and Sociology of Text
or ENGL 352  (3)  Theories of Difference

3 credits each from two of the following areas: Backgrounds of English Literature, Old English, Medieval, Renaissance
3 credits each from two of the following areas: Restoration, 18th Century, Romantic, Victorian, 19th-Century American
3 credits from one of the following areas: Early 20th Century, Modernist, Post-modern, Contemporary
6 additional credits from the option's offerings
Note: At least 3 of the 27 complementary credits must be from a list of courses on a "Major Author."

MAJOR CONCENTRATION IN ENGLISH – DRAMA AND THEATRE (36 credits)

Required Courses (9 credits)
ENGL 230* (3) Introduction to Theatre Studies
ENGL 269* (3) Introduction to Performance
ENGL 355* (3) The Poetics of Performance
* to be taken in the first two terms of the program

Complementary Courses (27 credits)
3 credits from a list of courses on Major Figures in Drama and/or Theatre
3 credits from a list of courses in Drama and/or Theatre with a Canadian component
3 credits in Theory or Criticism
ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
6 credits from a list of courses in Drama and/or Theatre with an historical dimension
12 additional credits from the option’s offerings

MAJOR CONCENTRATION IN ENGLISH – CULTURAL STUDIES (36 credits)

Required Courses (9 credits)
ENGL 275* (3) Introduction to Cultural Studies
ENGL 276* (3) Methods of Cultural Analysis
ENGL 359* (3) The Poetics of the Image
* to be taken in the first two terms of the program

Complementary Courses (27 credits)
3 credits from a list of courses on Major Figures in Cultural Studies
3 credits from a list of courses in Cultural Studies with a Canadian component
3 credits in Theory or Criticism:
ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
6 credits from a list of courses in Cultural Studies with an historical dimension
12 additional credits from the option’s offerings

HONOURS PROGRAMS IN ENGLISH (each 60 credits)

Entry to Honours is by application, normally after two terms in a Departmental program, including at least 18 credits of English. Students intending to apply for Honours or already accepted should consult an Honours adviser regarding their course selections throughout their program. The Faculty of Arts now requires that all students admitted to Honours programs after 2000/2001 complete a second-program Minor in addition to their Honours program.

Admission to the Honours program is limited to a small number of students with excellent records. The minimum CGPA for application to the Honours program is 3.50; students meeting the 3.50 minimum in English Department courses alone (although not in CGPA) may also apply and make a case for their acceptance. In neither instance is admission guaranteed. After admission into the Honours program, the student is required to maintain a CGPA at a level set by the Faculty for graduation with Honours and a program GPA at the level set by the Department. (See requirements for graduation with Honours listed below.)

The Honours program in English requires 60 credits. Students intending to apply for Honours should plan to complete as many of the specific requirements of their option as possible within the first two years. With the written approval of an adviser, up to nine credits may be taken outside the department. All Honours students must complete at least 6 of their complementary credits at the 500 level. Ideally, 500-level seminars chosen will be relevant to the area of the student’s independent study in the Honours Essay course (ENGL 491D1/ENGL 491D2), taken without exception in the final year of the program. The Honours Essay is first planned in consultation with a supervisor at the time of application to the Honours program; it is then guided and evaluated by that supervisor during the completion of ENGL 491. Graduation with Honours requires 60 credits of English, a minimum mark of B+ on the Honours Essay, a minimum CGPA of 3.00, and a minimum program GPA of 3.50. Graduation with First Class Honours requires a mark of A on the Honours Essay, a minimum CGPA of 3.50, and a minimum program GPA of 3.70.

HONOURS IN ENGLISH (LITERATURE) (60 credits)

Required Courses (18 credits)
ENGL 202* (3) Departmental Survey of English Literature 1
ENGL 203* (3) Departmental Survey of English Literature 2
ENGL 311* (3) Poetics
ENGL 360** (3) Literary Criticism
ENGL 491D1 (3) Honours Essay
ENGL 491D2 (3) Honours Essay
* to be taken in the first two terms in the program
** normally taken in the second year of the program

Complementary Courses (42 credits)
15 credits, 3 credits each, of Shakespeare, Canadian Literature, American Literature, Cultural Studies, Drama/Theatre.
3 credits of theory:
ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
3 credits each from two of the following areas: Backgrounds of English Literature, Old English, Medieval, Renaissance
3 credits each from two of the following areas: Restoration, 18th Century, Romantic, Victorian, 19th-Century American
3 credits from one of the following areas: Early 20th Century, Modernist, Post-modern, Contemporary
9 credits chosen from among other Department offerings
At least 6 complementary credits must be at the 500 level.
A maximum of 9 credits may be from another department with the signed permission of the adviser.

HONOURS IN ENGLISH (DRAMA AND THEATRE) (60 credits)

Required Courses (15 credits)
ENGL 230* (3) Introduction to Theatre Studies
ENGL 269* (3) Introduction to Performance
ENGL 355* (3) The Poetics of Performance
ENGL 491D1 (3) Honours Essay
ENGL 491D2 (3) Honours Essay
* to be taken in the first two terms of the program

Complementary Courses (45 credits)
3 credits from a list of courses on Major Figures in Drama and/or Theatre
3 credits from a list of courses in Drama and/or Theatre with a Canadian component
6 credits from a list of courses in Drama and/or Theatre with an historical dimension
3 credits of theory:
ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2

McGill University, Undergraduate Programs 2006-2007
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
3 credits from a list of courses with a theoretical component, from the option’s offerings at the 400 level or above
9 credits from a list of performance-oriented courses
6 credits chosen from Departmental offerings in English Literature
and/or Cultural Studies
12 credits in English selected in consultation with an academic adviser
At least 6 complementary credits must be at the 500 level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

**HONOURS IN ENGLISH (CULTURAL STUDIES) (60 credits)**

**Required Courses (15 credits)**

ENGL 275* (3) Introduction to Cultural Studies
ENGL 276* (3) Methods of Cultural Analysis
ENGL 359* (3) The Poetics of the Image
ENGL 491D1 (3) Honours Essay
ENGL 491D2 (3) Honours Essay

* must have been taken by the end of the first two terms of the program

**Complementary Courses (45 credits)**

3 credits from a list of courses on Major Figures in Cultural Studies
3 credits from a list of courses in Cultural Studies with a Canadian component
6 credits from a list of courses in Cultural Studies with an historical dimension
3 credits of theory:

ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
3 credits from a list of courses in theory, from the option’s offerings at the 400 level or above
12 credits in English Literature and/or Drama and Theatre, of which 6 credits are at the 300 level or higher
15 credits in additional courses in Cultural Studies

At least 6 complementary credits must be at the 500 level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

**JOINT HONOURS PROGRAM – ENGLISH COMPONENT**

(36 credits)

Students who wish to study at the Honours level in two Arts disciplines may apply to combine Joint Honours Program components from two Arts disciplines; see section 4.11.4 "Joint Honours Programs" for a list of available programs.

Applications to do a Joint Honours Program in English and another subject in the Faculty of Arts should be submitted once a minimum of 9 credits, and no more than 18 credits, have been completed in English. There are normally two possible application dates for Joint Honours in English: either by the end of January (by which time first-term courses are completed and the grades are available), or at the same time as the Honours application date, typically in mid-April. (Only students who will have completed more than 18 credits in English by the end of January may apply in the Fall.)

Applications will be considered by the Department’s Honours Committee on the basis of the student’s GPA in English courses, at a minimum of 3.50. The application form is available in the Department’s General Office (Arts 155), and the specific submission requirements are described by that form. The application will take some time to prepare, and allowance for such preparation (at least several weeks) must be made in order to meet the application deadline. Incomplete applications will not be considered.

Acceptance into Joint Honours English may be conditional on particular revisions to the Program Course Proposal to be submitted with the application form. This proposal goes on file in the General Office with the other submissions. Only course choices that are appropriate, given the nature of the Joint Honours program proposed, including the Honours Essay if applicable, will be approved. In order to graduate with Joint Honours, all subsequent course substitutions in the initially approved Joint Honours English program must be endorsed by the Joint Honours adviser when they are made (i.e., at the start of each term) and entered on the Program Course Proposal with the adviser’s initialled approval.

The maintenance of a 3.50 GPA in English courses is required for continuation in Joint Honours.

Each academic year there is a special adviser for Joint Honours students, and the receptionist in the General Office can provide his or her name and contact information. The Department’s Website provides additional information on the Joint Honours program and applications, and this Website should also be consulted prior to contacting the adviser.

**Joint Honours Program Descriptions**

**400 Level**

All Joint Honours students’ programs of study shall include 6 credits of study at the 400 level or above.

**Advanced Study**

In addition, Joint Honours students shall undertake at least 6 further credits of advanced study, in one of the following two forms, in order of preference:

a. ENGL 491D1/ENGL 491D2, an Honours Essay, or
b. Two 500-level courses

(In very rare cases, a third alternative may be approved at the discretion of the Joint Honours adviser, but only when it is formally recommended for the joint subject according to the description of that Joint Honours program in the University Calendar. For example, Joint Honours with Anthropology allows the option of combining 3 credits of essay work with 3 credits in the joint subject to create a joint essay.)

**JOINT HONOURS IN ENGLISH (LITERATURE) (36 credits)**

**Required Courses (6 credits)**

ENGL 311 (3) Poetics
ENGL 360 (3) Literary Criticism

**Complementary Courses (30 credits)**

9 credits of pre-1800 English literature
3 credits of theory:

ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
3 credits from a list of courses with a theoretical component, from the option's offerings at the 400 level or above
12 credits in English Literature and/or Drama and Theatre, of which 6 credits are at the 300 level or higher
15 credits in additional courses in Cultural Studies

At least 6 complementary credits must be at the 500 level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

**JOINT HONOURS IN ENGLISH (DRAMA AND THEATRE) (36 credits)**

**Required Courses (9 credits)**

ENGL 230 (3) Introduction to Theatre Studies
ENGL 269 (3) Introduction to Performance
ENGL 355 (3) The Poetics of Performance

**Complementary Courses (27 credits)**

3 credits of theory:

ENGL 317 (3) Theory of English Studies 1
or ENGL 318 (3) Theory of English Studies 2
or ENGL 319 (3) Theory of English Studies 3
or ENGL 322 (3) Theories of the Text
or ENGL 346 (3) Materiality and Sociology of Text
or ENGL 352 (3) Theories of Difference
6 credits in English Literature and/or Drama and Theatre
9 credits of advanced study as specified above
9 credits chosen from among Department offerings
or ENGL 322 (3) Theories of the Text  
or ENGL 346 (3) Materiality and Sociology of Text  
or ENGL 352 (3) Theories of Difference  
3 credits in dramatic literature  
3 credits in history of the theatre  
6 credits of advanced study as specified above  
12 credits chosen from among Department offerings

## JOINT HONOURS IN ENGLISH (CULTURAL STUDIES)  
(36 credits)

### Required Courses  
(9 credits)
ENGL 275 (3) Introduction to Cultural Studies  
ENGL 276 (3) Methods of Cultural Analysis  
ENGL 359 (3) The Poetics of the Image

### Complementary Courses  
(27 credits)
3 credits of theory:  
ENGL 317 (3) Theory of English Studies 1  
or ENGL 318 (3) Theory of English Studies 2  
or ENGL 319 (3) Theory of English Studies 3  
or ENGL 322 (3) Theories of the Text  
or ENGL 346 (3) Materiality and Sociology of Text  
or ENGL 352 (3) Theories of Difference  
3 credits from a list of courses in Cultural Studies with an historical dimension.  
3 credits from a list of courses on Major Figures in Cultural Studies.  
6 credits of advanced study as specified above.  
12 credits chosen from among Department offerings.

## Department of English Student Association (DESA)
DESA is the representative body for the students of the English Department at McGill. Any student taking one or more courses in DESA is the representative body for the students of the English

## 4.12.21 English for Academic Purposes (EAPR)

**English and French Language Centre**  
688 Sherbrooke Street West, 2nd Floor  
Montreal, QC H3A 3R1  
Telephone: (514) 398-4172  
Fax: (514) 398-5449  
Website: [www.mcgill.ca/effc](http://www.mcgill.ca/effc)

**Director** — Hélène Riel-Salvatore

**Lecturers**
Robert Myles; B.A., M.A.(Car.), Ph.D.(McG.)  
Susan Laver; B.A.(S.Fraser), M.A.(East Anglia, Norwich, Eng.), Ph.D.(McG.)

The English for Academic Purposes (EAP) course, EAPR 250 Research Essay & Rhetoric, develops academic writing and critical thinking skills.

The course is for native speakers of English. Near-native English speakers may also take the course, but students with less than advanced English Second Language (ESL) skills are advised to take the academic writing courses listed under ESLN (English as a Second Language) in this Calendar.

**Entrance Test:** Short composition first day of class. Students with less than advanced ESL skills and students with serious writing problems will be advised on other courses they might take.

## 4.12.22 Environment

**Department of English Student Association (DESA)**  
DESA is the representative body for the students of the English Department at McGill. All students are required to attend class without fail during the first two weeks in order to retain their places.

## Arts for Academic Purposes (EAPR)

**English and French Language Centre**  
688 Sherbrooke Street West, 2nd Floor  
Montreal, QC H3A 3R1  
Telephone: (514) 398-4172  
Fax: (514) 398-5449  
Website: [www.mcgill.ca/effc](http://www.mcgill.ca/effc)

**Director** — Hélène Riel-Salvatore

**Lecturers**
Robert Myles; B.A., M.A.(Car.), Ph.D.(McG.)  
Susan Laver; B.A.(S.Fraser), M.A.(East Anglia, Norwich, Eng.), Ph.D.(McG.)

The English for Academic Purposes (EAP) course, EAPR 250 Research Essay & Rhetoric, develops academic writing and critical thinking skills.

The course is for native speakers of English. Near-native English speakers may also take the course, but students with less than advanced English Second Language (ESL) skills are advised to take the academic writing courses listed under ESLN (English as a Second Language) in this Calendar.

**Entrance Test:** Short composition first day of class. Students with less than advanced ESL skills and students with serious writing problems will be advised on other courses they might take.

## 4.12.23 French as a Second Language (FRSL)

**English and French Language Centre**  
688 Sherbrooke Street West, 2nd Floor  
Montreal, QC H3A 3R1  
Telephone: (514) 398-4172  
Fax: (514) 398-5449  
Website: [www.mcgill.ca/effc](http://www.mcgill.ca/effc)

**Director** — Hélène Riel-Salvatore

**Lecturers**
Loretta Hyrat; B.A., M.A.(McG.)  
Denysse Laniel; B.A.(Montr.), M.A.(McG.), Cert. Ed.(‘dia)  
Geneviève Leidelinger; L.ès L.(Nice), M.A.(VL)  
Suzanne Pellerin; B.A., M.A.(Laval), D.E.A.(Metz)  
Hélène Poulin-Mignault; B.A., M.A.(McG.)  
Hélène Riel-Salvatore; B.A.(McG.), M.A.(Harv.)  
Jean-Yves Richard; B.A., M.A.(Laval)

Courses in French as a Second Language are open to students in any program who need to develop their oral and written skills in the French language either for use in their future professional career or as preparation for more advanced studies in French linguistics, literature, civilization, translation or in Canadian studies.

**ADMISSION AND REGISTRATION**

**A Placement Test** is required before admission to any FRSL course, including Beginners' French. All students should bring a photocopy of their transcript from high school or CEGEP. Departmental permission will be given after the student’s level has been determined by a placement test. Where students' levels in French make admission to this Department inappropriate, they will be directed to the Département de langue et littérature françaises. No auditors are accepted.
Placement tests and registration take place at 688 Sherbrooke Street West, 2nd floor, on August 28 at 09:00, 10:00, 11:00, 14:00 and 15:00, on August 29 and August 31 at 10:00, 11:00, 14:00 and 15:00 and on September 1 at 10:00 and 11:00. Only a limited number of students are tested at a time, beginning each hour. It is important to arrive on the hour.

**Registration is limited and Departmental permission is absolutely required.** As numbers are limited in all courses, students who meet the required standard for any given course are admitted on a first-come, first-served basis, until the day before classes start. As of the first day of class, if places open, the department will accept students who have not yet registered based upon the date their permit was issued with priority being given to the earliest date.

The Department reserves the right to transfer a student to another course if the level is inappropriate. Any absence from class during the Course Change period may lead to losing one’s place to another student.

### 4.12.24 French Language and Literature (FREN)

Pavillon Petersen
3460, rue McTavish
Montréal, QC H3A 1X9
Tél: (514) 398-6885
Télécopieur: (514) 398-8557
Site web: www.arts.mcgill.ca/french

**Chair — Gillian Lane-Mercier**

**Professors**

Marc Angenot; L.Phil.& Lett., Dr.Phil.& Lett.(Brussels), F.R.S.C. (James McGill Professor)
Yvan Lamonde; B.A., M.A. Philo.(Montr.), M.A., Ph.D.(Laval) (James McGill Professor)
Francois Ricard; B.A.(Laval), Dr. 3rd Cy.(Aix-Marseille), M.A.(McG.), F.R.S.C. (James McGill Professor)
Yvon Rivard; B.A.(Laval), Dr. 3rd Cy.(Aix-Marseille), M.A.(McG.)

**Associate Professors**

Michel Biron; M.A.(Montr.), Dr.Phil.& Lett.(Belgique) (Canada Research Chair)
Chantal Bouchard; M.A.(Montr.), Dr. 3rd Cy.(Paris VII-Jussieu)
Jean-Pierre Boucher; B.A.(Montr.), Dr. 3rd Cy.(Besançon), M.A.(McG.)
Annick Chapdelaine; M.A., D.E.A., Dr. 3rd Cy.(Paris VII-Jussieu)
Isabelle Daunais; M.A., Ph.D.(McG.)
Diane Desrosiers-Bonin; M.A., Ph.D.(Montr.) (William Dawson Scholar)
Normand Doiron; B.A., Ph.D.(Montr.)
Jane Everett; M.A.(Car.), Ph.D.(McG.);
Gillian Lane-Mercier; M.A.(Montpellier), Ph.D.(McG.)

**Assistant Professor**

Frédéric Charbonneau; M.A., Ph.D.(Montr.) (William Dawson Scholar)
Catherine Leclerc; M.A. (UQAM), Ph.D. (C’dia)

### GÉNÉRALITÉS

Le Département de langue et littérature françaises offre un programme de cours qui couvre l’ensemble des littératures française et québécoise ainsi que d’autres aspects des études françaises: civilisation et langue (linguistique, stylistique, traduction).

Le français est la seule langue de travail au Département. Tous les cours sont donnés en français. Les francophones constituent une proportion importante de notre clientèle, ce qui représente un avantage appréciable pour les étudiants qui ne sont pas de langue française, leur permettant de faire leurs études dans un milieu essentiellement français.

Pour ce qui est de la traduction, le programme offre à McGill a comme principale caractéristique de comporter un grand nombre de cours de culture générale.

La plupart des cours peuvent être suivis par tout étudiant ayant les connaissances et les capacités voulues: le professeur jugera en dernier ressort. Il existe toutefois quelques restrictions.

1. **L’admission aux cours pratiques de langue (Composition 1 et 2, Grammaire avancée, Traduction) est subordonnée à la réussite d’un test qui a pour but de déterminer le niveau de connaissance de l’étudiant et d’assurer que celui-ci sera dirigé vers un cours correspondant à ses besoins. Si la préparation de l’étudiant s’avère insuffisante pour lui permettre de suivre un cours au Département, un cours au Centre d’enseignement du français et de l’anglais (French as a Second Language) lui sera conseillé.**

2. **L’admission au programme de Lettres et traduction (pour les étudiants en Spécialisation) est subordonnée à la réussite d’un test.**

3. Les étudiants extérieurs au Département peuvent s’inscrire à tous les cours offerts au Département sauf exceptions indiquées dans le libellé des cours.

### ASSOCIATION GÉNÉRALE DES ÉTUDIANTS DE LANGUE ET LITTÉRATURE FRANÇAISES (AGELF)

Association regroupant les étudiants de 1er cycle (inscrits à au moins 6 crédits en français) qui a pour but de promouvoir les intérêts de tous ses membres.

### CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LANGUE FRANÇAISE

(18 crédits)

(Ne peut être convertie en Concentration majeure)

**Cours complémentaires** (18 crédits)

6 à 12 crédits au Centre d’enseignement du français et de l’anglais parmi:

- FRLS 321 (6) Oral and Written French 2
- FRLS 325 (6) Oral and Written French 2 - Intensive
- FRLS 431 (6) Français fonctionnel avancé
- FRLS 445 (3) Français fonctionnel, écrit 1
- FRLS 446 (3) Français fonctionnel, écrit 2
- FRLS 449 (3) Le Français des médias
- FRLS 455 (3) Grammaire et création

6 à 12 crédits au Département de langue et littérature françaises parmi:

- FREN 201 (3) Composition 1
- FREN 203 (3) Composition 2
- FREN 239 (3) Stylistique comparée
- FREN 245 (3) Grammaire avancée
- FREN 247 (3) Dissertation
- FREN 250 (3) Littérature française avant 1800
- FREN 251 (3) Littérature française depuis 1800
- ou autres cours au choix

### CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LANGUE ET TRADUCTION

(18 crédits)

(Ne peut être convertie en Concentration majeure)

**Cours complémentaires** (18 crédits)

9 crédits parmi:

- FREN 201 (3) Composition 1
- FREN 203 (3) Composition 2
- FREN 245 (3) Grammaire avancée
- FREN 247 (3) Dissertation

9 crédits parmi:

- FREN 239 (3) Stylistique comparée
- FREN 244 (3) Traduction 1
- FREN 346 (3) Traduction 2
- FREN 349 (3) Traduction 3
- FREN 431 (3) Traduction 4
- FREN 441 (3) Thème anglais
CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES (18 crédits)  
(Convertible en Concentration majeure Lettres)

Cours obligatoires (9 crédits)
FREN 250 (3) Littérature française avant 1800  
FREN 251 (3) Littérature française depuis 1800  
FREN 252 (3) Littérature québécoise

Cours complémentaires (9 crédits)  
9 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES ET TRADUCTION (18 crédits)  
(Convertible en Concentration majeure Lettres et traduction)

Cours obligatoires (9 crédits)
FREN 250 (3) Littérature française avant 1800  
FREN 251 (3) Littérature française depuis 1800  
FREN 252 (3) Littérature québécoise

Cours complémentaires (9 crédits)  
9 crédits parmi:  
FREN 239 (3) Stylistique comparée  
FREN 244 (3) Traduction 1  
FREN 246 (3) Traduction 2  
FREN 249 (3) Traduction 3  
FREN 431 (3) Traduction 4  
FREN 441 (3) Thème anglais  
FREN 443 (3) Version littéraire  
FREN 494 (3) Séminaire: Traduction spécialisée

CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – THÉORIE ET CRITIQUE LITTÉRAIRES (18 crédits)  
(Convertible en Concentration majeure Lettres)

Cours obligatoires (6 crédits)
FREN 394 (3) Théorie de la traduction  
FREN 490 (3) Critique et théorie

Cours complémentaires (12 crédits)  
3 crédits parmi:  
FREN 250 (3) Littérature française avant 1800  
FREN 251 (3) Littérature française depuis 1800  
FREN 252 (3) Littérature québécoise

3 crédits parmi:  
FREN 334 (3) Méthodes d’analyse des textes littéraires 1  
FREN 335 (3) Méthodes d’analyse des textes littéraires 2  
6 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

CONCENTRATION MAJEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES (36 crédits)

Cours obligatoires (9 crédits)
FREN 250 (3) Littérature française avant 1800  
FREN 251 (3) Littérature française depuis 1800  
FREN 252 (3) Littérature québécoise

Cours complémentaires (27 crédits)  
3 crédits parmi:  
FREN 334 (3) Méthodes d’analyse des textes littéraires 1  
FREN 335 (3) Méthodes d’analyse des textes littéraires 2  
6 crédits parmi:  
FREN 201 (3) Composition 1  
FREN 203 (3) Composition 2  
FREN 245 (3) Grammaire avancée  
FREN 247 (3) Dissertation

18 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).
départements concernés, pour établir leur choix de cours et formuler leur projet de recherche interdisciplinaire, le cas échéant.

PROGRAMME DE SPÉCIALISATION, OPTION LETTRES
(60 crédits)

Cours obligatoires (42 crédits)
FREN 250 (3) Littérature française avant 1800
FREN 251 (3) Littérature française depuis 1800
FREN 252 (3) Littérature québécoise
FREN 352 (3) Lectures 1
FREN 353 (3) Lectures 2
FREN 374 (3) Lectures 3
FREN 395 (3) Travaux pratiques 1
FREN 396 (3) Travaux pratiques 2
FREN 397 (3) Travaux pratiques 3
FREN 464D1 (3) Mémoire de spécialisation
FREN 464D2 (3) Mémoire de spécialisation
FREN 490 (3) Critique et théorie
FREN 493 (3) Lectures 4
FREN 497 (3) Travaux pratiques 4

Cours complémentaires (18 crédits)
6 crédits parmi les cours suivants (U3):
FREN 461 (3) Questions de littérature 1
FREN 472 (3) Questions de littérature 2
FREN 498 (3) Questions de littérature 3
FREN 499 (3) Questions de littérature 4
12 crédits au Département, répartis comme suit (maximum de 6 crédits dans les cours de niveau 200; minimum de 6 crédits dans les cours de niveau 400):
- 3 crédits de littérature/civilisation française
- 3 crédits de littérature/civilisation québécoise
- 3 crédits de langue/traduction
- 3 crédits au choix

En plus des cours du programme de Spécialisation, les étudiants doivent faire une Concentration mineure (18 crédits) dans un département autre que celui de leur programme de Spécialisation.

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme, et un CGPA de 3.00.

PROGRAMME DE SPÉCIALISATION, OPTION LETTRES ET TRADUCTION (60 crédits)

Cours obligatoires (46 crédits)
FREN 231 (3) Linguistique française
FREN 244 (3) Traduction 1
FREN 250 (3) Littérature française avant 1800
FREN 251 (3) Littérature française depuis 1800
FREN 252 (3) Littérature québécoise
FREN 346 (3) Traduction 2
FREN 347 (3) Terminologie générale
FREN 349 (3) Traduction 3
FREN 352 (3) Lectures 1
FREN 353 (3) Lectures 2
FREN 374 (3) Lectures 3
FREN 431 (3) Thème anglais
FREN 490 (3) Critique et théorie
FREN 493 (3) Lectures 4
FREN 494 (3) Séminaire: Traduction spécialisée

Cours complémentaires (12 crédits)
(Au moins 6 de ces crédits doivent être de niveau 400)
- 6 crédits de langue/traduction
- 6 crédits de littérature/civilisation française/québécoise

Les étudiants peuvent aussi suivre les cours Questions de littérature 1, 2, 3, 4 (FREN 461, FREN 472, FREN 498, FREN 499) et s’inscrire au FREN 464D1/D2 Mémoire de spécialisation.

En plus des cours du programme de Spécialisation, les étudiants doivent faire une Concentration mineure (18 crédits) dans un département autre que celui de leur programme de Spécialisation.

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme, et un CGPA de 3.00.

DOUBLE SPÉCIALISATION, OPTION LETTRES (36 crédits)

Cours obligatoires (24 crédits)
FREN 250 (3) Littérature française avant 1800
FREN 251 (3) Littérature française depuis 1800
FREN 252 (3) Littérature québécoise
FREN 352 (3) Lectures 1
FREN 353 (3) Lectures 2
FREN 374 (3) Lectures 3
FREN 490 (3) Critique et théorie
FREN 493 (3) Lectures 4

Cours complémentaires (12 crédits)
3 crédits parmi les Travaux pratiques (T.P.) le FREN 395: T.P. I, est recommandé; 9 crédits de niveau 200, 300 ou 400 parmi les cours de littérature offerts par le Département.

Les « cours de service » ne pourront être crédités comme cours complémentaires.

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme, et un CGPA de 3.00.

DOUBLE SPÉCIALISATION, OPTION LETTRES ET TRADUCTION (36 crédits)

Cours obligatoires (30 crédits)
FREN 231 (3) Linguistique française
FREN 244 (3) Traduction 1
FREN 250 (3) Littérature française avant 1800
FREN 251 (3) Littérature française depuis 1800
FREN 252 (3) Littérature québécoise
FREN 346 (3) Traduction 2
FREN 347 (3) Terminologie générale
FREN 349 (3) Traduction 3
FREN 431 (3) Traduction 4
FREN 490 (3) Critique et théorie

Cours complémentaires (6 crédits)
choisis parmi les cours complémentaires de langue/traduction offerts par le Département; 3 crédits doivent être de niveau 400.

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme, et un CGPA de 3.00.

4.12.25 Geography (GEOG)

Burnside Hall, Room 705
805 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-4951 (or leave message (514) 398-4111)
Fax: (514) 398-7437
Website: www.geog.mcgill.ca

The Geography Department offers programs in both Arts and Science. Consult the Science entry "Geography (GEOG)" in section 11.12.14 for B.Sc. Geography programs, a list of teaching staff, an outline of the nature of Geography and the opportunities for study in this discipline.

Students planning to enter a B.A. program in Geography or a Joint Honours program should telephone (514) 398-4951 (or leave a message at (514) 398-4111) for an appointment with the departmental adviser. Students should consult Undergraduate information on the departmental Website.

The World Commission on Environment and Development has identified the evidence and possible consequences of widespread
unsustainable land use practices. Geography is an integrative discipline concerned with the relations between culture systems and resource bases. Students interested in understanding, or working towards the resolution of, our environmental “crisis” should select courses which deal with (1) the dynamics of natural systems (courses in the physical geography of terrestrial, atmospheric and hydrological systems); (2) the dynamics of human systems (courses in cultural, social, economic, political and urban geography); (3) the context of development and land use changes; and (4) practical skills such as Geographical Information Science, remote sensing, image analysis, quantitative methods and resource management.

**Prerequisites**

There are no departmental prerequisites for entrance to the B.A. Major Concentrations or Honours programs in Geography. It is helpful for Arts students to include 6 credits of Mathematics in their CEGEP or pre-university programs. A student who has completed college or pre-university geography courses fully equivalent to those of first year university may, with the adviser's approval, substitute other courses as part of the Major Concentrations or Honours programs. B.A. students in U0 are invited to take GEOG 205 for science credit and GEOG 200 for social science credit.

**MINOR CONCENTRATION IN GEOGRAPHY** (18 credits)  
[Expandable into the Major Concentration in Geography, but not into the Major Concentration in Geography (Urban Systems).]

The Minor Concentration in Geography is designed to provide students in the Faculty of Arts with an overview of basic elements of human geography at the introductory and advanced level.

**Complementary Courses** (18 credits)

9 credits (3 courses) from:
- GEOG 201 (3) Introductory Geo-Information Science
- GEOG 203 (3) Environmental Systems
- GEOG 210 (3) Global Places and Peoples
- GEOG 216 (3) Geography of the World Economy
- GEOG 217 (3) The Canadian City
- GEOG 272 (3) Earth's Changing Surface

9 credits (3 courses) from any Geography courses at the 300- or 400-level.

**MINOR CONCENTRATION IN GEOGRAPHIC INFORMATION SYSTEMS** (18 credits)  
[Expandable into the Major Concentration in Geography, but not into the Major Concentration in Geography (Urban Systems).]

This Minor is designed to provide students in the Faculty of Arts with an overview of basic elements of human geography at the introductory and advanced level.

**Required Courses** (15 credits)

- GEOG 201 (3) Introductory Geo-Information Science
- GEOG 306 (3) Raster Geo-Information Science
- GEOG 307 (3) Socioeconomic Applications of GIS
- GEOG 308 (3) Principles of Remote Sensing
- GEOG 506 (3) Advanced Geographic Information Science

**Complementary Courses** (3 credits)

One course to be chosen from:
- ATOC 414 (3) Applications of Remote Sensing
- COMP 420 (3) Secondary Storage Algorithms and Data Structures
- COMP 557 (3) Fundamentals of Computer Graphics  
  (Note prerequisites)
- GEOG 535 (3) Remote Sensing and Interpretation
- GEOG 551 (3) Environmental Decisions
- URBP 506 (3) Geographic Information Systems

**MINOR CONCENTRATION IN GEOGRAPHIC INFORMATION SYSTEMS (URBAN SYSTEMS)** (18 credits)  
[Expandable into the Major Concentration in Geography (Urban Systems).]

**Complementary Courses** (18 credits)

**Group A (9 or 12 credits)**

- GEOG 210 (3) Global Places and Peoples
- GEOG 217 (3) The Canadian City
- GEOG 303 (3) Health Geography
- GEOG 315 (3) Urban Transportation Geography
- GEOG 331 (3) Urban Social Geography
- GEOG 494 (3) Urban Field Studies

**Group B (6 or 9 credits)**

- ARCH 378 (3) Site Usage (U2)
- ARCH 520 (3) Montreal: Urban Morphology
- ARCH 521 (3) Structure of Cities
- ARCH 527 (3) Civic Design (U3)
- ARCH 528 (3) History of Housing (U3)
- ARCH 529 (3) Housing Theory (U3)
- ARCH 550 (3) Urban Planning 1 (U3)  
  (same course as CIVE 433)

*Although Architecture courses have prerequisites, they are waived for Urban Systems students, but the course may not be taken before the year indicated.*

**Art History**

- ARTH 314 (3) The Medieval City

**Civil Engineering**

- CIVE 433 (3) Urban Planning (same course as ARCH 550)

**Geography**

- GEOG 307 (3) Socioeconomic Applications of GIS

**Jewish Studies**

- JWST 371D1 (3) Jews and the Modern City
- JWST 371D2 (3) Jews and the Modern City

**Law**

- PUB 104 (3) Land Use Planning

**Political Science**

- POLI 319 (3) Comparative Local Government

**Sociology**

- SOCI 222 (3) Urban Sociology

**Urban Planning**

- URBP 501 (2) Principles and Practice 1

**B.A. MAJOR CONCENTRATION IN GEOGRAPHY** (36 credits)

This program is designed to cover the main elements of human geography.

**Required Courses** (6 credits)

- GEOG 201 (3) Introductory Geo-Information Science
- GEOG 210 (3) Global Places and Peoples

**Complementary Courses** (30 credits)

3 credits of introductory physical geography, one of:
- GEOG 203 (3) Environmental Systems
- GEOG 272 (3) Earth's Changing Surface

3 credits of statistics*, one of:
- BIOL 373 (3) Biometry
- GEOG 202 (3) Statistics and Spatial Analysis
- MATH 203 (3) Principles of Statistics

**Course Overlap**

3 credits from field courses (field course availability is determined each year in February):
- GEOG 290 (1) Local Geographical Excursion  
  (In 2006, reserve Sept. 29 - Oct. 1)
- GEOG 398 (3) Field Studies in Human Geography
- GEOG 494 (3) Urban Field Studies
FAUCY OF ARTS

GEOG 495 (3) Field Studies - Physical Geography
GEOG 496 (3) Geographical Excursion
GEOG 497 (3) Ecology of Coastal Waters
GEOG 499 (3) Subarctic Field Studies

3 credits of analysis and methodology:
GEOG 306 (3) Raster Geo-Information Science
GEOG 307 (3) Socioeconomic Applications of GIS
GEOG 308 (3) Principles of Remote Sensing
GEOG 351 (3) Quantitative Methods
GEOG 506 (3) Advanced Geographic Information Science

18 credits in Geography (excluding GEOG 200, GEOG 205), at least 3 of these 18 to be at the 400 level or above.

MAJOR CONCENTRATION IN GEOGRAPHY (URBAN SYSTEMS) (36 credits)

This interdisciplinary Concentration exposes students to the various approaches to urban studies in many disciplines. Students who wish to retain the option of entering a Geography honours program should include GEOG 201, GEOG 203, GEOG 216, and GEOG 272 as well as the 9 credits of Required Courses listed below.

Students should observe the levels indicated by course numbers: 200-level are first year; 300-level, second year; 400- or 500-level, third year.

For further information on the Urban Systems Concentration telephone (514) 398-4951 or leave a message at (514) 398-4111.

For Urban Systems Majors, the total number of credits permitted outside Arts and Science is 30, see section 4.3.6.2 "Courses Outside the Faculties of Arts and Science".

Required Courses (9 credits)
GEOG 217 (3) The Canadian City
GEOG 331 (3) Urban Social Geography
GEOG 351 (3) Quantitative Methods

Complementary Courses (27 credits)
3 credits of statistics*, one of:
BIOL 373 (3) Biometry
GEOG 202 (3) Statistics and Spatial Analysis
MATH 203 (3) Principles of Statistics 1
PSYC 204 (3) Introduction to Psychological Statistics
SOCI 350 (3) Statistics in Social Research

* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 4.3.6.1, “Course Overlap”.

24 credits selected from the following courses:

Geography
GEOG 201 (3) Introductory Geo-Information Science
GEOG 210 (3) Global Places and Peoples
GEOG 290 (1) Local Geographical Excursion
(In 2006, reserve Sept. 29 - Oct. 1)
GEOG 303 (3) Health Geography
GEOG 307 (3) Socioeconomic Applications of GIS
GEOG 315 (3) Urban Transportation Geography
GEOG 494 (3) Urban Field Studies
GEOG 504 (3) Industrial Restructuring - Geographic Implications

Architecture* (Faculty of Engineering)
ARCH 378 (3) Site Usage (U2)
ARCH 520 (3) Montreal: Urban Morphology
ARCH 521 (3) Structure of Cities
ARCH 527 (3) Civic Design (U3)
ARCH 528 (3) History of Housing (U3)
ARCH 529 (3) Housing Theory (U3)
ARCH 550 (3) Urban Planning 1 (U3)
ARCH 551 (3) Urban Planning 2 (U3)

* Although Architecture courses have prerequisites, they are waived for Urban Systems Majors, but the course may not be taken before the year indicated. Limited enrolment, early registration recommended.

Art History
ARTH 314 (3) The Medieval City

Civil Engineering
CIVE 433 (3) Urban Planning (same course as ARCH 550)
- limited enrolment, departmental permission required, call (514) 398-6345

Jewish Studies
JWST 371D1 (3) Jews and the Modern City
JWST 371D2 (3) Jews and the Modern City

Law
PUB1 004 (3) Land Use Planning

Management (Desautels Faculty of Management)
FINE 445 (3) Real Estate Finance (prereq.)
FINE 446 (3) Real Estate Investment Analysis (prereq.)
FINE 447 (3) Real Estate Valuation (prereq.)
FINE 546 (3) Land Law (prereq.)

Political Science
POLI 318 (3) Comparative Local Government

Sociology
SOCI 222 (3) Urban Sociology

Urban Planning (Faculty of Engineering)
URBP 501 (2) Principles and Practice 1 (6-week intensive)
URBP 505 (3) Geographic Information Systems (permission)

B.A. HONOURS IN GEOGRAPHY (60 credits)

The B.A. Honours program is more concentrated and focused than the Major Concentration. Students must maintain a minimum program GPA of 3.30 and complete a 6-credit Honours thesis. Honours students are encouraged to participate in 500-level seminars with graduate students.

Required Courses (15 credits)
GEOG 201 (3) Introductory Geo-Information Science
GEOG 351 (3) Quantitative Methods
GEOG 381 (3) Geographic Thought and Practice
GEOG 491D1 (3) Honours Research
GEOG 491D2 (3) Honours Research

Complementary Courses (45 credits)
12 credits of introductory courses, four of:
GEOG 203 (3) Environmental Systems
GEOG 210 (3) Global Places and Peoples
GEOG 216 (3) Geography of the World Economy
GEOG 217 (3) The Canadian City
GEOG 272 (3) Earth's Changing Surface

3 credits of statistics*, one of:
BIOL 373 (3) Biometry
GEOG 202 (3) Statistics and Spatial Analysis
MATH 203 (3) Principles of Statistics 1
PSYC 204 (3) Introduction to Psychological Statistics
SOCI 350 (3) Statistics in Social Research

* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 4.3.6.1, “Course Overlap”.

3 credits from field courses:
GEOG 290 (1) Local Geographical Excursion
(In 2006, reserve Sept. 29 - Oct. 1)
GEOG 398 (3) Field Studies in Human Geography
GEOG 494 (3) Urban Field Studies
GEOG 495 (3) Field Studies - Physical Geography
GEOG 496 (3) Geographical Excursion
GEOG 497 (3) Ecology of Coastal Waters
GEOG 499 (3) Subarctic Field Studies

18 additional credits in Geography in consultation with the adviser.
9 credits at the 300 or 400-level or above outside Geography. Courses outside Geography, at the 300-level or higher, are selected from the humanities, social and physical sciences, or engineering and approved by the adviser as related to the focus within Geography.

In addition to the Faculty requirement that Honours students maintain a minimum CGPA of 3.00, students in a Geography Honours Program must maintain a program GPA of at least 3.30.

**B.A. JOINT HONOURS – GEOGRAPHY COMPONENT**

(36 credits)

**Required Courses** (9 credits)
- GEOG 201 (3) Introductory Geo-Information Science
- GEOG 351 (3) Quantitative Methods
- GEOG 381 (3) Geographic Thought and Practice

**Complementary Courses** (27 credits)
- 12 credits of introductory courses, four of:
  - GEOG 203 (3) Environmental Systems
  - GEOG 210 (3) Global Places and Peoples
  - GEOG 216 (3) Geography of the World Economy
  - GEOG 217 (3) The Canadian City
  - GEOG 272 (3) Earth's Changing Surface
- 3 credits of statistics*, one of:
  - BIOL 373 (3) Biometry
  - GEOG 202 (3) Statistics and Spatial Analysis
  - MATH 203 (3) Principles of Statistics 1
  - PSYC 204 (3) Introduction to Psychological Statistics
  - SOCI 350 (3) Statistics in Social Research
- * Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 4.3.6.1, “Course Overlap”.
- 6 to 9 credits from a coherent set of Geography courses approved by the student's adviser. A field course is desirable.
- 3 or 6 credits from:
  - GEOG 491D1*(3) Honours Research
  - GEOG 491D2*(3) Honours Research
- or, for those who submit the thesis in the other department,
  - GEOG 492D1 (1.5) Joint Honours Research
  - GEOG 492D2 (1.5) Joint Honours Research
- * Where both departments require an Honours Thesis, the student has the option of submitting the thesis to either department. If the thesis is submitted to the other department, then the student must register for GEOG 492D1/GEOG 492D2. In some cases, it is required that the thesis be jointly supervised by faculty of both departments.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable). In addition to the Faculty requirement that Joint Honours students maintain a minimum CGPA of at least 3.00, students in a Geography Joint Honours Program must maintain a program GPA of at least 3.30.

**AFRICAN FIELD STUDY SEMESTER**
The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1 “African Field Study Semester”.

**PANAMA FIELD STUDY SEMESTER**
The program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. For more information, see section 14.3 “Panama Field Study Semester”.

**GEOGRAPHY COURSES OF MOST INTEREST TO ARTS STUDENTS:**
- GEOG 199 FYS: Geo-Environments
- GEOG 200 Geographical Perspectives: World Environmental Problems
- GEOG 201 Introductory Geo-Information Science
- GEOG 210 Global Places and Peoples
- GEOG 216 Geography of the World Economy
- GEOG 217 The Canadian City
- GEOG 290 Local Geographical Excursion
- GEOG 300 Human Ecology in Geography
- GEOG 301 Geography of Nunavut
- GEOG 302 Environmental Management 1
- GEOG 303 Health Geography
- GEOG 306 Raster Geo-Information Science
- GEOG 307 Socioeconomic Applications of GIS
- GEOG 308 Principles of Remote Sensing
- GEOG 309 Geography of Canada
- GEOG 311 Canada - A Geo-Economic Perspective
- GEOG 315 Urban Transportation Geography
- GEOG 316 Political Geography
- GEOG 331 Urban Social Geography
- GEOG 351 Quantitative Methods
- GEOG 370 Protected Areas
- GEOG 381 Geographic Thought and Practice
- GEOG 398 Field Studies in Human Geography
- GEOG 404 Environmental Management 2
- GEOG 407 Issues in Geography
- GEOG 408 Geography of Development
- GEOG 410 Geography of Underdevelopment: Current Problems
- GEOG 416 Africa South of the Sahara
- GEOG 424 Europe: Places and Peoples
- GEOG 490 Geography: Independent Studies
- GEOG 494 Urban Field Studies
- GEOG 496 Geographical Excursion
- GEOG 498 Humans in Tropical Environments
- GEOG 500 Geography of Regional Identity
- GEOG 501 Modelling Environmental Systems
- GEOG 502 Geography of Northern Development
- GEOG 504 Industrial Restructuring - Geographic Implications
- GEOG 506 Advanced Geographic Information Science
- GEOG 508 Resources, People, and Power
- GEOG 510 Humid Tropical Environments
- GEOG 513 Behavioural Geography
- GEOG 551 Environmental Decisions

**4.12.26 German Studies (GERM)**
688 Sherbrooke Street West, Suite 425
Montreal, QC H3A 3R1
Telephone: (514) 398-3650
Fax: (514) 398-1748
E-mail: german.studies@mcgill.ca
Website: www.mcgill.ca/german

Chair — Karin Bauer (on leave 2006-07)
Emeritus Professor
Peter M. Daly; B.A. (Brist.), Ph.D. (Zur.)
Professors
Adrian Hsia; Ph.D. (F. U. Berlin)
Josef Schmidt; Ph.D. (Zur.)
Associate Professors
Karin Bauer; M.A., Ph.D. (Wash.)
Trudis E. Goldsmith-Reber; Ph.D. (Cologne)
Paul Peters; B.A. (Man.), Ph.D. (F. U. Berlin)
Assistant Professor
Andrew Piper; B.A. (Princ.), Ph.D. (Col.)
This is offered as a special program for students who already possess the necessary language skills before coming to McGill, or have acquired the competence by completing the intensive sequence (GERM 200 and GERM 300) as elective courses in their first year.

Required Course (6 credits)
GERM 325 (6) German Language - Intensive Advanced

Complementary Courses (12 credits)
12 credits of courses in German literature or culture, given in German, such as:
GERM 330 (3) Landeskunde
GERM 331 (3) Germany after Reunification
GERM 352 (3) German Literature - 19th Century 3
GERM 353 (3) 19th Century Literary Topics
GERM 360 (3) German Literature 1890 to 1918
GERM 361 (3) German Literature 1918 to 1945
GERM 362 (3) 20th Century Literature Topics
GERM 363 (3) German Postwar Literature
GERM 380 (3) 18th Century German Literature
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies
GERM 412 (3) Heroes, Lovers and Crusaders
GERM 450 (3) Classical Period in German Literature
GERM 451 (3) German Romanticism
GERM 455 (3) Women of the Romantic Era
GERM 511 (3) Middle High German Literature
GERM 561 (3) German Literature: Baroque

MINOR CONCENTRATION IN GERMAN LITERATURE AND CULTURE IN TRANSLATION (18 credits) (Non-expandable)
Professor Paul Peters, (514) 398-5050

Complementary Courses (18 credits)
18 credits chosen from courses in German literature or culture in translation, such as:
GERM 259 (3) Individual and Society in German Literature 1
GERM 260 (3) Individual and Society in German Literature 2
GERM 354 (3) Literary Approach to Song
GERM 355 (3) Nietzsche and Wagner
GERM 358 (3) Franz Kafka
GERM 359 (3) Bertolt Brecht
GERM 364 (3) German Culture: Gender and Society
GERM 365 (3) Media Studies in German
GERM 366 (3) Postwar German Literature/Film
GERM 367 (3) Topics in German Thought
GERM 371 (3) Cultural Change and Evolution of German
GERM 382 (3) Faust in European Literature

MAJOR CONCENTRATION IN CONTEMPORARY GERMAN STUDIES (36 credits)
Adviser: Professor Trudis E. Goldsmith-Reber, (514) 398-3649
The Major Concentration in Contemporary German Studies is open to students with a sound knowledge of German as acquired in GERM 325 or equivalent. Those students who do not have the required competence in German may take the Major Concentration in Contemporary German Studies only if they also take a Minor Concentration in German Language. Proficiency, equivalency and placement will be determined by the program adviser.

Required Courses (9 credits)
HIST 234 (3) German History to 1648
HIST 235 (3) German History since 1648
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies

Complementary Courses (27 credits)
a) 6 credits in German Literature and Culture, chosen from:
GERM 330 (3) Landeskunde
GERM 331 (3) Germany after Reunification
GERM 362 (3) 20th Century Literature Topics
GERM 363 (3) German Postwar Literature
GERM 365 (3) Media Studies
GERM 366 (3) Postwar German Literature/Film
GERM 367 (3) Topics in German Thought

b) 12 credits in German Society chosen from three disciplines including History, or from two disciplines excluding History.

Please contact the department(s) in question for pre/corequisites and availability of the following courses:

Economics:
ECON 340 (3) Ex-Socialist Economies
ECON 435 (3) The International Economy since 1914
ECON 423D1 (3) International Trade and Finance
ECON 423D2 (3) International Trade and Finance

History:
HIST 355D1 (3) Germany 1806-1918
HIST 355D2 (3) Germany 1918-1945
HIST 435D1 (3) Germany in the 20th Century
HIST 435D2 (3) Germany in the 20th Century

Management:
BUSA 391 (3) International Business Law
MCG 382 (3) International Business
MGPO 383 (3) International Business Policy
MRKT 483 (3) International Marketing Management
ORGB 380 (3) Cross Cultural Management

Political Science:
POLI 212 (3) Government and Politics - Developed World
POLI 328 (3) Modern Politics in Western Europe
GERM 325 (3) German Language - Intensive Advanced
GERM 307D2 (3) German Language - Intermediate
GERM 307D1 (3) German Language - Intermediate
GERM 300 (6) German Language Intensive Intermediate
GERM 202D2 (3) German Language, Beginners'
GERM 202D1 (3) German Language, Beginners'
GERM 200 (6) German Language, Intensive Beginners'

PHIL 474 (3) Phenomenology

MAJOR CONCENTRATION IN GERMAN LITERATURE AND CULTURE (36 credits)

GERM 353 (3) 19th Century Literary Topics
GERM 350 (3) 18th Century German Literature
GERM 382 (3) Faust in European Literature
GERM 412 (3) Heroes, Lovers and Crusaders
GERM 511 (3) Middle High German Literature
GERM 561 (3) German Literature: Baroque

9 credits selected from any of the literature courses above not already taken or from:
GERM 330 (3) Landeskunde
GERM 331 (3) Germany after Reunification
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies

* Courses on German literature or culture given in English may be substituted for any courses in the above lists, to a maximum of 6 credits.

MAJOR CONCENTRATION IN GERMAN LITERATURE AND CULTURE (36 credits)

Professor Paul Peters, (514) 398-5050

Note: All German literature courses given in German have as pre-requisite a linguistic competence as acquired in GERM 325 or equivalent. Such equivalence will be established by the program adviser.

Complementary Courses (36 credits)

9 credits chosen from:
GERM 330 (3) Landeskunde
GERM 331 (3) Germany after Reunification
GERM 360 (3) German Literature 1890 to 1918
GERM 361 (3) German Literature 1918 to 1945
GERM 362 (3) 20th Century Literature Topics
GERM 363 (3) German Postwar Literature

15 credits chosen from:
GERM 352 (3) German Literature - 19th Century 3
GERM 353 (3) 19th Century Literary Topics
GERM 350 (3) 18th Century German Literature
GERM 412 (3) Heroes, Lovers and Crusaders
GERM 450 (3) Classical Period in German Literature
GERM 451 (3) German Romanticism
GERM 455 (3) Women of the Romantic Era
GERM 511 (3) Middle High German Literature
GERM 561 (3) German Literature: Baroque

12 credits chosen from:
GERM 259 (3) Individual and Society in German Literature 1
GERM 260 (3) Individual and Society in German Literature 2
GERM 354 (3) Literary Approach to Song
GERM 355 (3) Nietzsche and Wagner
GERM 358 (3) Franz Kafka
GERM 359 (3) Bertolt Brecht
GERM 364 (3) German Culture: Gender and Society
GERM 365 (3) Media Studies in German
GERM 366 (3) Postwar German Literature/Film
GERM 367 (3) Topics in German Thought
GERM 371 (3) Cultural Change and Evolution of German
GERM 382 (3) Faust in European Literature
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies

HONOURS IN GERMAN STUDIES (60 credits)

Adviser: Professor Paul Peters, (514) 398-5050

The Honours Program in German Studies consists of 60 credits in German. Literature courses provide an introduction to the major periods from the Middle Ages to the present.

Admission to the Honours Program in German Studies requires departmental approval. Students may begin Honours in German Studies in their first year. Honours students must maintain a GPA of 3.30 in their program courses, and, according to Faculty regulations, a minimum CGPA of 3.00 in general. In addition to the above requirements, Honours students, according to Faculty regulations,
also must complete at least a Minor Concentration (18 credits) in another academic unit.

Required Courses (42 credits)
GERM 200 (6) German Language, Intensive Beginners’
GERM 300 (6) German Language Intensive Intermediate
GERM 325 (6) German Language - Intensive Advanced
GERM 352 (3) German Literature - 19th Century 3
GERM 360 (3) German Literature 1890 to 1918
GERM 363 (3) German Postwar Literature
GERM 450 (3) Classical Period in German Literature
GERM 451 (3) German Romanticism
GERM 511 (3) Middle High German Literature
GERM 575 (6) Honours Thesis

With permission of the adviser, students with advanced standing in German language will replace language courses for more advanced courses in language, culture or literature.

Complementary Courses (18 credits)
12 credits selected from:
GERM 330 (3) Landeskunde
GERM 331 (3) Germany after Reunification
GERM 353 (3) 19th Century Literary Topics
GERM 361 (3) German Literature 1810 to 1845
GERM 362 (3) 20th Century Literature Topics
GERM 365 (3) Media Studies in German Language
GERM 380 (3) 18th Century German Literature
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies

Note: In the event that there are not enough courses offered in German, substitution with courses from the list below is allowed only with permission of the adviser.

6 credits selected from:
GERM 259 (3) Individual and Society in German Literature
GERM 260 (3) Individual and Society in German Literature
GERM 336 (3) German Grammar Review
GERM 354 (3) Literary Approach to Song
GERM 355 (3) Nietzsche and Wagner
GERM 358 (3) Franz Kafka
GERM 359 (3) Bertolt Brecht
GERM 364 (3) German Culture: Gender and Society
GERM 367 (3) Topics in German Thought
GERM 371 (3) Cultural Change and Evolution of German
GERM 382 (3) Faust in European Literature
GERM 397 (3) Individual Reading Course
GERM 398 (3) Individual Reading Course
GERM 561 (3) German Literature: Baroque

or other suitable courses in the Department or in other related disciplines and departments with the approval of the adviser.

JOINT HONOURS – GERMAN STUDIES COMPONENT
(36 credits)

Adviser: Professor Paul Peters, (514) 398-5050

Admission to the Joint Honours Program in German Studies requires Departmental approval.

Required Courses (21 credits)
GERM 200 (6) German Language, Intensive Beginners’
GERM 300 (6) German Language Intensive Intermediate
GERM 325 (6) German Language - Intensive Advanced
GERM 570 (3) Joint Honours Thesis

With permission of the adviser, students with advanced standing in German language will replace language courses for more advanced courses in language, culture or literature.

Complementary Courses (15 credits)
Selected from 400- to 500-level German literature and culture courses, from at least three centuries, with the approval of the adviser.

Joint Honours students must maintain a GPA of 3.30 in their program courses, and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Prerequisites for Literature Courses — The prerequisite for all literature courses taught in German is GERM 325, or equivalent, or permission of the Department.

TOPICAL LISTINGS

Language

a) General courses
GERM 200 German Language, Intensive Beginners’
GERM 202 German Language, Beginners’
GERM 203 German for Reading
GERM 300 German Language Intensive Intermediate
GERM 307 German Language - Intermediate
GERM 325 German Language - Intensive Advanced

b) Special courses
GERM 316 German: Analytic Study of Texts
GERM 330 Landeskunde
GERM 336 German Grammar Review
GERM 341 Essay Writing
GERM 342 Translation
GERM 345 Business German 1
GERM 346 Business German 2

Literature and Culture

GERM 331 Germany after Reunification
GERM 349 Methods of Literary Analysis
GERM 352 German Literature - 19th Century 3
GERM 353 19th Century Literary Topics
GERM 360 German Literature 1890 to 1918
GERM 361 German Literature 1810 to 1845
GERM 362 20th Century Literature Topics
GERM 363 German Postwar Literature
GERM 368 18th Century German Literature
GERM 450 Classical Period in German Literature
GERM 451 German Romanticism
GERM 511 Middle High German Literature
GERM 561 German Literature: Baroque

Literature and Culture in Translation
GERM 197 FYS: Images of Otherness
GERM 259 Individual and Society in German Literature 1
GERM 260 Individual and Society in German Literature 2
GERM 355 Nietzsche and Wagner
GERM 358 Franz Kafka
GERM 359 Bertolt Brecht
GERM 364 German Culture: Gender and Society
GERM 365 Media Studies in German
GERM 366 Postwar German Literature/Film
GERM 367 Topics in German Thought
GERM 371 Cultural Change and Evolution of German
GERM 382 Faust in European Literature

4.12.27 Hispanic Studies (HISP)

688 Sherbrooke Street West, Room 425
Montreal, QC H3A 3R1
Telephone: (514) 398-6683
Fax: (514) 398-1748
E-mail: hispanic.studies@mcgill.ca
Website: www.arts.mcgill.ca/programs/hispanic

Chair — Jesús Pérez-Maggallón
The Department of Hispanic Studies offers courses on literature, intellectual history and the civilization of Spain and Hispanic America, as well as in the Spanish and Portuguese languages. The Department and its programs are committed to expanding the liberal arts background of students by helping to develop the skills of communication and critical reasoning, and by providing insight into the culture of other regional, linguistic and national groups.

McGill University has bilateral exchange agreements with the Universidad de Salamanca (Spain), the Universidad Nacional Autónoma de México, and the Universidad de las Américas, Puebla (Mexico), as well as with other leading universities in the Spanish and Portuguese-speaking world which allow student and faculty exchanges, and other collaborative ventures. Further information about these exchanges may be obtained from the Department. Application forms are available from the Student Exchange Officer in the Admissions, Recruitment and Registrar’s Office, James Building Annex.

The Department collaborates closely with the Program in Latin-American and Caribbean Studies, and students are encouraged to consult that program listing.

UNDERGRADUATE PROGRAMS
Adviser: Professor Fernanda Macchi, 688 Sherbrooke, Room 381, (514) 398-6687/6683

The Department of Hispanic Studies offers the following undergraduate programs and concentrations, which permit students to pursue a variety of intellectual and pre-professional options:

- Minor Concentration in Hispanic Languages (Expandable)
- Minor Concentration in Hispanic Literature and Culture (Expandable)
- Major Concentration in Hispanic Languages
- Major Concentration in Hispanic Literature and Culture
- Honours Program in Hispanic Studies
- Joint Honours Program in Hispanic Studies

Students who envision graduate studies upon completion of the B.A. are strongly advised to pursue a program of Honours or Joint Honours. (Honours students must submit their thesis by March 15). Although the Major and Minor Concentrations form an important part of the multi-track B.A. in Arts, this general degree does not provide the specialized training called for by most graduate programs in the Humanities and Social Sciences.

Note: Advanced Placement (AP) credits and courses taken at other universities in Quebec will not be accredited towards the Minor.

MINOR CONCENTRATION IN HISPANIC LANGUAGES
(18 credits) (Expandable to the Major Concentration in Hispanic Languages)

Note: Advanced Placement (AP) credits and courses taken at other universities in Quebec will not be accredited towards the Minor.

Complementary Courses (18 credits)
selected from:
HISP 202D1 (3) Portuguese Language: Beginners
HISP 202D2 (3) Portuguese Language: Beginners

HISP 204D1 (3) Portuguese Language: Intermediate
HISP 204D2 (3) Portuguese Language: Intermediate
HISP 210D1 (3) Spanish Language: Beginners
HISP 210D2 (3) Spanish Language: Beginners
HISP 218 (6) Spanish Language Intensive - Elementary
HISP 219 (6) Spanish Language Intensive - Intermediate
HISP 220D1 (3) Spanish Language: Intermediate
HISP 220D2 (3) Spanish Language: Intermediate
HISP 225 (3) Hispanic Civilization 1
HISP 226 (3) Hispanic Civilization 2

Students with advanced standing in the language will replace language courses with more advanced courses in language, culture or literature at the 200-level or above, selected from Departmental offerings.

MINOR CONCENTRATION IN HISPANIC LITERATURE AND CULTURE
(18 credits) (Expandable to the Major Concentration in Hispanic Literature and Culture)

Note: Advanced Placement (AP) credits and courses taken at other universities in Quebec will not be accredited towards the Minor.

Required Courses (6 credits)
HISP 225 (3) Hispanic Civilization 1
HISP 226 (3) Hispanic Civilization 2

Complementary Courses (12 credits)
6 credits selected from:
HISP 241 (3) Survey of Spanish Literature 1
HISP 242 (3) Survey of Spanish Literature 2
HISP 243 (3) Survey of Spanish-American Literature 1
HISP 244 (3) Survey of Spanish-American Literature 2

6 credits in literature and/or culture at the 300-level or above, selected from the following:
HISP 321 (3) Spanish Literature - 18th Century
HISP 324 (3) 20th Century Drama
HISP 325 (3) Spanish Novel of the 19th Century
HISP 326 (3) Spanish Romanticism
HISP 327 (3) Literature of Ideas: Spain
HISP 328 (3) Literature of Ideas: Spanish America
HISP 332 (3) Spanish-American Literature of 19th Century
HISP 333 (3) Spanish-American Theatre
HISP 350 (3) The Generation of 1898
HISP 351 (3) Spanish-American Novel 1
HISP 352 (3) Spanish-American Novel 2
HISP 356 (3) Spanish-American Short Story
HISP 358 (3) Women Writers Fiction Spanish-America
HISP 423 (3) Modern Lyric Poetry
HISP 424 (3) Spanish Novel since Civil War
HISP 432 (3) Literature - Discovery and Exploration Spain New World
HISP 437 (3) Viceregal Spanish America
HISP 438 (3) Topics: Spanish Literature
HISP 439 (3) Topics: Spanish-American Literature
HISP 442 (3) Modernismo
HISP 451D1 (3) Cervantes
HISP 451D2 (3) Cervantes
HISP 453 (3) 20th Century Spanish-American Poetry
HISP 454 (3) Major Figures: Spanish Literature
HISP 455 (3) Major Figures: Spanish-American Literature
HISP 457 (3) Medieval Literature
HISP 458 (3) Golden Age Literature: Renaissance
HISP 460 (3) Golden Age Literature: Baroque
HISP 501 (3) History of the Spanish Language
HISP 505 (3) Seminar in Hispanic Studies
HISP 506 (3) Seminar in Hispanic Studies
HISP 507 (3) Seminar in Hispanic Studies

The Minor Concentration in Spanish Literature and Culture and the Minor Concentration in Spanish-American Literature and Culture were retired at the end of the 2003-04 academic year.
Students enrolled in either program at that time should consult with a Departmental adviser.

**MAJOR CONCENTRATION IN HISPANIC LANGUAGES**

*(36 credits)*

**Complementary Courses**

*(36 credits)*

0 - 18 credits in language and civilization

6 credits in Survey of Literature

12 - 30 credits in Hispanic literature at the 300-level or above, at least 6 credits of which must be in literature of the pre-1700 period (courses marked with an asterisk *), selected from the Complementary course list given under the Major Concentration in Hispanic Literature and Culture.

**MAJOR CONCENTRATION IN HISPANIC LITERATURE AND CULTURE** *(36 credits)*

**Required Courses** *(18 credits)*

- HISP 241 (3) Survey of Spanish Literature 1
- HISP 242 (3) Survey of Spanish Literature 2
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2
- HISP 451D1 (3) Cervantes
- HISP 451D2 (3) Cervantes

**Complementary Courses** *(18 credits)*

0 - 3 credits from:

- HISP 250 (3) Reading Hispanic Literature

at least 15 credits in Hispanic literature at the 300-level or above, at least 3 credits of which must be in literature of the pre-1700 period (courses marked with an asterisk *), selected from the following:

- HISP 321 (3) Spanish Literature - 18th Century
- HISP 324 (3) 20th Century Drama
- HISP 325 (3) Spanish Novel of the 19th Century
- HISP 326 (3) Spanish Romanticism
- HISP 327 (3) Literature of Ideas: Spain
- HISP 328 (3) Literature of Ideas: Spanish America
- HISP 332 (3) Spanish-American Literature of 19th Century
- HISP 333 (3) Spanish-American Drama
- HISP 350 (3) The Generation of 1898
- HISP 351 (3) Spanish-American Novel 1
- HISP 352 (3) Spanish-American Novel 2
- HISP 356 (3) Spanish-American Short Story
- HISP 358 (3) Women Writers Fiction Spanish-America
- HISP 423 (3) Modern Lyric Poetry
- HISP 424 (3) Spanish Novel since Civil War
- HISP 432* (3) Literature - Discovery and Exploration Spain New World
- HISP 433* (3) Viceregal Spanish America
- HISP 438 (3) Topica: Spanish Literature
- HISP 439 (3) Topics: Spanish-American Literature
- HISP 442 (3) Modernismo
- HISP 453 (3) 20th Century Spanish-American Poetry
- HISP 454 (3) Major Figures: Spanish Literature
- HISP 455 (3) Major Figures: Spanish-American Literature
- HISP 457* (3) Medieval Literature
- HISP 458* (3) Golden Age Literature: Renaissance
- HISP 460* (3) Golden Age Literature: Baroque
- HISP 501* (3) History of the Spanish Language
- HISP 505 (3) Seminar in Hispanic Studies
- HISP 506 (3) Seminar in Hispanic Studies
- HISP 507 (3) Seminar in Hispanic Studies

**HONOURS IN HISPANIC STUDIES** *(60 credits)*

Prerequisite for admission into Honours: A first-year Spanish course with a final grade of B+. Honours students are expected to maintain a program GPA of 3.30 and an overall CGPA of 3.00.

Students must take an 18-credit Minor Concentration in another area.

**Required Courses** *(24 credits)*

- HISP 241 (3) Survey of Spanish Literature 1
- HISP 242 (3) Survey of Spanish Literature 2
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2
- HISP 451D1 (3) Cervantes
- HISP 451D2 (3) Cervantes
- HISP 490D1 (3) Honours Thesis
- HISP 490D2 (3) Honours Thesis

**Complementary Courses** *(36 credits)*

at least 6 credits selected from:

- HISP 432 (3) Literature - Discovery and Exploration Spain New World
- HISP 437 (3) Viceregal Spanish America
- HISP 458 (3) Golden Age Literature: Renaissance
- HISP 460 (3) Golden Age Literature: Baroque

All remaining credits may be selected from courses given in Spanish in the Department at or above the Intermediate Spanish language level (HISP 219 OR HISP 220D1/HISP 220D2).

**JOINT HONOURS – HISPANIC STUDIES COMPONENT** *(36 credits)*

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines. See section 4.11.4, “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Joint Honours students are expected to maintain a program GPA of 3.30 and an overall CGPA of 3.00.

**Required Courses** *(12 credits)*

- HISP 451D1 (3) Cervantes
- HISP 451D2 (3) Cervantes
- HISP 490D1 (3) Honours Thesis
- HISP 490D2 (3) Honours Thesis

**Complementary Courses** *(24 credits)*

6 credits selected from:

- HISP 241 (3) Survey of Spanish Literature 1
- HISP 242 (3) Survey of Spanish Literature 2
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2

at least 6 credits selected from:

- HISP 432 (3) Literature - Discovery and Exploration Spain New World
- HISP 437 (3) Viceregal Spanish America
- HISP 458 (3) Golden Age Literature: Renaissance
- HISP 460 (3) Golden Age Literature: Baroque

All remaining credits may be selected from courses given in Spanish in the Department above the Intermediate Spanish language level (HISP 219 OR HISP 220D1/HISP 220D2).

4.12.28 History (HIST)

General Office, Room 608
Sixth Floor, Stephen Leacock Building
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-3975
Fax: (514) 398-8365
E-mail: undergrad.history@mcgill.ca
Website: www.arts.mcgill.ca/programs/history

Chair
Brian Lewis

Emeritus Professors
Michael P. Maxwell; B.A.(Sir G. Wms.), M.A., Ph.D.(McG.)
Desmond Morton; B.A.(RMC), B.A., M.A.(Oxf.), Ph.D.(Lond.)
(Hiram Mills Professor of History)
Albert Schachter; B.A.(McG.), D.Phil.(Oxf.) (Hiram Mills Emeritus Professor of Classics)

Professors

Harald Beck; Ph.D. (Erlangen) (John MacNaughton Professor of Classics)
Valentin J. Boss; B.A.(Can.), Ph.D.(Harv.)
Gwyn Campbell; B.Soc.Sc., M.Soc.Sc.(Birmingham), Ph.D.(Wales)
Myron J. Echenberg; M.A.(McG.), Ph.D.(Wis.)
John W. Hellman; B.A.(Marquette), M.A., Ph.D.(Harv.)
Peter Hoffmann; Ph.D.(Munich), F.R.S.C. (William Kingsford Professor of History)
Gershon D. Hundert; B.A., M.A.(Ohio St.), Ph.D.(Col.)
Peter Hoffmann; Ph.D.(Munich), F.R.S.C.
John W. Hellman; B.A.(Marquette), M.A., Ph.D.(Harv.)
Myron J. Echenberg; M.A.(McG.), Ph.D.(Wis.)
Gwyn Campbell; B.Soc.Sc., M.Soc.Sc.(Birmingham), Ph.D.(Wales)

MINOR CONCENTRATION IN HISTORY (18 credits)

Director: Professor Margaret Kuo

Complementary Courses (18 credits)

A minimum of 15 credits to be taken in one of the following areas: The Americas, Europe, Asia/Africa/Middle East, Global/thematic.

MAJOR CONCENTRATION IN HISTORY (36 credits)

Director: Professor Peter Hoffmann

Complementary Courses (36 credits)

Within the 36 credits, a maximum of 24 credits from any one of the following areas: The Americas, Europe, Asia/Africa/Middle East, Global/thematic.

HONOURS IN HISTORY (60 credits)

Director: Professor Daviken Studnicki-Gizbert

Required Course (3 credits)

Hist 399 (3) History and Historical Methods

Complementary Courses (57 credits)

A maximum of 15 credits at the 200-level
A maximum of 42 credits in any one of the following areas: The Americas, Europe, Asia/Africa/Middle East, Global/thematic.

PROGRAMS IN HISTORY

The Department offers three kinds of undergraduate programs: Honours, Major Concentration and Minor Concentration. Courses in History fall into one of the following FOUR areas: The Americas; Europe; Asia/Africa/Middle East; Global/thematic. In each program, a specified number of credits may be selected from any single area. Each student’s program is worked out with an adviser to suit the student’s specific needs within the general framework of the program.

Courses within each area are listed in the History Department’s Web site. Please refer to our website for a listing of courses being offered in 2006-07 in each area.

Candidates entering University as U0 or U1 students may, during their first year, take all courses at the 200 level as well as courses at the 300 level for which they have prerequisites. First-Year Seminars are also available in History, see section 4.5.2.1 “Registration for First-Year Seminars”.

JOINT HONOURS – HISTORY COMPONENT (36 credits)

Required Course (3 credits)

Hist 399 (3) History and Historical Methods
### Complementary Courses (33 credits)

A maximum of 12 credits at the 200-level

A maximum of 18 credits in any one of the following areas:
- The Americas
- Europe
- Asia/Africa/Middle East
- Global/thematic

6 credits seminar

Students must maintain a 3.30 grade point average in their program courses and must have no less than a “B” in any program course. In addition, and in accordance with Faculty of Arts rules, students must maintain an overall CGPA of 3.00.

The following course(s) may be chosen by History Major Concentration and Honours students as part of their programs.

**Anthropology**

ANTH 308 (3) Native Peoples’ History in Canada

**Canadian Studies**

Please consult with advisers.

**Islamic Studies**

Please consult with advisers.

**Jewish Studies**

JWST 305 (3) American Jewish History/Colonial Era to WWI
JWST 306 (3) The American Jewish Community
JWST 356 (3) Jewish Labour Movement/Eastern Europe
JWST 357 (3) Jewish Labour Movement/North America

<table>
<thead>
<tr>
<th>4.12.29 History and Philosophy of Science (HPSC)</th>
</tr>
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<tbody>
<tr>
<td>Stephen Leacock Building, Room 637</td>
</tr>
<tr>
<td>855 Sherbrooke Street West</td>
</tr>
<tr>
<td>Montreal, QC H3A 2T7</td>
</tr>
<tr>
<td>Telephone: (514) 398-2806</td>
</tr>
<tr>
<td>Website: <a href="http://www.mcgill.ca/hpsc">www.mcgill.ca/hpsc</a></td>
</tr>
</tbody>
</table>

**Director — James Delbourgo (History)**

**Committee**

Cornelius Borck (Art History And Communications/ Social Studies of Medicine), Emily Carson (Philosophy), Nicholas Dew (History), Jonathan Sterne (Art History and Communication Studies)

History and Philosophy of Science at McGill is an interdisciplinary program that aims to provide students with an understanding of science through the study of both its historical development and of some of the fundamental philosophical principles upon which it rests. In addition, there is an ongoing seminar series of talks by visiting speakers: Please Visit www.mcgill.ca/hpsc/lectures.

**MINOR CONCENTRATION IN HISTORY AND PHILOSOPHY OF SCIENCE (18 credits)**

**Complementary Courses (18 credits)**

18 credits, with a maximum of 9 credits at the 200-level, distributed as follows:

**GROUP A: PHILOSOPHY OF SCIENCE**

6 - 12 credits, no more than 6 credits of which may be at the 200-level, chosen from the following:

**History and Philosophy of Science**

HPSC 300 (3) Independent Studies: History and Philosophy of Science
HPSC 500 (3) Interdisciplinary Seminar: History & Philosophy of Science

**Philosophy**

PHIL 210 (3) Introduction to Deductive Logic 1
or PHIL 310 (3) Intermediate Logic

PHIL 220 (3) Introduction to History and Philosophy of Science 1
PHIL 221 (3) Introduction to History and Philosophy of Science 2
PHIL 306 (3) Philosophy of Mind
PHIL 340 (3) Philosophy of the Social Sciences 1
PHIL 341 (3) Philosophy of Science 1
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 411 (3) Topics in Philosophy of Logic and Mathematics
PHIL 440 (3) Philosophy of Social Sciences 2
PHIL 441 (3) Philosophy of Science 2
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 511 (3) Seminar: Philosophy of Logic and Mathematics
PHIL 541 (3) Seminar: Philosophy of Science
PHIL 580 (3) Seminar: Problems of Philosophy 1

**Psychology**

PSYC 401 (3) Theories of Cognition
PSYC 472 (3) Scientific Thinking and Reasoning

**Religious Studies**

RELG 340 (3) Religion and the Sciences

**GROUP B: HISTORY OF SCIENCE**

6 - 12 credits, no more than 6 credits of which may be at the 200-level, chosen from the following:

**Anthropology**

ANTH 359 (3) History of Archaeological Theory

**Biology**

BIOL 210 (3) Perspectives of Science

**Geography**

GEOG 381 (3) Geographic Thought and Practice

**History**

HIST 319 (3) The Scientific Revolution
HIST 335 (3) Science from Greeks to Newton
HIST 348 (3) China: Science-Medicine-Technology
HIST 349 (3) Health and Healer in Western History
HIST 356 (3) Medieval Science and Medicine
HIST 381 (3) Colonial Africa: Health/Disease
HIST 454 (3) Seminar: Early Modern Medicine
HIST 455 (3) Research: Early Modern Medicine
HIST 457 (3) Topics in Medical History
HIST 458 (3) Modern Medicine: Seminar
HIST 459 (3) Modern Medicine: Research
HIST 466 (3) Seminar: Medieval Medicine
HIST 496 (3) Research: Medieval Medicine

**History and Philosophy of Science**

HPSC 300 (3) Independent Studies: History and Philosophy of Science
HPSC 500 (3) Interdisciplinary Seminar: History & Philosophy of Science

**Mathematics**

MATH 338 (3) History and Philosophy of Mathematics
MATH 339 (3) Foundations of Mathematics

**Psychology**

PSYC 403 (3) Modern Psychology in Historical Perspective

<table>
<thead>
<tr>
<th>4.12.30 Humanistic Studies (HMST)</th>
</tr>
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<tbody>
<tr>
<td>Peterson Hall, Room 220</td>
</tr>
<tr>
<td>3460 McTavish Street</td>
</tr>
<tr>
<td>Montreal, QC H3A 1X9</td>
</tr>
<tr>
<td>Telephone: (514) 398-4301</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:faye.scrim@mcgill.ca">faye.scrim@mcgill.ca</a></td>
</tr>
<tr>
<td>Website: <a href="http://www.mcgill.ca/humanistic/">www.mcgill.ca/humanistic/</a></td>
</tr>
</tbody>
</table>

**Director — Robert Myles (English and French Language Centre)**

**Committee**

Laura Beraha (Russian and Slavic Studies), Charles Boberg (Linguistics), Carlos Fraenkel (Jewish Studies), Elena Lombardi (Italian Studies), Storrs McCall (Philosophy), Josef Schmidt
Humanistic Studies provides a broad liberal arts education that is personally enriching. It is also practical in its goal of developing the analytical, critical, and contextual thinking skills that are vital for the creation, expression, and transmission of ideas. Humanistic Studies is not a department, but a program wherein students are advised and guided by professors from each of the disciplines involved. It has been designed so that students can devise individual interdisciplinary concentrations or explore one of the core humanistic subjects in more depth. The fundamental assumption of Humanistic Studies is that human knowledge as acquired and developed in the university is cumulative and interconnected. A historical sense is crucial for an understanding of the continuity and changes in human thinking and other human activity. Students are encouraged to seek links between and among subjects in the arts – for example, literature, history, philosophy, religion, music, history of fine arts – the social sciences, and natural sciences.

Students are strongly encouraged to seek advising. Courses should be “clustered” so that different fields complement each other or are interconnected. Students are strongly advised to take this program in tandem with concentrations in language and literature. Telephone (514) 398-4301 to set up an appointment.

MINOR CONCENTRATION IN HUMANISTIC STUDIES
(Expandable) (18 credits)
Required Courses (6 credits)
HMST 296 (3) Western Humanistic Tradition 1
HMST 297 (3) Western Humanistic Tradition 2

Complementary Courses (12 credits)
Courses from the list published on the Humanistic Studies Website will be taken in the following manner:
3 credits History of Fine Arts
3 credits Social Science
and 6 credits, all of which must be at the 300-level or above as follows:
(a) to acquire a more extensive knowledge of any ONE of the areas listed above;
(b) to be used to construct individual interdisciplinary concentrations with the permission of the Humanistic Studies Office.

It is strongly recommended that this Minor Concentration be accompanied by Major and/or Minor Concentrations in literature and/or languages.

MAJOR CONCENTRATION IN HUMANISTIC STUDIES
(36 credits)
Required Courses (6 credits)
HMST 296 (3) Western Humanistic Tradition 1
HMST 297 (3) Western Humanistic Tradition 2

Complementary Courses (30 credits)
Courses from the list published on the Humanistic Studies Website will be taken in the following manner:
6 credits from the Humanities
6 credits History of Fine Arts
6 credits Social Science
3 credits Natural Science
and 9 credits, all of which must be at the 300-level or above as follows:
(a) to be used to acquire a more extensive knowledge of any ONE of the areas listed above;
(b) to be used to construct individual interdisciplinary concentrations with the permission of the Humanistic Studies Office.

It is strongly recommended that this Major Concentration be accompanied by Major and/or Minor Concentrations in literature and/or languages.

4.12.31 Industrial Relations Faculty Program
Peterson Hall, Room 220
3460 McTavish Street
Montreal, QC H3A 1X9
Telephone: (514) 398-4301
E-mail: faye.scrim@mcgill.ca
Website: www.mcgill.ca/indr/

The Faculty of Arts Faculty Program in Industrial Relations provides students with a basic knowledge of industrial relations institutions and practices as well as the principal social and economic forces that underlie them. The program is composed of 54 credits of courses drawn from the Departments of Economics and Sociology within the Faculty of Arts and from labour-management relations within the Desautels Faculty of Management.

Further Information
New this year is internship course INDR 499 that will be available to interested students. Please contact the IR Office for details. Changes may be made in the program after this Calendar was prepared. For the most up-to-date information on the program, new and returning students should refer to the Website.

Advisers
For a list of advisers, new and returning students should refer to the Website.

Continuance in the Program
To remain in the program beyond the first year, students must take the six “U1 Required Courses” listed below during their first year and earn a 2.50 GPA in ECON 208, ECON 209, SOCI 235, SOC 312 and INDR 294.

Continuing Education Courses
Courses in Continuing Education may not be used to fulfill IR program requirements. Similarly, courses in Continuing Education taken before entering the program may not be used to fulfill program requirements.

B.A. FACULTY PROGRAM IN INDUSTRIAL RELATIONS
(54 credits)
U1 Required Courses (18 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 209 (3) Macroeconomic Analysis and Applications (or equivalent)
SOCI 235 (3) Technology and Society
SOCI 312 (3) Industrial Sociology
INDR 294 (3) Introduction to Labour-Management Relations

U2 Required Courses (18 credits)
ECON 306D1 (3) Labour Economics and Institutions
ECON 306D2 (3) Labour Economics and Institutions
SOCI 420 (3) Organizations
SOCI 444 (3) The Sociology of Labour Force
INDR 494 (3) Labour Law
MGCR 320 (3) Managing Human Resources

U2 Complementary Courses (6 credits)
either Economics
ECON 227D1 (3) Economic Statistics
ECON 227D2 (3) Economic Statistics
or Sociology
SOCI 350 (3) Statistics in Social Research
SOCI 461 (3) Quantitative Data Analysis

U3 Required Courses (6 credits)
INDR 492 (3) Public Policy in Industrial Relations
INDR 496 (3) Collective Bargaining

U3 Complementary Courses (6 credits)
ECON 426 (3) Labour Economics
INDR 449 (3) Occupational Health and Safety
INDR 459 (3) International Labour Relations
INDR 495 (3) Labour Relations: Public Sector
INDR 497 (3) Contract Administration

Credits outside Arts and Science
Students in the Faculty Program in Industrial Relations may take no more than 30 credits in courses outside of the Faculties of Arts and of Science. This total includes required and complementary courses taken for the IR Program and elective courses. Moreover, in the U1 year a student should take at most only one 3-credit elective course in the Desautels Faculty of Management in addition to the required courses, INDR 294 and MGCR 222.

4.12.32 International Development Studies (INTD)

Office of Interdisciplinary Programs
3715 Peel Street, Room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ids@mcgill.ca
Website: www.mcgill.ca/ids

Program Adviser — Ines Scharnweber
Program Chair — Myron Frankman, Economics

Advisory Committee
Oliver Coomes, Geography
Kathleen Fallon, Sociology
Franque Grimard, Economics
John Kurien, Economics
Matthew Lange, Sociology
Kristin Norgel, Anthropology
Philip Oxhorn, Political Science, (Director, Centre for Developing Area Studies)
Daviken Studnicki-Gizbert, History

The International Development Studies (IDS) programs are designed for those students who wish to take advantage of the resources available at McGill to pursue an interdisciplinary program of study focusing on the problems of the developing countries.

Most courses above the 200 level have prerequisites. Although these may be waived by instructors in some cases, students are urged to confirm their eligibility for courses when they prepare their programs of study. Note that certain courses (especially those in Management) may not be available owing to space limitations. Students should check the Class Schedule for confirmation as to which term courses are offered.

MINOR CONCENTRATION IN INTERNATIONAL DEVELOPMENT STUDIES (18 credits) (Expandable)

Required Courses (9 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 313 (3) Economic Development 1
INTD 200 (3) Introduction to International Development

Complementary Courses (9 credits)
3 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

The remaining credits to be selected from the IDS Complementary Course list Group B. At least 9 of the 18 credits must be at the 300 level or above.

MAJOR CONCENTRATION IN INTERNATIONAL DEVELOPMENT STUDIES (36 credits)

Required Courses (15 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
INTD 200 (3) Introduction to International Development
INTD 497 (3) Research Seminar on International Development

Complementary Courses (21 credits)
A minimum of 6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

The remaining credits to be selected from the IDS Complementary Course list Group B; at least 12 credits must be taken from one of the three categories. Students must take courses from at least three disciplines.

At least 18 of the 36 credits must be at the 300 level or above.

HONOURS IN INTERNATIONAL DEVELOPMENT STUDIES (57 credits)

Honours students must maintain a program GPA of 3.30 and an overall CGPA of 3.00.

Required Courses (15 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
INTD 200 (3) Introduction to International Development
INTD 497 (3) Research Seminar on International Development

Complementary Courses (42 credits)
No more than 21 credits can be taken in any one discipline.

Thesis or research project, 3 to 6 credits, one of:
INTD 491 (3) Research Project
INTD 492 (6) Honours Thesis

A minimum of 6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

21 to 33 credits to be selected from the IDS Complementary Course list Group B; at least 12 credits must be taken from one of the three categories. Students must take courses from at least three disciplines.

Group C – 0 to 9 credits of Introductory and/or Intermediate Language Training.

Students are strongly encouraged to master a language appropriate to an area of the developing world in which they have a particular interest.

Among the languages that are included in this option are Arabic, Chinese, French, Korean, Portuguese, Spanish, and Urdu. Other language options can be approved by the Honours Adviser.

Students who already have appropriate language capability, or who have distinct interests not likely to necessitate such training, may substitute an additional 9 credits from the Group B Complementary Courses.

At least 30 of the 57 credits must be at the 300 level or above; 9 credits of these must be at the 400 level or above.

JOINT HONOURS – INTERNATIONAL DEVELOPMENT STUDIES COMPONENT (36 credits)

Joint Honours students must maintain a program GPA of 3.30 and an overall CGPA of 3.00.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Required Courses (15 credits)
ECON 208 (3) Microeconomic Analysis and Applications
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
INTD 200 (3) Introduction to International Development
INTD 497 (3) Research Seminar on International Development

Complementary Courses (21 credits)
No more than 15 credits can be taken in any one discipline.

Thesis or research project, 3 to 6 credits; one of:
INTD 491 (3) Research Project
INTD 492 (6) Honours Thesis
6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

9 to 12 credits to be selected from the IDS Complementary Course list Group B.

At least 24 of the 36 credits must be at the 300 level or above; 6 of these must be at the 400 level.

**IDS Complementary Course Lists for Minor Concentration, Major Concentration, Honours, Joint Honours**

**GROUP A**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ANTH 202</td>
<td>Comparative Cultures</td>
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<tr>
<td>or ANTH 212</td>
<td>Anthropology of Development</td>
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<tr>
<td>GEOG 210</td>
<td>Global Places and Peoples</td>
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<tr>
<td>or GEOG 216</td>
<td>Geography of the World Economy</td>
</tr>
<tr>
<td>POLI 227</td>
<td>Developing Areas/Introduction</td>
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<tr>
<td>SOCI 254</td>
<td>Development and Underdevelopment</td>
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**GROUP B**

**Development Theory and World View**

<table>
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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ANTH 209</td>
<td>Anthropology of Religion</td>
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<tr>
<td>ANTH 341</td>
<td>Women in Cross-Cultural Perspective</td>
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<tr>
<td>ANTH 342</td>
<td>Gender, Inequality and the State</td>
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<tr>
<td>ANTH 349</td>
<td>Transformation of Third World Societies</td>
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<td>ANTH 439</td>
<td>Theories of Development</td>
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<td>ISLA 501</td>
<td>The Qur'an: Text and History</td>
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<td>ISLA 505</td>
<td>Islam: Origin and Early Development</td>
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<td>ISLA 506</td>
<td>Islam: Later Developments</td>
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<td>RELG 204</td>
<td>Judaism, Christianity and Islam</td>
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<td>RELG 207</td>
<td>The Study of World Religions 1</td>
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<td>RELG 252</td>
<td>Hinduism and Buddhism</td>
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<td>RELG 253</td>
<td>Religions of East Asia</td>
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<td>RELG 254</td>
<td>Introduction to Sikhism</td>
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<td>RELG 337</td>
<td>Themes in Buddhist Studies</td>
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<td>RELG 354</td>
<td>Chinese Religions</td>
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<td>RELG 371</td>
<td>Ethics of Violence/Non-Violence</td>
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<td>RELG 452</td>
<td>East Asian Buddhism</td>
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<td>RELG 454</td>
<td>Modern Hindu Thought</td>
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<tr>
<td>RELG 557</td>
<td>Asian Ethical Systems</td>
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</tbody>
</table>

Up to 6 credits of Group A courses (not previously counted) may be used in this category. (Applies only to the Major Concentration and Honours Program.)

**Regions**

<table>
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<tr>
<th>Course</th>
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<tr>
<td>ANTH 315</td>
<td>Society/Culture: East Africa (Field Study in Africa only)</td>
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<tr>
<td>ANTH 321</td>
<td>People and Cultures of Africa</td>
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<td>ANTH 322</td>
<td>Social Change in Modern Africa</td>
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<td>ANTH 326</td>
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<td>ANTH 328</td>
<td>Peoples and Cultures of South-East Asia</td>
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<td>ANTH 340</td>
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<td>ANTH 416</td>
<td>Environment/Development: Africa (Field Study in Africa only)</td>
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<td>ANTH 422</td>
<td>Contemporary Latin American Culture &amp; Society (Field Study in Latin America only)</td>
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<td>EAST 353</td>
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<td>Seminar: Beyond Orientalism</td>
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<td>ECON 411</td>
<td>Economic Development: A World Area</td>
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<td>ENGL 321</td>
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<td>FREN 313</td>
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<td>GEOG 416</td>
<td>Africa South of the Sahara</td>
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<td>HISP 434</td>
<td>Dictatorship: Hispanic America</td>
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<td>HIST 197</td>
<td>FYS: Race in Latin America</td>
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<td>HIST 208</td>
<td>Introduction to East Asian History</td>
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<td>HIST 213</td>
<td>World History, 1300-2000</td>
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<td>HIST 218</td>
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<td>HIST 309</td>
<td>History of Latin America to 1825</td>
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<td>HIST 338</td>
<td>China in Revolution 2: 1921-1997</td>
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<td>HIST 348</td>
<td>China: Science-Medicine-Technology</td>
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<td>HIST 360</td>
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<td>HIST 374</td>
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<td>HIST 381</td>
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<td>HIST 396</td>
<td>Disease in Africa Since 1960</td>
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<td>HIST 419</td>
<td>Central America</td>
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<td>HIST 441</td>
<td>Topics: Culture and Ritual in China</td>
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<td>China in the Modern World</td>
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<td>ISLA 411</td>
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<td>POLI 323</td>
<td>Developing Areas/China and Japan</td>
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<td>POLI 324</td>
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<td>POLI 340</td>
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<td>POLI 347</td>
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<td>POLI 349</td>
<td>Foreign Policy: Asia</td>
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<td>POLI 352</td>
<td>International Policy/Foreign Policy: Africa</td>
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<td>SOCI 366</td>
<td>Social Change in the Caribbean</td>
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**Development Policies and Practices**

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<td>AGEC 442*</td>
<td>Economics of International Agricultural Development</td>
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<td>AGRI 305</td>
<td>Barbados Agro-Ecosystems (Field course)</td>
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<td>AGRI 411*</td>
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<td>ANTH 227</td>
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<td>ANTH 445</td>
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<td>ECON 209</td>
<td>Macroeconomic Analysis and Applications (Minor Concentration only)</td>
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<td>Environmental Management 1</td>
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<td>GEOG 309</td>
<td>Managing Field Research</td>
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<tr>
<td>GEOG 404</td>
<td>Environmental Management 2 (Panama and Africa programs only)</td>
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<td>GEOG 408</td>
<td>Geography of Development</td>
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<td>GEOG 410</td>
<td>Geography of Underdevelopment: Current Problems</td>
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<td>GEOG 498</td>
<td>Humans in Tropical Environments (Panama and Africa programs only)</td>
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<td>GEOG 504</td>
<td>Industrial Restructuring - Geographic Implications</td>
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<td>GEOG 508</td>
<td>Resources, People and Power</td>
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<td>GEOG 510</td>
<td>Humid Tropical Environments</td>
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<td>INTD 499</td>
<td>Internship: International Development Studies</td>
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<td>MGRS 382</td>
<td>International Business</td>
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<td>MIME 524</td>
<td>Mineral Resources Economics</td>
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<td>NRSC 340*</td>
<td>Global Perspectives on Food</td>
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<td>NRSC 540*</td>
<td>Socio-Cultural Issues in Water</td>
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<td>NUTR 501*</td>
<td>Nutrition in Developing Countries</td>
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<td>ORGB 380</td>
<td>Cross Cultural Management</td>
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POLI 300D1 (3) Developing Areas/Revolution
POLI 300D2 (3) Developing Areas/Revolution
POLI 338 (3) Developing Areas/Topics 1
POLI 345 (3) International Organization
POLI 348 (3) Foreign Policy: Third World
POLI 422 (3) Developing Areas/Topics 2
POLI 423 (3) Politics of Ethno-Nationalism
POLI 445 (3) IPE: North-South Relations
POLI 450 (3) Peacebuilding
POLI 471 (3) Democracy in the Modern World
POLI 472 (3) Developing Areas/Social Movements
POLI 473 (3) Democracy and the Market
POLI 474 (3) Inequality and Development
POLI 522 (3) Seminar: Developing Areas
SOCI 222 (3) Urban Sociology
SOCI 234 (3) Population and Society
SOCI 335 (3) Sociology of State Repression
SOCI 370 (3) Sociology: Gender and Development
SOCI 418 (3) Human Rights and Humanitarianism
SOCI 520 (3) Migration and Immigrant Groups
SOCI 550 (3) Developing Societies
SOCI 590 (3) Conflict and State Breakdown
SWRK 400 (3) Policy and Practice for Refugees
SWRK 532 (3) International Social Work
* These courses are normally offered only at Macdonald Campus.

AFRICAN STUDY SEMESTER
The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester; see section 14.2.1 “African Field Study Semester”.

4.12.34 Italian Studies (ITAL)

688 Sherbrooke Street West, Room 425
Montreal, QC H3A 3R1
Telephone: (514) 398-3953
Fax: (514) 398-1748
E-mail: italian.studies@mcgill.ca
Website: www.mcgill.ca/italian

Chair — Lucienne Kroha (on leave 2006/07)
Emeritus Professor
Pamela D. Stewart; B.A. (Montr.), M.A. (McG.), F.R.S.C.

Professor
Maria Predelli; Lic. Cl., Dott. Lett. (Florence)

Associate Professor
Lucienne Kroha; B.A., M.A. (McG.), Ph.D. (Harv.)

Assistant Professors
Eugenio Bolongaro; B.A., L.L.B. (UBC), Ph.D. (McG.)
Elena Lombardi; Dott. Lett. (Pavia), M.A., Ph.D. (NYU)

Lecturers
Enrica Quaroni; B.A., Ph.D. (McG.)
Jen Wienstein; B.A., M.A., Ph.D. (McG.)

Associate Members
Paula Clarke (History)
Anthony Masi (Sociology)
Filippo Sabetti (Political Science)
Bronwen Wilson (Art History and Communication Studies)

Advisers:
Minor – Dr. Jen Wienstein, (514) 398-3955
Majors, Honours and Joint Honours –
Professor Maria Predelli, (514) 398-3149

MINOR CONCENTRATION IN ITALIAN LANGUAGE AND LITERATURE (18 credits) (Expandable)
Students with advanced standing in the language must replace language courses with courses from groups B and C.

Complementary Courses (18 credits)
chosen from the following three groups:
0 - 12 credits Group A – Basic Language Courses.
6 - 18 credits Group B – Courses taught in Italian.
0 - 6 credits Group C – Courses taught in English.

MINOR CONCENTRATION IN ITALIAN CIVILIZATION (18 credits) (Expandable)
Students with advanced standing in the language must replace language courses with courses from groups B, C and D.

Complementary Courses (18 credits)
0 - 12 credits chosen from Group A – Basic Language Courses.
0 - 12 credits chosen from Group B – Courses taught in Italian.
3 - 18 credits chosen from Group C – Courses taught in English.
0 - 6 credits chosen from Group D – Courses offered in other departments.

MAJOR CONCENTRATION IN Italian LANGUAGE AND LITERATURE (36 credits)
All students wishing to register for the Major Concentration in Italian Language and Literature are strongly urged to meet with a departmental adviser.

Complementary Courses (36 credits)
0 - 12 credits chosen from Group A – Basic Language Courses.
18 - 36 credits (at least 6 of which must be at the 350-level or above) chosen from courses at the 300-level or above as listed in Group B – Courses taught in Italian.
Note: ITAL 300 may not be taken by students who have taken 132-306, and vice-versa.
0 - 18 credits chosen from courses at the 300-level or above as listed in Group C – Courses taught in English.
0 - 6 credits chosen from Group D – Courses offered in other departments.

MAJOR CONCENTRATION IN ITALIAN CIVILIZATION (36 credits)
This program is designed to enable students with no previous knowledge of Italian to pursue a Major Concentration by allowing them to take some literature and culture courses in English translation while acquiring language competency in other courses (including some literature courses taught in the original). All students wishing to register for the Major Concentration in Italian Civilization are strongly urged to meet with a Departmental adviser.

Complementary Courses (36 credits)
6 - 12 credits chosen from Group A – Basic Language Courses. Students with no knowledge of the Italian language must take 12 credits.
Students arriving with some knowledge of the language may take 6 credits (ITAL 210D1/ITAL 210D2 or ITAL 215D1/ITAL 215D2 or ITAL 216).

Students arriving with competency in the language may substitute courses from Groups B, C, and D for Basic Language Courses.

All students with some background must consult with the Department for proper placement.

18 - 30 credits chosen from courses at the 300-level or above as listed in Group B – Courses taught in Italian and Group C – Courses taught in English.

0 - 6 credits chosen from Group D – Courses offered in other departments.

HONOURS IN ITALIAN STUDIES (54 credits)
Students with advanced standing in the language must replace language courses with courses from groups B, C, and D.

Required Courses (6 credits)
ITAL 341 (3) The Art of Essay Writing
ITAL 470 (3) Honours Thesis

Complementary Courses (48 credits)
48 credits, 9 of which must be at the 400 level or above.

0 - 12 credits from Group A – Basic Language Courses.

30 - 48 credits Group B – Courses taught in Italian.

0 - 9 credits combined from Group C – Courses taught in English and Group D – Courses offered in other departments.

Students must maintain a minimum CGPA of 3.00 and a GPA of 3.30 in the program courses.

Admission to the Honours program in Italian requires Departmental approval. Students wishing to register should consult with the Department as early as possible.

Students may begin Honours in Italian Studies in the first year, instead of the second, if in the opinion of the Department they are found to be qualified.

JOINT HONOURS – ITALIAN STUDIES COMPONENT (36 credits)
Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Admission to Joint Honours requires departmental approval.

Students wishing to register in the program should consult with the Department as early as possible.

Students may register for Joint Honours in the first year, instead of the second, if in the opinion of the departments they are found to be qualified.

Students with advanced standing in the language must replace language courses with courses from groups B, C, and D.

Required Courses (6 credits)
ITAL 341 (3) The Art of Essay Writing
ITAL 470 (3) Honours Thesis

Complementary Courses (30 credits)
30 credits, 6 of which must be at the 400 level or above:

0 - 12 credits from Group A – Basic Language Courses.

12 - 30 credits from Group B – Courses taught in Italian.

0 - 18 credits combined from Group C – Courses taught in English and Group D – Courses offered in other departments.

Students must maintain a minimum CGPA of 3.00 and a GPA of 3.30 in the program courses.

ITALIAN STUDIES COURSE GROUPS
Group A – Basic Language Courses:
ITAL 205D1 (3) Italian for Beginners’
ITAL 205D2 (3) Italian for Beginners’
ITAL 206 (6) Beginners’ Italian Intensive
ITAL 210D1 (3) Elementary Italian
ITAL 210D2 (3) Elementary Italian
ITAL 215D1 (3) Intermediate Italian
ITAL 215D2 (3) Intermediate Italian
ITAL 216 (6) Intermediate Italian Intensive

Group B – Courses taught in Italian:
ITAL 300* (3) Italian Literary Composition
ITAL 306* (6) Advanced Reading and Composition
* only one of ITAL 300 or ITAL 306 can count towards all programs
ITAL 307 (3) Topics in Italian Culture
ITAL 308 (3) Business Italian 1
ITAL 311 (3) Twentieth Century Texts
ITAL 320 (3) Manzoni: Novel and Nationhood
ITAL 325 (3) Masterpieces of Italian Literature 1
ITAL 326 (3) Masterpieces of Italian Literature 2
ITAL 327 (3) A Literary Map of Italy
ITAL 328 (3) Contemporary Italy
ITAL 330 (3) Commedia dell’Arte
ITAL 331 (3) Drama from Goldoni to Pirandello
ITAL 341 (3) The Art of Essay Writing
ITAL 356 (3) Medieval Discourses on Love
ITAL 360 (3) Contemporary Italian Prose
ITAL 368 (3) Literature of the Renaissance
ITAL 370 (3) Italian Poetry and Music
ITAL 376 (3) Medieval Romance in Italy
ITAL 380 (3) Neorealism: Roots and Development
ITAL 383 (3) Women’s Writing since 1860
ITAL 410 (3) Modern Italian Literature
ITAL 411 (3) Pirandello
ITAL 415 (3) Italian Poetry 20th Century
ITAL 420 (3) Leopardi and Italian Romanticism
ITAL 435 (3) Ariosto’s “Orlando Furioso”
ITAL 436 (3) Tasso’s “Gerusalemme Liberata”
ITAL 461 (3) Dante: “The Divine Comedy”
ITAL 530 (3) 17th - 18th Century Culture
ITAL 542 (3) History of Italian Language
ITAL 551 (3) Boccaccio and the Italian Novella
ITAL 560 (3) Topics in 19th & 20th C Literature
ITAL 562 (3) Petrarch and Petrarchism
ITAL 563 (3) 13th-16th Century Literature
ITAL 590  (3) Italian Literary Criticism

Group C – Courses taught in English:
ITAL 199  (3) FYS: Italy's Literature in Context
ITAL 355  (3) Dante and The Middle Ages
ITAL 361  (3) Italian Prose after 1945
ITAL 363  (3) Gender, Literature and Society
ITAL 365  (3) The Italian Renaissance
ITAL 375  (3) Cinema and Society in Modern Italy
ITAL 385  (3) Italian Futurist Movement
ITAL 395  (3) Interdisciplinary Seminar
ITAL 412  (3) Pirandello and European Theatre
ITAL 416  (3) The Twentieth Century
ITAL 464  (3) Machiavelli
ITAL 477  (3) Italian Cinema and Video

Group D – Courses offered in other departments:

Please contact the department(s) in question for pre/corequisites and availability of the following courses:
ANTH 337  (3) Mediterranean Society and Culture
ARTH 223  (3) Introduction to Italian Renaissance Art
ARTH 324  (3) Sixteenth-Century Art in Italy
ARTH 325  (3) Visual Culture Renaissance Venice
ARTH 332  (3) Italian Renaissance Architecture
CLAS 208  (3) Roman Literature and Society
CLAS 307  (3) Roman Comedy
CLAS 404  (3) Classical Tradition
ENGL 447  (3) Crosscurrents/English Literature and European

4.12.35 Jewish Studies (JWST)

3438 McTavish Street, Room 202
Montreal, QC H3A 1X9
Telephone: (514) 398-6543
Fax: (514) 398-5158
Website: www.arts.mcgill.ca/programs/jewish
Chair — Gershon D. Hundert

Professors
Gershon D. Hundert; B.A.(Col.), M.A.(Ohio St.), Ph.D.(Col.)
(Leonard Segal Professor of Jewish Studies)
B. Barry Levy; B.A., B.R.E.(Yeshiva), Ph.D.(NYU)

Associate Professors
David Aberbach; B.A., B.Sc.(Univ.Coll.,Lond.), M.Litt.,
D.Phil.(Oxf.)
Lawrence Kaplan; B.A.(Yeshiva), M.A., Ph.D.(Harv.)
Eugene Orenstein; B.A.(C.C.N.Y.), M.A., Ph.D.(Col.)

Assistant Professors
Eric Caplan; B.A.(McG.), M.A.(Tor.), Ph.D.(McG.)
Carlos Fraenkel; B.A., M.A., Ph.D.(Freie U., Berlin)
Yael Halevi-Wise, B.A.(Hebrew), M.A.(G'town), Ph.D.(Princ.)

Lecturers
Karen Bauer; B.Ed.(McG.)
Lea Fima; B.Ed.(Beit Berl College), M.A.(McG.)
Esther Frank; B.A., M.A.(McG.)
Anna Gonshor; B.A., M.L.S., M.A.(McG.)

Adjunct Professors
Ruth Wisse; M.A.(Col.), Ph.D.(McG.)
Magdalena Opalski; M.A.(Warsaw), Ph.D. (Ott.)

The Department of Jewish Studies, established in 1968, offers an interdisciplinary approach to the study of Judaica. It includes:

- a selection of courses that will enable students not taking a Concentration in Jewish Studies to broaden their knowledge of Jewish history and culture;
- elementary, intermediate and advanced courses in Jewish languages – Hebrew, Yiddish, and Aramaic. In the case of the first two, this includes attention to both spoken idiom and written texts;
- specialized courses in the various disciplines that comprise Jewish Studies for students who have specific academic interests;
- a Minor Concentration for students who wish to add competence in Jewish Studies to their major field of study;
- a comprehensive Major Concentration, and an Honours program culminating in advanced seminars and tutorials for students contemplating careers in the various fields of Judaica. The Honours Program in Jewish Studies will give students the necessary linguistic, textual and bibliographical knowledge to enable them to pursue graduate work in Jewish Studies.

MINOR CONCENTRATION IN JEWISH LAW (18 credits)
Adviser: Professor Lawrence Kaplan, (514) 398-5008
This Minor Concentration in Jewish Law is designed to provide students with a special interest in Law, and particularly students from the Faculty of Law who are now permitted a Minor in the Faculty of Arts, a basic but comprehensive knowledge of the concepts and methods related to Jewish Law.

Complementary Courses (18 credits)
0-3 credits from:
JWST 216  (3) Jewish Studies 2: 400 BCE - 1000
HIST 207  (3) Jewish History: 400 BCE to 1000

15-18 credits from:
JWST 201  (3) Jewish Law
JWST 316  (3) Social and Ethical Issues Jewish Law 1
JWST 374  (3) Talmud and Law 1: Bava Kamma
JWST 375  (3) Talmud and Law 2: Bava Metzia
JWST 474  (3) Maimonides' Mishneh Torah
JWST 475  (3) The Responsa Literature
JWST 576  (3) Jewish Family Law

MINOR CONCENTRATION IN JEWISH STUDIES (18 credits)
Advisers: Gershon D. Hundert, (514) 398-6542
David Aberbach, (514) 398-5009
In order to permit students flexibility within their chosen area, all courses in the Jewish Studies Concentrations are placed into the category “Complementary Courses.”

Complementary Courses (18 credits)
18 credits in Jewish Studies:
9 credits are normally taken at the 300 level and up.
At least 9 credits will normally be taken at the 300 level and above in a single area. (See the list of courses, divided by areas of study, at the end of the Department section.) Consultation with the Adviser is strongly recommended.

MAJOR CONCENTRATION IN JEWISH STUDIES (36 credits)
Advisers: Eugene Orenstein, (514) 398-6545
Gershon D. Hundert, (514) 398-6542
In order to permit students flexibility within their chosen area, all courses in the Jewish Studies Concentrations are placed into the category “Complementary Courses.”

Complementary Courses (36 credits)
36 credits in Jewish Studies, 24 of which are normally taken at the 300 level or above.
6 credits (minimum) in the history of Jewish Civilization to be chosen from:
JWST 211  (3) Jewish Studies 1: Biblical Period
27 - 45 credits, planned with an adviser and normally chosen to
4 - 18 credits: Language
3 credits, one of:
JWST 491 (3) Honours Thesis 1
JWST 211 (3) Jewish Studies 1: Biblical Period
JWST 369, JWST 370 or any course at the 400 level (except
JWST 404 and JWST 405).
Consultation with the Adviser is strongly recommended.

HONOURS IN JEWISH STUDIES (60 credits)
Honours Adviser: Lawrence Kaplan, (514) 398-5008

Required Courses (9 credits)
JWST 211 (3) Jewish Studies 1: Biblical Period
JWST 491 (3) Honours Thesis 1
JWST 492 (3) Honours Thesis 2

Complementary Courses (51 credits)
3 credits, one of:
JWST 216 (3) Jewish Studies 2: 400 BCE - 1000
HIST 207 (3) Jewish History: 400 B.C.E. to 1000
3 credits, one of:
JWST 217 (3) Jewish Studies 3: 1000 to 2000
HIST 219 (3) Jewish History: 1000-2000
0 - 18 credits: Language
Each Honours student will complete at least one Jewish
language at the advanced level of instruction. A student who
can demonstrate competence in a Jewish language may be
permitted to substitute other courses for all or part of the
language requirement.
JWST 220D1 (3) Introductory Hebrew
JWST 220D2 (3) Introductory Hebrew
JWST 320D1 (3) Intermediate Hebrew
JWST 320D2 (3) Intermediate Hebrew
JWST 340D1 (3) Advanced Hebrew
JWST 340D2 (3) Advanced Hebrew
JWST 280D1 (3) Introductory Yiddish
JWST 280D2 (3) Introductory Yiddish
JWST 380D1 (3) Intermediate Yiddish
JWST 380D2 (3) Intermediate Yiddish
JWST 480 (3) Advanced Yiddish 1
JWST 481 (3) Advanced Yiddish 2

27 - 45 credits, planned with an adviser and normally chosen to
reflect progress to the advanced level in two of the areas of study:
Biblical Studies, Rabbinic Studies, Literature, Jewish
Thought, Jewish History, Modern Jewish Studies, and East
European Studies.
According to Faculty regulations, Honours students must
maintain a minimum CGPA of 3.00 and a Program GPA of 3.00.

JOINT HONOURS – JEWISH STUDIES COMPONENT
(36 credits)
Students who wish to study at the Honours level in two Arts disci-
plines can combine Joint Honours program components from any
two Arts disciplines, see section 4.11.4 “Joint Honours Programs”
for a list of available programs.
Joint Honours students should consult an adviser in each
department to discuss their course selection and their interdiscipli-
nary research project (if applicable).

Required Courses (9 credits)
JWST 211 (3) Jewish Studies 1: Biblical Period
JWST 491 (3) Honours Thesis 1
JWST 492 (3) Honours Thesis 2

Complementary Courses (27 credits)
3 credits, one of:
JWST 216 (3) Jewish Studies 2: 400 BCE - 1000
HIST 207 (3) Jewish History: 400 B.C.E. - 1000
3 credits, one of:
JWST 217 (3) Jewish Studies 3: 1000 to 2000
HIST 219 (3) Jewish History: 1000-2000
0 - 6 credits: Language
Each Joint Honours student will complete at least one Jewish
language at the advanced level of instruction. A student who
can demonstrate competence in a Jewish language may be
permitted to substitute other courses for all or part of the
language requirement.
JWST 340D1 (3) Advanced Hebrew
JWST 340D2 (3) Advanced Hebrew
JWST 480 (3) Advanced Yiddish 1
JWST 481 (3) Advanced Yiddish 2

15 - 21 credits, planned with an adviser and normally chosen to
reflect progress to the advanced level in one of the areas of study:
Biblical Studies, Rabbinic Studies, Literature, Jewish Thought,
Jewish History, Modern Jewish Studies, and East European
Studies.

JEWSH TEACHER TRAINING PROGRAM
Established in 1973 in the Faculty of Education in conjunction with
the Department of Jewish Studies, this program prepares students
to teach at the elementary and secondary school levels.
Students are encouraged to acquire a strong general back-
ground in Bible, Jewish liturgy, traditions and history prior to regis-
tering in the program. Students lacking the ability to teach in
Hebrew should consider spending a term at an Israeli university.
Further information can be obtained by contacting the Director,
Dr. Eric Caplan, at (514) 398-8544; by consulting the Faculty of
Education “Bachelor of Education Kindergarten and Elementary
Program (Jewish Studies Option)” in section 6.5.1.6; and from the

Interdepartmental Programming
Many of the courses in Jewish Studies are related to other depart-
ments, e.g., History, Religious Studies. There are also related
courses in other departments which students specializing in cer-
tain areas of Jewish Studies might be encouraged to include in
their programs, e.g., Classical Greek, Arabic, theories of literature,

The following History department courses may be used as Jewish
Studies courses in the Department of Jewish Studies programs.
HIST 207 (3) Jewish History: 400 B.C.E. to 1000
HIST 219 (3) Jewish History: 1000-2000
HIST 307 (3) Jews in Poland
HIST 427 (3) The Hasidic Movement
HIST 477D1 (3) Seminar In Jewish History
HIST 477D2 (3) Seminar In Jewish History

AREAS OF STUDY
It is possible to group the course offerings in Jewish Studies into a
number of areas of study. The following is a representative but not
exhaustive list.

Biblical Studies
JWST 211 Jewish Studies 1: Biblical Period
JWST 310 Believers, Heretics and Critics
JWST 324 Biblical Interpretation - Antiquity
JWST 327/328/329 A Book of the Bible
JWST 331 Bible Interpretation/Medieval Ashkenaz
JWST 332 Bible Interpretation/Sefardic Tradition
JWST 323 The Israeli Novel
JWST 320D1/JWST 320D2 Intermediate Hebrew
JWST 300 Charisma and Social Change
JWST 301 Hebrew Empire and Crisis
JWST 320D1/JWST 320D2 Intermediate Hebrew
JWST 323 The Israeli Novel
JWST 348 Survey of Hebrew Literature
JWST 499D1/JWST 499D2 Studies in Yiddish Literature
JWST 481 Advanced Yiddish 2
JWST 480 Advanced Yiddish 1
JWST 587/588 Tutorial in Yiddish Literature
JWST 445 The Poetry of Nationalism
JWST 439 Survey of Hebrew Literature 2
JWST 438 Survey of Hebrew Literature 1
JWST 445 The Poetry of Nationalism
JWST 502 Contemporary Hebrew Literature
JWST 550 The Bible in Hebrew Literature
JWST 582 Hebrew and Aramaic Philology

2. Yiddish Language and Literature

JWST 206 Introduction to Yiddish Literature
JWST 280D1/JWST 280D2 Introductory Yiddish
JWST 351 Studies in Modern Jewish Literature
JWST 355 The Yiddish Canon
JWST 361 The Shetl: 1897-1939
JWST 362 The Shetl: 1897-1939
JWST 380D1/JWST 380D2 Intermediate Yiddish
JWST 381 Modern Yiddish Literature
JWST 383 Holocaust Literature
JWST 387 Modern Jewish Authors
JWST 400 Advanced Yiddish
JWST 409 Introduction to Yiddish
JWST 408 Intermediate Yiddish
JWST 407 Yiddish Language

Jewish Thought

JWST 216 Jewish Studies 2: 400 BCE -1000
JWST 217 Jewish Studies 3: 1000 to 2000
JWST 261 History of Jewish Philosophy and Thought
JWST 301 Hebrew Empire and Crisis
JWST 310 Believers, Heretics and Critics
JWST 314 Denominations in North American Judaism
JWST 315 Modern Liberal Jewish Thought
JWST 337 Jewish Philosophy and Thought 1
JWST 358 Topics in Jewish Philosophy 2
JWST 359 Topics in Jewish Philosophy
JWST 365 Modern Jewish Ideologies
JWST 366 History of Zionism
JWST 542 Abraham Ibn Ezra as Parshah
JWST 543 Maimonides as Parshah
JWST 544 Nachmanides as Parshah
JWST 545 Parshah in Renaissance Italy
JWST 546 Innovative Medieval Parshah
JWST 547 Mystical Biblical Interpretation
JWST 548 Medieval Parshah
JWST 550 The Bible in Hebrew Literature
JWST 551 20th Century Parshah
JWST 552 Modern Jewish Scholarship
JWST 553 The Bible in Jewish Philosophy
JWST 554 The Bible in Jewish Philosophy
JWST 555 The Bible in Jewish Philosophy
JWST 556 Modern Parshah 1
JWST 557 Biblical Literature
JWST 558 History of Hebrew Bible Text
JWST 559 Biblical Literature
JWST 560 Topics in Parshah
JWST 561 Aramaic Language
JWST 562 Hebrew and Aramaic Philology

Religious Studies

JWST 216 Jewish Studies 2: 400 BCE - 1000
JWST 217 Jewish Studies 3: 1000 to 2000
JWST 261 History of Jewish Philosophy and Thought
JWST 301 Hebrew Empire and Crisis
JWST 310 Believers, Heretics and Critics
JWST 314 Denominations in North American Judaism
JWST 315 Modern Liberal Jewish Thought
JWST 337 Jewish Philosophy and Thought 1
JWST 358 Topics in Jewish Philosophy 2
JWST 359 Topics in Jewish Philosophy
JWST 365 Modern Jewish Ideologies
JWST 366 History of Zionism
JWST 542 Abraham Ibn Ezra as Parshah
JWST 543 Maimonides as Parshah
JWST 544 Nachmanides as Parshah
JWST 545 Parshah in Renaissance Italy
JWST 546 Innovative Medieval Parshah
JWST 547 Mystical Biblical Interpretation
JWST 548 Medieval Parshah
JWST 550 The Bible in Hebrew Literature
JWST 551 20th Century Parshah
JWST 552 Modern Jewish Scholarship
JWST 553 The Bible in Jewish Philosophy
JWST 554 The Bible in Jewish Philosophy
JWST 555 The Bible in Jewish Philosophy
JWST 556 Modern Parshah 1
JWST 557 Biblical Literature
JWST 558 History of Hebrew Bible Text
JWST 559 Biblical Literature
JWST 560 Topics in Parshah
JWST 561 Aramaic Language
JWST 562 Hebrew and Aramaic Philology
Modern Jewish Studies

JWST 217 Jewish Studies 3: 1000 to 2000
JWST 225 Literature and Society.
JWST 240 The Holocaust
JWST 301 Hebrew Empire and Crisis
JWST 346/347/348/349 Modern Jewish Studies
JWST 351 Studies in Modern Jewish Literature
JWST 356 Jewish Labour Movement/Eastern Europe
JWST 357 Jewish Labour Movement/North America
JWST 359 Topics in Jewish Philosophy 2
JWST 361 The Shetl: 1500-1897
JWST 362 The Shetl: 1897-1939
JWST 365 Modern Jewish Ideologies
JWST 386 History of Zionism
JWST 371D1/JWST 371D2 Jews and the Modern City
JWST 383 Holocaust Literature
JWST 386 American Jewish Literature
JWST 387 Modern Jewish Authors
JWST 404 Literary Response to Loss/Separation
JWST 445 The Poetry of Nationalism
JWST 556 Modern Parshanut 1
JWST 558 Topics: Modern Jewish Thought
JWST 585 Tutorial: Eastern European Studies 1
JWST 586 Tutorial: Eastern European Studies 2
EDER 421 Teaching the Holocaust
HIST 219 Jewish History: 1000-2000
HIST 427 The Hasidic Movement
HIST 477D1/HIST 477D2 Seminar in Jewish History

East European Studies

JWST 206 Introduction to Yiddish Literature
JWST 217 Jewish Studies 3: 1000 to 2000
JWST 240 The Holocaust
JWST 351 Studies in Modern Jewish Literature
JWST 356 Jewish Labour Movement/Eastern Europe
JWST 357 Jewish Labour Movement/North America
JWST 361 The Shetl: 1500-1897
JWST 362 The Shetl: 1897-1939
JWST 365 Modern Jewish Ideologies
JWST 366 History of Zionism
JWST 371D1/JWST 371D2 Jews and the Modern City
JWST 381 Modern Yiddish Literature
JWST 383 Holocaust Literature
JWST 404 Literary Response to Loss/Separation
JWST 411 Topics: Modern Hebrew Literature 1881-1948
JWST 412 Topics: Modern Hebrew Literature 2
JWST 438 Survey of Hebrew Literature 1
JWST 439 Survey of Hebrew Literature 2
JWST 445 The Poetry of Nationalism
JWST 485/486/487/488 Tutorial in Yiddish Literature
JWST 498D1/JWST 498D2 Tutorial in Yiddish Literature
JWST 499D1/JWST 499D2 Studies in Yiddish Literature
JWST 585 Tutorial: Eastern European Studies 1
JWST 586 Tutorial: Eastern European Studies 2
HIST 307 Jews in Poland
HIST 427 The Hasidic Movement

4.12.36 Latin-American and Caribbean Studies (LACS)

Office of Interdisciplinary Programs
3715 Peel Street, Room 121
Montreal, Quebec H3A 1X1

Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: info.lacs@mcgill.ca
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Program Adviser — Ines Scharnweber
Advisory Committee Chair — TBA

Advisory Committee — O. Coomes (Geography), J. Jouve-Martin (Hispanic Studies), A. Holmes (Hispanic Studies), U. Locher (Sociology), T. Meredith (Geography), K. Norget (Anthropology), P. Oehrn (Political Science), D. Studnicki-Gizbert (History)

Established in 1971, the interdisciplinary Program in Latin-American and Caribbean Studies offers a comprehensive array of courses on the peoples, cultures, history, literature, politics, economy and geography of Latin America and the Caribbean, providing students with a broad-based understanding of this geographic region, and with the language and research skills required for advanced scholarship. The program in Latin-American and Caribbean Studies encourages the free exchange of ideas and perspectives in order to foster an environment suitable for serious reflection and critical analysis.

Students in the Program in Latin-American and Caribbean Studies are encouraged to consider the opportunities for foreign study and research made available by bilateral exchange agreements with leading universities in the Spanish and Portuguese-speaking world. These exchanges are open to all members of the McGill University community. Further information may be obtained from the Student Exchange and Study Abroad Office, James Administration Building.

An agreement of cooperation with the Centre for Latin American Studies at Georgetown University (Washington, D.C.) permits Honours students in Latin-American and Caribbean Studies at McGill to count a portion of their undergraduate coursework toward the degree requirements for Georgetown’s M.A. in Latin American Studies, thus permitting completion of the M.A. in one calendar year. See the Program Adviser for additional information.

Undergraduate Degree Programs

The program in Latin-American and Caribbean Studies offers an interdisciplinary Honours degree and an interdisciplinary Major Concentration as part of the Multi-track B.A. in Arts. Given the constraints of the Multi-track B.A. and our belief that an interdisciplinary Honours degree and an interdisciplinary Major Concentration as part of the Multi-track B.A. permits Honours students in Latin-American and Caribbean Studies at McGill to count a portion of their undergraduate coursework toward the degree requirements for Georgetown University’s M.A. in Latin American Studies, thus permitting completion of the M.A. in one calendar year. See the Program Adviser for additional information.

MAJOR CONCENTRATION IN LATIN-AMERICAN STUDIES

(36 credits)

Required Courses (18 credits)
HISP 243* (3) Survey of Spanish-American Literature 1
HISP 244* (3) Survey of Spanish-American Literature 2
HIST 309 (3) History of Latin America to 1825
HIST 360 (3) Latin America since 1825
LACS 497 (3) Research Seminar: Latin America and the Caribbean
POLI 319 (3) Politics of Latin America

* Please note that successful completion of Intermediate Spanish Language (HISP 220D1/HISP 220D2, HISP 219 or the equivalent) is required for admission to HISP 243 and HISP 244.

Complementary Courses (18 credits)

18 credits selected from the Complementary Course List in consultation with the Program Adviser.

Courses from at least two disciplines or departments must be included; at least 6 of the 18 credits must be at the 300 level or above.
HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES

The Honours Program in Latin-American and Caribbean Studies is designed to meet the needs of students who plan to attend graduate or professional school upon completion of the B.A. Both options provide a comprehensive interdisciplinary understanding of Latin America and the Caribbean, upon which more specialized coursework and research may be based.

Students pursuing Honours in Latin-American and Caribbean Studies must normally maintain a B+ (3.30) average in all Program courses, and must meet all additional Faculty of Arts requirements for graduation with Honours.

Please note that successful completion of Intermediate Spanish Language (HISP 220D1/HISP 220D2 or HISP 219 or equivalent) is required for admission to HISP 243 and HISP 244, courses required in both options.

HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES – AREA OPTION (60 credits)

The Area Option, with its disciplinary clusters, is recommended for students who envision graduate study in a specific discipline, such as History or Political Science.

Required Courses (21 credits)
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2
- HIST 309 (3) History of Latin America to 1825
- HIST 360 (3) Latin America since 1825
- LACS 497 (3) Research Seminar: Latin America and the Caribbean
- LACS 498 (3) Independent Research Project
- POLI 319 (3) Politics of Latin America

Complementary Courses (39 credits)
- 12 credits in Spanish or Portuguese.
- 27 additional credits on Latin America and the Caribbean, exclusive of language courses, selected from the Complementary Course List in consultation with the Program Adviser.
- At least 15 of these 27 credits must be taken in one of the following disciplinary clusters, which may also include up to 6 credits of theoretical and/or methodological courses of particular relevance to the student's research interests: Literature and Culture; History, Economics and Political Science; Anthropology, Geography and Sociology.

HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES – THEMATIC OPTION (60 credits)

This option permits highly motivated students to combine the study of Latin America and the Caribbean with a theme or intellectual focus whose roots extend beyond the geographic confines of this area, and for which a high level of methodological and/or theoretical expertise is required.

Themes of study may include, but are not limited to: ethnography and ethnohistory; the age of European expansion; transnationalism; the concepts and practice of law and justice; nationalism and nation-building; ecology and the management of human and natural resources.

Required Courses (21 credits)
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2
- HIST 309 (3) History of Latin America to 1825
- HIST 360 (3) Latin America since 1825
- LACS 497 (3) Research Seminar: Latin America and the Caribbean
- LACS 498 (3) Independent Research Project
- POLI 319 (3) Politics of Latin America

Complementary Courses (39 credits)
- 12 credits in Spanish or Portuguese.
- 12 credits on Latin America and the Caribbean, exclusive of language courses, selected from the Complementary Course List in consultation with the Program Adviser.
- 15 credits from outside the Complementary Course List, within a coherent theme of specialization, selected in consultation with the Program Adviser.

LACS Complementary Course List
Consult the Courses section for course descriptions and information on prerequisites. Not all courses listed are offered in any given year. NB: no credit will be given for multi-term courses unless all components are successfully completed as specified; for example, D1 and D2 components must both be successfully completed in consecutive terms.

Anthropology
- ANTH 212 (3) Anthropology of Development
- ANTH 326 (3) Peoples of Central and South America
- ANTH 349 (3) Transformation of Third World Societies
- ANTH 439 (3) Theories of Development

Economics
- ECON 313 (3) Economic Development 1
- ECON 314 (3) Economic Development 2
- ECON 410 (3) Economic Development: Selected World Area

English
- ENGL 321 (3) Caribbean Fiction

Geography
- GEOG 310 (3) Geography of the Caribbean
- GEOG 320 (3) Geography of Food Systems
- GEOG 408 (3) Geography of Development
- GEOG 410 (3) Geography of Underdevelopment: Current Problems

Hispanic Studies
- HISP 202D1 (3) Portuguese Language: Beginners
- HISP 202D2 (3) Portuguese Language: Beginners
- HISP 204D1 (3) Portuguese Language: Intermediate
- HISP 204D2 (3) Portuguese Language: Intermediate
- HISP 210D1 (3) Spanish Language: Beginners
- HISP 210D2 (3) Spanish Language: Beginners
- HISP 218 (6) Spanish Language Intensive - Elementary
- HISP 219 (6) Spanish Language Intensive - Intermediate
- HISP 220D1 (3) Spanish Language: Intermediate
- HISP 220D2 (3) Spanish Language: Intermediate
- HISP 222 (3) Advanced Oral and Written Expression
- HISP 225 (3) Hispanic Civilization 1
- HISP 226 (3) Hispanic Civilization 2
- HISP 243 (3) Survey of Spanish-American Literature 1
- HISP 244 (3) Survey of Spanish-American Literature 2
- HISP 302 (3) Hispanic Literature - English Translation 2
- HISP 326 (3) Literature of Ideas: Spanish America
- HISP 332 (3) Spanish-American Literature of 19th Century
- HISP 333 (3) Spanish-American Drama
- HISP 351 (3) Spanish-American Novel 1
- HISP 352 (3) Spanish-American Novel 2
- HISP 356 (3) Spanish-American Short Story
- HISP 358 (3) Women Writers Fiction Spanish-America
- HISP 432 (3) Literature - Discovery and Exploration Spain New World
- HISP 433 (3) Gaucho Literature
- HISP 434 (3) Dictatorship: Hispanic America
- HISP 437 (3) Viceregal Spanish America
- HISP 442 (3) Modernismo
- HISP 453 (3) 20th Century Spanish-American Poetry
- HISP 503 (3) Seminar in Hispanic Studies
- HISP 506 (3) Seminar in Hispanic Studies
- HISP 507 (3) Seminar in Hispanic Studies
The Linguistics Department offers a Minor Concentration, a Major Concentration, an Honours program, and a Joint Honours program with other departments in the Faculty of Arts.

New Students
Students who are registering with the Department for the first time must attend the Department orientation meeting before seeing an advisor.

Requirements
Linguistics students must do at least two-thirds of their linguistics courses at McGill. Honours students must also do their Honours thesis at McGill.

MINOR CONCENTRATION IN LINGUISTICS  
(Expandable)  
(18 credits)
Inquiries may be addressed to the departmental office or the advisers for undergraduate studies.

Required Courses  
(9 credits)
LING 201 (3) Introduction to Linguistics  
LING 230 (3) Phonetics  
LING 371 (3) Syntax 1

Complementary Courses  
(9 credits)
9 credits in Linguistics: 3 credits must be at the 400/500 level, 3 credits must be selected from the following list, and 3 credits can be chosen according to the student’s interests. (If a 400/500 level course is chosen from the following list, the remaining 6 credits can be chosen according to the student’s interests.)
LING 320 (3) Sociolinguistics 1  
LING 350 (3) Linguistic Aspects of Bilingualism  
LING 355 (3) Language Acquisition 1  
LING 390 (3) Neuroscience of Language  
LING 425 (3) Historical Linguistics  
LING 450 (3) Linguistic Theory and Processing  
LING 451 (3) Acquisition of Phonology  
LING 455 (3) Second Language Syntax  
LING 520 (3) Sociolinguistics 2  
LING 521 (3) Dialectology  
LING 555 (3) Language Acquisition 2  
LING 590 (3) Language Acquisition and Breakdown

Students who take LING 370 as one of the complementary courses may also count PHIL 210 as a complementary course, but must take a 400/500 level course from the above list.

MAJOR CONCENTRATION IN LINGUISTICS  
(36 credits)
Required Courses  
(21 credits)
LING 201 (3) Introduction to Linguistics  
LING 230 (3) Phonetics  
LING 331 (3) Phonology 1  
LING 370 (3) Introduction to Semantics  
LING 371 (3) Syntax 1  
LING 440 (3) Morphology  
PHIL 210 (3) Introduction to Deductive Logic 1

Complementary Courses  
(15 credits)
9 credits in Linguistics: 3 credits must be at the 400/500-level  
6 credits in Linguistics (normally at the 200/300-level)

HONOURS IN LINGUISTICS  
(60 credits)
Required Courses  
(27 credits)
LING 201 (3) Introduction to Linguistics  
LING 230 (3) Phonetics  
LING 331 (3) Phonology 1  
LING 370 (3) Introduction to Semantics  
LING 371 (3) Syntax 1
LING 440 (3) Morphology  
LING 480D1 (3) Honours Thesis  
LING 480D2 (3) Honours Thesis  
PHIL 210 (3) Introduction to Deductive Logic 1

4.12.37 Linguistics (LING)
1085 Dr. Penfield Avenue  
Montreal, QC H3A 1A7  
Telephone: (514) 398-4222  
Website: www.arts.mcgill.ca/linguistics

Chair — Lydia White  
Emeritus Professors
C. Douglas Ellis; B.A.(Can.), B.A.(McG.), M.A.(Tor.), M.A. (Yale), Ph.D.(McG.)  
Myrna Gopnik; M.A., Ph.D.(Penn.)  
Michel Paradis; B.A.(Montr.), M.A. (McG.), Ph.D.(Montr.), F.R.S.C.

Professors
Yosef Grodzinsky; B.Sc.(Hebrew), Ph.D.(Brandeis) (Canada Research Chair)  
Glyne L. Piggott; B.A.(W.I.), M.A., Ph.D.(Tor.)  
Lydia White; M.A.(Cant.), Ph.D.(McG.) (James McGill Professor)  
Associate Professors
Charles Boberg; B.A.(Alta.), Ph.D.(Penn.)  
Heather Good; B.A.(Br.Col.), M.A., Ph.D.(S.Calif.)  
Lisa de M. Travis; B.A.(Yale), Ph.D.(MIT)  
Assistant Professors
Jonathan Nissenbaum; B.A.(Oberlin College), Ph.D.(MIT)  
Andrea Gualmini; Laurea(Milan), Ph.D.(Md.)  
Bernhard Schwarz; M.A. (Tübingen), Ph.D. (Mass.)  
Junko Shimoyama; B.A., M.A. (Ochanomizu), Ph.D. (Mass.)

Linguistics is the scientific study of human language. Topics include: the structure of the world’s languages at the level of sounds (phonetics and phonology), words (morphology), sentences (syntax), and meaning (semantics); how people learn languages (acquisition); how people use two languages (bilingualism); how language is processed and represented in the brain (psycho- and neurolinguistics); how languages change over time (historical linguistics); and how languages vary in relation to region and social identity (dialectology and sociolinguistics). In addition to preparing students for advanced academic work in linguistics and related disciplines (e.g., anthropology, cognitive neuroscience, computer science, philosophy, or psychology), courses in linguistics provide a useful background for many careers, for example, language teaching, translation, child psychology, speech-language pathology, communication, and speech technology.
Complementary Courses (33 credits)
21 credits in Linguistics:
- 15 credits at the 400/500 level, 3 of which must be selected from:
  - LING 425 (3) Historical Linguistics
  - LING 450 (3) Linguistic Theory and Processing
  - LING 451 (3) Acquisition of Phonology
  - LING 455 (3) Second Language Syntax
  - LING 520 (3) Sociolinguistics 2
  - LING 521 (3) Dialectology
  - LING 525 (3) Topics in Historical Linguistics
  - LING 555 (3) Language Acquisition 2
  - LING 590 (3) Language Acquisition and Breakdown

6 credits others, usually at the 200/300 level.

12 credits in related fields to be selected from the following list:

- Computer Science
  - COMP 202 (3) Introduction to Computing 1
  - COMP 203 (3) Introduction to Computing 2

- French Language and Literature
  - FREN 231 (3) Linguistique française
  - FREN 336 (3) La langue française
  - FREN 434 (3) Sociolinguistique du français

- Language
  - Any course in language (other than the student's native language)
    - literature courses are not acceptable.

- Mathematics
  - MATH 240 (3) Discrete Structures 1
  - MATH 328 (5) Computability and Mathematical Linguistics

- Philosophy
  - PHIL 304 (3) Chomsky
  - PHIL 306 (3) Philosophy of Mind
  - PHIL 415 (3) Philosophy of Language
  - PHIL 515 (3) Seminar: Philosophy of Language

- Psychology
  - PSYC 311 (3) Human Cognition and the Brain
  - PSYC 316 (3) Psychology of Deafness
  - PSYC 340 (3) Psychology of Language
  - PSYC 341 (3) The Psychology of Bilingualism
  - PSYC 343 (3) Language Learning in Children
  - PSYC 530 (3) Applied Topics in Deafness
  - PSYC 532 (3) Cognitive Science
  - PSYC 561 (3) Methods: Developmental Psycholinguistics

- Statistics
  - Any course in statistics (from any department).

A B+ average (program GPA 3.30) is required to maintain Honours standing in Linguistics and a minimum grade of B+ must be obtained in four out of five of the following courses: LING 230, LING 331, LING 370, LING 371, LING 440, as well as in the Joint Honours Thesis, LING 481D1/LING 481D2. As per Faculty of Arts rules, a minimum CGPA of 3.00 must be maintained. The requirement for First Class Honours is a CGPA of 3.50 and a minimum grade of A- in the Joint Honours Thesis. Inquiries may be addressed to the departmental office or to the adviser for undergraduate studies.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

MINOR CONCENTRATION IN MATHEMATICS (18 credits)
(Expandable and Non-expandable Versions)
Students entering the Minor Concentration in Mathematics may be taken in conjunction with a Major Concentration in some other discipline under option A of the Multi-track Program, or together with a Major Concentration and a Minor Concentration in other disciplines under option C.
The Minor Concentration in Mathematics is offered in two versions: an expandable version, for students who wish to leave open the option of expanding the program into a Major Concentration in Mathematics, and a non-expandable version for students who know on entry into the Minor that they do not wish to expand it into a Major.

All courses counted towards the Minor Concentration must be passed with a grade of C or better.

No overlap is permitted with other programs.

MINOR CONCENTRATION IN MATHEMATICS (Expandable) (18 credits)
Program prerequisites: MATH 133, MATH 140 and MATH 141 or their equivalents.
Required Courses (12 credits)
MATH 222 (3) Calculus 3
MATH 235 (3) Algebra 1
MATH 236* (3) Algebra 2
MATH 315 (3) Ordinary Differential Equations
* credit cannot be received for both MATH 223 and MATH 236
Complementary courses (6 credits)
6 credits to be selected from the Complementary Course list below (MATH 323 strongly recommended).

MINOR CONCENTRATION IN MATHEMATICS (Non-Expandable) (18 credits)
Program prerequisites: MATH 133, MATH 140 and MATH 141 or their equivalents.
Required Courses (9 credits)
MATH 222 (3) Calculus 3
MATH 223* (3) Linear Algebra
MATH 315 (3) Ordinary Differential Equations
* credit cannot be received for both MATH 223 and MATH 236
Complementary courses (9 credits)
9 credits to be selected from the Complementary Course list below (MATH 323 strongly recommended).

Complementary Course List – Mathematics Minor Concentrations
Mathematics Minor Concentrations
MATH 314 (3) Advanced Calculus
MATH 316 (3) Complex Variables
or MATH 249 (3) Honours Complex Variables
MATH 317 (3) Numerical Analysis
MATH 318 (3) Mathematical Logic
MATH 319 (3) Partial Differential Equations
MATH 320 (3) Differential Geometry
MATH 323* (3) Probability
MATH 324 (3) Statistics
MATH 326 (3) Nonlinear Dynamics and Chaos
MATH 327 (3) Matrix Numerical Analysis
MATH 328 (3) Computability and Mathematical Linguistics
MATH 339 (3) Foundations of Mathematics
MATH 340 (3) Discrete Structures 2
MATH 346 (3) Number Theory
MATH 348 (3) Topics in Geometry
MATH 407 (3) Dynamic Programming
MATH 417 (3) Mathematical Programming
* It is strongly recommended that students in this program take MATH 323.

MINOR CONCENTRATION IN STATISTICS (Non-expandable) (18 credits)
Students entering the Minor Concentration in Statistics are expected to have completed MATH 133, MATH 140 and MATH 141 or their equivalents.

The Minor Concentration in Statistics may be taken in conjunction with a Major Concentration in some other discipline under option A of the Multi-track Program, or together with a Major Concentration (which may be in Mathematics or some other discipline) and a Minor Concentration (which must be in some other discipline) under option C.

It is not possible to combine this program with the Minor Concentration in Mathematics under option C. Students wishing to do this should instead take the Major Concentration in Mathematics under option B and select a large number of Statistics complementary courses.

The Minor Concentration in Statistics is offered in a non-expandable version, that is, one that cannot be expanded into the Major Concentration in Mathematics. While it is not possible to expand the Minor Concentration, it is possible for students taking the Major Concentration in Mathematics to adopt this program as one of their Minor Concentrations under option C.

Credit cannot be received for both MATH 223 and MATH 236. All courses counted towards the Minor Concentration must be passed with a grade of C or better.

No overlap is permitted with other programs.

Program prerequisites: MATH 133, MATH 140 and MATH 141 or their equivalents.
Required Courses (15 credits)
MATH 222 (3) Calculus 3
MATH 223* (3) Linear Algebra
MATH 323 (3) Probability
MATH 324 (3) Statistics
MATH 423 (3) Regression and Analysis of Variance
* credit cannot be received for both MATH 223 and MATH 236
Note: If this Minor Concentration is combined with the Major Concentration in Mathematics, the required courses MATH 222, MATH 223, and MATH 323 must be replaced by courses on the list of Complementary Statistics courses.

Complementary Course (3 credits)
one of the following:
COMP 202 (3) Introduction to Computing 1
MATH 317 (3) Numerical Analysis
MATH 447 (3) Stochastic Processes
MATH 523 (4) Generalized Linear Models
MATH 524 (4) Nonparametric Statistics
MATH 525 (4) Sampling Theory and Applications

MAJOR CONCENTRATION IN MATHEMATICS (36 credits)
Students entering the Major Concentration are normally expected to have completed MATH 133, MATH 140 and MATH 141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 36 credits required by the program. Students who have done well in MATH 242 and MATH 235 at the end of their first term should consider, in consultation with their adviser and the instructors of the courses involved, the possibility of entering into an Honours program in Mathematics, in Applied Mathematics in Probability and Statistics, or a Joint Honours program in Mathematics and another discipline.

Guidelines for the selection of courses in the Major Concentration
Where appropriate, Honours-level courses may be substituted for their Majors-level counterparts. Students planning to undertake graduate studies in mathematics are urged to make such substitutions.

Students interested in computer science should consider the courses MATH 317, MATH 318, MATH 327, MATH 328, MATH 340, MATH 407, MATH 417 and take a Minor Concentration in computer science.

Students interested in probability and statistics should consider either taking the Minor Concentration in statistics under option C, or else including some or all of the courses MATH 423, MATH 447, MATH 523, MATH 524, and MATH 525.

Students interested in applied mathematics should consider the courses MATH 317, MATH 319, MATH 322, MATH 324, MATH 327, MATH 407 and MATH 417.

Students interested in careers in business, industry or government should consider the courses MATH 317, MATH 319.
MATH 327, MATH 407, MATH 417, MATH 423, MATH 447, MATH 523, and MATH 525.

Program prerequisites: MATH 133, MATH 140, and MATH 141 or their equivalents.

Required Courses (21 credits)
MATH 222 (3) Calculus 3
MATH 235 (3) Algebra 1
MATH 236 (3) Algebra 2
MATH 242 (3) Analysis 1
MATH 243 (3) Analysis 2
MATH 314 (3) Advanced Calculus
MATH 323 (3) Probability

Complementary Courses (15 credits)
at least 9 credits selected from:
MATH 315 (3) Ordinary Differential Equations
MATH 316 (3) Complex Variables
or MATH 249 (3) Honours Complex Variables
MATH 317 (3) Numerical Analysis
MATH 324 (3) Statistics
MATH 340 (3) Discrete Structures 2
MATH 423 (3) Regression and Analysis of Variance

the remaining credits to be selected from the following list:
MATH 318 (3) Mathematical Logic
MATH 319 (3) Partial Differential Equations
MATH 320 (3) Differential Geometry
MATH 326 (3) Nonlinear Dynamics and Chaos
MATH 327 (3) Matrix Numerical Analysis
MATH 328 (3) Computability and Mathematical Linguistics
MATH 339 (3) Foundations of Mathematics
MATH 346 (3) Number Theory
MATH 348 (3) Topics in Geometry
MATH 407 (3) Dynamic Programming
MATH 410 (3) Majors Project
MATH 417 (3) Mathematical Programming
MATH 447 (3) Stochastic Processes
MATH 523 (4) Generalized Linear Models
MATH 524 (4) Nonparametric Statistics
MATH 525 (4) Sampling Theory and Applications

Where appropriate, Honours courses may be substituted for their Majors equivalents.

JOINT HONOURS – MATHEMATICS COMPONENT (36 credits)
Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program components from any two Arts disciplines, see section 4.11.4 "Joint Honours Programs" for a list of available programs.

Joint Honours students should consult an adviser each department to discuss their course selection and their interdisciplinary research project (if applicable).

A student who has not completed the equivalent of MATH 222 will need to take that course in addition to the 36-credit program outlined below.

To remain in the Joint Honours program and receive the Joint Honours degree, a student must maintain the standards set by each discipline, as well as by the Faculty. In the Mathematics courses of the program a GPA of 3.00 and a CGPA of 3.00 must be maintained. Students who have difficulty in maintaining the required level should change to another program before entering their final year.

Required Courses (15 credits)
MATH 235 (3) Algebra 1
MATH 242 (3) Analysis 1
MATH 248 (3) Honours Advanced Calculus
MATH 251 (3) Honours Algebra 2
MATH 255 (3) Honours Analysis 2

Complementary Courses (21 credits)
at least 15 credits selected from the following:
MATH 325 (3) Honours Ordinary Differential Equations
MATH 354 (3) Honours Analysis 3
MATH 355 (3) Honours Analysis 4
MATH 356 (3) Honours Probability
MATH 357 (3) Honours Statistics
MATH 366 (3) Honours Complex Analysis
MATH 370 (3) Honours Algebra 3
MATH 371 (3) Honours Algebra 4
MATH 380 (3) Honours Differential Geometry

The remaining credits to be chosen from the full list of available Honours courses in Mathematics and Statistics.

4.12.39 Middle East Studies Program (MEST)

Program Adviser — Professor Laila Parsons, Department of History and Institute of Islamic Studies, (514) 398-7108

Program Committee Chair — L. Parsons

Program Committee:
S. Ahi (Islamic Studies), R. Brynen (Political Science), M. Hartman (Islamic Studies), L. Parsons (History), P. Salzman (Anthropology), U. Turgay (Islamic Studies), student members

Website: www.mcgill.ca/mes

The Middle East Studies Program is designed for students who wish to pursue an interdisciplinary program of study focusing on the Middle East since the rise of Islam. Courses offered include language, history, religion and philosophy, political science and anthropology. From these are drawn combinations which make up the Major and Minor Concentrations, Honours and Joint Honours in Middle East Studies.

Students wishing to pursue a program in Middle East Studies must consult a Program Adviser each year to devise a suitable program. Before doing so, students should consult the Middle East Studies’ Website at www.mcgill.ca/mes for a full description of each program. Failure to consult an adviser could lead to a delay in completing program requirements. Students wishing to have courses taken at other universities counted as satisfying program requirements must bring copies of their transcripts and course syllabi to the Program Adviser.

MINOR CONCENTRATION IN MIDDLE EAST STUDIES
(Expandable) (18 credits)

6 credits selected from History core courses:
ISLA 410 (3) History: Middle-East 1798-1918
ISLA 411 (3) History of the Middle East 1918-1945
ISLA 510D1 (3) History: Islamic Civilization - Classical
ISLA 510D2 (3) History: Islamic Civilization - Classical
ISLA 511D1 (3) History: Islamic Civilization - Mediaeval Era
ISLA 511D2 (3) History: Islamic Civilization - Mediaeval Era

6 credits in Religion and Philosophy:
at least 3 credits from:
ISLA 505 (3) Islam: Origin and Early Developments
ISLA 506 (3) Islam: Later Developments
ISLA 531D1 (3) Survey Development of Islamic Thought
ISLA 531D2 (3) Survey Development of Islamic Thought

6 credits in Social Science selected from:
ANTH 340 (3) Middle Eastern Society and Culture
POLI 340 (3) Developing Areas/Middle East
POLI 341 (3) Foreign Policy: The Middle East
POLI 347 (3) Arab-Israel Conflict, Crisis, Peace
POLI 437 (3) Politics in Israel
MINOR CONCENTRATION IN MIDDLE EAST LANGUAGES
(Expandable) (18 credits)

Complementary Courses (18 credits)
18 credits of Middle Eastern language (Arabic, Hebrew, Persian, Turkish), either:
all 18 credits (3 levels) in one language
or 12 credits (2 levels) in one language and 6 credits (1 level) in another language

MAJOR CONCENTRATION IN MIDDLE EAST STUDIES
(36 credits)

Complementary Courses (36 credits)
12 credits (2 levels) in one Middle East language – Arabic, Hebrew, Persian, Turkish.
(In the case of Arabic, the first two levels involve 15 credits. The extra 3 credits will be counted towards the remainder of the program requirements.)
24 credits in Middle East Studies (21 credits if Arabic has been chosen):
6 - 9 credits in History, a minimum of 6 credits from core courses;
6 - 9 credits in Religion and Philosophy, a minimum of 6 credits from core courses;
6 - 9 credits in Social Science.

HONOURS IN MIDDLE EAST STUDIES (60 credits)
The Honours program involves 60 credits in Middle East Studies:
18 credits (3 levels) in one Middle Eastern language;
12 credits in Middle Eastern history, a minimum of 9 credits from Core courses;
6 credits in Middle Eastern religion and philosophy, a minimum of 3 credits from Core courses;
12 credits in Middle East social science courses;
12 credits in Middle East Studies electives.
Honours students must maintain a program GPA of 3.30 in their Middle East Studies courses.
According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00.

JOINT HONOURS – MIDDLE EAST STUDIES COMPONENT
(36 credits)
Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Complementary Courses (36 credits)

Language:
12 credits (2 levels) in one Middle East language (in the case of Arabic, the first two levels involve 15 credits. The extra 3 credits will be counted toward the remainder of the program).

Middle East Studies:
24 credits (21 if Arabic has been chosen), distributed as follows:
History
6 - 9 credits, a minimum of 6 credits from the following courses:
ISLA 410 (3) History: Middle-East 1798-1918
ISLA 411 (3) History of the Middle East 1918-1945
ISLA 510D1 (3) History: Islamic Civilization - Classical
ISLA 510D2 (3) History: Islamic Civilization - Classical
ISLA 511D1 (3) History: Islamic Civilization - Mediaeval Era
ISLA 511D2 (3) History: Islamic Civilization - Mediaeval Era
Religion and Philosophy
6 - 9 credits, a minimum of 6 credits from the following courses:
ISLA 505 (3) Islam: Origin and Early Developments
ISLA 506 (3) Islam: Later Developments
ISLA 531D1 (3) Survey Development of Islamic Thought
ISLA 531D2 (3) Survey Development of Islamic Thought
Social Science
6 - 9 credits to be selected from:
POLI 340 (3) Developing Areas/Middle East
POLI 341 (3) Foreign Policy: The Middle East
POLI 347 (3) Arab-Israeli Conflict, Crisis, Peace
POLI 437 (3) Politics in Israel
or ANTH 340 (3) Middle Eastern Society and Culture

Independent Research/Honours Seminar
3 credits selected from:
MEST 495 (3) Middle East Studies: Research Seminar
MEST 496 (3) Independent Reading and Research

Joint Honours students must maintain a program GPA of 3.30 in their Middle East Studies courses. According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00.

COURSES
For the most up-to-date list of eligible courses, see www.mcgill.ca/mes.
Students wishing to take upper-level courses in Anthropology and Political Science are expected to take the necessary prerequisites.

Languages
Arabic (Islamic Studies)
ISLA 521D1 (4.5) Introductory Arabic
ISLA 521D2 (4.5) Introductory Arabic
ISLA 522D1 (3) Lower Intermediate Arabic
ISLA 522D2 (3) Lower Intermediate Arabic
ISLA 523D1 (3) Higher Intermediate Arabic
ISLA 523D2 (3) Higher Intermediate Arabic

Hebrew (Jewish Studies)

Hebrew Language
JWST 200 (12) Hebrew Language (Intensive)

Hebrew Literature
JWST 220D1 (3) Introductory Hebrew
JWST 220D2 (3) Introductory Hebrew

Advanced Hebrew
JWST 340D1 (3) Advanced Hebrew
JWST 340D2 (3) Advanced Hebrew

Studies in Hebrew Language and Literature
JWST 367 (3) Studies in Hebrew Language and Literature
JWST 368 (3) Studies in Hebrew Language and Literature
JWST 369 (3) Studies in Hebrew Language and Literature
JWST 370 (3) Studies in Hebrew Language and Literature

Topics
JWST 411 (3) Topics: Modern Hebrew Literature 1881-1948
JWST 412 (3) Topics: Modern Hebrew Literature 2
JWST 438 (3) Topics in Hebrew Literature 1
JWST 439 (3) Topics in Hebrew Literature 2

Persian (Islamic Studies)
ISLA 541D1 (3) Introductory Persian
ISLA 541D2 (3) Introductory Persian
ISLA 542D1 (3) Lower Intermediate Persian
ISLA 542D2 (3) Lower Intermediate Persian
ISLA 643D1 (3) Upper Intermediate Persian
ISLA 643D2 (3) Upper Intermediate Persian

Turkish (Islamic Studies)
ISLA 532D1 (3) Introductory Turkish
ISLA 532D2 (3) Introductory Turkish
ISLA 533D1 (3) Lower Intermediate Turkish
ISLA 533D2 (3) Lower Intermediate Turkish
ISLA 633D1 (3) Higher Intermediate Turkish
ISLA 633D2 (3) Higher Intermediate Turkish

History
Islamic Studies (*Core Course)
ISLA 350* (3) From Tribe to Dynasty
ISLA 410* (3) History: Middle-East 1798-1918
ISLA 411* (3) History of the Middle East 1918-1945
ISLA 510D1* (3) History: Islamic Civilization - Classical
ISLA 510D2* (3) History: Islamic Civilization - Classical
ISLA 511D1* (3) History: Islamic Civilization - Mediaeval Era
Students interested in a more intensive music program, including practical instruction on an instrument or in voice and additional ensemble participation, should consider the B.Mus degree or the diplomas offered by the Schulich School of Music; “Degrees and Diplomas Offered” in section 9.3.1.

MINOR CONCENTRATION IN MUSIC (18 credits) (Expandable)

Required Courses (6 credits)
MUTH 210 (3) Tonal Theory and Analysis 1*
MUTH 211 (3) Tonal Theory and Analysis 2*

* Students must take a diagnostic placement examination before registering for this course. If the appropriate level is not achieved on the examination, students will be required to register for Melody and Counterpoint MUTH 110 (3 credits) and/or Elementary Harmony and Analysis MUTH 111 (3 credits). These courses may not be counted toward the 18-credit Music Minor Concentration.

Complementary Courses (12 credits)
9 credits in Music History, Literature or Performance Practice, from any courses with an MULH prefix at the 300 level – see list of courses in the Schulich School of Music section; an historical performance practice course with an MUPP prefix may be taken with Departmental permission.

3 credits in Music Theory, any course with a MUTH prefix at the 300-level.

MINOR CONCENTRATION IN MUSIC TECHNOLOGY (18 credits) (Non-Expandable)

[Program registration cannot be done via Minerva.]

Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Department of Theory Office of the Schulich School of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2006 and must be completed and returned to that office by May 15, 2006. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2006.

Required Courses (18 credits)
MUHL 342 (3) History of Electroacoustic Music
MUMT 202 (3) Fundamentals of New Media
MUMT 203 (3) Introduction to Digital Audio
MUMT 301 (3) Music and the Internet
MUMT 302 (3) New Media Production 1
MUMT 303 (3) New Media Production 2

With permission of the Chair, Department of Theory, students with advanced programming skills may substitute more advanced MUMT courses in Music Technology for MUMT 301, MUMT 302, and/or MUMT 303.

MAJOR CONCENTRATION IN MUSIC (36 credits)

This Concentration studies music as a vital art form in contemporary society and in the history of Western civilization. Its central purpose emphasizes music within broader intellectual and cultural contexts; the Concentration’s premise is that, as a product of culture, music must be considered in relation to the other humanistic disciplines. This degree could be an excellent preparation for graduate work in music (musicology, music theory, music librarianship, music journalism, arts administration) or for professional studies in other fields.

Students in the Major Concentration MUST consult the Adviser PRIOR to registration each year. Questions regarding the requirements of the B.A. Major Concentration and especially elective courses should be addressed to the Arts Student Affairs Office in Dawson Hall.

4.12.40 Music (MUAR)

Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Telephone: (514) 398-4535
Fax: (514) 398-4535
Website: www.mcgill.ca/music

Department of Theory — David Brackett (Chair)
Department of Performance — Douglas McNabney (Chair)
Adviser (B.A.,B.Sc. Music programs) — B. Minorgan (514) 398-4535, ext. 6333

Music Programs in Arts

Available within the Faculty of Arts are a Major and a Minor Concentration in Music, and a Minor Concentration in Music Technology.

Admission to the B.A. program is granted according to criteria established by the Faculty of Arts.

Students in the B.A. Freshman Program who are considering a Music Concentration should see the Freshman Adviser in the Arts Student Affairs Office in Dawson Hall. They should also see the Music Adviser in order to ensure that they include any necessary prerequisite Music courses (based on the results of placement examinations) in their first-year selection.
**Required Courses** (13 credits)

MUTH 210 (3) Tonal Theory and Analysis 1*

MUTH 211 (3) Tonal Theory and Analysis 2*

MUSP 229 (2) Musicianship 3**

MUSP 231 (2) Musicianship 4**

MUHL 570 (3) Research Methods in Music

* Students must take a diagnostic placement examination before registering for this course. If the appropriate level is not achieved on the examination, students will be required to register for Melody and Counterpoint MUTH 110 (3 credits) and/or Elementary Harmony and Analysis MUTH 111 (3 credits). These courses may not be counted toward the 36-credit Music Major Concentration.

** Students must take a diagnostic placement examination in both Musicianship courses with an MUPP prefix. Students registered in both historical performance practice courses with an MUPP prefix may register for Melody and Counterpoint MUTH 110 (3 credits) and/or Elementary Harmony and Analysis MUTH 111 (3 credits). These courses may not be counted toward the 36-credit Music Major Concentration.

** Students must take a diagnostic placement examination in both Musicianship courses with an MUPP prefix. Students registered in both historical performance practice courses with an MUPP prefix may register for Melody and Counterpoint MUTH 110 (3 credits) and/or Elementary Harmony and Analysis MUTH 111 (3 credits). These courses may not be counted toward the 36-credit Music Major Concentration.

Complementary Courses (23 credits)

9 credits in Music History, Literature, or Performance Practice, from any courses with an MUHL prefix at the 300 level; an historical performance practice course with an MUPP prefix may be taken with Departmental permission.

6 credits in Music Theory from any course with an MUTH prefix at the 300 level, see list of courses in the Schulich School of Music section.

8 credits selected from:

- MUTH 301 (3) Modal Counterpoint 1
- MUTH 302 (3) Modal Counterpoint 2
- MUTH 303 (3) Tonal Counterpoint 1
- MUTH 304 (3) Tonal Counterpoint 2
- MUTH 310 (3) Mid and Late 19th-Century Theory and Analysis or MUTH 327 (4) 19th-Century Analysis
- MUTH 311 (3) 20th-Century Theory and Analysis or MUTH 427D1 (3) 20th-Century Analysis and MUTH 427D2 (3) 20th-Century Analysis
- MUTH 522D1 (3) Advanced Counterpoint
- MUTH 522D2 (3) Advanced Counterpoint
- MUTH 523D1 (3) Advanced Harmony
- MUTH 523D2 (3) Advanced Harmony
- MUTH 526 (3) Schenkerian Techniques
- MUCO 230D1 (2) The Art of Composition
- MUCO 230D2 (2) The Art of Composition
- MUCO 260 (2) Instruments of the Orchestra
- MUCO 261 (2) Elementary Orchestration
- MUHL 220 (3) Women in Music
- MUHL 3xx Music History complementary (maximum of 3 credits)

MUSIC ENSEMBLES

Arts students may, with the permission of the instructor and the Associate Dean (Student Affairs) of the Faculty of Arts, participate in one of the following ensembles in a given year. Auditions are held starting the week prior to the beginning of classes in September and continuing during that first week and, in the case of the McGill Symphony Orchestra (MUEN 497), in early January for the Winter term. The schedule and requirements for these auditions are available at the end of June from the Department of Performance office, (514) 398-4542. Normally both the Fall and Winter sections of an ensemble are taken in the same academic year.

- MUEN 489 Woodwind Ensembles
- MUEN 490 McGill Winds
- MUEN 491 Brass Ensembles
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 495 Jazz Ensembles
- MUEN 496 Opera Studio
- MUEN 497 Orchestral Ensembles
- MUEN 498 Percussion Ensembles
- MUEN 499 String Ensembles

**COURSES OFFERED BY THE SCHULICH SCHOOL OF MUSIC AS ELECTIVES for students in the Faculties of Arts, Science, and Education**

The courses referred to below are also open to students from other faculties. Other Music courses may be taken by qualified students from other faculties providing they obtain permission from the relevant department in the Schulich School of Music and from the Associate Dean of their own faculty.

**All courses with the prefix MUAR. These are considered to be courses taught in the Faculty of Arts, but they cannot be credited toward the B.A. or B.Sc. Music programs.**

**The Music History and Literature (MUHL), Music Theory and Analysis (MUTH), and Music Technology (MUMT) courses listed below are considered by the Faculty of Arts as courses taught in the Faculty; however, the Faculty of Science considers them to be courses taught outside of the Faculty.**

These courses are intended for students who have at least high school matriculation music or the equivalent. Students who do not have the formal music prerequisites require the permission of the Chair of the Department of Theory to register for any of these courses.

**MUHL (Music History and Literature)**

- MUHL 184 History Survey - Medieval, Renaissance, Baroque
- MUHL 185 History Survey - Classical, Romantic, 20th-C.
- MUHL 220 Women in Music

**MUTH (Music Theory and Analysis)**

Students not in the B.A. or B.Sc. Music programs are not required to take the corequisites for the following MUTH courses.

However, students intending later to enter either the B.A. Major Concentration or the B.Mus. program would then be required to sit placement tests in Musicianship and Keyboard Proficiency and may be required to take the corequisite courses.

- MUTH 110 Melody and Counterpoint
- MUTH 111 Elementary Harmony and Analysis
- MUTH 210 Tonal Theory and Analysis 1
- MUTH 211 Tonal Theory and Analysis 2

**MUMT (Music Technology)**

- MUMT 202 Fundamentals of New Media
- MUMT 203 Introduction to Digital Audio
- MUMT 301 Music and the Internet
- MUMT 302 New Media Production 1
- MUMT 303 New Media Production 2

**4.12.41 North American Studies Program (NAST)**

Office of Interdisciplinary Programs
3715 Peel Street, room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ines.scharnweber@mcgill.ca

**Program Adviser — Ines Scharnweber**

**Program Committee Chair — Tom Velk (Economics)**

Program Committee:

- James Delbourgo (History), Catherine Desbarats (History), Allan Hepburn (English), Leonard Moore (History), Gil Troy (History), Harold Waller (Political Science)

The purpose of North American Studies is to provide a comprehensive view of civilization on this continent. Proceeding from the premise that similarities between North American peoples are greater than their differences, the first year in the program...
requires the traditional mix of history and literature, with the addition of political science, economics and sociology courses to underline differences that may be more substantial.

The introductory complementary credits in the first year are a prelude to a broader list of courses in Economics, Political Science/Sociology, History, and Arts and Letters, where students are allowed greater freedom to direct their own study according to their personal needs and inclinations. Students must ensure they have fulfilled the 200-level prerequisites before registering for the advanced-level courses listed below.

Independent study, internships and university exchange arrangements can be worked into a student’s program (a certain amount of flexibility is allowed here, but in close conjunction with the program as outlined below).

Each Major Concentration student in third year must enrol in the required North American Studies Seminar offered by the Department of English.

MINOR CONCENTRATION IN NORTH AMERICAN STUDIES
(18 credits) (Expandable)

Complementary Courses (18 credits)
3 credits in two of the three introductory level categories listed for the Major Concentration.
Note: Students who take POLI 325D1/D2 at the intermediate level may count 3 credits towards the introductory level - Canadian and American Political Science/Economics/Sociology.
12 credits from courses at the intermediate and senior levels, 3 credits from each of the following four categories: Canadian and American Economics, Canadian and American Political Science/Sociology, Canadian and American History, and Canadian and American Arts and Letters. (See the categories listed for the Major Concentration.)
Students should be aware that some courses listed may have prerequisites at the introductory level, which may have to be taken as electives. No more than 12 credits can be taken outside the Faculties of Arts and Science.
Note: Students in the Minor Concentration are NOT permitted to take courses from the Miscellaneous grouping.

MAJOR CONCENTRATION IN NORTH AMERICAN STUDIES
(36 credits)

Required Course (3 credits)
ENGL 529D1 (1.5) Interdisciplinary Seminar - North American Studies
ENGL 529D2 (1.5) Interdisciplinary Seminar - North American Studies

Complementary Courses (33 credits)
9 credits at the introductory level, normally taken in the first year of the program to be chosen as follows:
3 credits in Canadian and American History, selected from:
HIST 202 (3) Survey: Canada to 1867
HIST 203 (3) Survey: Canada since 1867
HIST 211 (3) American History to 1865
HIST 221 (3) United States since 1865
3 credits in Canadian and American Literature, selected from:
ENGL 225 (3) American Literature 1
ENGL 226 (3) American Literature 2
ENGL 228 (3) Canadian Literature 1
ENGL 229 (3) Canadian Literature 2
3 credits in Canadian and American Political Science, Economics/Sociology selected from:
CANS 200 (3) Introduction to the Study of Canada
ECON 208 (3) Microeconomic Analysis and Applications
ECON 209 (3) Macroeconomic Analysis and Applications
ECON 219 (3) Current Economic Problems: Topics
ECON 223 (3) Political Economy of Trade Policy
POLI 221 (3) Government of Canada
POLI 222 (3) Political Process and Behaviour in Canada
POLI 325D1 (3) Government and Politics: United States
POLI 325D2 (3) Government and Politics: United States
SOCI 230 (3) Sociology of Ethnic Relations
SOCI 233 (3) Canadian Society
Note: Students who take POLI 325D1/D2 at the intermediate level may count 3 credits towards the introductory level - Canadian and American Political Science/Economics/Sociology

24 credits from courses at intermediate and senior levels, 6 from each of the following groups: Canadian and American Economics, Canadian and American Political Science, Canadian and American History, Canadian and American Arts and Letters. A maximum of 3 credits may be selected from the Miscellaneous grouping. Students must receive prior approval from the Program Adviser.

Students should be aware that some courses listed below may have prerequisites at the introductory level, which may have to be taken as electives. No more than 12 credits can be taken outside the Faculties of Arts and Science.

Canadian and American Economics
BUSA 364 (3) Business Law 1
BUSA 368 (3) Business Law 2
ECON 302D1 (3) Money and Banking
ECON 302D2 (3) Money and Banking
ECON 303D1 (3) Canadian Economic Policy
ECON 303D2 (3) Canadian Economic Policy
ECON 305 (3) Industrial Organization
ECON 306D1 (3) Labour Economics and Institutions
ECON 306D2 (3) Labour Economics and Institutions
ECON 308 (3) Governmental Policy Toward Business
ECON 311 (3) United States Economic Development
ECON 321 (3) The Quebec Economy
ECON 326 (3) Ecological Economics
ECON 329 (3) Economics of Confederation
ECON 334 (3) The International Economy 1830-1914
ECON 345 (3) The International Economy since 1914
ECON 404 (3) Transportation
ECON 406 (3) Topics in Economic Policy
ECON 408D1 (3) Public Sector Economics
ECON 408D2 (3) Public Sector Economics
ECON 426 (3) Labour Economics
ECON 434 (3) Current Economic Problems
ECON 440 (3) Health Economics
MGCR 352 (3) Marketing Management 1
MRKT 354 (3) Marketing Management 2
MRKT 452 (3) Consumer Behaviour

Canadian and American Political Science/Sociology
POLI 318 (3) Comparative Local Government
POLI 320 (3) Issues in Canadian Democracy
POLI 321 (3) Issues: Canadian Public Policy
POLI 325D1 (3) Government and Politics: United States
POLI 325D2 (3) Government and Politics: United States
POLI 326 (3) Provincial Politics
POLI 336 (3) Le Québec et le Canada
POLI 337 (3) Canadian Public Administration
POLI 339 (3) Comparative Developed: Topics 1
POLI 342 (3) Canadian Foreign Policy
POLI 346 (3) American Foreign Policy
POLI 370 (3) Révolution tranquille/changements politiques/Québec de 1960
POLI 371 (3) Challenge of Canadian Federalism
POLI 378 (3) The Canadian Judicial Process
POLI 410 (3) Canadian Political Parties
POLI 411 (3) Immigration and Multiculturalism in Canada
POLI 416 (3) Political Economy of Canada
POLI 421 (3) Social Movements in Canada
POLI 425 (3) Topics in American Politics
POLI 427 (3) Selected Topics: Canadian Politics
POLI 446 (3) Les politiques publiques au Québec
POLI 469 (3) Politics of Regulation
POLI 478 (3) The Canadian Constitution
Canadian and American History
ANTH 306 (3) Native Peoples' History in Canada
ANTH 336 (3) Ethnohistory: North Eastern North America
ANTH 338 (3) Native Peoples of North America
CANS 401 (3) Canadian Studies Seminar 1
CANS 405 (3) Canadian Studies Seminar 5
HIST 301 (3) U.S. Presidential Campaigning
HIST 303 (3) History of Quebec
HIST 310 (3) Knowledge and Atlantic Empire
HIST 311 (3) Theodore Roosevelt and Progressive Era
HIST 322 (3) Canada: American Presence since 1939
HIST 323 (3) History and Sexuality 1
HIST 331 (3) F.D. Roosevelt and the New Deal
HIST 332 (3) Constitutional History: Canada -1867
HIST 333 (3) History of New France: Part 1
HIST 334 (3) History of New France: Part 2
HIST 341 (3) The New Nation: U.S. 1800-1850
HIST 342 (3) Canada: External Relations since 1867
HIST 343 (3) Women in Post-Confederation Canada
HIST 351 (3) Themes in U.S. History since 1865
HIST 353 (3) History of Montreal
HIST 357 (3) Religion and Canadian Society in Historical Perspective
HIST 361 (3) The Canadian West to 1905
HIST 362 (3) The Canadian West Since 1905
HIST 363 (3) Canada 1870-1914
HIST 364 (3) Canada, 1914-1945
HIST 367 (3) Canada Since 1945
HIST 370 (3) Canadian Party Politics 1867-2000
HIST 371 (3) Race/Ethnicity: U.S. since 1800
HIST 373 (3) Canadian Labour History
HIST 377 (3) The United States, 1940-1965
HIST 383 (3) History of Latin America to 1825
HIST 393 (3) Civil War and Reconstruction
HIST 403 (3) History of Quebec Institutions
HIST 423 (3) Topics: Migration and Immigrant Groups
HIST 429 (3) Topics: Canadian Family History
HIST 432 (3) The Atlantic Provinces
HIST 447 (3) The Natural History of America
JWST 306 (3) The American Jewish Community

Canadian and American Arts and Letters
ENGL 324 (3) 20th Century American Prose
ENGL 325 (3) Modern American Fiction
ENGL 326 (3) 19th Century American Prose
ENGL 327 (3) Canadian Prose Fiction 1
ENGL 328 (3) Development of Canadian Poetry 1
ENGL 333 (3) Development of Canadian Poetry 2
ENGL 408 (3) The 20th Century (see Program Adviser)
ENGL 410 (3) Theme or Movement Canadian Literature
ENGL 411 (3) Studies in Canadian Fiction
ENGL 414 (3) Studies in 20th Century Literature 1
ENGL 415 (3) Studies in 20th Century Literature 2
ENGL 422 (3) Studies in 19th Century American Literature
ENGL 423 (3) Studies in 19th Century Literature (see Program Adviser)
JWST 351 (3) Studies in Modern Jewish Literature
JWST 386 (3) American Jewish Literature

Miscellaneous
ECON 410 (3) Economic Development: Selected World Area
HISP 243* (3) Survey of Spanish-American Literature 1
HISP 244* (3) Survey of Spanish-American Literature 2
HISP 302 (3) Hispanic Literature - English Translation 2
HISP 432* (3) Literature - Discovery and Exploration Spain New World
HIST 309 (3) History of Latin America to 1825
HIST 360 (3) Latin America since 1825
HIST 419 (3) Central America
NAST 471 (3) Topics in North American Studies 1
POLI 319 (3) Politics of Latin America
POLI 343 (3) Foreign Policy: Latin America

*Denotes courses taught in Spanish.

4.12.42 Philosophy (PHIL)

Leacock Building, Room 908
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-6060
Fax: (514) 398-7148
E-mail: info.philosophy@mcgill.ca
Website: www.mcgill.ca/philosophy
Broadly speaking, the principal aim of philosophy is to increase our understanding of ourselves, the world, and our place in it. Philosophy differs from the empirical and social sciences in important respects. One way to characterise philosophy is by the sorts of questions it seeks to answer, and the ways in which it seeks to answer them. Different areas of philosophy are characterised by the questions they address. For example, Epistemology inquires into the nature of knowledge, Metaphysics is concerned with the fundamental nature of the world and of the types of things that it contains, Ethics investigates the nature of moral judgment and moral reasoning, while Political Philosophy examines such matters as justice, freedom, rights, democracy, and power, and Logic is broadly the analysis of the structure of correct reasoning. In addition, there are the various “Philosophies of...”, e.g., Philosophy of Science, Philosophy of Language, Philosophy of Mind, Philosophy of Religion.

Some of the courses in the Department are explicitly devoted to these specific areas of philosophy, each exploring one or several ways of construing and answering the questions it poses. Other courses explore some period or individual figure in the history of philosophy, approaching philosophical questions through the work of past thinkers, and often exploring connections between the different areas of philosophy. The discipline of Philosophy, as a particular way of thinking, emphasizes clarity in expression, both written and oral, and rigour in argument. Philosophical questions are intriguing and hard, and so philosophical method stresses thoroughness and intellectual generosity – the willingness and ability to grasp another's arguments and respond to them. The Department requires of all (and only) Honours and Joint Honours students that they take a special 3-credit course (PHIL 301), the principal aim of which is to equip students with the distinctively philosophical skills required for advanced work in the field.

The B.A. in Philosophy is not a professional qualification. It prepares students for graduate work in philosophy and for study in other disciplines, e.g., Law. As the interdisciplinary discipline par excellence, philosophy also maintains and encourages ties with other fields, so many students will find that certain classes in philosophy are directly relevant to their major area of study. The department has a strong commitment to providing an intensive yet broad-based philosophical education. The research interests of members of the Department are wide-ranging.

See also the separate listing for History and Philosophy of Science (HPSC), section 4.12.29.

Note: Philosophy students may use either PHIL 200 or PHIL 201 towards their program requirements, but not both. Students may, however, take both for credit (using the second as an elective), as the content in PHIL 201 does not overlap with PHIL 200.

MINOR CONCENTRATION IN PHILOSOPHY (18 credits)

Complementary Courses (18 credits)
15 credits from Groups A - E, with one course from at least four of the five groups.

Group A
PHIL 230 (3) Introduction to Moral Philosophy 1
PHIL 237 (3) Contemporary Moral Issues
PHIL 242 (3) Introduction to Feminist Theory
PHIL 334 (3) Ethics 1
PHIL 343 (3) Biomedical Ethics
PHIL 348 (3) Philosophy of Law 1
PHIL 434 (3) Ethics 2
PHIL 442 (3) Topics in Feminist Theory

Group B
PHIL 210 (3) Introduction to Deductive Logic 1
PHIL 220 (3) Introduction to History and Philosophy of Science 1
PHIL 221 (3) Introduction to History and Philosophy of Science 2
PHIL 304 (3) Chomsky
PHIL 306 (3) Philosophy of Mind
PHIL 310 (3) Intermediate Logic

PHIL 341 (3) Philosophy of Science 1
PHIL 370 (3) Problems in Analytic Philosophy
PHIL 410 (3) Advanced Topics in Logic 1
PHIL 411 (3) Topics in Philosophy of Logic and Mathematics
PHIL 415 (3) Philosophy of Language
PHIL 419 (3) Epistemology
PHIL 421 (3) Metaphysics
PHIL 441 (3) Philosophy of Science 2
PHIL 470 (3) Topics in Contemporary Analytic Philosophy

Group C
PHIL 375 (3) Existentialism
PHIL 474 (3) Phenomenology
PHIL 475 (3) Topics in Contemporary European Philosophy

Group D
PHIL 344 (3) Medieval and Renaissance Political Theory
PHIL 345 (3) Greek Political Theory
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 353 (3) The Presocratic Philosophers
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory

Group E
PHIL 360 (3) 17th Century Philosophy
PHIL 361 (3) 18th Century Philosophy
PHIL 366 (3) 18th and Early 19th Century German Philosophy
PHIL 367 (3) 19th Century Philosophy
PHIL 444 (3) Early Modern Political Theory
PHIL 445 (3) 19th Century Political Theory

3 additional credits from the lists above or from other Philosophy courses.

In total, no more than 9 credits may be at the 200-level, and at least 3 credits must be at the 400 or 500 level.

MAJOR CONCENTRATION IN PHILOSOPHY (36 credits)

Required Course (3 credits)
PHIL 210 (3) Introduction to Deductive Logic 1

Complementary Courses (33 credits)
33 credits, of which no more than 9 may be at the 200-level, and at least 9 must be at the 400 or 500 level, distributed as follows:

6 credits, one course from each of Groups A and B:

Group A
PHIL 304 (3) Chomsky
PHIL 306 (3) Philosophy of Mind
PHIL 310 (3) Intermediate Logic
PHIL 341 (3) Philosophy of Science 1
PHIL 370 (3) Problems in Analytic Philosophy
PHIL 410 (3) Advanced Topics in Logic 1
PHIL 411 (3) Topics in Philosophy of Logic and Mathematics
PHIL 415 (3) Philosophy of Language
PHIL 419 (3) Epistemology
PHIL 421 (3) Metaphysics
PHIL 441 (3) Philosophy of Science 2
PHIL 470 (3) Topics in Contemporary Analytic Philosophy

Group B
PHIL 375 (3) Existentialism
PHIL 474 (3) Phenomenology
PHIL 475 (3) Topics in Contemporary European Philosophy

6 credits, two courses from Group C OR two from Group D:

Group C
PHIL 344 (3) Medieval and Renaissance Political Theory
PHIL 345 (3) Greek Political Theory
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 353 (3) The Presocratic Philosophers

PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory

PHIL 360 (3) 17th Century Philosophy
PHIL 361 (3) 18th Century Philosophy
PHIL 366 (3) 18th and Early 19th Century German Philosophy
PHIL 367 (3) 19th Century Philosophy
PHIL 444 (3) Early Modern Political Theory
PHIL 445 (3) 19th Century Political Theory

3 additional credits from the lists above or from other Philosophy courses.
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory

Group D
PHIL 360 (3) 17th Century Philosophy
PHIL 361 (3) 18th Century Philosophy
PHIL 366 (3) 18th and Early 19th Century German Philosophy
PHIL 367 (3) 19th Century Philosophy
PHIL 444 (3) Early Modern Political Theory
PHIL 445 (3) 19th Century Political Theory

6 credits, one course from each of Groups E and F:

Group E
PHIL 230 (3) Introduction to Moral Philosophy 1
PHIL 237 (3) Contemporary Moral Issues
PHIL 242 (3) Introduction to Feminist Theory

Group F
PHIL 334 (3) Ethics 1
PHIL 343 (3) Biomedical Ethics
PHIL 348 (3) Philosophy of Law 1
PHIL 434 (3) Ethics 2
PHIL 442 (3) Topics in Feminist Theory

15 additional credits from the lists above or from other Philosophy courses. Only one of PHIL 200 and PHIL 201 can be included in the program.

HONOURS IN PHILOSOPHY (60 credits)

60 credits in Philosophy, to include:
- PHIL 210, or equivalent, and one of: PHIL 306, PHIL 310, PHIL 370, PHIL 410, PHIL 411, PHIL 415, PHIL 419, PHIL 421, PHIL 470
- PHIL 301
- PHIL 334, and one of: PHIL 230, PHIL 237, PHIL 240, PHIL 241, PHIL 242
- two of: PHIL 345, PHIL 350, PHIL 353, PHIL 354, PHIL 355, PHIL 452, PHIL 453, PHIL 454
- two of: PHIL 360, PHIL 361, PHIL 366, PHIL 367, PHIL 444, PHIL 445
- one of: PHIL 375, PHIL 474, PHIL 475
- 12 credits from 400–500 level courses (not including the Honours tutorial), at least 3 of which must be 500-level
- 6 credits of Honours tutorial with thesis (PHIL 499)

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – PHILOSOPHY COMPONENT (36 credits)

36 credits in Philosophy, to include:
- PHIL 210, or equivalent, and one of PHIL 306, PHIL 310, PHIL 370, PHIL 410, PHIL 411, PHIL 415, PHIL 419, PHIL 421, PHIL 470
- PHIL 301
- PHIL 334, and one of PHIL 230, PHIL 237, PHIL 240, PHIL 241, PHIL 242
- two of: PHIL 345, PHIL 350, PHIL 353, PHIL 354, PHIL 355, PHIL 452, PHIL 453, PHIL 454
- two of: PHIL 360, PHIL 361, PHIL 366, PHIL 367, PHIL 444, PHIL 445
- OR two of: PHIL 360, PHIL 361, PHIL 366, PHIL 367, PHIL 444, PHIL 445
- one of: PHIL 375, PHIL 474, PHIL 475
- 9 credits from 400–500 level courses (not including the Honours tutorial), at least 3 of which must be 500-level
- 3 credits of Honours tutorial with thesis, which can take either of two forms: a 6-credit interdisciplinary thesis, or a 3-credit thesis in philosophy (PHIL 498).

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

ADMISSION TO HONOURS AND JOINT HONOURS

Students must attain a 3.00 CGPA and have a 3.00 GPA in Philosophy courses.

All Honours and Joint Honours students are bound by the following constraints:
- students may use a maximum of 15 credits from 200-level courses towards satisfaction of their program requirements in Philosophy;
- students cannot count both PHIL 200 and PHIL 201 towards satisfaction of their program requirements in Philosophy.

Minor in Cognitive Science

Students following Major or Honours programs in Philosophy with an interest in cognition may consider the Minor in Cognitive Science, described in the Faculty of Science section.

4.12.43 Philosophy and Western Religions (PHWR)

Office of Interdisciplinary Programs
3715 Peel Street, Room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ines.scharnweber@mcgill.ca
Website: www.mcgill.ca/phwr

Chair – Carlos Fraenkel ( Philosophy and Jewish Studies)

Program Committee
E. Caplan ( Jewish Studies), M. Deslauriers ( Philosophy), D. Farrow ( Religious Studies), I. Henderson ( Religious Studies), T. Kirby ( Religious Studies), B. Levy ( Religious Studies), S. Menn ( Philosophy), R. Myles ( English and French Language Centre), G. Oegema ( Religious Studies), R. Wisnovsky ( Islamic Studies)

This interdisciplinary program, in which the Department of Philosophy, the Institute of Islamic Studies, the Department of Jewish Studies and the Faculty of Religious Studies collaborate, was designed for students who wish to study the encounter between philosophy and the three Abrahamic religions ( Judaism, Christianity, and Islam), an encounter which shaped the basic patterns of Western and Muslim intellectual history. The program covers the period from Antiquity to the Enlightenment during which philosophy and religious thought were inseparably interwoven, making visible the wide range of links between the intellectual worlds of these three religious traditions. Although the interaction between philosophy and religious thought continued in a variety of forms also after the Enlightenment’s critique of religion, this critique transformed their relationship in a fundamental way, and for this reason will be used to delimit the chronological scope of the program. During the period in question, the impact of Greek philosophy on theologians, philosophers, and mystics within Judaism, Christianity, and Islam determined often in a decisive way – both positively and negatively – the interpretation of their Holy Scriptures, and their understanding of crucial religious concepts such as God, creation, revelation, providence, divine Law, and the origin of evil. The interdisciplinary approach takes into account that the history of the encounter in question crossed the linguistic, cultural and religious boundaries which define the areas of the tradi-
tional academic disciplines. This approach permits the student to pursue the development of a philosophical or religious concept from its origin through the different historical and geographical contexts in which it was received by Jewish, Christian and Muslim thinkers.

In order to achieve its goal the program focuses on (i) the acquisition of relevant languages (Greek, Latin, Arabic, Hebrew), (ii) the history of Ancient, Medieval and Early Modern Philosophy, (iii) the Holy Scriptures and the history of Judaism, Christianity, and Islam, (iv) the reception and transformation of philosophical ideas in Jewish, Christian, and Islamic thought, and (v) the multiple points of contact among the different traditions of religious thought.

The program provides excellent preparation for graduate studies in Philosophy (with the appropriate choice of electives, or in combination with a Minor in Philosophy), in Religious Studies and, with the relevant language component, in Islamic Studies and Jewish Studies as well. Students wishing to pursue graduate studies in a particular discipline should consult about specific requirements with a faculty member of the corresponding department at McGill.

MINOR CONCENTRATION IN PHILOSOPHY AND WESTERN RELIGIONS (18 credits)

Students will benefit most from the Minor if they combine it with programs in Philosophy, Islamic Studies, Jewish Studies, Religious Studies, or Classics. Students are also encouraged to complete a Minor Concentration in one of the languages relevant to the academic field.

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (15 credits)

Students must complete 6 credits in two of the following three categories: Philosophy and Western Religions; History of Philosophy; and Jewish, Christian and Islamic Thought.

3 - 6 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

3 - 6 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

The remaining credits, if any, to be chosen from:
CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 356 (3) History and Philosophy of Ancient Science
PHIL 361 (3) Early Medieval Philosophy
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory
PHIL 551 (3) Seminar: Ancient Philosophy 2
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy

3 - 6 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

9 - 12 credits, History of Philosophy:
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option A - Without Language Component
9 - 12 credits, History of Philosophy:
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option A - Without Language Component
9 - 12 credits, History of Philosophy:
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option B - With Language Component
12 - 15 credits (two years: 12 credits, or in the case of Arabic, 15 credits) in one language (Greek, Latin, Arabic, or Hebrew), chosen from the PHWR Complementary Course List - Languages.

6 - 9 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option B - With Language Component
12 - 15 credits (two years: 12 credits, or in the case of Arabic, 15 credits) in one language (Greek, Latin, Arabic, or Hebrew), chosen from the PHWR Complementary Course List - Languages.

6 - 9 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Scriptural Interpretation

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option B - With Language Component
12 - 15 credits (two years: 12 credits, or in the case of Arabic, 15 credits) in one language (Greek, Latin, Arabic, or Hebrew), chosen from the PHWR Complementary Course List - Languages.
0 - 3 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

6 - 9 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought, with a maximum of 6 credits from any one of the three groups.

**HONOURS IN PHILOSOPHY AND WESTERN RELIGIONS**
(60 credits)

The Honours Program in Philosophy and Western Religions was designed for students who wish (i) to explore in depth the intertwined intellectual worlds of Judaism, Christianity and Islam, and the interaction between philosophy and religion from Antiquity to the Enlightenment and (ii) to acquire the linguistic and conceptual tools allowing them to read source texts in the original languages, and to conduct research in the areas investigated by the interdisciplinary program. Students are encouraged to complete, in addition, a Minor Concentration in one of the languages relevant to the academic field.

Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

- Students strongly encouraged to consult an adviser each year to devise a suitable course combination.

Students who combine the Honours Program with a Minor Concentration in one of the languages relevant to the academic field, or who have acquired proficiency in one language elsewhere may replace 6 credits of the language requirements through additional credits in other segments of the program.

**Note:** Not all courses listed below are offered every year, and some of the courses have limited enrolment.

**Required Course**
(3 credits)
RELG 307 (3) Scriptural Interpretation

**Complementary Courses**
(57 credits)

6 - 9 credits*, Philosophy and Western Religions,

PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

9 - 12 credits, History of Philosophy, at least one of:

PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

at least one of:

PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy

The remaining credits, if any, to be chosen from:

CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 345 (3) Greek Political Theory
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 353 (3) The Presocratic Philosophers
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory
PHIL 551 (3) Seminar: Ancient Philosophy 2
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy

3 - 6 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

9 - 12 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought, with a maximum of 6 credits from any one of the three groups.

18 - 21 credits chosen from the PHWR Complementary Course List - Languages (Greek, Latin, Arabic, or Hebrew):

12 - 15 credits (two years: 12 credits, or in the case of Arabic 15 credits) in one language

and 6 - 9 credits (one year: 6 credits or in the case of Arabic, 9 credits) in a second language relevant to the program.

6 credits, specialized skills for conducting research, chosen from:

PHWR 400 (3) Joint Honours/Honours Tutorial
PHWR 401 (3) Honours Thesis Tutorial 1
PHWR 402 (3) Honours Thesis Tutorial 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar

**JOINT HONOURS – PHILOSOPHY AND WESTERN RELIGIONS COMPONENT**
(36 credits)

The Joint Honours Philosophy and Western Religions Component was designed for students who wish (i) to explore in depth the intertwined intellectual worlds of Judaism, Christianity and Islam, and the interaction between philosophy and religion from Antiquity to the Enlightenment and (ii) to acquire the linguistic and conceptual tools allowing them to read source texts in the original languages, and to conduct research in the areas investigated by the interdisciplinary program. Students will benefit most from the Joint Honours if they combine it with a program in Philosophy, Islamic Studies, Jewish Studies, Religious Studies, or Classics. Students are also encouraged to complete a Minor Concentration in one of the languages relevant to the academic field.

Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

Students are strongly encouraged to consult an adviser each year to devise a suitable course combination.

**Note:** Not all courses listed below are offered every year, and some of the courses have limited enrolment.

**Required Course**
(3 credits)
RELG 307 (3) Scriptural Interpretation

**Complementary Courses**
(33 credits)

3 - 9 credits*, Philosophy and Western Religions,

PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar

* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

3 - 6 credits, History of Philosophy, at least one of:

PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

The remaining credits, if any, to be chosen from:

CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy

0 - 3 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

6 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought.

12 - 15 credits (two years: 12 credits, or in the case of Arabic 15 credits) in one language (Greek, Latin, Arabic, or Hebrew), chosen from the PHWR Complementary Course List - Languages.

3 credits, specialized skills for conducting research, chosen from:

PHWR 400 (3) Joint Honours/Honours Tutorial
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
PHILOSOPHY AND WESTERN RELIGIONS (PHWR)
PROGRAMS COMPLEMENTARY COURSE LISTS

Scripts and History of the Western Religious Traditions

Department of Jewish Studies
JWST 201 (3) Jewish Law
JWST 211 (3) Jewish Studies 1: Biblical Period
JWST 216 (3) Jewish Studies 2: 400 BCE - 1000
JWST 217 (3) Jewish Studies 3: 1000 to 2000
JWST 310 (3) Believers, Heretics and Critics
JWST 316 (3) Social and Ethical Issues Jewish Law 1
JWST 331 (3) Bible Interpretation/Medieval Ashkenaz
JWST 332 (3) Bible Interpretation/Sefardic Tradition
JWST 345 (3) Introduction to Rabbinic Literature
JWST 510 (3) Jewish Bible Interpretation 1
JWST 511 (3) Jewish Bible Interpretation 2
JWST 523 (3) Ancient Bible Interpretation
JWST 534 (3) Homiletic Midrash
JWST 535 (3) Exegetical Midrash
JWST 539 (3) Early Rabbinic Parshanut 1
JWST 539 (3) Biblical Interpretation 1
JWST 540 (3) Biblical Interpretation 2
JWST 546 (3) Innovative Medieval Parshanut
JWST 548 (3) Medieval Parshanut
JWST 575 (3) Topics in Parshanut

Institute of Islamic Studies
ISLA 505 (3) Islam: Origin and Early Development
ISLA 506 (3) Islam: Later Developments
ISLA 510D1 (3) History: Islamic Civilization – Classical
ISLA 510D2 (3) History: Islamic Civilization – Classical
ISLA 511D1 (3) History: Islamic Civilization – Medieval Era
ISLA 511D2 (3) History: Islamic Civilization – Medieval Era

Department of History
HIST 207 (3) Jewish History: 400 B.C.E. to 1000
HIST 219 (3) Jewish History: 1000 – 2000

Faculty of Religious Studies
RELG 203 (3) Bible and Western Culture
RELG 210 (3) Jesus of Nazareth
RELG 220D1 (3) Introductory Ancient Hebrew
RELG 220D2 (3) Introductory Ancient Greek
RELG 230 (3) Post-Biblical Jewish Tradition
RELG 231 (3) New Testament Studies 1
RELG 232 (3) The Church in History 1
RELG 233 (3) The Church in History 2
RELG 236 (3) Ancient Christian Church AD54 - AD604
RELG 237 (3) Reformed Theology
RELG 239 (3) Christian Spirituality
RELG 240 (3) Post Exilic Biblical Literature
RELG 247 (3) The Writings
RELG 248 (3) The Prophets
RELG 411 (3) New Testament Exegesis
RELG 481 (3) Exegesis of Greek New Testament
RELG 491 (3) Hebrew Texts
RELG 492 (3) Hebrew Texts
RELG 500 (3) Methodology Colloquium

Catholic Studies Program
CATH 200 (3) Introduction to Catholicism
CATH 310 (3) Catholic Intellectual Traditions
CATH 320 (3) Scripture and Catholicism

Jewish, Christian, and Islamic Thought
Group 1, Institute of Islamic Studies
ISLA 510D1 (3) Survey Development of Islamic Thought
ISLA 510D2 (3) Survey Development of Islamic Thought

Group 2, Department of Jewish Studies
JWST 261 (3) History of Jewish Philosophy & Thought

Languages
Arabic (Institute of Islamic Studies)
ISLA 521D1 (4.5) Introductory Arabic
ISLA 521D2 (4.5) Introductory Arabic
ISLA 522D1 (3) Lower Intermediate Arabic
ISLA 522D2 (3) Lower Intermediate Arabic

Greek (Classics Program, Faculty of Religious Studies)
CLAS 220D1 (3) Introductory Ancient Greek
CLAS 220D2 (3) Introductory Ancient Greek
CLAS 321 (3) Intermediate Greek; Plato/Xenophon
CLAS 322 (3) Intermediate Greek; Orators
CLAS 323 (3) Intermediate Greek; Homer
CLAS 324 (3) Intermediate Greek; Poetry
CLAS 325 (3) Intermediate Greek; Later Prose
CLAS 326 (3) Intermediate Greek; Selections
RELG 280D1 (3) Elementary New Testament Greek
RELG 280D2 (3) Elementary New Testament Greek
RELG 381 (3) Advanced New Testament Greek

Latin (Classics Program)
CLAS 210D1 (3) Introductory Latin 1
CLAS 210D2 (3) Introductory Latin 1
CLAS 311 (3) Catullus/Ovid
CLAS 312 (3) Intermediate Latin; Poetry
CLAS 313 (3) Intermediate Latin; Cicero
CLAS 314 (3) Intermediate Latin; Historians
CLAS 315 (3) Intermediate Latin; Selections
CLAS 316 (3) Intermediate Latin; Medieval

4.12.44 Political Science (POLI)

Stephen Leacock Building, Room 414
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-4800
Fax: (514) 398-1770
Website: www.mcgill.ca/politicalscience

Chair — Christopher Manfredi

Emeritus Professors
Baldev Raj Nayar; B.A., M.A.(Punjab), M.A., Ph.D.(Chic.)
Blema Steinberg; B.A.(McG.), M.A.(C’nell), Ph.D.(McG.)
**Professors**  
Michael Brecher; B.A.(McG.), M.A., Ph.D.(Yale), F.R.S.C.  
(R.B. Angus Professor of Economics and Political Science)  
(on leave Winter 2007)  
Mark R. Brawley; B.A.(Calif.), M.A., Ph.D.(Calif.-LA)  
Rex Brynen; B.A.(Vic., BC), M.A., Ph.D.(Calg.)  
Elisabeth Gidengil; B.A.(LSE), M.A.(N.Y.), Ph.D.(McG.)  
(on leave Winter 2007)  
Jody Heymann; B.A.(Yale), M.D., Ph.D.(Harv.) (Canada Research Chair)  
Christopher Manfredi; B.A., M.A.(Calg.), M.A., Ph.D.(Claremont)  
T.V. Paul; B.A.(Kerala), M.Phil.(JNU), M.A., Ph.D.(Calif.-LA)  
(James McGill Professor)  
Filippo Sabetti; B.A.(McM.), M.A., Ph.D.(Ind.)  
Richard Schultz; B.A.(York), M.A.(Manc.), Ph.D.(York) (James McGill Professor)  
Harold M. Waller; M.S.(N'western), Ph.D.(G'town)  

**Associate Professors**  
Jerome H. Black; B.A.(Tor.), M.A.(Kent & Roch.), Ph.D.(Roch.)  
(Professor of Canadian Ethnic Studies)  
Barbara Haskel; A.M., Ph.D.(Harv.)  
Juliet Johnson; A.B.(Stan.), M.A., Ph.D.(Princ.)  
Antonia Maioni; M.A.(Car.), Ph.D.(N'western) (William Dawson Scholar)  
(on leave 2006-2007)  
Hudson Meadowell; B.A.(Man.), M.A., Ph.D.(Duke)  
Philip D. Oxhorn; B.A.(Redlands), M.A.(Cant.), Ph.D.(Harv.)  
Stephen Saideman; B.A.(Oberlin), M.A., Ph.D.(Calif.- San Diego)  
(Canada Research Chair)  
Narendra Subramanian; B.A.(Princ.), M.A., Ph.D.(MIT)  

**Assistant Professors**  
Arash Abizadeh; B.A.(Winn.), M.Phil.(Oxf.), Ph.D.(Harv.)  
Èric Bélanger; B.A., M.A.(Laval), Ph.D.(Montr.)  
Erik Kuhonta; B.A.(Penn.), Ph.D.(Princ.)  
Catherine Lu; B.A., M.A.(Br. Col.), Ph.D.(Tor.)  
Mark Manger; M.Sc.(Hamburg), Ph.D.(Br. Col.)  
Khalid Medani; B.A.(Brown), M.A.(G'town), M.A., Ph.D.(Calif., Berk.)  
Brian Rathbun; B.A.(Duke), Ph.D.(Princ.)  
Christa Schultz; B.A.(Alta.), M.A.(Ott.), Ph.D.(Princ.)  
Stuart Soroka; B.A.(Qu.), M.A.(Car.), Ph.D.(Br. Col.) (William Dawson Scholar)  
Dietlind Stolle; M.A.(Claremont), Ph.D.(Princ.) (on leave 2006-2007)  
Christina Tamopolsky; B.A.(Tor.), M.A., Ph.D.(Chic.)  

**Faculty Lecturers**  
Daniel Cere; B.A., M.A.(McG.), Ph.D.(C’dia)  

Students wishing to do an Honours degree or a Major or Minor Concentration in Political Science should consult with a Political Science Departmental Adviser each year in order to devise a suitable program. Proper selection of courses is required if a student wishes to graduate on time.

1. **Procedure for NEW Students**

All new students entering the Political Science Program (including Minor Concentrations) are strongly urged to attend an Information Meeting scheduled at the end of August. The date and location of the meeting will be posted on the Web. Attendance will help students prepare for their session with an adviser. It is the student’s responsibility to be in Montreal for the meeting. The following brochures are available on the Web: “Programs in Political Science,” and “Minor Programs in Political Science”. It is essential to read through these prior to attending the Information Meeting.

2. **For all Political Science Students**

“Programs in Political Science,” and “Minor Programs in Political Science,” are all available in the Department as well as on the Web. Students wishing to have courses taken at other universities counted as satisfying program requirements must bring copies of their transcripts and course syllabi to the Director of the Major or Honours Program or the Director of Undergraduate Studies. Students are not accepted into the Honours Program in Political Science until their second year in Political Science; an exception is made for those in Joint Honours Programs.

As course and personnel changes may occur after this Calendar has gone to press, students should not use it to plan their program of studies without first consulting the Department Office for updated information.

**MINOR CONCENTRATION IN POLITICAL SCIENCE (18 credits) (Expandable)**

**Complementary Courses (18 credits)**

6 - 9 credits at the 200 level, from at least two fields:

**Canadian Politics Field**

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<tr>
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<tr>
<td>POLI 2235</td>
<td>Government of Canada</td>
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<tr>
<td>POLI 2245</td>
<td>Political Process and Behaviour in Canada</td>
<td>3</td>
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<tr>
<td>POLI 2265</td>
<td>La vie politique Québécoise</td>
<td>3</td>
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**Comparative Politics Field**

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<tr>
<td>POLI 2115</td>
<td>Comparative Government and Politics</td>
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<tr>
<td>POLI 2125</td>
<td>Government and Politics - Developed World</td>
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<td>POLI 2275</td>
<td>Developing Areas/Introduction</td>
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**International Relations Field**

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<td>POLI 2435</td>
<td>International Politics of Economic Relations</td>
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<tr>
<td>POLI 2445</td>
<td>International Politics: State Behaviour</td>
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**Political Theory Field**

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<td>POLI 2315</td>
<td>Introduction to Political Theory</td>
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<tr>
<td>POLI 2325</td>
<td>Modern Political Thought</td>
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9 - 12 credits above the 200 level from at least two fields:

**Canadian Politics Field**

<table>
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<tbody>
<tr>
<td>POLI 3165</td>
<td>Le Québec et l'Amérique du Nord</td>
<td>3</td>
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<td>POLI 3205</td>
<td>Issues in Canadian Democracy</td>
<td>3</td>
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<td>POLI 3215</td>
<td>Issues: Canadian Public Policy</td>
<td>3</td>
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<td>POLI 3265</td>
<td>Provincial Politics</td>
<td>3</td>
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<td>POLI 3275</td>
<td>Principles of Public Administration</td>
<td>3</td>
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<tr>
<td>POLI 3365</td>
<td>Le Québec et le Canada</td>
<td>3</td>
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<tr>
<td>POLI 3375</td>
<td>Canadian Public Administration</td>
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<td>POLI 3425</td>
<td>Canadian Foreign Policy</td>
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<td>POLI 3555</td>
<td>Idéologie et classes sociales au Québec</td>
<td>3</td>
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<td>POLI 3705</td>
<td>Révolution tranquille/changement politiques/Québec de 1960</td>
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<td>Challenge of Canadian Federalism</td>
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<td>POLI 3785</td>
<td>The Canadian Judicial Process</td>
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<td>POLI 3795</td>
<td>Topics in Canadian Politics</td>
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<td>POLI 4105</td>
<td>Canadian Political Parties</td>
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<td>Immigration and Multiculturalism in Canada</td>
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<td>POLI 4125</td>
<td>Canadian Voting/Public Opinion</td>
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<td>POLI 4155</td>
<td>Political Parties</td>
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<td>POLI 4165</td>
<td>Political Economy of Canada</td>
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<td>POLI 4175</td>
<td>Health Care in Canada</td>
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<td>POLI 4215</td>
<td>Social Movements in Canada</td>
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<td>POLI 4265</td>
<td>Partis politiques et comportements électoraux au Québec</td>
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**Comparative Field (Developed and Developing)**

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<tr>
<td>POLI 300D1</td>
<td>Selected Topics: Canadian Politics</td>
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<tr>
<td>POLI 300D2</td>
<td>Les politiques publiques au Québec</td>
<td>3</td>
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<tr>
<td>POLI 4475</td>
<td>Canadian Constitutional Politics</td>
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<td>POLI 4675</td>
<td>Politique et société à Montréal</td>
<td>3</td>
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<td>POLI 4695</td>
<td>Politics of Regulation</td>
<td>3</td>
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<td>POLI 4775</td>
<td>Business-Government Relations in Canada</td>
<td>3</td>
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<td>POLI 4785</td>
<td>The Canadian Constitution</td>
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<td>Q CST 4405</td>
<td>Aspects du Québec contemporain/Aspects of Contemp. Quebec</td>
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**ARTS – POLITICAL SCIENCE**
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<tr>
<td>POLI 325D2</td>
<td>(3) Government and Politics: United States</td>
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<td>(3) Modern Politics in Western Europe</td>
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<td>POLI 329</td>
<td>(3) Russian and Soviet Politics</td>
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<td>POLI 331</td>
<td>(3) Politics in East Central Europe</td>
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<td>POLI 332</td>
<td>(3) Politics of Former Soviet Republics</td>
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<td>POLI 335</td>
<td>(3) State and Society - Southern Europe and South America</td>
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<td>POLI 338</td>
<td>(3) Developing Areas/Topics 1</td>
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<td>(3) Comparative Developed: Topics 1</td>
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<td>POLI 340</td>
<td>(3) Developing Area/Middle East</td>
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<td>POLI 353</td>
<td>(3) British Constitutional Thought</td>
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<td>POLI 356</td>
<td>(3) Public Policy: Western Europe</td>
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<td>(3) Politics: Contemporary Europe</td>
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<td>POLI 358</td>
<td>(3) Comparative State-Society Relations</td>
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<td>POLI 368</td>
<td>(3) Comparative Politics of Welfare</td>
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<td>POLI 411</td>
<td>(3) Immigration and Multiculturalism in Canada</td>
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<td>POLI 414</td>
<td>(3) Society and Politics in Italy</td>
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<td>POLI 419</td>
<td>(3) Transitions from Communism</td>
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<td>POLI 423</td>
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<td>POLI 428</td>
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<td>POLI 431</td>
<td>(3) Nations and States/Developed World</td>
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<td>(3) Public Policy Analysis</td>
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<td>(3) Arab-Israel Conflict, Crisis, Peace</td>
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<td>(3) Crisis, Conflict and War</td>
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<td>(3) Security: War and Peace</td>
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<td>(3) Ideology and Political Ideologies</td>
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<td>POLI 470</td>
<td>(3) Philosophy, Economy and Society</td>
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<tr>
<td>POLI 478</td>
<td>Other Political Science courses may be used to satisfy this Minor subject to approval.</td>
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**MINOR CONCENTRATION IN POLITICAL SCIENCE:**

**CANADA/QUEBEC** (Non-expandable) (18 credits)

**Complementary Courses** (Non-expandable) (18 credits)

6 credits at the introductory level from:
- POLI 221 (3) Government of Canada
- POLI 222 (3) Political Process and Behaviour in Canada
- POLI 226* (3) La vie politique Québécoise
- POLI 226* (3) La vie politique Québécoise
- POLI 316* (3) Le Québec et l’Amérique du Nord
- POLI 320 (3) Issues in Canadian Democracy
- POLI 321 (3) Issues: Canadian Public Policy
- POLI 326 (3) Provincial Politics
- POLI 327 (3) Principles of Public Administration
- POLI 336* (3) Le Québec et le Canada
- POLI 337 (3) Canadian Public Administration
- POLI 342 (3) Canadian Foreign Policy
- POLI 355* (3) Idéologie et classes sociales au Québec
- POLI 370* (3) Révolution tranquille/changements politiques/Québec de 1960
- POLI 371 (3) Challenge of Canadian Federalism
- POLI 378 (3) The Canadian Judicial Process
- POLI 379 (3) Topics in Canadian Politics
- POLI 410 (3) Canadian Political Parties
- POLI 411 (3) Immigration and Multiculturalism in Canada
- POLI 412 (3) Canadian Voting/Public Opinion
- POLI 415 (3) Political Parties
- POLI 416 (3) Political Economy of Canada
- POLI 417 (3) Health Care in Canada
- POLI 421 (3) Social Movements in Canada
- POLI 426 (3) Partis politiques et comportsements électoraux au Québec
- POLI 427 (3) Selected Topics: Canadian Politics
- POLI 444* (3) Les politiques publiques au Québec
- POLI 447 (3) Canadian Constitutional Politics
- POLI 467* (3) Politique et société à Montréal
- POLI 469 (3) Politics of Regulation
- POLI 477 (3) Business-Government Relations in Canada
- POLI 478 (3) The Canadian Constitution
- QCST 440* (3) Aspects du Québec contemporain/Aспектs de Contemp. Quebec

*Denotes Quebec Politics

**MINOR CONCENTRATION IN COMPARATIVE POLITICS**

(Non-expandable) (18 credits)

**Required Course** (3 credits)
- POLI 211 (3) Comparative Government and Politics

**Complementary Courses** (15 credits)

3 credits selected from the following:
- POLI 212 (3) Government and Politics - Developed World
- POLI 227 (3) Developing Areas - Introduction
- POLI 419 (3) Transitions from Communism

12 credits selected from the following:
- POLI 300D1 (3) Developing Areas/Revolution
- POLI 300D2 (3) Developing Areas/Revolution
- POLI 315 (3) Approaches to Political Economy
- POLI 318 (3) Comparative Local Government
- POLI 319 (3) Politics of Latin America
- POLI 322 (3) Canadian Political Parties
- POLI 323 (3) Developing Areas/China and Japan
- POLI 324 (3) Developing Areas/Africa
- POLI 325D2 (3) Government and Politics: United States
- POLI 328 (3) Modern Politics in Western Europe
- POLI 355* (3) Ideologie et classes sociales au Québec
- POLI 370* (3) Révolution tranquille/changements politiques/Québec de 1960
- POLI 427 (3) Selected Topics: Canadian Politics
- POLI 444* (3) Les politiques publiques au Québec
- POLI 447 (3) Canadian Constitutional Politics
- POLI 467* (3) Politique et société à Montréal
- POLI 469 (3) Politics of Regulation
- POLI 477 (3) Business-Government Relations in Canada
- POLI 478 (3) The Canadian Constitution
- QCST 440* (3) Aspects du Québec contemporain/Aспектs de Contemp. Quebec
MINOR CONCENTRATION IN INTERNATIONAL RELATIONS
(Non-expandable) (18 credits)

**Required Courses** (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI 243</td>
<td>International Politics of Economic Relations</td>
</tr>
<tr>
<td>POLI 244</td>
<td>International Politics: State Behaviour</td>
</tr>
</tbody>
</table>

**Complementary Courses** (12 credits)

12 credits, of which 6 credits must be in thematic courses:

**Thematic courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI 345</td>
<td>International Organization</td>
</tr>
<tr>
<td>POLI 347</td>
<td>Arab-Israel Conflict, Crisis, Peace</td>
</tr>
<tr>
<td>POLI 351</td>
<td>Crisis, Conflict and War</td>
</tr>
<tr>
<td>POLI 354</td>
<td>Approaches to International Political Economy</td>
</tr>
<tr>
<td>POLI 360</td>
<td>Security: War and Peace</td>
</tr>
<tr>
<td>POLI 362</td>
<td>Political Theory and International Relations</td>
</tr>
<tr>
<td>POLI 441</td>
<td>IPE: North-North Relations</td>
</tr>
<tr>
<td>POLI 445</td>
<td>IPE: North-South Relations</td>
</tr>
<tr>
<td>POLI 450</td>
<td>Peacebuilding</td>
</tr>
<tr>
<td>POLI 451</td>
<td>The European Union</td>
</tr>
</tbody>
</table>

**Regional courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI 341</td>
<td>Foreign Policy: The Middle East</td>
</tr>
<tr>
<td>POLI 342</td>
<td>Canadian Foreign Policy</td>
</tr>
<tr>
<td>POLI 344</td>
<td>Foreign Policy: Europe</td>
</tr>
<tr>
<td>POLI 346</td>
<td>American Foreign Policy</td>
</tr>
<tr>
<td>POLI 349</td>
<td>Foreign Policy: Asia</td>
</tr>
</tbody>
</table>

MINOR CONCENTRATION IN POLITICAL ECONOMY
(Non-expandable) (18 credits)

**Required Courses** (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI 221</td>
<td>Comparative Government and Politics</td>
</tr>
<tr>
<td>POLI 227</td>
<td>Developing Areas/Introduction</td>
</tr>
<tr>
<td>POLI 243</td>
<td>International Politics of Economic Relations</td>
</tr>
</tbody>
</table>

**Complementary Courses** (12 credits)

3 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 208</td>
<td>Microeconomic Analysis and Applications</td>
</tr>
<tr>
<td>ECON 209</td>
<td>Macroeconomic Analysis and Applications</td>
</tr>
</tbody>
</table>

Students who take ECON 230D1/ECON 230D2 or ECON 250D1/ ECON 250D2D are deemed to have fulfilled the economics requirement;

12 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI 243</td>
<td>International Politics of Economic Relations</td>
</tr>
<tr>
<td>POLI 315</td>
<td>Approaches to Political Economy</td>
</tr>
<tr>
<td>POLI 321</td>
<td>Issues: Canadian Public Policy</td>
</tr>
<tr>
<td>POLI 354</td>
<td>Approaches to International Political Economy</td>
</tr>
</tbody>
</table>
MAJOR CONCENTRATION IN POLITICAL SCIENCE
(36 credits)

Complementary Courses (36 credits)

36 credits of Political Science courses, as follows:

No more than one-half (18 credits) of the credits in a single field. (If the field in question is Comparative Politics, the maximum is 21 credits; provided courses are taken in both Developed Areas and Developing Areas.)

In the first year of the program, students are advised to select 12 - 15 credits from at least three of the four main fields (Comparative Government and Politics, Canadian and Québec Government and Politics, International Politics, Political Theory).

No more than 15 of the 36 credits may be at the 200 level.

In the final year, no program courses may be taken below the 300 level.

Students may take only one 500-level Political Science Honours Seminar and it is to be taken in the final year.

The normal course load for a first-year student is 30 credits; a typical course distribution is given in the Departmental guidelines. First-year students normally may take courses at the 200-level only. First-year students in the second term of a 90-credit program may, with the approval of their adviser at Course Change period, transfer into one 300-level course provided that they have obtained an average of B+ in their first-term courses and that they have taken the prerequisite 200-level course. Second-year students in the third term of a 120-credit program may take one 300-level course provided they have taken the prerequisite course at the 200 level.

HONOURS IN POLITICAL SCIENCE (54 credits)

Note: The following provides only a summary view of the program. Detailed information is provided in the handout “Programs in Political Science,” available from the Department or on the Web; all Honours and potential Honours students must read it before seeing an adviser.

The Honours program in Political Science consists of 54 credits, of which 48 must be in Political Science. The remaining 6 credits must be in related social studies disciplines and must be taken at the 300 or 400 level.

Students wishing to take Honours Political Science will be admitted to the program in their second year in Political Science. In their first year in political science, they should register as Major students and take 12-15 credits in Political Science spread over at least three of the four main fields offered by the Department (Comparative Politics, Canadian and Québec Politics, International Politics, Political Theory). Potential Honours students are also strongly encouraged to take one of the basic courses in economic analysis (ECON 208 and ECON 209 or ECON 230D1/ ECON 230D2). The introductory course requirements in the various fields of Political Science are the same as those presented in the description of the Major program above.

Students in the Honours Political Science program are encouraged to concentrate in one or two of the major fields offered by the Department. While concentration is considered beneficial, excessive specialization is discouraged. Students will normally not be permitted to take more than half their Political Science credits in any one field. Honours students are required to take a 3-credit course in Methods (POLI 311) and a 3-credit course in Political Theory (at any level). They are also required to take one-quarter of their Political Science credits (12 credits) at the 400 level or higher, including at least one 500- or 600-level Seminar. Students can satisfy this one-quarter rule by taking one 400-, one 500-, and one 600-level course. Students who do not have the prerequisite(s) for a course may be asked to withdraw from the course. Further information may be obtained from one of the Honours advisers.

Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.30.

JOINT HONOURS – POLITICAL SCIENCE COMPONENT
(36 credits)

Students who wish to study at the Honours level in two Arts disciplines may combine Joint Honours program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Note: The following provides only a summary view of the program. Detailed information is provided in the handout “Programs in Political Science,” available from the Department; all Joint Honours and potential Joint Honours students must read it before seeing an adviser.

To meet the requirements for Joint Honours degrees, students must complete 36 credits in Political Science and meet the requirements set forth by the other Department. Students wishing to follow a Joint Honours program will be admitted in their first year in political science. Joint Honours students normally take 12 credits in Political Science, 12 credits in the other Honours subject and 6 credits of other courses in each year of their program.

In the first year in political science, the 12 credits in Political Science should cover at least two (preferably three) of the four main fields offered by the Department. While some concentration is encouraged, students will normally not be permitted to take more than half their Political Science credits in any one field. Joint Honours students are required to take a Political Science course in Methods (POLI 311) unless they are authorized to take an equivalent social science methods course in another department (Sociology, Economics). In that case they are required to take a course (at any level) in Political Theory. They are also required to take one-quarter of their Political Science credits (i.e., 9 credits) at the 400 level or higher, including at least one 500- or 600-level Seminar. Students can satisfy the one-quarter rule by taking one 500- and one 600-level course.

Students who do not have the prerequisite(s) for a course may be asked to withdraw from the course.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.30.

HONOURS STANDARDS

To enter, remain and graduate in Honours, students must achieve/maintain a B+ average in their political science courses and more than half of the political science grades must be at the B+ level or higher. To be awarded First Class Honours at graduation, in addition to a 3.50 CGPA, students must achieve an A average in their political science courses and more than half of political science grades must be at the A- level or higher. All political science courses taken at McGill are counted in determining a student’s standing. (The specific criteria are given in the brochure “Programs in Political Science,” which may also be found on the Department Website.) To be awarded Honours at graduation, students must be registered in the Honours program in their final year. At graduation, students’ Honours standing will be determined by their overall record in the Honours program.

Further information may be obtained from the Head of the Honours program.

4.12.45 Psychology (PSYC)

Stewart Biological Sciences Building, Room W8/1
1205 Docteur Penfield Avenue
Montreal, QC H3A 1B1
Telephone: (514) 398-6100
Fax: (514) 398-4896
E-mail: info@psych.mcgill.ca
Website: www.psych.mcgill.ca

The Psychology department offers programs in both Arts and Science. For a list of teaching staff and an outline of the nature of Psychology refer to the Science entry “Psychology
(PSYC)” in section 11.12.29. Programs which may be taken by Arts students are described in this section, those listed under the Faculty of Science may be taken by Science students only.

Note: The B.A. (or B.Sc.) with a Major Concentration or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology.

INFORMATION MEETINGS FOR NEW STUDENTS

All new students entering the Psychology undergraduate program are required to attend an Information Meeting prior to registration. Students planning to pursue a Bachelor of Arts with a Major Concentration in Psychology must attend a meeting at 14:30 on August 29, 2006, in the Stewart Biological Sciences Building, Room S1/3. At this meeting, Nicole Allard, the Academic Adviser, will explain the requirements of the Department's programs. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. After this meeting students in the Major Concentration in Psychology will make appointments for individual advising sessions and fill out their Study Plan form for registration.

Entering students must bring their letter of acceptance and a copy of their collegial transcript(s). They will also need this Calendar and a preliminary Class Schedule. Students will also find the Psychology Department Handbook helpful. The Handbook contains more detailed descriptions of Psychology courses, as well as providing guidelines for how students might pursue particular areas of interest. The Handbook is available on the Department Website: www.psych.mcgill.ca/ugrad/ugrad.htm.

Students entering the Psychology program in January are encouraged to call the Academic Adviser, Nicole Allard, in December to clarify their course selections.

COURSE GROUPS: LIST A AND LIST B

The study of psychology covers many fields. To develop a breadth of understanding in psychology, students are expected to obtain knowledge beyond the introductory level in two or more areas of psychology. To ensure this requirement is met, Psychology courses are divided into two lists. List A covers the areas of behavioural neuroscience, cognition and quantitative methods. List B covers social, health and developmental psychology.

List A (Behavioural Neuroscience, Cognition and Quantitative Methods)

- PSYC 301 (3) Learning
- PSYC 308 (3) Behavioural Neuroscience 1
- PSYC 310 (3) Human Intelligence
- PSYC 311 (3) Human Cognition and the Brain
- PSYC 317 (3) Genes and Behaviour
- PSYC 318 (3) Behavioural Neuroscience 2
- PSYC 334 (3) Computer Simulation - Psychological Processes
- PSYC 335 (3) Formal Models: Psychological Processes
- PSYC 336 (3) Measurement of Psychological Processes
- PSYC 340 (3) Psychology of Language
- PSYC 341 (3) The Psychology of Bilingualism
- PSYC 342 (3) Hormones and Behaviour
- PSYC 352 (3) Cognitive Psychology Laboratory
- PSYC 353 (3) Laboratory in Human Perception
- PSYC 403 (3) Modern Psychology in Historical Perspective
- PSYC 406 (3) Psychological Tests
- PSYC 410 (3) Special Topics in Neuropsychology
- PSYC 413 (3) Cognitive Development
- PSYC 427 (3) Sensorimotor Behaviour
- PSYC 451 (3) Human Factors Research and Techniques
- PSYC 470 (3) Memory and Brain
- PSYC 472 (3) Scientific Thinking and Reasoning
- PSYC 503 (3) Computational Psychology
- PSYC 505 (3) The Psychology of Pain
- PSYC 510 (3) Statistical Analysis of Tests
- PSYC 522 (3) Neurochemistry and Behaviour
- PSYC 526 (3) Advances in Visual Perception

List B (Social, Health and Developmental Psychology)

- PSYC 529 (3) Music Cognition
- PSYC 531 (3) Structural Equation Models
- PSYC 532 (3) Cognitive Science
- PSYC 536 (3) Correlational Techniques
- PSYC 541 (3) Multilevel Modelling

List B (Social, Health and Developmental Psychology)

- PSYC 304 (3) Child Development
- PSYC 316 (3) Psychology of Deafness
- PSYC 331 (3) Inter-Group Relations
- PSYC 332 (3) Introduction to Personality
- PSYC 333 (3) Personality and Social Psychology
- PSYC 337 (3) Introduction: Abnormal Psychology 1
- PSYC 338 (3) Introduction: Abnormal Psychology 2
- PSYC 343 (3) Language Acquisition in Children
- PSYC 351 (3) Research Methods in Social Psychology
- PSYC 408 (3) Principles of Cognitive Behaviour Therapy
- PSYC 412 (3) Deviations: Child Development
- PSYC 414 (3) Social Development
- PSYC 416 (3) Topics in Child Development
- PSYC 429 (3) Health Psychology
- PSYC 436 (3) Human Sexuality and its Problems
- PSYC 471 (3) Human Motivation
- PSYC 473 (3) Social Cognition and the Self
- PSYC 474 (3) Interpersonal Relationships
- PSYC 491D1 (3) Advanced Study: Behavioural Disorders
- PSYC 491D2 (3) Advanced Study: Behavioural Disorders
- PSYC 511 (3) Infant Competence
- PSYC 530 (3) Applied Topics in Deafness
- PSYC 533 (3) International Health Psychology
- PSYC 534 (3) Community Psychology
- PSYC 535 (3) Advanced Topics in Social Psychology

Unclassified Courses

- PSYC 395 (6) Psychology Research Project 1
- PSYC 450D1 (4.5) Research Project and Seminar
- PSYC 450D2 (4.5) Research Project and Seminar
- PSYC 492 (3) Special Topics Seminar 1
- PSYC 493 (3) Special Topics Seminar 2
- PSYC 494D1 (4.5) Psychology Research Project
- PSYC 494D2 (4.5) Psychology Research Project
- PSYC 495 (6) Psychology Research Project 2

MINOR CONCENTRATION IN PSYCHOLOGY (18 credits) (Expandable)

Students registered in a Bachelor of Arts program in another department may pursue a Minor Concentration in Psychology. This Minor Concentration is expandable for students who may wish to transfer into a Major Concentration in Psychology at a later date.

Recommended background: Students are advised to complete a course in Introductory Psychology at the collegial or freshman level. Students who have not previously completed CEGEP Psychology 350-101 or 350-102 or equivalent are required to complete PSYC 100 during the first year of study at McGill.

Complementary Courses (18 credits)

6 credits selected from:

- PSYC 204 (3) Introduction to Psychological Statistics
- PSYC 211 (3) Intro Behavioral Neuroscience
- PSYC 212 (3) Perception
- PSYC 213 (3) Cognition
- PSYC 215 (3) Social Psychology

12 credits in Psychology at the 300 level or above.

MINOR CONCENTRATION IN BEHAVIOURAL SCIENCE (18 credits) (Non-expandable) (Open only to students registered in the Major Concentration In Psychology)

Students who wish to go on to graduate training in Psychology, and those who may wish to apply for membership in the Ordre des
Psychologues du Québec (once the additional graduate requirements of the Ordre have been completed), are advised to take the following supplementary Minor Concentration in Behavioural Science. Note that this counts as a second Minor Concentration, and is open only to students registered in the Major Concentration in Psychology. A first Minor Concentration must also be completed in a discipline other than Psychology.

Complementary Courses (18 credits)
3 credits in Psychology from List A
3 credits in Psychology from List B
3 credits in Psychology at the 400 or 500 level
9 credits at the 300 level or above from one or more of the following disciplines: Psychology (PSYC), Anthropology (ANTH), Linguistics (LING), or Sociology (SOCI)

MAJOR CONCENTRATION IN PSYCHOLOGY (36 credits)
Students with a Major Concentration in Psychology must obtain a minimum grade of C in all 36 credits of the program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one).

The Major Concentration in Psychology does not provide sufficient undergraduate background to enable students to apply for membership in the Ordre des Psychologues du Québec, even once the additional graduate requirements of the Ordre have been completed. Students who are interested in practising psychology in Quebec are advised to also complete the Minor Concentration in Behavioral Science.

Recommended Background:
Students registered in a Bachelor of Arts degree with a Major Concentration or Honours program in Psychology, and those registered in a Bachelor of Arts and Science degree with a Major Concentration or Joint Honours Component in Psychology, are advised to complete courses in Introductory Psychology and Human Biology at the collegial level.

Students who have not previously completed Psychology 350-101 or 350-102 in CEGEP will be required to register for PSYC 100 during their U1 year. Bachelor of Arts students who have not completed one Biology 101-301, 101-401, 101-911 or 101-921 in CEGEP will be required to complete BIOL 115 (or, if they prefer, BIOL 111 or BIOL 112) during their U1 year. Bachelor of Arts and Science students who have not completed one course in General Biology (CEGEP objective OOUK, OOXU or equivalent) will be required to complete one of BIOL 111 or BIOL 112 during their U1 year.

All students who have completed either Mathematics 201-307 or 201-337 or equivalent, or the combination of Quantitative Methods 360-300 with Mathematics 201-300, and who obtained a minimum grade of 75%, will be exempt from PSYC 204. Bachelor of Arts students will replace this requirement with 3 credits at the 300 level in one of the following disciplines: Psychology (PSYC), Anthropology (ANTH), Linguistics (LING) or Sociology (SOCI). Bachelor of Arts and Science students will replace this requirement with 3 credits in Psychology at the 300 level or above.

Required Courses (18 credits)
PSYC 204 (3) Introduction to Psychological Statistics
PSYC 211 (3) Intro Behavioral Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 215 (3) Social Psychology
PSYC 305 (3) Statistics for Experimental Design

Complementary Courses (18 credits)
3 credits in Psychology from List A
3 credits in Psychology from List B
12 credits in Psychology, at least 6 at the 400 or 500 level

Note: Students who wish to apply to the Honours Program in Psychology must complete the following courses in their U1 year to be eligible for admission: PSYC 204, PSYC 211, PSYC 212, PSYC 213, PSYC 215. Students who have been exempted from PSYC 204 are advised to complete PSYC 305 in U1. All students must complete a minimum of 27 graded credits in U1 to be eligible for admission to the Honours Program.

B.A. HONOURS IN PSYCHOLOGY (60 credits)
Honours in Psychology prepares students for graduate study, and so emphasises practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of their U2 year, and the two-year sequence of Honours courses continues through U3.

Admission to Honours is selective. Students with a cumulative grade point average of 3.00 or better are eligible to apply; since enrolment is limited the usual GPA for admission to this program is 3.50 (based on a 27-30 graded credit program over two terms). Students must complete the following courses in their U1 year to be eligible to apply to the Honours Program: PSYC 204, PSYC 211, PSYC 212, PSYC 213 and PSYC 215. Students who have been exempted from PSYC 204 due to previous courses completed in CEGEP are advised to complete PSYC 305 in their U1 year. Once in the Honours Program, the student must obtain a GPA of 3.00 in the U2 year in order to continue in the program for U3. Students in the Honours Program are required to complete a minimum of 27 graded credits per academic year.

Applications can be obtained from the Undergraduate Office of the Department of Psychology, Room N7/9A, Stewart Biological Sciences Building. The applications must be completed and returned to the Undergraduate Office by August 1 for September admission and by December 1 for January admission. Candidates will be advised of the Department’s decision through a notice posted in front of the Undergraduate Adviser’s Office, N7/9, before classes begin in September or in January.

Students should note that awarding of the Honours degree will depend on both cumulative grade point average and a minimum grade of B on PSYC 380D1/PSYC 380D2, PSYC 482, PSYC 483. "First Class Honours" is awarded to students who obtain a minimum CGPA of 3.50 and a minimum grade of A- in the required honours courses, namely PSYC 380D1/D2, PSYC 482 and PSYC 483. "Honours" is awarded to students with a minimum CGPA of 3.00 and a minimum grade of B in the required honours courses, namely PSYC 380D1/D2, PSYC 482 and PSYC 483. Moreover, the awarding of the Honours degree normally requires completion of two full years of study, U2 and U3, in the Psychology Department. Students with particularly strong academic records may be admitted for the U3 year only on the basis of their marks and research experience. These students must complete all Honours Program requirements.

U1 Required Courses (15 credits)
PSYC 204 (3) Introduction to Psychological Statistics
PSYC 211 (3) Intro Behavioral Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 215 (3) Social Psychology

Note: PSYC 100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC 305 (3) Statistics for Experimental Design

U2 Required Courses (9 credits)
PSYC 380D1 (4.5) Honours Research Project Seminar
PSYC 380D2 (4.5) Honours Research Project Seminar

U3 Required Courses (6 credits)
PSYC 482 (3) Advanced Honours Seminar 1
PSYC 483 (3) Advanced Honours Seminar 2

Complementary Courses (27 credits)
Minimum of 9 credits to be selected from:
PSYC 495 (3) Psychology Research Project 2
PSYC 496 (3) Seniors Honours Research 1
PSYC 497 (3) Seniors Honours Research 2
PSYC 498D1 (3) Senior Honours Research
PSYC 498D2 (3) Senior Honours Research
Any Psychology course at the 500 level.
6 credits in Psychology from List A
6 credits in Psychology from List B
6 credits at the 300 level or above in the following disciplines:
Psychology (PSYC), Anthropology (ANTH), Linguistics (LING),
or Sociology (SOCI)

JOINT HONOURS – PSYCHOLOGY COMPONENT (36 credits)
Students planning to pursue the Joint Honours Component in Psychology are advised to complete courses in Introductory Psychology and Human Biology at the collegial level.

Students who have not previously completed Psychology 350-101 or 350-102 in CEGEP will be required to register for PSYC 100 during their U1 year.

Bachelor of Arts students who have not completed one Biology 101-301, 101-401, 101-911 or 101-921 in CEGEP will be required to complete BIOL 115 (or, if they prefer, BIOL 111 or BIOL 112) during their U1 year.

Bachelor of Arts and Science students who have not completed one course in General Biology (CEGEP objective OOUK, OOXU or equivalent) will be required to complete one of BIOL 111 or BIOL 112 during their U1 year. Students who have not completed Biology CEGEP objective OOUK or OOXU or equivalent will be required to complete BIOL 111 or BIOL 112 during their U1 year.

All students who have completed either Mathematics 201-307 or 201-337 or equivalent, or the combination of Quantitative Methods 360-300 with Mathematics 201-300, and who obtained a minimum grade of 75%, will be exempt from PSYC 204. Bachelor of Arts students will replace this requirement with 3 credits at the 300 level in one of the following disciplines: Psychology (PSYC), Anthropology (ANTH), Linguistics (LING) or Sociology (SOCI). Bachelor of Arts and Science students will replace this requirement with 3 credits in Psychology at the 300 level or above.

Students may apply to the Joint Honours Component upon completion of the U1 year. Eligible students must have completed the following Psychology courses: PSYC 204, PSYC 211, PSYC 212, PSYC 213 and PSYC 215. Students who have been exempted from PSYC 204 due to previous studies must complete PSYC 305. Admission to the Joint Honours Component is selective. Students with a cumulative grade point average of 3.00 or higher are eligible to apply; however, normally only students with a U1 GPA above 3.50 based on a 27-30 graded credit program are admitted. Once in the Joint Honours Component, students must obtain a GPA of 3.00 in the U2 year in order to continue in the program for U3. Students in the Joint Honours Component are required to complete 27 graded credits per academic year (Fall and Winter terms), and those who intend to apply for admission to the Joint Honours Component should do so as well.

“First Class Honours” is awarded to students who obtain a minimum CGPA of 3.50 and a minimum grade of A- in the required honours courses, namely PSYC 380D1/D2, PSYC 482 or PSYC 483. “Honours” is awarded to students with a minimum CGPA of 3.00 and a minimum grade of B in the required honours courses, namely PSYC 380D1/D2, PSYC 482 or PSYC 483.

U1 Required Courses (15 credits)
PSYC 204 (3) Introduction to Psychological Statistics
PSYC 211 (3) Intro Behavioral Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 215 (3) Social Psychology
Note: PSYC 100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC 305 (3) Statistics for Experimental Design

U2 Required Courses (6 credits)
PSYC 380D1 (3) Honours Research Project Seminar
PSYC 380D2 (3) Honours Research Project Seminar

Complementary Courses (12 credits)
3 credits selected from the following, which must be taken in U3:
PSYC 482 (3) Advanced Honours Seminar 1
PSYC 483 (3) Advanced Honours Seminar 2
3 credits in Psychology from List A
3 credits in Psychology from List B
3 credits in Psychology at the 400 or 500 level

4.12.46 Quebec Studies/Études sur le Québec (QCST)
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Fax: (514) 398-3959
Website: www.mcgill.ca/qcst

Adviser —
Ines Scharnweber, 3715 Peel Street, Room 121
Telephone: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca

Director — Jarrett Rudy (History)
Coordinator — Stéphan Gervais (Quebec Studies)

Program Committee Chair —
Michael Smith (Sociology)

Program Committee: Michel Biron (French Language and Literature), Chantal Bouchard (French Language and Literature), Catherine Desbarats (History), Jane Everett (French Language and Literature), Hélène Poulin-Mignault (English and French Language Centre), Marie-Claude Prémont (Law), Christine Ross (Art History), Jarrett Rudy (History), Brian Young (History)

Le Programme d'études sur le Québec veut favoriser la recherche et la formation multidisciplinaires en l'études québécoises. Avec l'appui des départements, la concentration Mineur et la concentration Majeur en Études sur le Québec sont offertes constituant l'une et l'autre d'une suite agencée de cours ayant pour but de fournir un enseignement interdisciplinaire aussi complet que possible sur la société québécoise à l'intérieur d'un cadre canadien et international.

Sauf les cours de Études sur le Québec (QCST 300), Travaux dirigés (QCST 472D1/QCST 472D2) et le séminaire (QCST 440), les cours compris dans la concentration Majeur ou la concentration Mineur sont sous la responsabilité des divers départements. Pour connaître la description de ces cours et, le cas échéant, les conditions d'admission, l'étudiant(e) est donc invité(e) à se reporter aux autres sections de l'Annuaire et, au besoin, à consulter les départements concernés, d'autant plus que tous les cours ne se donnent pas nécessairement à chaque année.

Le titre de chaque cours indique s'il est donné en français ou en anglais, mais les travaux et examens peuvent toujours être rédigés dans l'une ou l'autre de ces deux langues (sauf au Département de langage et littérature françaises, où le français est de rigueur).

Le Quebec Studies Program is intended to stimulate interdisciplinary studies and exchanges on Quebec society.

With departmental support, a Major Concentration and a Minor Concentration are offered, both of which consist of a coherent series of courses providing an interdisciplinary perspective on Quebec society in a Canadian and an international context.

Except for the general course (QCST 300), the Tutorial (QCST 472D1/QCST 472D2) and the seminar (QCST 440), courses included in the Major Concentration or Minor Concentration are the responsibility of the departments. To obtain a complete description of these courses and the admission requirements where applicable, students should read the relevant sections of
The Minor Concentration in Quebec Studies is intended for students from inside as well as outside Quebec and Canada. Its goal is to provide the student with a wide and thorough knowledge of Quebec, while allowing him/her to focus on several fields of study.

**Cours Obligatoires/Required Courses**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>QCST 300</td>
<td>Études sur le Québec</td>
<td>3</td>
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<tr>
<td>QCST 440</td>
<td>Aspects du Québec contemporain/Aspects of Contemp. Quebec</td>
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**Complémentaires/Complementary**

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>QCST 472D1</td>
<td>Tutorial/Travaux dirigés</td>
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</tr>
<tr>
<td>QCST 472D2</td>
<td>Tutorial/Travaux dirigés</td>
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</table>

The selection of courses will be made in consultation with the Program Director and will vary depending on the Major Concentration or Honours program of each student. The title of each course indicates whether it is given in French or English, but term papers and exams can be written in either of these two languages (except in the French Language and Literature Department, where French is the rule).

**LA CONCENTRATION MAJEUR EN ÉTUDES SUR LE QUÉBEC MAJOR CONCENTRATION IN QUEBEC STUDIES**

(36 credits)

La concentration Majeur en Études sur le Québec s’adresse aussi bien aux étudiants(es) du Québec et du Canada qu’à ceux et celles de l’étranger. Ce programme veut offrir à chaque étudiant(e) une connaissance du Québec à la fois large et approfondie, tout en lui permettant de recevoir une bonne formation interdisciplinaire.

The Major Concentration in Quebec Studies is intended for students from inside as well as outside Quebec and Canada. Its goal is to provide the student with a wide and thorough knowledge of Quebec, while allowing him/her to focus on several fields of study. The selection of courses will be made in consultation with the Program Director and will vary depending on the Major Concentration or Honours program of each student.

**Cours Obligatoires/Required Courses**

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<tr>
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<td>QCST 300</td>
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<td>QCST 440</td>
<td>Aspects du Québec contemporain/Aspects of Contemp. Quebec</td>
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<td>QCST 472D1</td>
<td>Tutorial/Travaux dirigés</td>
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**Complémentaires/Complementary**

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<tr>
<td>QCST 472D2</td>
<td>Tutorial/Travaux dirigés</td>
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The selection of courses will be made in consultation with the Program Director and will vary depending on the Major Concentration or Honours program of each student.
<table>
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<tr>
<td>HIST 463D2</td>
<td>Topics: History of Women in Canada</td>
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<td>HIST 469D1</td>
<td>Topics in Canadian Religious History</td>
</tr>
<tr>
<td>HIST 469D2</td>
<td>Topics in Canadian Religious History</td>
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<tr>
<td>HIST 471D1</td>
<td>Canadian Immigration History</td>
</tr>
<tr>
<td>HIST 471D2</td>
<td>Canadian Immigration History</td>
</tr>
<tr>
<td>HIST 472D*</td>
<td>Economics and Society/British North America 1760-1867</td>
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<tr>
<td>HIST 472D*</td>
<td>Economics and Society/British North America 1760-1867</td>
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<tr>
<td>HIST 483D*</td>
<td>History of Montreal</td>
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<td>HIST 483D*</td>
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<tr>
<td>HIST 493D1</td>
<td>Topics: Canadian Social History</td>
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<td>Topics: Canadian Social History</td>
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**Histoire de l'Art/Art History**

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<th>Course Code</th>
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<tr>
<td>ARTH 301</td>
<td>Canadian Art 1914 - Present</td>
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<td>ARTH 302</td>
<td>Aspects of Canadian Art</td>
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**Langue et littérature françaises**

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<th>Course Code</th>
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<tr>
<td>FREN 207*</td>
<td>French and Québec Literature</td>
</tr>
<tr>
<td>FREN 210*</td>
<td>Francophonie 1</td>
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<tr>
<td>FREN 228*</td>
<td>Civilisation québécoise 1</td>
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<tr>
<td>FREN 295*</td>
<td>Histoire littéraire française et québécoise</td>
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<td>FREN 296</td>
<td>Travaux pratiques 2</td>
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<tr>
<td>FREN 315*</td>
<td>Le cinéma québécois</td>
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<td>FREN 329*</td>
<td>Civilisation québécoise 2</td>
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<td>FREN 372*</td>
<td>Le roman québécois 1</td>
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<td>FREN 373*</td>
<td>Théâtre québécois</td>
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<tr>
<td>FREN 382*</td>
<td>Le roman québécois 2</td>
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<td>FREN 391</td>
<td>Histoire de la littérature française</td>
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<td>FREN 392</td>
<td>Travaux pratiques 1</td>
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<td>FREN 470*</td>
<td>Poésie québécoise</td>
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<td>FREN 480*</td>
<td>Le roman québécois 3</td>
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<td>FREN 487</td>
<td>L’essai québécois</td>
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<tr>
<td>FREN 495*</td>
<td>Séminaire de littérature québécoise 1</td>
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**Science économique/Economics**

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<tr>
<td>ECON 211D1</td>
<td>Canadian Economic History</td>
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<td>ECON 211D2</td>
<td>Canadian Economic History</td>
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<tr>
<td>ECON 219</td>
<td>Current Economic Problems: Topics</td>
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<td>ECON 303D1</td>
<td>Canadian Economic Policy</td>
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<tr>
<td>ECON 303D2</td>
<td>Canadian Economic Policy</td>
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<tr>
<td>ECON 305</td>
<td>Industrial Organization</td>
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<td>ECON 306D1</td>
<td>Labour Economics and Institutions</td>
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<tr>
<td>ECON 306D2</td>
<td>Labour Economics and Institutions</td>
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<tr>
<td>ECON 308</td>
<td>Governmental Policy Toward Business</td>
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<td>ECON 321*</td>
<td>The Quebec Economy</td>
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<td>ECON 329</td>
<td>Economics of Confederation</td>
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<td>ECON 404</td>
<td>Transportation</td>
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<td>ECON 408D1</td>
<td>Public Sector Economics</td>
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<td>ECON 408D2</td>
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<td>ECON 434</td>
<td>Current Economic Problems</td>
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<td>ECON 440</td>
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**Science politique/Political Science**

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<tr>
<td>POLI 221</td>
<td>Government of Canada</td>
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<td>POLI 222</td>
<td>Political Process and Behaviour in Canada</td>
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<tr>
<td>POLI 226*</td>
<td>La vie politique québécoise</td>
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<td>POLI 320</td>
<td>Issues in Canadian Democracy</td>
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<td>POLI 321</td>
<td>Issues: Canadian Public Policy</td>
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<td>POLI 326</td>
<td>Provincial Politics</td>
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<tr>
<td>POLI 336*</td>
<td>Le Québec et le Canada</td>
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<td>POLI 337</td>
<td>Canadian Public Administration</td>
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<td>POLI 342</td>
<td>Canadian Foreign Policy</td>
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<td>POLI 370*</td>
<td>Révolution tranquille/changes politiques/Québec de 1960</td>
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<td>POLI 371</td>
<td>Challenge of Canadian Federalism</td>
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<td>POLI 378</td>
<td>The Canadian Judicial Process</td>
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<td>POLI 410</td>
<td>Canadian Political Parties</td>
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<td>POLI 411</td>
<td>Immigration and Multiculturalism in Canada</td>
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<td>POLI 416</td>
<td>Political Economy of Canada</td>
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<td>POLI 421</td>
<td>Social Movements in Canada</td>
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<td>POLI 427</td>
<td>Selected Topics: Canadian politics</td>
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<td>POLI 446*</td>
<td>Les politiques publiques au Québec</td>
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<td>POLI 469</td>
<td>Politics of Regulation</td>
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<td>POLI 478</td>
<td>The Canadian Constitution</td>
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**Sociologie/Sociology**

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<td>SOCI 210</td>
<td>Sociological Perspectives</td>
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<td>SOCI 211</td>
<td>Sociological Inquiry</td>
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<tr>
<td>SOCI 215</td>
<td>Gender Family and Social Change</td>
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<td>SOCI 217</td>
<td>Canadian Mass Communications</td>
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<tr>
<td>SOCI 220*</td>
<td>Introduction to Québec Society</td>
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<td>SOCI 230</td>
<td>Sociology of Ethnic Relations</td>
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<td>SOCI 233</td>
<td>Canadian Society</td>
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<td>SOCI 235</td>
<td>Technology and Society</td>
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<td>SOCI 318</td>
<td>Television in Society</td>
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<tr>
<td>SOCI 320*</td>
<td>The Minorities in Quebec</td>
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<td>SOCI 327</td>
<td>Jews in North America</td>
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<tr>
<td>SOCI 333</td>
<td>Social Stratification</td>
</tr>
<tr>
<td>SOCI 444</td>
<td>The Sociology of Labour Force</td>
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<tr>
<td>SOCI 475</td>
<td>Canadian Ethnic Studies Seminar</td>
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</tbody>
</table>

4.12.47 Religious Studies (RELG)

William and Henry Birks Building
3520 University Street
Montreal, QC H3A 2A7

Telephone: (514) 398-4121
Website: www.mcgill.ca/religionstudies


Emeritus Professors
Gregory B. Baum: B.A.(McM.), M.A.(Ohio), D.Th.(Fribourg)

Post-Retirement
Robert C. Culley: B.D.(Knox, Tor.), M.A., Ph.D.(Tor.)
Frederik Wisse: Ing.(Utrecht), B.A., B.D.(Calvin, Mich.), Ph.D. (Claremont)

Professors
(I.W. McConnell Professor of Philosophy of Religion)
Avind Sharma: B.A.(Alld.), M.A.(Syr.), M.T.S., Ph.D.(Harv.) (Henry Birks Professor of Comparative Religion)
Katherine K. Young; B.A.(Vt.), M.A.(Chic.), Ph.D.(McG.) (James McGill Professor of Hinduism/Comparative Religion)

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Frederik Wisse: Ing.(Utrecht), B.A., B.D.(Calvin, Mich.), Ph.D. (Claremont)
Faculty of Arts

Faculty Lecturer
Jim Kanaris; B.A.,(C’dia), M.A., Ph.D.(McG.)

Course Lecturers
Norman Cornett; A.B.(Calif.), M.A., Ph.D.(McG.)
Michel Distefano; B.A.(Providence Col.), M.A.(Trinity International University)
Melissa Curley; B.A., M.A.(McG.)
Sanjay Kumar; B.A.(Maharshi Dayanand), M.A.(Meerut), M.Phil.(University of Delhi)
Cory Labrecque; B.Sc., M.A.(McG.)
Nathan Loewen; B.Th. (Can. Mennonite), B.A.(Winnipeg), M.S.T.(St. Andrew’s Col., Sask.), S.T.M.(St. Andrew’s Col., Sask.)
Lucille Marr; B.A., M.A., Ph.D. (Wat.)
John Milton; B.A.(C’dia), M.Div.(Trinity International University)
Rowshan Nemazee; B.A.(Trinity College of Vermont), M.A.(McG.)
Michelle Rebidoux; B.A.(York), M.A.(UBC)
Mirela Saim; B.A., M.A.(Bucharest), Ph.D.(McG.)
Vanessa Sasson; B.A., M.A., Ph.D.(McG.)
Manjit Singh; B.A., M.A.(Delhi)
John M. Simons; B.A. (Bishop’s), S.T.B.(Trinity), Ph.D.(Georgetown)(PT)
Michael Storch; B.A.(Alta.), Ph.D. Candidate(McG.)
John Vissers; B.A.(Toronto), M.Div.(Knox, Toronto), Th.M.(Princeton), Th.D.(Knox, Tor.) (PT)
Richard Walker; B.A., M.A.(Calg.), Ph.D. Candidate(McG.)

Numata Visiting Professor
Robert Kritzer; B.A. M.A. Ph.D.(Calif, Berk.)

Associate Members
A. Uner Turgay; B.A.(Robert Coll., Istanbul), M.A., Ph.D.(Madison-Wis.)
Leigh Turner; B.A.(Winn.), M.A.(Manit.), M.A., Ph.D.(USC)

Adjunct Professor
T. Jina Langri; Dr. Div. B.A.(King’s Coll.), Ph.D.(Camb.)

Religious Studies Programs in Arts

Available within the Faculty of Arts are a Major Concentration and a Minor Concentration in World Religions, a Major Concentration in Scriptures and Interpretations, and a Minor Concentration in Scriptural Languages as well as an Honours and a Joint Honours Program with two options: Western Religions and Asian Religions. These programs are administered by the Faculty of Arts and the general rules, regulations and requirements of that Faculty apply to them.

Students interested in these programs can obtain information from the Faculty of Arts Website at www.mcgill.ca/arts and the Religious Studies Website, or from a Religious Studies B.A. Adviser. For general information on Religious Studies programs, make an appointment to see an adviser by telephoning (514) 398-4121 or visiting the Reception office in the Birks Building.

Admission to the B.A. program is granted according to criteria established by the Faculty of Arts.

Students interested in theology programs will find information about the Bachelor of Theology (B.Th.), see section 10.5 and the Master of Divinity (M.Div.), section 10.4.

MINOR CONCENTRATION IN WORLD RELIGIONS (18 credits) (Expandable to Major Concentration in World Religions)
The Minor Concentration in World Religions introduces students to the major world religions and to the academic study of religion.

Complementary Courses (18 credits*)
12 credits in Religious Traditions, chosen from the following:

Judaism and Christianity
RELG 201 (3) Religions of the Ancient Near East
RELG 202 (3) Religion of Ancient Israel
RELG 203 (3) Bible and Western Culture
RELG 204 (3) Judaism, Christianity and Islam
RELG 210 (3) Jesus of Nazareth

* No more than 12 credits of the Minor may be taken at the 200 level.
MINOR CONCENTRATION IN SCRIPTURAL LANGUAGES
(18 credits) (Non-expandable)

The Minor Concentration in Scriptural Languages is designed to provide students with the skills necessary to read Scriptural sources in their original languages. The Minor is recommended to be followed in conjunction with the Major Concentration in Scriptures and Interpretations.

Students will choose from one of two streams:

Stream I: Biblical Languages

Stream II: Indo-Tibetan Languages

MINOR CONCENTRATION IN SCRIPTURAL LANGUAGES
STREAM I: BIBLICAL LANGUAGES COMPLEMENTARY COURSES (18 credits)
chosen from among the following:

Biblical Hebrew
- RELG 390D1* (3) Elementary Biblical Hebrew
- RELG 390D2* (3) Elementary Biblical Hebrew
- RELG 491 (3) Hebrew Texts
- RELG 492 (3) Hebrew Texts
- JWST 327 (3) A Book of the Bible
- JWST 328 (3) A Book of the Bible
- JWST 329 (3) A Book of the Bible
- JWST 330 (3) A Book of the Bible

Biblical Greek
- RELG 280 (6) Elementary New Testament Greek
- RELG 381 (3) Advanced New Testament Greek
- RELG 482 (3) Exegesis of Greek New Testament

* Students with advanced standing in Hebrew may take Aramaic as part of their program.

MINOR CONCENTRATION IN SCRIPTURAL LANGUAGES
STREAM II: INDO-TIBETAN LANGUAGES

Sanskrit is the language of classical Indian civilization and is recommended for students interested in gaining access to religious texts, philosophical works, academic treatises on all subjects and poetry written in classical and medieval India.

Classical Tibetan is one of the main scriptural languages of Buddhism. Many texts originally composed in Sanskrit are only extant in their Tibetan translations, and a vast body of philosophical, devotional, poetic and academic works composed in Classical Tibetan is only accessible to one who has a firm grasp of the language.

Complementary Courses (18 credits)
chosen from among the following:

Sanskrit
- RELG 257D1 (3) Introductory Sanskrit
- RELG 257D2 (3) Introductory Sanskrit
- RELG 357D1 (3) Sanskrit 2
- RELG 357D2 (3) Sanskrit 2
- RELG 457D1 (3) Advanced Sanskrit
- RELG 457D2 (3) Advanced Sanskrit

Tibetan:
- RELG 264 (3) Introductory Tibetan 1
- RELG 265 (3) Introductory Tibetan 2
- RELG 364 (3) Intermediate Tibetan 1
- RELG 365 (3) Intermediate Tibetan 2
- RELG 464 (3) Advanced Tibetan 1
- RELG 465 (3) Advanced Tibetan 2

MAJOR CONCENTRATION IN WORLD RELIGIONS
(36 credits)

The Major Concentration in World Religions offers students a broad introduction to the study of the world’s major religions, with the possibility for concentration in a student’s specific areas of interest. Developing an understanding of methods and problems in comparative approaches to the academic study of religion will be encouraged.

Required Course (3 credits)
- RELG 456 (3) Theories of Religion

Complementary Courses (33 credits) REL
33 credits, no more than 12 of which may be taken at the 200 level.

24 credits in World Religions chosen from the following, according to the student’s area of interest:

- Judaism and Christianity
  - RELG 201 (3) Religions of the Ancient Near East
  - RELG 202 (3) Religion of Ancient Israel
  - RELG 203 (3) Bible and Western Culture
  - RELG 204 (3) Judaism, Christianity and Islam
  - RELG 210 (3) Jesus of Nazareth
  - RELG 302 (3) Old Testament Studies 1
  - RELG 303 (3) Literature of Ancient Israel 2
  - RELG 306 (3) Rabbinic Judaism
  - RELG 311 (3) New Testament Studies 1
  - RELG 312 (3) New Testament Studies 2
  - RELG 313 (3) Topics in Biblical Studies 1
  - RELG 314 (3) Topics in Biblical Studies 2
  - RELG 320 (3) History of Christian Thought 1
  - RELG 322 (3) The Church in History 1
  - RELG 323 (3) The Church in History 2
  - RELG 324 (3) Armenian Apostolic Tradition
  - RELG 325 (3) Varieties Religious Experience in Christianity
  - RELG 326 (3) Ancient Christian Church AD54 - AD604
  - RELG 327 (3) History of Christian Thought 2
  - RELG 336 (3) Contemporary Theological Issues
  - RELG 338 (3) Women and the Christian Tradition
  - RELG 399 (3) Christian Spirituality
  - RELG 420 (3) Canadian Church History
  - RELG 423 (3) Reformation Thought
  - RELG 470 (3) Theological Ethics

- Hinduism and Buddhism
  - RELG 252 (3) Hinduism and Buddhism
  - RELG 253 (3) Religions of East Asia
  - RELG 337 (3) Themes in Buddhist Studies
  - RELG 339 (3) Hindu and Buddhist Images of Feminine
  - RELG 342 (3) Theravada Buddhist Literature
  - RELG 344 (3) Mahayana Buddhism
  - RELG 348 (3) Classical Hinduism
  - RELG 350 (3) Bhakti Hinduism
  - RELG 352 (3) Japanese Religions
  - RELG 354 (3) Chinese Religions
  - RELG 442 (3) Pure Land Buddhism
  - RELG 451 (3) Zen: Maxims and Methods
  - RELG 452 (3) East Asian Buddhism
  - RELG 454 (3) Modern Hindu Thought
  - RELG 456 (3) Indian Philosophy
  - RELG 458 (3) Indian Buddhist Philosophy
  - RELG 459 (3) East Asian Buddhist Philosophy
  - RELG 552 (3) Advaita Vedanta
  - RELG 553 (3) Religions of South India 1
  - RELG 554 (3) Religions of South India 2
  - RELG 556 (3) Issues in Buddhist Studies
  - RELG 557 (3) Asian Ethical Systems

9 credits in Comparative Studies, chosen from the following according to the student's area of interest:

- RELG 207 (3) The Study of World Religions 1
- RELG 256 (3) Women in Judaism and Islam
- RELG 270 (3) Religious Ethics and the Environment
- RELG 271 (3) Sexual Ethics
- RELG 307 (3) Scriptural Interpretation
- RELG 315 (3) Special Topics in Religion 1
- RELG 316 (3) New Religious Movements
- RELG 317 (3) Special Topics in Religion 2
- RELG 318 (3) Special Topics in Religion 3
- RELG 319 (3) Special Topics in Religion 4
### MAJOR CONCENTRATION IN SCRIPTURES AND INTERPRETATIONS (36 credits)

The Major Concentration in Scriptures and Interpretations is designed for students interested in understanding scriptural literatures and their place in developing religious traditions. While students will be able to concentrate in the area of their choice (Jewish, Christian, or Hindu and Buddhist Scriptures and Interpretations), they will study scriptures of at least two religious traditions, either in English translation or, if their skills permit, in the original language.

#### Required Courses (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 307</td>
<td>Scriptural Interpretation</td>
</tr>
<tr>
<td>RELG 456</td>
<td>Theories of Religion</td>
</tr>
</tbody>
</table>

#### Complementary Courses (30 credits)

30 credits, a minimum of 18 credits from one area of specialization and a minimum of 6 credits from a second area. No more than 12 credits of complementary courses may be taken at the 200 level.

(a) **Jewish Scriptures and the History of Their Interpretation**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>JWST 310</td>
<td>Believers, Heretics and Critics</td>
</tr>
<tr>
<td>JWST 324</td>
<td>Biblical Interpretation - Antiquity</td>
</tr>
<tr>
<td>JWST 327</td>
<td>A Book of the Bible</td>
</tr>
<tr>
<td>JWST 328</td>
<td>A Book of the Bible</td>
</tr>
<tr>
<td>JWST 329</td>
<td>A Book of the Bible</td>
</tr>
<tr>
<td>JWST 330</td>
<td>A Book of the Bible</td>
</tr>
<tr>
<td>JWST 331</td>
<td>Bible Interpretation/Medieval Ashkenaz</td>
</tr>
<tr>
<td>JWST 332</td>
<td>Bible Interpretation/Sefardic Tradition</td>
</tr>
<tr>
<td>JWST 510</td>
<td>Jewish Biblical Interpretation 1</td>
</tr>
<tr>
<td>JWST 511</td>
<td>Jewish Biblical Interpretation 2</td>
</tr>
<tr>
<td>RELG 202</td>
<td>Religion of Ancient Israel</td>
</tr>
<tr>
<td>RELG 203</td>
<td>Bible and Western Culture</td>
</tr>
<tr>
<td>RELG 300</td>
<td>Post-Biblical Jewish Tradition</td>
</tr>
<tr>
<td>RELG 302</td>
<td>Old Testament Studies 1</td>
</tr>
<tr>
<td>RELG 303</td>
<td>Literature of Ancient Israel 2</td>
</tr>
<tr>
<td>RELG 306</td>
<td>Rabbinic Judaism</td>
</tr>
<tr>
<td>RELG 308</td>
<td>Ancient Bible Translations</td>
</tr>
<tr>
<td>RELG 390D1</td>
<td>Elementary Biblical Hebrew</td>
</tr>
<tr>
<td>RELG 390D2</td>
<td>Elementary Biblical Hebrew</td>
</tr>
<tr>
<td>RELG 407</td>
<td>The Writings</td>
</tr>
<tr>
<td>RELG 408</td>
<td>The Prophets</td>
</tr>
<tr>
<td>RELG 491</td>
<td>Hebrew Texts</td>
</tr>
<tr>
<td>RELG 492</td>
<td>Hebrew Texts</td>
</tr>
</tbody>
</table>

(b) **Christian Scriptures and the History of Their Interpretation**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 203</td>
<td>Bible and Western Culture</td>
</tr>
<tr>
<td>RELG 210</td>
<td>Jesus of Nazareth</td>
</tr>
<tr>
<td>RELG 280</td>
<td>Elementary New Testament Greek</td>
</tr>
<tr>
<td>RELG 302</td>
<td>Old Testament Studies 1</td>
</tr>
<tr>
<td>RELG 303</td>
<td>Literature of Ancient Israel 2</td>
</tr>
<tr>
<td>RELG 308</td>
<td>Ancient Bible Translations</td>
</tr>
<tr>
<td>RELG 311</td>
<td>New Testament Studies 1</td>
</tr>
<tr>
<td>RELG 312</td>
<td>New Testament Studies 2</td>
</tr>
<tr>
<td>RELG 313</td>
<td>Topics in Biblical Studies 1</td>
</tr>
<tr>
<td>RELG 314</td>
<td>Topics in Biblical Studies 2</td>
</tr>
<tr>
<td>RELG 381</td>
<td>Advanced New Testament Greek</td>
</tr>
<tr>
<td>RELG 411</td>
<td>New Testament Exegesis</td>
</tr>
<tr>
<td>RELG 482</td>
<td>Exegesis of Greek New Testament</td>
</tr>
</tbody>
</table>

(c) **Hindu and Buddhist Scriptures and the Histories of Their Interpretations**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 252</td>
<td>Hinduism and Buddhism</td>
</tr>
<tr>
<td>RELG 253</td>
<td>Religions of East Asia</td>
</tr>
<tr>
<td>RELG 254</td>
<td>Introduction to Sikhism</td>
</tr>
<tr>
<td>RELG 257D1</td>
<td>Introductory Sanskrit</td>
</tr>
<tr>
<td>RELG 257D2</td>
<td>Introductory Tibetan 1</td>
</tr>
<tr>
<td>RELG 264</td>
<td>Introductory Tibetan 2</td>
</tr>
<tr>
<td>RELG 337</td>
<td>Themes in Buddhist Studies</td>
</tr>
<tr>
<td>RELG 342</td>
<td>Theravada Buddhist Literature</td>
</tr>
<tr>
<td>RELG 344</td>
<td>Mahâyâna Buddhism</td>
</tr>
<tr>
<td>RELG 348</td>
<td>Classical Hinduism</td>
</tr>
<tr>
<td>RELG 350</td>
<td>Bhakti Hinduism</td>
</tr>
<tr>
<td>RELG 352</td>
<td>Japanese Religions</td>
</tr>
<tr>
<td>RELG 354</td>
<td>Chinese Religions</td>
</tr>
<tr>
<td>RELG 357D1</td>
<td>Sanskrit 2</td>
</tr>
<tr>
<td>RELG 357D2</td>
<td>Sanskrit 2</td>
</tr>
<tr>
<td>RELG 364</td>
<td>Intermediate Tibetan 1</td>
</tr>
<tr>
<td>RELG 365</td>
<td>Intermediate Tibetan 2</td>
</tr>
<tr>
<td>RELG 442</td>
<td>Pure Land Buddhism</td>
</tr>
<tr>
<td>RELG 443</td>
<td>Japanese Esoteric Buddhism</td>
</tr>
<tr>
<td>RELG 451</td>
<td>Zen: Maxims and Methods</td>
</tr>
<tr>
<td>RELG 452</td>
<td>East Asian Buddhism</td>
</tr>
<tr>
<td>RELG 454</td>
<td>Modern Hindu Thought</td>
</tr>
<tr>
<td>RELG 457D1</td>
<td>Advanced Sanskrit</td>
</tr>
<tr>
<td>RELG 457D2</td>
<td>Advanced Sanskrit</td>
</tr>
<tr>
<td>RELG 464</td>
<td>Advanced Tibetan 1</td>
</tr>
<tr>
<td>RELG 465</td>
<td>Advanced Tibetan 2</td>
</tr>
<tr>
<td>RELG 546</td>
<td>Indian Philosophy</td>
</tr>
<tr>
<td>RELG 548</td>
<td>Indian Buddhist Philosophy</td>
</tr>
<tr>
<td>RELG 552</td>
<td>Advaita Vedanta</td>
</tr>
<tr>
<td>RELG 553</td>
<td>Religions of South India 1</td>
</tr>
<tr>
<td>RELG 554</td>
<td>Religions of South India 2</td>
</tr>
</tbody>
</table>

### HONOURS IN RELIGIOUS STUDIES (60 credits)

The Honours program in Religious Studies offers a degree of analysis and concentration beyond that of the Major program through coursework, intensive research and discussion with peer groups.

There are no prerequisites for entry to the program. Students must, however, maintain a program GPA and a CGPA of 3.00 (or 3.50 for First Class Honours).

While gaining general knowledge of the study of religion, students also develop more concentrated expertise in either Western religious traditions (Option 1) or Asian religious traditions (Option 2).

#### Required Courses (9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 204</td>
<td>Judaism, Christianity and Islam</td>
</tr>
<tr>
<td>RELG 456</td>
<td>Theories of Religion</td>
</tr>
<tr>
<td>RELG 555</td>
<td>Honours Seminar</td>
</tr>
</tbody>
</table>

#### Complementary Courses (51 credits)

3 credits, one of:

- RELG 252 (3) Hinduism and Buddhism
- RELG 253 (3) Religions of East Asia

6 credits of scriptural languages (Biblical Greek, Biblical Hebrew, Sanskrit, or Tibetan), related to the specialization option and chosen in consultation with the adviser.

9 credits, religion and culture, chosen from:

- RELG 256 (3) Women in Judaism and Islam
- RELG 270 (3) Religious Ethics and the Environment
- RELG 271 (3) Sexual Ethics
- RELG 338 (3) Women and the Christian Tradition
- RELG 339 (3) Hindu and Buddhist Images of Feminine
- RELG 340 (3) Religion and the Sciences
- RELG 341 (3) Introduction: Philosophy of Religion
- RELG 345 (3) Religion and the Arts 1
- RELG 347 (3) Topics in Religion and the Arts
- RELG 355 (3) Religion and the Arts 2
12 credits chosen from a list of approved courses in other departments in consultation with the adviser. At least 6 credits must be from the specialization option which was not selected.

21 credits chosen from either specialization, Option 1 or Option 2, at least 3 of these credits must be a 500-level research seminar.

**Option 1: Western Religions**

- JWST 510 (3) Jewish Bible Interpretation 1
- RELG 201 (3) Religions of the Ancient Near East
- RELG 202 (3) Religion of Ancient Israel
- RELG 203 (3) Bible and Western Culture
- RELG 204 (3) Judaism, Christianity and Islam
- RELG 210 (3) Jesus of Nazareth
- RELG 300 (3) Post-Biblical Jewish Tradition
- RELG 301 (3) Jewish Thought 200 B.C.E. - 200 C.E.
- RELG 306 (3) Rabbinic Judaism
- RELG 308 (3) Ancient Bible Translations
- RELG 311 (3) New Testament Studies 1
- RELG 312 (3) New Testament Studies 2
- RELG 313 (3) Topics in Biblical Studies 1
- RELG 314 (3) Topics in Biblical Studies 2
- RELG 322 (3) The Church in History 1
- RELG 323 (3) The Church in History 2
- RELG 326 (3) Ancient Christian Church AD54-AD604
- RELG 334 (3) The Christian Faith
- RELG 336 (3) Contemporary Theological Issues
- RELG 381 (3) Advanced New Testament Greek
- RELG 399 (3) Christian Spirituality
- RELG 423 (3) Reformation Thought
- RELG 438 (3) Topics in Jewish Theology
- RELG 482 (3) Exegesis of Greek New Testament
- RELG 491 (3) Hebrew Texts
- RELG 492 (3) Hebrew Texts
- RELG 532 (3) History of Christian Thought 1
- RELG 533 (3) History of Christian Thought 2

**Option 2: Asian Religions**

- RELG 337 (3) Themes in Buddhist Studies
- RELG 339 (3) Hindu and Buddhist Images of Feminine
- RELG 342 (3) Theravada Buddhist Literature
- RELG 344 (3) Mahāyāna Buddhism
- RELG 348 (3) Classical Hinduism
- RELG 350 (3) Bhashki Hinduism
- RELG 352 (3) Japanese Religions
- RELG 354 (3) Chinese Religions
- RELG 442 (3) Pure Land Buddhism
- RELG 451 (3) Zen: Maxims and Methods
- RELG 452 (3) East Asian Buddhism
- RELG 454 (3) Modern Hindu Thought
- RELG 546 (3) Indian Philosophy
- RELG 548 (3) Indian Buddhist Philosophy
- RELG 549 (3) East Asian Buddhist Philosophy
- RELG 552 (3) Advaita Vedanta
- RELG 553 (3) Religions of South India 1
- RELG 554 (3) Religions of South India 2
- RELG 556 (3) Issues in Buddhist Studies
- EAST 354 (3) Taoist and Buddhist Apocalypses

**JOINT HONOURS – RELIGIOUS STUDIES COMPONENT**

(36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Students in Joint Honours must maintain a program GPA and a CGPA of 3.00 (3.50 for First Class Honours) and attain a B- or higher in each program course. No overlap is allowed between the courses forming each segment of the Joint Honours program.

**Complementary Courses** (36 credits)

3 credits from the following:
- RELG 252 (3) Hinduism and Buddhism
- RELG 253 (3) Religions of East Asia

3 credits from the following:
- RELG 456 (3) Theories of Religion
- RELG 555 (3) Honours Seminar

9 credits selected from the following, with at least 3 credits from each group.

**Sources of Western Religious Traditions**

- RELG 201 (3) Religions of the Ancient Near East
- RELG 202 (3) Religion of Ancient Israel
- RELG 204 (3) Judaism, Christianity and Islam
- RELG 311 (3) New Testament Studies 1
- RELG 312 (3) New Testament Studies 2
- RELG 313 (3) Topics in Biblical Studies 1
- RELG 314 (3) Topics in Biblical Studies 2
- RELG 322 (3) The Church in History 1
- RELG 323 (3) The Church in History 2
- RELG 326 (3) Ancient Christian Church AD54-AD604
- RELG 334 (3) The Christian Faith
- RELG 336 (3) Contemporary Theological Issues
- RELG 381 (3) Advanced New Testament Greek
- RELG 399 (3) Christian Spirituality
- RELG 423 (3) Reformation Thought
- RELG 438 (3) Topics in Jewish Theology
- RELG 482 (3) Exegesis of Greek New Testament
- RELG 491 (3) Hebrew Texts
- RELG 492 (3) Hebrew Texts
- RELG 532 (3) History of Christian Thought 1
- RELG 533 (3) History of Christian Thought 2

6 credits in Religion and Culture, selected from the following:
- RELG 256 (3) Women in Judaism and Islam
- RELG 271 (3) Sexual Ethics
- RELG 340 (3) Religion and the Sciences
- RELG 341 (3) Introduction: Philosophy of Religion
- RELG 345 (3) Religion and the Arts 1
- RELG 347 (3) Topics in Religion and the Arts
- RELG 355 (3) Religion and the Arts 2
- RELG 361 (3) Religious Behaviour
- RELG 370 (3) Human Condition
- RELG 371 (3) Ethics of Violence/Non-Violence
- RELG 375 (3) Religion and Society
- RELG 376 (3) Religious Ethics
- RELG 377 (3) Religious Controversies

15 credits, selected in consultation with an adviser, from Religious Studies courses (or approved related courses in other departments) at the 300 level or above.

**APPROVED COURSES IN OTHER DEPARTMENTS**

In consultation with the Adviser, students may select courses in other departments to count towards Religious Studies programs. Generally no more than four such courses will be counted towards an Honours program; no more than two such courses towards a Joint Honours program; no more than two such courses towards a Minor program. Listed below are some of the courses that have been approved in the past for inclusion in Religious Studies programs.

This list is NOT comprehensive: Students may take approved related courses in other departments of the Faculty of Arts, such as Anthropology, Art History, Classics, English, History, Italian Studies, Philosophy, Sociology. Contact the Religious Studies Office at (514) 398-4121 to speak with an adviser.

Please note that some of these courses have prerequisites that are not approved for Religious Studies programs.

**Institute of Islamic Studies**

- ISLA 410 (3) History: Middle-East 1798-1918
- ISLA 411 (3) History of the Middle East 1918-1945
- ISLA 505 (3) Major Themes of Islamic Religious Expression
- ISLA 510D1 (3) History: Islamic Civilization - Classical
- ISLA 510D2 (3) History: Islamic Civilization - Classical
- ISLA 511D1 (3) History: Islamic Civilization - Medieval Era
MINOR CONCENTRATION IN RUSSIAN (18 credits)
(Expandable)
The Minor Concentration in Russian includes complementary courses chosen from ONE of the following streams:
- Russian Language & Literature
- Russian Language & Culture
- Advanced Russian Language
- Advanced Russian Literature

Students who wish to follow the Advanced Russian Literature or Advanced Russian Language stream must receive Departmental approval; they are designed primarily for students also intending to complete a Major Concentration in Russian.
Enrolment in courses above the 200 level is by permission of the Department only.

Required Courses (12 credits*)
RUSS 210 (3) Elementary Russian Language 1
RUSS 211 (3) Elementary Russian Language 2
RUSS 310 (3) Intermediate Russian Language 1
RUSS 311 (3) Intermediate Russian Language 2

* The required courses are designed to give students a basic working knowledge of Russian. Students who can demonstrate to the Department that they have acquired the equivalent competence elsewhere will replace these credits with courses from the Complementary Course list.

Students must obtain Departmental approval to register for language courses and are strongly urged to consult with the Department for advice/approval of their program plans.

Complementary Courses (6 - 18 credits)
6 - 18 credits to be selected from one of the following streams:

Stream 1: Russian Language & Literature
RUSS 217 (3) Russia's Eternal Questions
RUSS 330 (3) Introduction to Soviet Russian Literature before WWII

RUSS 331 (3) Introduction to Soviet Russian Literature after WWII
RUSS 400 (3) Advanced Russian Language 1
RUSS 401 (3) Advanced Russian Language 2

Stream 2: Russian Language & Culture
RUSS 199 (3) FY: Patterns - Russian Culture
RUSS 218 (3) Russian Literature in Revolution
RUSS 219 (3) Russian Literature in Recovery
RUSS 221 (3) Russian Prose: 1980s and 1990s
RUSS 223 (3) Russian Writers - 19th Century
RUSS 224 (3) From War to Revolution

Stream 3: Advanced Russian Literature*
RUSS 327 (3) Outlines 19th Century Russian Literature: Romantic Period
RUSS 328 (3) Outlines 19th Century Russian Literature: Russian Realism
RUSS 330 (3) Introduction to Soviet Russian Literature before WWII
RUSS 331 (3) Introduction to Soviet Russian Literature after WWII
RUSS 410 (3) Drama in Russian Literature before 1850
RUSS 411 (3) Drama in Russian Literature after 1850
RUSS 450 (3) 20th-Century Russian Language and Literature before WWII
RUSS 451 (3) 20th-Century Russian Language and Literature after WWII
RUSS 458 (3) Development Russian Novel before Turgenev
RUSS 459 (3) Russian Novel Pushkin - Gogol
RUSS 460 (3) Russian Novel 1860-1900 1
RUSS 461 (3) Russian Novel 1860-1900 2
RUSS 462 (3) Soviet Literature: Thaw - Early 70s
RUSS 463 (3) Soviet Literature: Early 70s - Perestroika
RUSS 465 (3) Russian Modernism 1
RUSS 466 (3) Russian Modernism 2
RUSS 468 (3) Pushkin and Contemporaries 1
RUSS 469 (3) Pushkin and Contemporaries 2
RUSS 470 (3) Individual Reading Course
RUSS 471 (3) Independent Research
RUSS 510 (3) High Stalinist Culture

* By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

Stream 4: Advanced Russian Language*
RUSS 415 (6) Advanced Russian Lang Intensive 1
RUSS 416 (6) Advanced Russian Lang Intensive 2
RUSS 450 (3) 20th-Century Russian Language and Literature before WWII
RUSS 451 (3) 20th-Century Russian Language and Literature after WWII
RUSS 452 (3) Advanced Russian Language and Syntax 1
RUSS 453 (3) Advanced Russian Language and Syntax 2
RUSS 455 (3) History of the Russian Language 1
RUSS 456 (3) History of the Russian Language 2
RUSS 470 (3) Individual Reading Course
RUSS 471 (3) Independent Research

* By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

MINOR CONCENTRATION IN RUSSIAN CIVILIZATION
(Non-expandable) (18 credits)
The Minor Concentration in Russian Civilization is designed primarily as an adjunct to area studies and/or programs in the humanities or social sciences. As there are no Russian language requirements, this is a non-expandable program.

There are no prerequisites for Departmental courses. For pre/corequisites and availability of Economics, History, Jewish Studies and Political Science courses, students should refer to the departmental Calendar entry.
**Required Courses (12 credits)**

RUSS 218 (3) Russian Literature in Revolution
RUSS 219 (3) Russian Literature in Recovery
RUSS 223 (3) Russian Writers - 19th Century
RUSS 224 (3) From War to Revolution

**Complementary Courses (6 credits)**

6 credits to be selected from the following list. Please contact the department(s) in question for pre/corequisites and availability of the following courses:

- ECON 331 (3) Economic Development: Russia and USSR
- ECON 340 (3) Ex-Socialist Economies
- HIST 216 (3) History of Russia to 1801
- HIST 226 (3) Eastern Europe in 20th Century
- HIST 236 (3) Russia from 1801 to 1991
- HIST 306 (3) East Central Europe since 1944
- HIST 312 (3) East-Central Europe: 1453-1740
- HIST 313 (3) East-Central Europe: 1740-1814
- HIST 316 (3) Russia: Revolutions 1905 and 1917
- HIST 326 (3) Russia from 1905 to Present
- HIST 329 (3) Eastern Europe: 4th Century - 1453
- HIST 387 (3) The First World War
- HIST 388 (3) The Second World War
- HIST 406 (3) Petrine and Catherinean Russia
- HIST 436 (3) Topics: European History
- HIST 446 (3) Russian Thought to 1825
- HIST 456 (3) Russian Intellectual History 1825-1917
- JWST 303 (3) The Soviet Jewish Experience
- POLI 329 (3) Russian and Soviet Politics
- RUSS 199 (3) FYS: Patterns - Russian Culture
- RUSS 217 (3) Russia's Eternal Questions
- RUSS 221 (3) Russian Prose: 1980s and 1990s
- RUSS 510 (3) High Stalinist Culture
- SOCI 455 (3) Post-Socialist Societies

**MAJOR CONCENTRATION IN RUSSIAN (36 credits)**

Enrolment in courses above the 200 level is by permission of the Department only.

**Required Courses (18 credits)**

RUSS 210 (3) Elementary Russian Language 1
RUSS 211 (3) Elementary Russian Language 2
RUSS 310 (3) Intermediate Russian Language 1
RUSS 311 (3) Intermediate Russian Language 2
RUSS 400 (3) Advanced Russian Language 1
RUSS 401 (3) Advanced Russian Language 2

* The required courses are designed to give students a basic working knowledge of Russian. Students who can demonstrate to the Department that they have acquired the equivalent competence elsewhere will replace these credits with courses from the Complementary Course list.

**Complementary Courses (18 credits)**

12 credits to be selected from the following:

RUSS 199 (3) FYS: Patterns - Russian Culture
RUSS 217 (3) Russia's Eternal Questions
RUSS 218 (3) Russian Literature in Revolution
RUSS 219 (3) Russian Literature in Recovery
RUSS 221 (3) Russian Prose: 1980s - 1990s
RUSS 223 (3) Russian Writers - 19th Century
RUSS 224 (3) From War to Revolution
RUSS 327 (3) Outlines 19th Century Russian Literature: Romantic Period
RUSS 328 (3) Outlines 19th Century Russian Literature: Russian Realism
RUSS 330 (3) Introduction to Soviet Russian Literature before WWII
RUSS 331 (3) Introduction to Soviet Russian Literature after WWII

6 credits to be selected from the following:

RUSS 410 (3) Drama in Russian Literature before 1850
RUSS 411 (3) Drama in Russian Literature after 1850
RUSS 450 (3) 20th-Century Russian Language and Literature before WWII
RUSS 451 (3) 20th-Century Russian Language and Literature after WWII
RUSS 452 (3) Advanced Russian Language and Syntax 1
RUSS 453 (3) Advanced Russian Language and Syntax 2
RUSS 490 (3) Honours Seminar
RUSS 491 (3) Honours Seminar

**HONOURS IN RUSSIAN (60 credits)**

The Department offers a full Honours Program in Russian for students intending to pursue graduate studies or advanced careers in the field. Students must complete 60 credits in the Program, as well as maintaining a CGPA in accordance with Faculty requirements. All students applying for an Honours in Russian must consult with an academic adviser in the Department for approval of their program. Normally, 200-level courses are taken in U1, 300 in U2 and 400 in U3. By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

**U1 Required Courses (12 credits)**

RUSS 215 (6) Elementary Russian Language Intensive 1
RUSS 316 (6) Intermediate Russian Language Intensive 2

**U1 Complementary Courses (6 credits)**

selected from:

RUSS 199 (3) FYS: Patterns - Russian Culture
RUSS 218 (3) Russian Literature in Revolution
RUSS 219 (3) Russian Literature in Recovery
RUSS 221 (3) Russian Prose: 1980s and 1990s
RUSS 223 (3) Russian Writers - 19th Century
RUSS 224 (3) From War to Revolution

**U2 Required Courses (24 credits)**

RUSS 415 (6) Advanced Russian Language Intensive 1
RUSS 416 (6) Advanced Russian Language Intensive 2
RUSS 327 (3) Outlines 19th Century Russian Literature: Romantic Period
RUSS 328 (3) Outlines 19th Century Russian Literature: Russian Realism
RUSS 330 (3) Introduction to Soviet Russian Literature before WWII
RUSS 331 (3) Introduction to Soviet Russian Literature after WWII

**U3 Required Courses (12 credits)**

RUSS 452 (3) Advanced Russian Language and Syntax 1
RUSS 453 (3) Advanced Russian Language and Syntax 2
RUSS 490 (3) Honours Seminar
RUSS 491 (3) Honours Seminar
Additional Complementary Courses (6 credits) selected from:

- RUSS 217 (3) Russia's Eternal Questions
- RUSS 410 (3) Drama in Russian Literature before 1850
- RUSS 411 (3) Drama in Russian Literature after 1850
- RUSS 450 (3) 20th-Century Russian Language and Literature before WWII
- RUSS 451 (3) 20th-Century Russian Language and Literature after WWII
- RUSS 455 (3) History of the Russian Language 1
- RUSS 456 (3) History of the Russian Language 2
- RUSS 458 (3) Development Russian Novel before Turgenev
- RUSS 459 (3) Russian Novel Pushkin - Gogol
- RUSS 460 (3) Russian Novel 1860-1900 1
- RUSS 461 (3) Russian Novel 1860-1900 2
- RUSS 462 (3) Soviet Literature: Thaw - Early 1970s
- RUSS 463 (3) Soviet Literature: Early 1970s - Perestroika
- RUSS 465 (3) Russian Modernism 1
- RUSS 466 (3) Russian Modernism 2
- RUSS 468 (3) Pushkin and Contemporaries 1
- RUSS 469 (3) Pushkin and Contemporaries 2
- RUSS 470 (3) Individual Reading Course
- RUSS 471 (3) Independent Research
- RUSS 510 (3) High Stalinist Culture

Please contact the department(s) in question for pre/corequisites and availability of the following courses:

- ECON 331 (3) Economic Development: Russia and USSR
- ECON 340 (3) Ex-Socialist Economies
- HIST 216 (3) History of Russia to 1801
- HIST 226 (3) Eastern Europe in 20th Century
- HIST 236 (3) Russia from 1801 to 1991
- HIST 306 (3) East Central Europe since 1944
- HIST 316 (3) Russia: Revolutions 1905 and 1917
- HIST 326 (3) Russia from 1905 to Present
- HIST 387 (3) The First World War
- HIST 388 (3) The Second World War
- HIST 406 (3) Petroine and Catherinian Russia
- HIST 436 (3) Topics: European History
- HIST 446 (3) Russian Thought to 1825
- HIST 456 (3) Russian Intellectual History 1825-1917
- JWST 303 (3) The Soviet Jewish Experience
- POLI 329 (3) Russian and Soviet Politics
- SOCI 455 (3) Post-Socialist Societies

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – RUSSIAN COMPONENT (36 credits)

Students must maintain a CGPA in accordance with Faculty requirements. 12 credits in Russian and 12 credits in the cooperating department are normally taken each year. For information telephone (514) 398-3639.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

4.12.49 Science for Arts Students

Director — Professor Louis Lefebvre (Biology), (514) 398-6457

The following courses offered by the Faculty of Science may be of interest to Arts students. Not all courses are available in any given year.

Air and Oceanic Sciences
- ATOC 210 (3) Introduction to Atmospheric Science
- ATOC 220 (3) Introduction to Oceanic Sciences

Biology
- BIOL 115 (3) Essential Biology
- BIOL 210 (3) Perspectives of Science
- BIOL 373 (3) Biometry

Chemistry
- CHEM 150 (3) World of Chemistry: Food
- CHEM 160 (3) World of Chemistry: Technology
- CHEM 170 (3) World of Chemistry: Drugs
- CHEM 180 (3) World of Chemistry: Environment

Computer Science
- COMP 102 (3) Computers and Computing

Earth and Planetary Sciences
- EPSC 200 (3) The Terrestrial Planets
- EPSC 201 (3) Understanding Planet Earth
- EPSC 210 (3) Introductory Mineralogy
- EPSC 233 (3) Earth and Life History
- EPSC 243 (3) Environmental Geology
- EPSC 334 (3) Invertebrate Paleontology

Geography
- GEOG 203 (3) Environmental Systems
- GEOG 205 (3) Global Change: Past, Present and Future

Physics
- PHYS 224 (3) Physics and Psychophysics of Music
- PHYS 225 (3) Musical Acoustics

MINOR CONCENTRATION IN SCIENCE FOR ARTS STUDENTS (18 credits)

Freshman students interested in this Minor Concentration should seek advice at the earliest opportunity, either through the Freshman Advisers or by contacting the Program Director. In general, students should declare their intention to obtain this Minor Concentration during their U1 year and consult the Program Director regarding approval of courses to meet the requirements.

This Minor Concentration is administered by the Department of Biology. For more information contact Ms. Anne Comeau in the Biology Department, Room W4/13, Stewart Biological Sciences Building, (514) 398-4109; or the Program Director, Professor Louis Lefebvre, Room W6/10, Stewart Biological Sciences Building, (514) 398-6457.

Required Courses (3 credits)
- BIOL 210 (3) Perspectives of Science (in U1)

Complementary Courses (15 credits)

15 credits taken in one of the disciplinary areas given below. Where suggested courses have prerequisites at the 200 or 300 level associated with them, credit for the associated prerequisites may also be counted as part of the 15 credits.

Prerequisites at the 100 level cannot be counted towards the Minor Concentration.

With the prior written approval of the Program Director, an appropriate alternative set of courses may be substituted.

DISCIPLINARY AREAS

Atmospheric and Oceanic Sciences
- Students should note that MATH 133 (or its CEGEP equivalent) is not essential as a prerequisite for these courses.
- ATOC 210 (3) Introduction to Atmospheric Science
- ATOC 214 (3) Intro to the Physics of the Atmosphere
- ATOC 215 (3) Oceans, Weather and Climate
- ATOC 220 (3) Introduction to Oceanic Sciences

Biochemistry
- Prerequisites which cannot be counted towards the Minor Concentration: BIOL 111 and BIOL 112 plus CHEM 120 (or CHEM 121) or their CEGEP equivalents.
15 credits taken from the following courses and their associated 200- or 300-level prerequisites:

**ANAT 262 (3)** Introductory Molecular and Cell Biology
**BIOC 212 (3)** Molecular Mechanisms of Cell Function (Prerequisite: BIOL 200)
**BIOC 311 (3)** Metabolic Biochemistry (Prerequisite: BIOC 200, BIOC 201 or BIOC 212, CHEM 222)
**BIOC 312 (3)** Biochemistry of Macromolecules (Prerequisite: BIOC 311, BIOL 200, BIOC 201 or BIOC 212)

**Biology**
Students interested in Biology can choose between two streams.

1. **Upper level courses in biodiversity, ecology, sociobiology, neurobiology, behaviour, or conservation biology.** See Ms. Anne Comeau in the Biology Department, Room W4/13, Stewart Biology Building, to arrange a session for counsel on choice of courses above the 200 level.

2. Courses which follow:
   - BIOL 200 (3) Molecular Biology
   - BIOL 201 (3) Cell Biology and Metabolism (Prerequisite: BIOL 200)
   - BIOL 202 (3) Basic Genetics (Prerequisite: BIOL 200)
   - plus a selected subset of these or related upper level courses:
   - BIOL 300 (3) Molecular Biology of the Gene (Prerequisite: BIOL 200)
   - BIOL 303 (3) Developmental Biology (Prerequisite: BIOL 200, BIOL 201)

1. **Organismal Stream:**
   - Note: CHEM 212 or its CEGEP equivalent is prerequisite to this stream.
   - BIOL 205 (3) Biology of Organisms (Prerequisite: BIOL 200. Corequisite: BIOL 210)
   - BIOL 215 (3) Intro. to Ecology and Evolution
   - BIOL 304 (3) Evolution (Prerequisite: BIOL 205 or BIOL 215 or ENVR 202)
   - plus a selected subset of these or related upper level courses:
   - BIOL 305 (3) Animal Diversity (Prerequisite: BIOL 215 or ENVR 202)
   - BIOL 306 (3) Neurobiology and Behaviour (Prerequisite: BIOL 201, BIOL 205)
   - BIOL 307 (3) Behavioural Ecology/Sociobiology (Prerequisite: BIOL 205, BIOL 215 or permission)
   - BIOL 308 (3) Ecological Dynamics
   - BIOL 465 (3) Conservation Biology (Prerequisite: BIOL 215)

2. **Chemistry**
   - Prerequisites which cannot be counted towards the Minor Concentration: CHEM 120 (or CHEM 121) or their CEGEP equivalents.
   
   1. Note: CHEM 212 or its CEGEP equivalent is prerequisite to this stream.
   - BIOL 200 (3) Molecular Biology
   - BIOL 203 (3) Survey of Physical Chemistry
   - CHEM 200 (3) Modern Inorganic Chemistry 1
   - CHEM 201 (3) Modern Inorganic Chemistry 2
   - CHEM 204 (3) Physical Chemistry/Biological Sciences 1
   - CHEM 212 (4) Introductory Organic Chemistry 1
   - CHEM 222 (4) Introductory Organic Chemistry 2
   - CHEM 257D1 (2) Introductory Analytical Chemistry
   - CHEM 257D2 (2) Introductory Analytical Chemistry
   - CHEM 301 (3) Modern Inorganic Chemistry 2
   - CHEM 381 (3) Inorganic Chemistry 2 (Prerequisite: CHEM 201 or CHEM 281)

3. **Computer Science**
   - Note: Students in any Minor or Major Concentration or Honours Program in Computer Science cannot choose this disciplinary area.
   
   1. Prerequisites which cannot be counted towards the Minor Concentration: MATH 139 or MATH 140, MATH 141, and MATH 133 and COMP 102 or their CEGEP equivalents.
   
   A selection of courses should be taken from:
   - COMP 202 (3) Introduction to Computing 1
   - COMP 203 (3) Introduction to Computing 2 (Prerequisite: COMP 202)
   - COMP 250 (3) Introduction to Computer Science (Major and Honours)
   - COMP 251 (3) Data Structures and Algorithms (Prerequisite: COMP 250 or COMP 253)
   
   plus some of the following courses:
   - COMP 273 (3) Introduction to Computer Systems (Prerequisite: COMP 202)
   - COMP 302 (3) Programming Languages and Paradigms (Prerequisite: COMP 203 or COMP 250)

4. **Earth and Planetary Sciences**
   - A combination of EPSC 210, EPSC 212, and one or more of EPSC 200, EPSC 201, and EPSC 243 provides a grounding in these inter-related disciplines in preparation for more specialized courses which follow:
   - EPSC 200 (3) The Terrestrial Planets
   - EPSC 201 (3) Understanding Planet Earth
   - EPSC 203 (3) Structural Geology 1
   - EPSC 205 or (3) Astrobiology
   - EPSC 210 (3) Introductory Mineralogy
   - EPSC 212 (4) Introductory Petrology (Prerequisite: EPSC 210)
   - EPSC 220 (3) Principles of Geochemistry (Prerequisite: EPSC 201, EPSC 210)
   - EPSC 231 (2) Field School 1 (Prerequisite: EPSC 222)
   - EPSC 233 (3) Earth and Life History
   - EPSC 243 (3) Environmental Geology
   - EPSC 320 (3) Elementary Earth Physics (Prerequisite: EPSC 222)
   - EPSC 334 (3) Invertebrate Paleontology
   - EPSC 425 (3) Sediments to Sequences (Prerequisite: EPSC 210, EPSC 212)

5. **Geography**
   - Note: Students in any Minor or Major Concentration or Honours Program in Geography cannot choose this disciplinary area.
   
   Geography advisers recommend including some preparation in chemistry, statistics and calculus for study in this area even if for-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PHYS 225</td>
<td>Musical Acoustics</td>
</tr>
<tr>
<td>PHYS 224</td>
<td>Physics and Psychophysics of Music</td>
</tr>
<tr>
<td>PHYS 208</td>
<td>Introduction to Selected Topics in Physics</td>
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<tr>
<td>PHYS 200</td>
<td>Space, Time and Matter</td>
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<tr>
<td>PHYS 209</td>
<td>Introduction to Selected Topics in Physics</td>
</tr>
<tr>
<td>PHYS 224</td>
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</tr>
<tr>
<td>PHYS 225</td>
<td>Musical Acoustics (Prerequisite: PHYS 224)</td>
</tr>
<tr>
<td>PHYS 230</td>
<td>Dynamics of Simple Systems</td>
</tr>
<tr>
<td>PHYS 232</td>
<td>Heat and Waves (Prerequisite: PHYS 230)</td>
</tr>
<tr>
<td>PHYS 241</td>
<td>Signal Processing</td>
</tr>
<tr>
<td>PHYS 242</td>
<td>Electricity and Magnetism (Prerequisite: MATH 222)</td>
</tr>
<tr>
<td>PHYS 257</td>
<td>Experimental Methods 1 (Prerequisite: PHYS 230 or PHYS 250)</td>
</tr>
<tr>
<td>PHYS 258</td>
<td>Experimental Methods 2 (Prerequisite: PHYS 257)</td>
</tr>
</tbody>
</table>

**Physics**

- **Prerequisites which cannot be counted towards the Minor Concentration:** BIOL 111 and BIOL 112, CHEM 120 (CHEM 121) or their CEGEP equivalents.
- Students can complete the 15 credits from the following courses and their associated prerequisites:
- Note: CHEM 212 or its CEGEP equivalent is prerequisite, or corequisite, to these courses.
- **MIMM 211 (3) Introductory Microbiology**
- **MIMM 314 (3) Immunology (Prerequisite: BIOL 200 and BIOL 210 or BIOL 212)**
- **MIMM 323 (3) Microbial Physiology (Prerequisite: MIMM 211)**
- **MIMM 324 (3) Fundamental Virology (Prerequisite: MIMM 211, BIOL 200, BIOL 210 or BIOL 212)**
- **PHGY 311 (3) Intermediate Physiology 1 (Prerequisite: PHGY 209, PHGY 210 or equivalent or permission.)**
- **PHGY 312 (3) Intermediate Physiology 2 (Prerequisite: PHGY 209, PHGY 210 or equivalent, PHGY 311 or permission.)**
- **PHGY 313 (3) Intermediate Physiology 3 (Prerequisite: PHGY 209, PHGY 210 or equivalent, PHGY 311 or permission.)**

**Mathematics and Statistics**

- [Students in any Minor or Major Concentration or Honours Program in Mathematics and Statistics cannot choose this disciplinary area.]
- **Suggested courses:**
  - **MATH 133 (3) Vectors, Matrices and Geometry**
  - **MATH 203 (3) Principles of Statistics 1**
  - **MATH 204 (3) Principles of Statistics 2 (Prerequisite: MATH 203 or equivalent)**
  - **MATH 222 (3) Calculus 3**
  - **MATH 338 (3) History and Philosophy of Mathematics**
  - **PHGY 209, PHGY 210 or equivalent, or PHGY 311 or permission.**
  - **PHGY 209, PHGY 210 or equivalent or PHGY 311 or permission.**
  - **PHGY 209, PHGY 210 or equivalent or PHGY 311 or permission.**

**Microbiology and Immunology**

- Prerequisites which cannot be counted towards the Minor Concentration: BIOL 111 and BIOL 112, CHEM 120 (CHEM 121) or their CEGEP equivalents.
- Students can complete the 15 credits from the following courses and their associated prerequisites:
- Note: CHEM 212 or its CEGEP equivalent is prerequisite, or corequisite, to these courses.
- **MIMM 211 (3) Introductory Microbiology**
- **MIMM 314 (3) Immunology (Prerequisite: BIOL 200 and BIOL 210 or BIOL 212)**
- **MIMM 323 (3) Microbial Physiology (Prerequisite: MIMM 211)**
- **MIMM 324 (3) Fundamental Virology (Prerequisite: MIMM 211, BIOL 200, BIOL 210 or BIOL 212)**
- **PHGY 311 (3) Intermediate Physiology 1 (Prerequisite: PHGY 209, PHGY 210 or equivalent or permission.)**
- **PHGY 312 (3) Intermediate Physiology 2 (Prerequisite: PHGY 209, PHGY 210 or equivalent, PHGY 311 or permission.)**
- **PHGY 313 (3) Intermediate Physiology 3 (Prerequisite: PHGY 209, PHGY 210 or equivalent, PHGY 311 or permission.)**

**Pathology**

- Prerequisites which cannot be counted towards the Minor Concentration: BIOL 111 and BIOL 112 plus CHEM 120 (CHEM 121) or their CEGEP equivalents.
- This course, together with its associate prerequisites, is well suited to students with an interest in medicine.
- Note: CHEM 212 or its CEGEP equivalent is also prerequisite, or corequisite, to this course.
- **PATH 300 (3) Human Disease (Prerequisites: BIOL 200, BIOL 210 or BIOL 212, PHGY 209. Pre- or corequisite PHGY 210)**

**Psychology**

- [Students in any Minor or Major Concentration or Honours Program in Psychology cannot choose this disciplinary area.]
- Prerequisites which cannot be counted towards the Minor Concentration: PSYC 100 plus BIOL 111 or BIOL 112 or BIOL 115 (or their CEGEP equivalents).
- Students in the Minor Concentration take two of the following courses:
- Note: PSYC 204 is prerequisite to this area:
- **PSYC 211 (3) Intro Behavioral Neuroscience**
- **PSYC 212 (3) Perception**
- **PSYC 213 (3) Cognition**
- **PSYC 215 (3) Social Psychology**
- plus one or more Psychology courses at the 300 level or higher (excluding PSYC 305). Students are recommended to satisfy the upper level course requirement by taking 6 credits from one of the areas of specialization specified in the Psychology section.

### 4.12.50 Sexual Diversity Studies Program

**Office of Interdisciplinary Programs**
3715 Peel Street, Room 121
Montreal, QC H3A 1X1
Telephone: (514) 398-4804
Fax: (514) 398-8432
E-mail: ines.scharnweber@mcgill.ca
Website: www.mcgill.ca/sdst

**Program Adviser — Ines Scharnweber**

**Advisory Committee Chair — B. Lewis (History)**
Advisory Committee

K. Borriss (English), S. Brotman (Social Work), E. Elbourne (History), A. Hepburn (English), S. Mulay (Medicine and McGill Centre for Research and Teaching on Women), L. Whitesell (Music)

The Minor Concentration in Sexual Diversity Studies is informed by a tradition of critical inquiry developed within various frameworks including Women's Studies and Gay, Lesbian and Queer Studies. It is designed to introduce students to the latest scholarship on the study of sexuality and sexual and gender diversity across a wide range of disciplines and cultures.

MINOR CONCENTRATION IN SEXUAL DIVERSITY STUDIES (18 credits)

Required Course (3 credits)
SDST 250 (3) Introduction: Sexual Diversity Studies

Note: *indicates courses that are acceptable only when the topic is appropriate for Sexual Diversity Studies.

Complementary Courses (15 credits)
EAST 370 (3) History of Sexuality in Japan
ENGL 493 (3) Image and Text 2
HIST 323 (3) History and Sexuality 1
HIST 347 (3) History and Sexuality 2
HIST 433 (3) British Queer History
MUAR 374* (3) Special Topics in Music
PHIL 242 (3) Introduction to Feminist Theory
PHIL 442 (3) Topics in Feminist Theory
PSYC 436 (3) Human Sexuality and its Problems
RELG 271 (3) Sexual Ethics
RELG 339 (3) Hindu and Buddhist Images of Feminine
RELG 356 (3) Religion and Sexuality in India
SOCI 503 (3) Sex and Gender
SISR 468 (3) Clinical Practice Seminar 2
WMST 402* (3) Women's Studies Special Topics 2
WMST 513 (3) Gender, Race and Science

4.12.51 Social Studies of Medicine (SSMD)

Department of Social Studies of Medicine
3647 Peel Street, 2nd floor
Montreal, QC H3A 1X1

Telephone: (514) 398-6033
Fax: (514) 398-1498
E-mail: ssom@mcgill.ca
Website: www.mcgill.ca/ssom

Chair — Alberto Cambrosio

Professors
Alberto Cambrosio; M.A.(Sher.), Ph.D.(Montr.)
Margaret Lock; B.Sc.(Leeds), M.A., Ph.D.(Calif.)(Marjorie Bronfman Professor in Social Studies of Medicine)
Andrea Tone; B.A.(Queen's), M.A., Ph.D.(Emory)
George Weisz; M.A., Ph.D.(SUNY), Dr. 3rd Cy(Paris) (Cotton-Hannah Professor of the History of Medicine)
Allan Young; M.A.(Wash.), B.A., Ph.D.(Penn.)

Associate Professors
Cornelius Borck; M.A., M.D.(Free Univ. Berlin), Ph.D.(Lond.)
Faith Wallis; M.A., M.L.S.(McG.), Ph.D.(Tor.)
Thomas Schlich; M.D.(Marburg), Ph.D.(Freiburg)

The Minor Concentration in Social Studies of Medicine is an interdisciplinary concentration of courses designed to address the needs of (1) undergraduates preparing for one of the health professions, and (2) social sciences and humanities undergraduates who wish to gain a broader interdisciplinary understanding of medicine and health issues.

The courses present medicine as a complex network of institutions, cultures and political relations embedded in the institutions, cultures and political relations of the larger society. Courses are divided into three groups: History of Medicine, Anthropology of Medicine, and Medical Humanities and Social Sciences.

The Minor consists of 18 credits. Students are required to take six credits from each of the three groups. Note: No overlap is permitted with courses counting towards the student's Major Concentration. A maximum of 6 credits can be taken at another university; the approval of the student's adviser is required.

MINOR CONCENTRATION IN SOCIAL STUDIES OF MEDICINE (18 credits)

Complementary Courses (18 credits)
6 credits from each of the following groups:

History of Medicine
HIST 319 (3) The Scientific Revolution
HIST 335 (3) Science from Greeks to Newton
HIST 348 (3) China: Science-Medicine-Technology
HIST 349 (3) Health and Healer in Western History
HIST 356 (3) Medieval Science and Medicine
HIST 381 (3) Colonial Africa: Health/Disease
HIST 449 (3) Medicine in the Ancient World
HIST 457 (3) Topics in Medical History
HIST 458 (3) Modern Medicine: Seminar
HIST 459 (3) Modern Medicine: Research
HIST 466 (3) Seminar: Medieval Medicine
HIST 496 (3) Research: Medieval Medicine

Anthropology of Medicine
ANTH 227 (3) Medical Anthropology
ANTH 302 (3) New Horizons in Medical Anthropology
ANTH 314 (3) Psychological Anthropology
ANTH 407 (3) Anthropology of the Body
ANTH 438 (3) Topics in Medical Anthropology
ANTH 439 (3) Theories of Development
ANTH 443 (3) Medical Anthropological Theory
ANTH 480, 481, 482, 483, 484, 485 (special topics each 3 credits)

Medical Humanities and Social Sciences
BIOL 570 (3) Advanced Seminar in Evolution
ECON 440 (3) Health Economics
HSEL 308 (3) Issues in Women's Health
HSEL 309 (3) Women's Reproductive Health
PHIL 343 (3) Biomedical Ethics
PHIL 543 (3) Seminar: Medical Ethics
SOCI 225 (3) Medicine and Health in Modern Society
SOCI 309 (3) Health and Illness
SOCI 310 (3) Sociology of Mental Disorder
SOCI 338 (3) Introduction to Biomedical Knowledge
SOCI 515 (3) Medicine and Society
SOCI 538 (3) Selected Topics in Sociology of Biomedical Knowledge
SSMD 199 (3) Mind-Body Medicine
WMST 513 (3) Gender, Race and Science

4.12.52 Social Work (SWRK)

School of Social Work
Wilson Hall
3506 University Street
Montreal, QC H3A 2A7

Telephone: (514) 398-7070
Fax: (514) 398-4760
E-mail: undergraduate.socialwork@mcgill.ca
Website: www.mcgill.ca/socialwork

Director — Wendy Thomson

Emeritus Professor
David E. Woodsworth; B.A., Dipl.S.W.(Tor.), M.A.(Mich.), Ph.D.(Brandeis)

Professors
Peter Leonard; B.Sc., M.Sc., Dip. Mental Health(Lond.)
Nico Trocmé; B.A., M.S.W., Ph.D.(Tor.)

Wendy Thomson; B.S.W., M.S.W. (McG.), Ph.D. (Brist.)

2. To prepare students for entry into more specialized professions in Social Work, leading to the degree of Bachelor of Social Work (B.S.W.). The B.S.W. degree course has the following principal educational objectives:

1. To prepare students for professional practice in any one of a range of social service positions. (The B.S.W. degree represents the point of admission into the Ordre Professionnel des Travailleurs Sociaux du Québec* and the Canadian Association of Social Workers.)

2. To prepare students for entry into more specialized professional studies at the graduate level.

*Quebec law requires that candidates seeking admission to the provincially recognized regulatory bodies possess a working knowledge of the French language, i.e., be able to communicate verbally and in writing in that language. For further information, refer to Language Requirements for Professions, section 3.11.1.

As it is the policy of the School of Social Work to ensure that social workers are as diverse as the communities they serve, applications for the undergraduate B.S.W. program are encouraged from persons of varied backgrounds, including members of minority groups and persons of low income.

The B.S.W. degree is offered in two ways:

1. as a three-year undergraduate B.S.W. program, and
2. as a Special B.S.W. program for applicants who already have an undergraduate degree in another subject.

BACHELOR OF SOCIAL WORK (B.S.W.) – THREE-YEAR PROGRAM – ADMISSION

Three categories of applicants are eligible to apply for admission to the three-year Bachelor of Social Work:

1. Applicants who have completed a DEC from CEGEP or have completed equivalent studies will be considered for admission to a minimum 90-credit program.

2. Transfer Students

Students who have begun undergraduate degree programs either at McGill or at other universities may apply to transfer to the School of Social Work. In order to qualify as a transfer student, applicants are expected to have a B average in their course work (minimum 3.00 CGPA). While previously taken credits may be accepted towards the B.S.W. program requirements, accepted applicants must be prepared to complete a minimum of five additional academic terms, three Fall terms and two Winter terms, in order to receive a B.S.W. degree (a minimum of 60 McGill credits is required in order to meet University degree requirements).

Students wishing to transfer after their Freshman year must have completed the minimum 24 credits required for the Arts Freshman Program. Completion of these credits does not exempt students from any of the course requirements for the B.S.W. degree, nor decrease their credit requirement. Those who have taken more than 24 credits may, however, have their social science course requirements decreased.

Students who hold a general B.A. degree (minimum 3.00 CGPA) but have not completed a DEC from CEGEP, may also apply as a Transfer Student. Accepted applicants will be required to complete a minimum of 60 McGill credits over five academic terms (three Fall terms and two Winter terms).

3. Mature Students

Residents of Canada who are 23 years of age or older, and who lack the academic background normally required for admission, may apply for entrance as mature students. To be considered for the B.S.W. program, applicants must have had significant paid or volunteer community work experience in related fields and be able to produce satisfactory recommendations from community social agencies with which they have been affiliated.

Applicants must also have completed a minimum of two appropriate courses at the college or university level, each with a grade of B or better.

Enrolment is limited. All candidates are expected to have better than average grades. Within the group of applicants who meet the academic requirements, preference is given to those who have had social work-related experience, paid or volunteer, and also to those who demonstrate personal suitability for the social work profession.

Please note that, although not a requirement for the 3-year B.S.W. program, a course in statistics is a prerequisite for admission into both the Special B.S.W. and M.S.W. programs at McGill. Students in the 3-year B.S.W. program who have not previously completed a course in statistics and are planning on completing a graduate degree are, therefore, strongly encouraged to take a statistics course during their undergraduate studies.

More details on entrance requirements can be found on the Web at www.mcgill.ca/applying.

BACHELOR OF SOCIAL WORK (B.S.W.) – THREE-YEAR PROGRAM – PLAN OF STUDY

The B.S.W. degree is awarded upon successful completion of 90 credits of study; it consists of a combination of professional social work courses, supervised field practice and related courses drawn principally from the social sciences. The 90 credits of study are made up as follows:

- a minimum of 48 credits (and a maximum of 60) must be social work courses.
- a minimum of 18 credits must be social science courses.
- any remaining credits may be taken according to the student’s own individual interests. If credits in French language are required, they will be taken from among the credits available after satisfaction of the minimum requirements of social work (48) and social science (18) credits.

The mix of these possible types of credits will vary according to each student’s needs.

The distribution of the Social Work 48-60 credits over the three years will be approximately as follows:

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<th>Year</th>
<th>Credits</th>
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<td>U1</td>
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First-Year Required Courses (12 credits)

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<td>SWRK 240 (3)</td>
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<td>SWRK 352 (3)</td>
<td>Public Social Services in Canada</td>
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<td>SWRK 357 (3)</td>
<td>Legal Problems of the Poor</td>
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</tbody>
</table>

First-Year Complementary Courses (12 credits)

12 credits of approved courses in the social sciences

First-Year Elective Courses (6 credits)
Second-Year Required Courses (9 credits)
SWRK 344 (3) Anti-Oppression Social Work Practice
SWRK 355 (3) Field Practice 1
SWRK 356 (3) Field Practice 2

Second-Year Complementary Courses (6 credits)
6 credits may be taken as complementary courses to complete the social science minimum; or all 15 credits may be taken as electives, with the limitation that no more than 9 credits may be Social Work.

Third-Year Required Courses (12 credits)
SWRK 401 (3) Social Work Research
SWRK 420 (3) Advanced Field Practice 1
SWRK 421 (3) Advanced Field Practice 2
SWRK 458 (3) Social Policy and Administration

Third-Year Complementary Courses (6 credits)
6 credits from the 400- or 500-level Social Work practice courses.

Additional Third-Year Courses (12 credits)
6 complementary credits of social science courses, unless completed in second year: the remaining credits may be taken as electives, with the limitation that no more than 6 credits may be from Social Work.

Students are cautioned that they are allowed to take a maximum of 12 credits in Elective and/or Complementary Courses outside of the Faculties of Arts and of Science. Please see “Courses Outside the Faculties of Arts and of Science” in section 4.3.6.2 for the full regulation.

Subject to the following conditions, U3 students may be permitted to take 600-level courses:
• a minimum CGPA of 3.30;
• written approval from the professor of the course and from the program adviser supporting the request; and
• a maximum of six (6) credits towards the B.S.W. program.

Field Practicum
Students in the 3-year B.S.W. program complete a field placement during their second and third years, 2 days per week, in different settings each year. Students must have completed a minimum of 24 credits of the 90 credits of study before commencing their second year placement, and 54 credits before commencing their third year placement.

Grading Policy
Students are required to obtain a grade of C or better in all of their Social Work courses (48-60 credits) and also in their 18 social science credits. If students receive a D in any of these courses, they must take additional courses to satisfy the program requirement. Only in an elective course will the grade of D be counted for credit.

SPECIAL B.S.W. (BACHELOR OF SOCIAL WORK) – ADMISSION
A number of students with Bachelor’s degrees are admitted into a Special B.S.W. program consisting of 48 Social Work credits of study over a 14-month period. This program offers an excellent opportunity for students to consolidate past experience related to social work or, for some, to change career directions.

The minimum requirements for admission to the Special B.S.W. are as follows:
1. Bachelor’s degree with a high B average. A Bachelor’s degree is defined as being either a three-year degree following a CEGEP Diploma (or equivalent advanced standing) or a four-year degree following high school.
2. Completion of at least five courses (15 credits) in the social sciences.
3. An introductory course in statistics (either CEGEP or university level).
4. Paid and/or volunteer work experience.

Normally, candidates will not be considered unless their CGPA is 3.00 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work-related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work.

While not a prerequisite for admission, possession of a working knowledge of the French language is important not only to candidates who intend to seek admission to the Quebec professional corporation after graduation but also to those who wish to maximize their field placement opportunities during their program. Students, however, have the option of completing their field requirements at an approved social service agency outside of Quebec once coursework is completed.

The Special B.S.W. is usually a full-time program of study. Those wishing to pursue this program follow a prescribed pattern of study starting with the initial summer session in May-June (7 weeks), the academic session (September-April), and the second summer session (April-June of the following year). In some instances, part-time study can be arranged.

More details on entrance requirements are available on the Web, at www.mcgill.ca/applying. The application deadline is December 1.

SPECIAL B.S.W. (BACHELOR OF SOCIAL WORK) – PLAN OF STUDY
The Special B.S.W., for those holding an undergraduate degree, will be offered in three time blocks: a summer session of 7 weeks, May - June, one regular academic year, and a summer session of 12 weeks, April - June. Students in this program will take 48 Social Work credits, including courses in social work practice, field practice, and policy.

Required Courses (33 credits)
Initial Summer Term
SWRK 350 (3) Social Work Skills Laboratory
SWRK 353 (6) Introduction to Practice

Fall and Winter Terms
SWRK 344 (3) Anti-Oppression Social Work Practice
SWRK 352 (3) Public Social Services in Canada
SWRK 355 (3) Field Practice 1
SWRK 356 (3) Field Practice 2
SWRK 401* (3) Social Work Research

Second Summer Term
SWRK 420 (3) Advanced Field Practice 1
SWRK 421 (3) Advanced Field Practice 2
SWRK 458 (3) Social Policy and Administration

Students who have successfully completed a research course during their undergraduate degree may be eligible for an exemption from this course. However, the 3 credits must be replaced by another Social Work course.

Complementary Courses (15 credits)
a minimum of 6 credits selected from the 400- or 500-level practice courses
9 credits to be selected from other courses offered at the B.S.W. level

Field Practicum
Field Practice takes place in one field setting 2½ days per week, September - April, and 3½ days per week, April - June, to meet the 800-hour requirement.

Grading Policy
Students are required to obtain a grade of C or better in all of their courses. If students receive a D in any of these courses, they must take additional courses to satisfy the program requirement.
Satisfactory/Unsatisfactory (S/U) Option Policy
Please note that “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option” in section 3.3.6 is not available to students in the Special B.S.W. program.

4.12.53 Sociology (SOCI)

Stephen Leacock Building, Room 712
855 Sherbrooke Street West
Montreal, QC H3A 2T7

Undergraduate Program Information: (514) 398-6868
Fax: (514) 398-3403
E-mail: undergraduate.sociology@mcgill.ca
Website: www.mcgill.ca/sociology

Chair — Suzanne Staggenborg
Director, Undergraduate Studies — TBA
Director, Graduate Studies — Morton Weinfeld
Emeritus Professor
Morton Weinfeld; B.A., LL.L., M.A.(Montr.), Ph.D.(Johns H.), F.R.S.C.

Professors
John A. Hall; B.A.(Oxf.), M.A.(Penn.), Ph.D.(London Sch. of Economics) (on leave Fall 2006)
Céline Le Bourdais; B.Sc.(Montr.), B.Sc.(Laval), M.Sc.(Montr.), Ph.D.(Brown) (Canada Research Chair in Statistics and Family Change)
Alberto Cambrosio; Diploma(Basel), M.A.(Sher.), Ph.D.(Montr.)
Anthony Mast; A.B.(Colgate), M.A., Ph.D.(Brown) (Deputy Provost and Chief Information Officer)
Michael Smith; B.A.(Leic.), M.A., Ph.D.(Brown)
Suzanne Staggenborg; B.A.(Miami), M.A.(Wash.), Ph.D.(Nwestern)
Axel P.M. van den Berg; Kand. Doc.(Amsterdam), Ph.D.(McG)
Morton Weinfeld; B.A.(McG.), Ed.M., Ph.D.(Harv.)

(Social Studies of Medicine)

Chair, Canadian Ethnic Studies

Associate Professors
Lucia Benaquisto; B.A.(SUNY, Albany), A.M., Ph.D.(Harv.)
Uli Locher; Ph.D.(Yale)
James (Jim) Ron; B.A.(Stan.), M.A., Ph.D.(Berk.) (Canada Research Chair in Conflict and Human Rights)
Steven L. Rytina; B.G.S., Ph.D.(Mich.)
Donald Von Eschen; A.B.(Beloit), M.A.(Chic.), Ph.D.(Johns H.)

Assistant Professors
Giovanni Burgos; B.A.(SUNY Albany), M.A., Ph.D.(Ind.)
Kathleen Fallon; B.A.(Calif.), M.A., Ph.D.(Ind.)
Jennifer Fosket; B.A. (Mills), Ph.D.(California San Francisco)
Matthew Lange; B.A.(Car.), M.A., Ph.D.(Brown)
Amélie Quesnel-Vallée; B.Sc., M.Sc.(Montr.), M.A., Ph.D.(Duke)
John (Jack) Sandberg; B.A.(Hunter), Ph.D.(Mich.)

(Social Studies of Medicine)

Elaine Weiner, B.A.(Grinnel), M.A.(Flor.), Ph.D.(Mich.)

Faculty Lecturers
Rodney Nelson; B.A.(Regina), M.A.(Wash.), Ph.D.(Tor.)

Visiting Professors
Donald Hinrichs; B.A.(W.Md), M.A. (Md.), Ph.D. (Ohio St.)

Associate Members
Gregory Baum (Religious Studies)

Adjunct Professors
Stanley Heckadon-Moreno; B.A.(Col.), M.A., Ph.D.(Eng.)

Sociology is commonly defined as the scientific study of society. It offers the student an educational experience which is both intellectually rewarding and practically useful as a preparation for future career opportunities. It provides the student with the theoretical and analytical tools to better understand the complex social forces which affect our lives, contributing in this way to personal enrichment and more effective citizenship. It is also valuable preparation for advanced study in the social sciences, as well as for careers in the professions, management, education, law, medicine and health-related areas, social work, and communications in both the public sector and private industry.

The Department offers a Minor Concentration, a Major Concentration, and an Honours Program in Sociology. Although students from outside the Department may take courses in the Department without having had SOCI 210 Sociological Perspectives (except where noted otherwise), nevertheless the course is recommended. The purpose of the Minor Concentration is to give the student a basic understanding of the field of Sociology, while the Major Concentration will provide a more comprehensive coverage of the field. The purpose of the Honours Program is to permit a student to study the field in depth, and to do an Honours Project – a research paper under the supervision of a faculty member, the topic and supervisor chosen by mutual agreement between the student and the professor.

Undergraduate Adviser:
TBA

Honours Undergraduate Adviser:
Rodney Nelson
Telephone: (514) 398-6212
E-mail: rodney.nelson@mcgill.ca

General Program Inquiries:
Joanne Terrasi, Undergraduate Program Coordinator
Telephone: (514) 398-6868
E-mail: undergraduate.sociology@mcgill.ca

Orientation Session for New Students
The Sociology Department Orientation Session will be held in Leacock 738 (7th floor of the Stephen Leacock Building, directly opposite the elevators).

SUBSTANTIVE AREAS OF STUDY
The Department offers four substantive areas of study:
• Institutions, Deviance, and Culture
• Politics and Social Change
• Social Stratification: Class, Ethnicity, and Gender
• Work, Organizations, and the Economy

The following lists indicate the courses which are included within each Substantive Area:

Institutions, Deviance, and Culture

SOCI 216 (3) Social Psychology
SOCI 217 (3) Canadian Mass Communications
SOCI 219 (3) Sociology of Culture
SOCI 225 (3) Medicine and Health in Modern Society
SOCI 247 (3) Family and Modern Society
SOCI 250 (3) Social Problems
SOCI 305 (3) Socialization
SOCI 309 (3) Health and Illness
SOCI 310 (3) Sociology of Mental Disorder
SOCI 315 (3) Sociology of Religion
SOCI 318 (3) Television in Society
SOCI 338 (3) Introduction to Biomedical Knowledge
SOCI 377 (3) Deviance
SOCI 388 (3) Crime
SOCI 435 (3) Popular Culture
SOCI 460 (3) Responses to Social Problems
SOCI 477 (3) Reactions to Deviance
SOCI 488 (3) Punishment and Prisons
SOCI 489 (3) Gender, Deviance and Social Control
SOCI 495 (3) Social Problems and Conflicts
SOCI 515 (3) Medicine and Society
SOCI 525 (3) Health Care Systems in Comparative Perspective
SOCI 535 (3) Sociology of the Family
SOCI 538 (3) Selected Topics in Sociology of Biomedical Knowledge
SOCI 571 (3) Deviance and Social Control

Politics and Social Change

SOCI 222 (3) Urban Sociology
MINOR CONCENTRATION IN SOCIOLOGY (18 credits) (Expandable)

The purpose of the Minor Concentration is to give the student a basic understanding of the field of sociology.

U1 Required Courses (6 credits)
- SOCI 210 (3) Sociological Perspectives
- SOCI 211 (3) Sociological Inquiry

Complementary Courses (12 credits)
3 credits, one of the following courses to be taken in the second year.
- SOCI 330 (3) Classical Sociological Theory
- SOCI 350 (3) Statistics in Social Research

9 credits, 3 courses, to be chosen from any ONE of the four Substantive Areas. At least 3 credits, 1 course, must be taken at the 300 level or above.

500-level seminars are open to Honours students and social science Major Concentration students in their final year, and Minor Concentration students only with permission of the instructor.

MAJOR CONCENTRATION IN SOCIOLOGY (36 credits)

The purpose of the Major Concentration is to give the student a comprehensive understanding of the field of sociology.

U1 Required Courses (6 credits)
- SOCI 210 (3) Sociological Perspectives
- SOCI 211 (3) Sociological Inquiry

U2 Required Courses (6 credits)
- SOCI 330 (3) Classical Sociological Theory
- SOCI 350 (3) Statistics in Social Research

Complementary Courses (24 credits*)
12 credits, 4 courses from one of the four Substantive Areas.
6 credits, 2 courses from a second Substantive Area.
6 credits, 2 courses from a third Substantive Area.

*At least 12 credits, 4 courses, must be taken at the 300 level or above. A student taking the Major Concentration may take no more than 6 credits throughout the three-year program from the following: SOCI 340/SOCI 341, SOCI 342/SOCI 343. SOCI 440/ SOCI 441, SOCI 442/SOCI 443.

Seminars at the 500 level are open to Honours students and social science Major Concentration students in their final year, and Minor Concentration students only with permission of the instructor.

Graduate Seminars listed below are open to final-year Honours students with adequate preparation:
- SOCI 612 Industrial Sociology
- SOCI 627 Political Sociology
- SOCI 629 Ethnicity and Public Policy
- SOCI 652 Current Sociological Theory
- SOCI 661 Seminar: Sociology of Knowledge.

HONOURS IN SOCIOLOGY (51 credits)

Students may register for the Honours Program at the beginning of their second year (U2).

To remain in the Honours Program and receive an Honours degree, students must maintain a cumulative grade point average (CGPA) of 3.00, as well as a program GPA of 3.30. For more information see section 4.3.5 “Program Requirements”.

A Minor Concentration outside Sociology must be taken.

Required Courses (18 credits)
- SOCI 210 (3) Sociological Perspectives
- SOCI 211 (3) Sociological Inquiry
- SOCI 330 (3) Classical Sociological Theory
- SOCI 350 (3) Statistics in Social Research
- SOCI 461 (3) Quantitative Data Analysis
- SOCI 480 (3) Honours Project

Complementary Courses (33 credits*)
12 credits from one of the four Substantive Areas.
12 credits from a second Substantive Area.
9 credits from the two remaining Substantive Areas, a minimum of 3 credits from each.

*At least 15 of the credits in Sociology must be taken at the 300 level or above, and 24 credits must be taken at the 400 level or above (for a total of at least 39 credits at or above the 300 level).

JOINT HONOURS – SOCIOLOGY COMPONENT (36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program components from any two Arts disciplines, see section 4.11.4 “Joint Honours Programs” for a list of available programs.

Students may register for the Joint Honours program at the beginning of their second year (U2).

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Joint Honours students must maintain a minimum CGPA of 3.00 as well as a minimum GPA of 3.30 in this component.
The remainder of the student's courses will be selected from major social and intellectual issues, both past and present class, economics and culture. Students are encouraged to explore gender intersects with issues such as ethnicity, sexuality, religion, and 45 credits from the three Women's Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Sciences. 9 credits to be chosen from one group, 3 credits to be chosen from a second group.

By arrangement with the Chair of the Women's Studies Advisory Committee and subject to University approval, transfer credits will be accepted from approved exchange programs for a total of no more than 6 credits.

MAJOR CONCENTRATION IN WOMEN'S STUDIES (36 credits)
Adviser: Chair, Women's Studies Advisory Committee

Required Courses (6 credits)
WMST 200 (3) Introduction to Women's Studies
WMST 303 (3) Feminist Theory and Research

Complementary Courses (30 credits)
30 credits from the three Women's Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Sciences. At least 6 of the 30 credits must be at the 400 or 500 level. 12 credits to be chosen from one group, 12 credits to be chosen from a second group, 6 credits to be chosen from the remaining group.

By arrangement with the Chair of the Women's Studies Advisory Committee and subject to University approval, transfer credits will be accepted from approved exchange programs for a total of no more than 12 credits.

HONOURS IN WOMEN'S STUDIES (57 credits)
Adviser: Chair, Women's Studies Advisory Committee

Honours students are encouraged to take at least one course in a non-European tradition. Honours students must maintain a program GPA of 3.30 and a CGPA of 3.00. Honours students must write a thesis, to be developed within the framework of the Honours/Joint Honours Colloquium. The thesis will be supervised by an appropriate faculty member with the approval of the Women's Studies Honours Thesis Committee; students should secure the approval of a potential adviser during the year before undertaking the thesis. Three credits will be accorded to the thesis (to be graded by the supervisor), and 3 credits to work undertaken in the Colloquium, which requires supplemental reading and writing assignments, participation in seminars by visiting speakers, training in research and thesis writing methods, presentation to the group of theses in progress, and response to the work of others.

Required Courses (12 credits)
WMST 200 (3) Introduction to Women's Studies
WMST 303 (3) Feminist Theory and Research

Complementary Courses (45 credits)
45 credits from the three Women's Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Sciences. At least 9 of the 45 credits must be at the 400 or 500 level; no more than 18 credits can be at the 200 level. 12 credits to be chosen from one group, at least 15 credits to be chosen from a second group, at least 6 credits to be chosen from the remaining group.
JOINT HONOURS IN WOMEN’S STUDIES (36 credits)
Adviser: Chair, Women’s Studies Advisory Committee
Joint Honours students must maintain a program GPA of 3.30 and a CGPA of 3.00.
Joint Honours students must write a thesis, to be developed within the framework of the Honours/Joint Honours Colloquium. The thesis will be supervised by an appropriate faculty member with the approval of the Women’s Studies Honours Thesis Committee; students should secure the approval of a potential adviser during the year before undertaking the thesis. Three credits will be accorded to the thesis (to be graded by the supervisor), and a 3 credits to work undertaken in the Colloquium, which requires supplemental reading and writing assignments, participation in seminars by visiting speakers, training in research and thesis writing methods, presentation to the group of theses in progress, and response to the work of others.

Required Courses (12 credits)
WMST 200 (3) Introduction to Women’s Studies
WMST 303 (3) Feminist Theory and Research
WMST 495D1 (1.5) Honours/Joint Honours Colloquium
WMST 495D2 (1.5) Honours/Joint Honours Colloquium
WMST 497D1 (1.5) Honours/Joint Honours Thesis
WMST 497D2 (1.5) Honours/Joint Honours Thesis

Complementary Courses (24 credits)
24 credits from the three Women’s Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Studies. At least 6 of the 24 credits must be at the 400 or 500 level; no more than 9 credits can be at the 200 level.
12 credits to be chosen from one group.
9 credits to be chosen from a second group.
3 credits to be chosen from the remaining group.

COMPLEMENTARY COURSE LISTS
Additions may be made during a particular calendar year depending on the topic of special courses. For final updates, go to www.mcgill.ca/mcrtw. Please note that not all courses are offered every year.
Courses currently awaiting University approval to be cross-listed as Women’s Studies courses will be added to the on-line calendar and the MCRTW Website. Please go to www.mcgill.ca/courses/current and www.mcgill.ca/mcrtw.

Notes:
Courses that appear in more than one component may not be double counted.
* indicates courses that are acceptable ONLY when the topic is appropriate for Women’s Studies.

(1) Historical and Non-European Group

Anthropology
ANTH 341 (3) Women in Cross-Cultural Perspective
ARCH 355* (3) Architectural History 4
East Asian Studies
EAST 351 (3) Women in Chinese Literature
EAST 370 (3) History of Sexuality in Japan
EAST 453* (3) Topics: Chinese Literature
EAST 466 (3) Feminism and Japan
History
HIST 199 (3) FYS: Medieval Women and Men
HIST 323 (3) History and Sexuality 1
HIST 343 (3) Women in Post-Confederation Canada
HIST 347 (3) History and Sexuality 2
HIST 398* (3) Topics in Italian History
HIST 399* (3) History and Historical Methods
HIST 412 (3) Women and Gender in Modern Britain
HIST 429* (3) Topics: Canadian Family History
HIST 433 (3) British Queer History
HIST 439 (3) History of Women in China
HIST 463D1/D2 (6) Topics: History of Women in Canada

HIST 555D1/D2 (6) Women in the Western World Since 1860
Religious Studies
RELG 256 (3) Women in Judaism and Islam
RELG 336* (3) Contemporary Theological Issues
RELG 339 (3) Hindu and Buddhist Images of Feminine
RELG 356 (3) Religion and Sexuality in India
Women’s Studies
WMST 513 (3) Gender, Race and Science

(2) Literature and the Arts Group

Art History and Communication Studies
ARTH 352 (3) Feminism in Art and Art History
Canadian Studies
CANS 406* (3) Canadian Studies Seminar 6
Classics
CLAS 370 (3) Women in Greek Drama
East Asian Studies
EAST 351 (3) Women in Chinese Literature
EAST 370 (3) History of Sexuality in Japan

English
ENGL 335* (3) The 20th Century Novel
ENGL 345* (3) Literature and Society
ENGL 453* (3) Topics: Chinese Literature

German Studies
GERM 365* (3) Media Studies in German

Hispanic Studies
HISP 302* (3) Hispanic Literature - English Translation 2
HISP 358 (3) Women Writers Fiction Spanish-America

Italian Studies
ITAL 363 (3) Gender, Literature and Society
ITAL 383 (3) Women’s Writing Since 1880

Jewish Studies
JWST 351* (3) Studies in Modern Jewish Literature

Music
MUHL 220 (3) Women in Music

(3) Science and Social Sciences Group

Anthropology
ANTH 341 (3) Women in Cross-Cultural Perspective
ANTH 432 (3) Gender Inequality and the State
ANTH 413 (3) Gender in Archaeology
Economics
ECON 306D1/D2 (6) Labour Economics and Institutions

Educational Studies
EDER 409 (3) Women and Education
EDER 410 (3) Women in Higher Education
Educational and Counselling Psychology
EDPE 515 (3) Gender Identity Development

German Studies
GERM 364 (3) German Culture: Gender and Society

Law
CMPL 504 (3) Feminist Legal Theory

Management
ORGB 435 (3) Women as Global Leaders and Managers

Nursing

HSEL 308 (3) Issues in Women’s Health
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<td>Human Sexuality and Its Problems</td>
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**Additional Women's Studies Courses**

(The component of the program into which these courses fall is dependent upon the topic and content of the course when offered)

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5 Bachelor of Arts and Science

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5.1 The Faculties

5.1.1 Location
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Canada
Telephone: (514) 398-4210
Faculty Websites: www.mcgill.ca/arts and www.mcgill.ca/science
Degree Website: www.mcgill.ca/artscisao/basc

Student Affairs Office
Website: www.mcgill.ca/artscisao
The Student Affairs Office of the Faculties of Arts and of Science and the Office of the Associate Dean (Student Affairs) of the Faculty of Science are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both Arts and Science.

5.1.2 Administrative Officers
For a listing of administrative officers in the Faculty of Arts, refer to section 4.1.2 “Administrative Officers”, and for those in the Faculty of Science, refer to section 11.1.2 “Faculty Administrative Officers”. Note that the Associate Dean (Student Affairs) of Science is responsible for students pursuing a B.A. & Sc.

The B.A. & Sc. Program Administration Committee (PAC), which oversees the curriculum and regulations for the degree, consists of the following members:

Nicholas DeTakacsy; B.Sc., M.Sc.(Montr.), Ph.D.(McG.)

André Costopoulos; B.A.(McG.), M.A.(Montr.), Ph.D.(Oulu)

Laurie Hendren; B.Sc., M.Sc.(Oulu), Ph.D.(C’nell)

Daniel Levitin; A.B.(Stan.), M.S., Ph.D.(Oregon)
5.1.3 Programs and Teaching in Arts and in Science

Programs and teaching in Arts are described in section 4.1.3 “Programs and Teaching in Arts”. Those in Science are described in section 11.1.3 “Programs and Teaching in Science”. The two faculties jointly offer the B.A. & Sc., so students pursuing that degree are at home in both Arts and Science.

5.1.4 Student Affairs Office

The Student Affairs Office provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and programs, degree requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.

Special requests can be made, in writing, to the Associate Dean (Student Affairs) of Science, who is responsible for students pursuing a B.A. & Sc.

The Committee on Student Standing (CSS) of the Faculty of Science will consider appeals of the Associate Dean's (Student Affairs) decisions. For information about CSS, see the Associate Dean's (Student Affairs) secretary.

For more information, please refer to our Website at www.mcgill.ca/artscisao.

5.2 Degree Admission Requirements

For information about admission requirements to the B.A. & Sc., please refer to “2006-07 Undergraduate Admissions Guide (Appendix A)”.

For information about inter-faculty or inter-degree transfers, please refer to “Inter-Faculty Transfer”, section 3.3.12, as well as to the relevant information posted on the Student Affairs Office Website at www.mcgill.ca/artscisao and in the Student Affairs Office.

5.3 Degree Requirements

Each student pursuing a B.A. & Sc. must be aware of the regulations as stated in this section of the Calendar and on the McGill and Student Affairs Office Websites.

While departmental and Faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration, for compliance with, and completion of, program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student’s responsibility to seek guidance from the Student Affairs Office if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

To be eligible for a B.A. & Sc., students must fulfill all Faculty degree and program requirements as indicated below:

- “Degree Requirements”, section 5.3
- “Residency”, section 5.3.2
- “Cumulative Grade Point Average (CGPA)”, section 5.3.3
- “Time and Credit Limit for Completion of the Degree”, section 5.3.4
- “Program Requirements”, section 5.3.5
- “Course Requirements”, section 5.3.6

5.3.1 Minimum Credit Requirement

Students must complete the minimum credit requirement for the degree as specified in the letter of admission.

Students are normally admitted to a four-year degree requiring the completion of 120 credits, but advanced standing of up to 30 credits may be granted to students who obtain satisfactory results in the Diploma of Collegial Studies, International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests.

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new GPA will be calculated. The Associate Dean (Student Affairs) of Science, in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

Students who are readmitted after a period of absence are normally subject to the program and degree requirements in effect at the time of readmission.

5.3.2 Residency

To obtain a B.A. & Sc., students must satisfy the following residency requirements: a minimum of 60 credits of courses used to satisfy the B.A. & Sc. requirements must be taken and passed at McGill, exclusive of any courses completed as part of the basic science requirements defined below. At least two-thirds of all departmental program requirements (Multi-track, Honours, Faculty) must normally be completed at McGill. However, students in Major Concentrations or Faculty or Honours Programs who pursue an approved Study Away or Exchange Program may, with departmental approval, be exempted from the two-thirds rule. In addition, some departments may require that their students complete specific components of their program at McGill.

5.3.3 Cumulative Grade Point Average (CGPA)

Each candidate for a B.A. & Sc. must achieve a minimum cumulative grade point average (CGPA) of 2.00.

5.3.4 Time and Credit Limit for Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their degree in no more than eight terms after their initial registration. Students in the Freshman Program become subject to these regulations one year after their initial registration. Students who need or wish to exceed this time limit must receive permission from the Associate Dean (Student Affairs) of Science to continue their studies. Students who wish to exceed the minimum credit requirements for their degree must also seek permission of the Associate Dean (Student Affairs) of Science. Permission for exceeding the time and/or credit limits will normally be granted only for valid academic reasons, such as a change of program (subject to departmental approval) and part-time status.

5.3.5 Program Requirements

Students with specific career goals should consult an academic adviser about their choice of program within the B.A. & Sc. However, students intending to pursue further studies following the B.A. & Sc. should refer to the admissions requirements of particular programs for the appropriate prerequisite courses.

In particular, students should note the following:
- The minimum freshman science requirements in the B.A. & Sc. may not satisfy the introductory science requirements of all medical/dental schools.
- The Major Concentration in Psychology does not provide sufficient undergraduate background to enable students to apply for membership in the Ordre des Psychologues du...
Québec, even once the additional graduate requirements of the Ordre have been completed.

- The Major Concentration in Chemistry is not certified by the Ordre des Chimistes du Québec. Students interested in pursuing a career in Chemistry in Québec are advised to take an appropriate B.Sc. program in Chemistry.

5.3.5.1 Freshman Program

[Revised, March 2006: section begins.]

Students who need to complete 97-120 credits to fulfill their degree requirements must, within their first year at McGill, complete 21 credits of basic Science courses: 7 credits in Mathematics (MATH 139 or 140 or 150 and MATH 141 or 151) and 14 credits in at least two departments from Biology (Biol 111 and/or 112), Chemistry (CHEM 110 and/or 120), and Physics (PHYS 101 or 131 and possibly PHYS 102 or 142). They should choose the remainder of their first-year courses, keeping in mind the requirement that they take 21 credits of Arts electives over their 120-credit degree. The Freshman Program is currently under review and may change subject to University approval.

Students who have completed the Diploma of Collegial Studies, Advanced Placement exams, Advanced Levels, the International Baccalaureate, the French Baccalaureate, or McGill placement examinations may receive exemption and/or credit for all or part of the basic science courses in biology, chemistry, mathematics and statistics, and physics as well as exemption from all or part of the 21-credit requirement of Arts electives over their degree. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits.

For further details, refer to information about the B.A. & Sc. Freshman Program on the Web at www.mcgill.ca/artscisao.

[Revised, March 2006: section end.]

5.3.5.2 Departmental Programs

Students pursuing a B.A. & Sc., other than those registered in the Freshman Program, are required to have an approved program (Multi-track, Honours, Faculty), and to select their courses in each term with a view to timely completion of their degree and program requirements. Students must complete one of the program streams described below.

In all cases, the degree also includes a required integrative course (BASC 201; 3 credits), a complementary integrative course (3 credits) within or outside a student's programs selected from the complementary list in “Integrative Courses”, section 5.11.6, plus electives (12-15 credits).

5.3.5.3 Multi-Track System

To recognise the diversity of student backgrounds and interests and the multiple routes to understanding provided by a modern university, the Faculties of Arts and of Science offer a 90-credit multi-track system that includes a Major Concentration in one faculty complemented by either a Major Concentration or two Minor Concentrations in the other faculty and that may be counted in one of the following ways:

Options
1) Arts Major Concentration (36) + Science Major Concentration (36-38) (see "Programs in the B.A. & Sc.", section 5.11, for a list of programs open to students in the B.A. & Sc.)
2) Major Concentration in Arts or Science (36-38) + two Minor Concentrations in the other faculty (2 x 18 = 36)

Regulations
- Programs offered by Computer Science, Mathematics and Statistics, and Psychology are considered Science programs for the purpose of the B.A. & Sc.
- Within both options, all Concentrations must be in different academic units. Thus, students may take a Geography program either in Arts or in Science, but not in both.
- Students will include within the 36 or 18 credits of their Major Concentrations or Minors or Minor Concentrations any university-level (200- or above) prerequisites to required courses within their programs.
- No course may fulfill the requirements for more than one program.

Definitions
- Units: academic departments or administrative equivalents.
- Programs: lists of required and complementary courses (including prerequisites for required courses) prepared and maintained by units.
- Major Concentration: 36-38 credits taken from a unit’s Major program.
- Minor Concentration: 18 credits taken from a unit’s Minor program. Expandable Minor Concentrations are those that can, on the completion of 18 additional approved credits, be expanded into a Major Concentration within the appropriate unit.

HONOURS PROGRAM

Honours programs demand a high degree of specialisation, and require students to satisfy specific departmental and Faculty Honours requirements while maintaining good academic standing. They are designed to prepare students for graduate study.

At the time of publishing this Calendar, an Honours program in Environment had been approved for the B.A. & Sc. Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

JOINT HONOURS PROGRAM

Students who wish to study at the Honours level in two disciplines can combine a Joint Honours Program Component from an Arts discipline with one from a Science discipline; see section 4.11.4 “Joint Honours Programs” for a list of available programs. Each Joint Honours component consists of a minimum of 36-38 required and complementary credits (not including program prerequisites). In cases where a minimum of 24 credits are in courses normally restricted to Honours students, the total of required and complementary credits may be as few as 30.

To complete a Joint Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required and complementary courses taken at McGill that constitute the Joint Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their component of the program GPA.

At the time of publishing this Calendar, only two Science Joint Honours Components had been approved (Mathematics and Psychology). Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

FACULTY PROGRAM

A Faculty program is an approved selection of courses constituting a concentration in an intellectually coherent and inter-faculty field of studies. These courses must include approved selections from the Faculties of Arts and of Science and possibly other faculties. Students in the B.A. & Sc. who complete an approved Faculty program must also complete an approved Minor Concentration or a Minor in the Faculties of Arts or of Science.

At the time of publishing this Calendar, a Faculty program in Cognitive Science and one in Environment had been approved. Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

5.3.6 Course Requirements

All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do additional work for a supplemental grade, if these options are available, or repeat the course. Course substitution will be allowed only in special cases; students should consult their academic adviser.

Normally, students are permitted to repeat a failed course only once. (Failure is considered to be a grade of less than C or the administrative failures of J and KF.) If a required course is failed a second time, a student must appeal to the Associate Dean (Student Affairs) of Science for permission to take the course a third
time. If permission is denied by the Associate Dean (Student Affairs) and/or by the Committee on Student Standing of the Faculty of Science, on appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs as well as the locations of departmental advisory offices, program directors, and telephone numbers for further information are available as follows:

For descriptions of B.A. & Sc. programs that are available to Arts students, see section 4.12 “Academic Programs.”

For descriptions of B.A. & Sc. Science programs that are available to Science students, see section 11.12 “Academic Programs.”

For descriptions of B.A. & Sc. Science programs that are not available to Arts or Science students, see the unit’s section below.

For descriptions of B.A. & Sc. Science programs offered by the McGill School of Environment, see “Programs Offered” in section 13.3. (At the time of publishing this Calendar, no MSE programs had yet been approved for the B.A. & Sc., but students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.)

5.3.6.1 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, CEGEP, at another university, or Advanced Placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate. It is the student’s responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

Sometimes two different departments offer the same course. Such courses are called “double-prefix” courses. When such courses are offered simultaneously, students should take the course offered by the department in which they are obtaining their degree. For example, in the case of double-prefix courses CHEM XZY and PHYS XZY, Chemistry students would take CHEM XZY and Physics students would take PHYS XZY. If different departments offer a double-prefix course in alternate years, students could take whatever course best fits their schedule.

Credit for computer courses will be subject to the following restrictions:
1) credit for courses offered by the School of Computer Science is governed by rules specified as “Notes” in the School’s entry in the Faculty of Science section of the Calendar.
2) credit for computer courses offered by faculties other than Arts or Science requires the permission of the Associate Dean (Student Affairs) of Science.

5.3.6.2 Courses outside the Faculties of Arts and of Science

The following regulations apply to students in the B.A. & Sc. who wish to take courses outside the Faculties of Arts and of Science:

- Regardless of their minimum credit requirement towards their B.A. & Sc., students are allowed a maximum of 12 credits in ELECTIVE and/or COMPLEMENTARY courses taken in faculties other than the Faculties of Arts and of Science.
- Students in certain designated programs that include a number of REQUIRED and COMPLEMENTARY courses in other faculties are permitted a maximum of 30 credits outside the Faculties of Arts and of Science. These programs are the Faculty Programs in Environment, the Minor Concentration in Geography (Urban Systems).
- Any courses taught at McGill University may be used towards the maximum allowed except for courses in Continuing Education, for which students receive credit only in Continuing Education.
- For the purpose of this policy, courses taught in other faculties and specifically listed in the Arts or Science section of the printed Calendar are considered as courses taught in the Faculties of Arts and of Science.
- The maximum number of credits allowed will be strictly enforced.

5.3.6.3 Distance Education Courses

1. A maximum of 6 credits of courses taught through distance education may be used as electives towards the B.A. & Sc. degree at McGill.
2. Courses taught through distance education from institutions other than McGill will be approved as transfer credits under the following conditions:
   a. the course is given by a government-accredited, degree-granting institution acceptable to McGill;
   b. the course counts for credit towards degrees granted at the institution giving the course;
   c. prior approval for the course is obtained from the Arts and Science Student Affairs Office.
3. The combined total of regular course credits and distance education course credits may not exceed the permitted maximum number of credits per term according to the regulations for the B.A. & Sc.
4. Courses taught through distance education may not be used to complete program requirements, except on an individual basis when serious, documented circumstances warrant it. In such cases, prior approval must be obtained from the student’s program adviser and the Associate Dean (Student Affairs) of the Faculty of Science.

5.3.6.4 Courses Taken Under the Satisfactory/Unsatisfactory Option

Students may take one elective course per term that is graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of their credits taken at McGill to fulfill their degree requirements. The decision to have an elective course graded as Satisfactory/Unsatisfactory must be made by students before the end of the Drop/Add period. For more information and restrictions, please see section 3.3.6 “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”.

5.3.6.5 Courses in English as a Second Language

ESL courses are only open to students whose primary language is not English and who have studied for fewer than five years in English-language secondary institutions. Students in the B.A. & Sc. may take a maximum of 12 credits, including academic writing courses for non-anglophones.

5.3.6.6 Auditing of Courses

Auditing of courses is not allowed at McGill University.

5.4 Advising

Fall term advising for newly admitted students takes place during the week prior to the beginning of classes. Students newly admitted to the Winter term should consult the Calendar of Dates for exact advising dates.

Students who need 96 or fewer credits to complete their degree requirements must consult an academic adviser in their proposed department of study to obtain advice and approval of their course selection. To facilitate program planning, they must present their transcripts and letters of admission. Such students who have not fulfilled the 21-credit basic science requirement of the B.A. & Sc. should also seek advice from an adviser in the Student Affairs Office. For a detailed description of advising and registration pro-
5.5 Registration


Students who fall into an unsatisfactory standing at the end of the academic year will have their registration cancelled. They may not re-register. However, students who can provide proof of extenuating circumstances that affected their academic performance may appeal to the Associate Dean (Student Affairs) of Science for readmission. For more information, students should consult the Student Affairs Office, or the Student Affairs Website, www.mcgill.ca/arts cisao.

Students who have an outstanding fee balance from a previous term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but who subsequently take Summer courses without paying the fees, will have their registration cancelled. Registration will be denied until these debts are paid in full. Students who need 97-120 credits to complete their degree requirements will normally be registered in a Freshman Program until they complete their first year. They must consult an adviser in the Student Affairs Office to obtain advice and approval of their course selection. For a detailed description of advising and registration procedures, Freshman students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as the Student Affairs Website, www.mcgill.ca/arts cisao.

Advising for all returning students takes place in March for the upcoming academic year. For more information, students should refer to the Student Affairs Website, www.mcgill.ca/arts cisao.

Advising is also available by e-mail: advisor.arts@mcgill.ca.

5.5.2 Course Registration

All courses have limited enrolment. Students pursuing a B.A. & Sc. may register for, and take for credit, any course, unless otherwise indicated, in the sections of the Calendar applicable to the Faculties of Arts and of Science, subject to the course restrictions listed in this section.

Since the registration system is unable to verify whether or not degree regulations are respected, it is technically possible to register for courses that may not be credited towards the B.A. & Sc. When students’ records are manually verified, however, any courses taken that violate the degree regulations will be flagged after the end of course change period as “not for credit towards the B.A. & Sc.” As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and/or the Class Schedule well in advance of the course change (drop/add) period to determine if permission is required of the instructor, the department, or the Faculty for any course they wish to take.

Students who complete their degree requirements elsewhere at McGill University, Undergraduate Programs 2006-2007 173
• whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses with formal final examinations must have supplemental examinations);
• whether students with marks of D, F, J, or U will have the option of submitting additional work, and, if so, how the supplemental mark will be calculated with the extra work.

5.6.1 Incomplete Grades
An instructor who believes that there is justification for a student to delay submitting term work may extend the deadline until after the end of the course. In this case, the instructor will submit a grade of K (incomplete), indicating the date by which the work is to be completed. The maximum extensions for the submission of grades to the Student Affairs Office are as follows:

• students graduating in June:
  • Fall, Winter, and multi-term courses: April 30
  • non-graduating students:
  • Fall courses: April 30
  • Winter and multi-term courses: July 30

Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time.

It is important to note that instructors may impose earlier deadlines than those listed.

If marks to clear K’s have not been submitted to the Student Affairs Office by April 30 for Fall courses, or July 30 for Winter courses and courses spanning Fall/Winter, the K is automatically changed to a KF and counts as an F in the GPA.

Students with a grade of K who have serious extenuating circumstances may request an extension of the K deadline (KE) from the Associate Dean (Student Affairs) of Science. Please see section 3.3 “Registration” for more information.

5.7 Examinations
Students should see “Examinations” in section 3.7 for information about final examinations and deferred examinations.

The exam schedules are posted on the McGill Website, www.mcgill.ca, normally one month after the start of classes for the tentative Exam Schedule, and two months after the start of classes for the final Examination Schedule. Students should also refer to the Student Affairs Website at www.mcgill.ca/arts cisao for more information.

5.8 Supplemental Assessments

5.8.1 Supplemental Examinations
Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• special permission from the Associate Dean (Student Affairs) of Science is required if students wish to write supplemental exams totalling more than 8 credits in any supplemental exam period;
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the drop/add period;
• the format of the supplemental examination (e.g., multiple-choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental examination;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;
• students must apply to write a supplemental exam; the deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter; a non-refundable fee is payable for each supplemental paper is payable at the time of application; supplemental examination applications are available at www.mcgill.ca/arts cisao and from the Student Affairs Office;
• students must write the supplemental exams at the time of the next supplemental examination period (for Fall courses during the months of April and May, and for Winter courses and courses spanning Fall/Winter during the last week of August for the Faculties of Arts and of Science);
• supplemental examinations in courses outside the Faculties of Arts or Science are subject to the deadlines, rules, and regulations of the relevant faculty;
• no supplemental examinations are available for students who fail to achieve satisfactory grades in deferred examinations.

Students who register for a supplemental examination and subsequently find themselves unprepared for it should not write it; except for the loss of the registration fee, there is no penalty for not writing a supplemental examination. Students should consult the Student Affairs Office for further information.

5.8.2 Additional Work
Instructors of courses that include graded written term work may choose to provide the option of additional work to eligible students. The following conditions apply:

• if there is an option for additional work, it must be announced in the course outline at the beginning of the course;
• additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;
• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• students must apply for additional work: the deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter; a non-refundable fee is payable for each course at the time of application; additional work applications and further information are available in the Student Affairs Office;
• the mark resulting from the revised or additional work will be recorded as a supplemental mark;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental mark will count in calculating the CGPA;
• the weight of the additional work, in calculating the supplemental mark, will be equal to the weight given the work revised or replaced when the original mark was submitted;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional work in courses outside the Faculties of Arts and of Science is subject to the deadlines, rules, and regulations of the relevant faculty.
5.8.3 Reassessments and Rereads
In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner.

The Faculties of Arts and of Science recognise two types of reassessments or rereads:
- reassessment of coursework (term papers, mid-terms, assignments, quizzes, etc.);
- reread of a final exam.

Reassessments and rereads for Arts courses are subject to the deadlines, rules, and regulations outlined in “Reassessments and Rereads” in section 4.8.3. Reassessments and rereads for Science courses are subject to the deadlines, rules, and regulations outlined in “Reassessments and Rereads” in section 11.8.3. Reassessments and rereads in courses not in the Faculties of Arts and of Science are subject to the deadlines, rules, and regulations of the relevant faculty.

5.9 Academic Standing
Academic standing is based primarily on students’ cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the Fall term, in May for the Winter term, and in September for the Summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the Fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and Fall-term grades for courses that span the Fall and Winter terms do not affect academic standing for the Fall term, even though they will ultimately affect students’ Fall TGPA. Therefore, academic standings for the Fall term that are designated as interim should be interpreted as advisory. Note that interim standings will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

5.9.1 Interim Satisfactory/Satisfactory Standing
Students in interim satisfactory or satisfactory standing:
- may continue in their program;
- have a CGPA of 2.00 or greater.

5.9.2 Interim Probationary/Probationary Standing
Students in interim probationary standing (at the end of the Fall term):
- may continue in their program;
- should evaluate their course load and reduce it as appropriate;
- are strongly advised to consult a departmental adviser, before withdrawal deadlines, about their course selection.

Students in probationary standing:
- may continue in their program;
- must carry a reduced load (maximum 14 credits per term);
- must raise their CGPA to return to satisfactory standing (see above);
- should see their departmental adviser to discuss their course selection.

Students will be placed in probationary standing:
- if their CGPA falls between 1.50 and 1.99 and if they were previously in satisfactory standing;
- if their CGPA falls between 1.50 and 1.99 and their TGPA in Fall or Winter is 2.50 or higher, and if they were previously in probationary, or interim unsatisfactory standing;
- if their CGPA is less than 2.00, and if they were previously in unsatisfactory readmitted standing and have satisfied the relevant conditions specified in their letter of readmission.

5.9.3 Unsatisfactory Readmitted Standing
Students in unsatisfactory readmitted standing:
- were previously in unsatisfactory standing and were readmitted to the B.A. & Sc. by the Associate Dean (Student Affairs) of Science or the Committee on Student Standing of the Faculty of Science;
- must meet the conditions specified in their letter of readmission to be allowed to continue in their program;
- should see their departmental adviser to discuss their course selection.

5.9.4 Interim Unsatisfactory/Unsatisfactory Standing
Students in interim unsatisfactory standing (at the end of the Fall term):
- may continue in their program;
- should evaluate their course load and reduce it as appropriate;
- are strongly advised to consult an academic adviser, before the withdrawal deadlines, about their course selection for the Winter term.

Students in unsatisfactory standing:
- have failed to meet the minimum standards set by the faculties;
- may not continue in their program, and their registration will be cancelled.

Students will be placed in unsatisfactory standing:
- if their CGPA falls or remains below 1.50;
- if their TGPA in the Fall or Winter falls below 2.50 and their CGPA is below 2.00 and if they were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing;
- if they were previously in unsatisfactory standing and were readmitted to the B.A. & Sc. by the Associate Dean (Student Affairs) of Science or the Committee on Student Standing of the Faculty of Science but have not at least satisfied the conditions specified in the letter of readmission.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Student Affairs) of Science no later than July 15 for readmission to the Fall term and November 15 for the Winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean (Student Affairs) of Science for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

5.9.5 Incomplete Standings
Standing awaits deferred exam. Must clear Ks, Ls or Supplements. Standing Incomplete.

Students with incomplete standings in the Winter or Summer term may register for the Fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean (Student Affairs) of Science as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.
Students in an Honours program whose program GPA or CGPA mark in the course will not affect their result. Otherwise the standing will only be made once their incomplete marks have been cleared. For more information about incomplete grades please refer to "Incomplete Grades" in section 5.6.1.

5.10 Awards and Honorary Designations

5.10.1 Honours and First-Class Honours

Departments may recommend to the Faculties of Arts and of Science that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:
- students must complete all requirements imposed by the department;
- for Honours, the CGPA at graduation must be at least 3.00;
- for First-Class Honours, the CGPA at graduation must be 3.50 or better;
- some departments have additional requirements that must be met before students are recommended for Honours or First-Class Honours (see the departmental entries).
- Students in an Honours program whose program GPA or CGPA is below 3.00 or who did not satisfy certain additional program requirements must consult their academic adviser to determine if they are eligible to graduate in a program other than Honours.

5.10.2 Distinction and Great Distinction

Students in the Faculty or the Multi-track programs may be awarded their degrees with Distinction or Great Distinction under the following conditions:
- students must have completed a minimum of 60 McGill credits towards the same degree to be considered;
- for Distinction, the CGPA at graduation must be 3.30 to 3.49;
- for Great Distinction, the CGPA at graduation must be at least 3.50;
- these designations may be withdrawn in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the B.A. & Sc.

5.10.3 Dean’s Honour List

The designation Dean’s Honour List may be awarded to a graduating student under the following conditions:
- students must have completed a minimum of 60 McGill credits towards the same degree;
- students must have a CGPA that is greater than the mean of the minimum CGPAs required for students in the Faculties of Arts and of Science to be placed on their respective Dean's Honour Lists;
- this designation may be withdrawn in the case of transfer students, if their CGPA in another degree program or at another university was not comparable to the CGPA earned in the B.A. & Sc.

The designation Dean’s Honour List may be awarded at the end of each academic year to continuing students under the following conditions:
- students must have completed at least 27 graded credits during the academic year;
- students must have a sessional GPA (i.e., combined GPA for the Fall and Winter terms) that is greater than the mean of the minimum sessional GPAs required for students in the Faculties of Arts and of Science to be placed on their respective Dean’s Honour Lists.

5.10.4 Medals and Prizes

Various medals, scholarships, and prizes are open to continuing and graduating students. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available from the Admissions, Recruitment and Registrar’s Office or on the Web at www.mcgill.ca. Application may be required for some scholarships.

5.11 Programs in the B.A. & Sc.

5.11.1 Major Concentrations

5.11.1.1 Arts

The Arts Major Concentrations available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

African Studies, page 79
Anthropology, page 81
Art History, page 83
Canadian Studies, page 85
Classics, page 89
Economics, page 97
English - Cultural Studies, page 101
English - Drama and Theatre, page 101
English - Literature, page 100
Geography, page 107
Geography (Urban Systems), page 108
German Language and Literature, page 111
German Literature and Culture, page 111
German Studies, Contemporary, page 110
Hispanic Languages, page 114
Hispanic Literature and Culture, page 114
History, page 115
Humanistic Studies, page 117
International Development Studies, page 118
Italian Civilization, page 121
Italian Language and Literature, page 120
Jewish Studies, page 122
L’angue et littérature françaises - Lettres, page 105
L’angue et littérature françaises - Lettres et traduction, page 105
L’angue et littérature françaises - Linguistique du français, page 105
Latin-American Studies, page 125
Linguistics, page 127
Middle East Studies, page 131
North American Studies, page 134
Philosophy, page 136
Philosophy and Western Religions, page 138
Political Science, page 144
Quebec Studies, page 148
Russian, page 156
Scriptures and Interpretations - see Religious Studies, page 152
Sociology, page 164
Women's Studies, page 165
World Religions - see Religious Studies, page 151

5.11.1.2 Science

The Science Major Concentrations available to B.A. & Sc. students are listed here and are described in detail either below in the Arts & Science (AS) section or in the Faculty of Arts (A) section of the Calendar as indicated.

Biology - Cell/Molecular Option (AS), page 178
Biology - Organismal Option (AS), page 178
Biomedical Sciences (AS), page 179
Chemistry (AS), page 180
Computing, Foundations of (A), page 91
Earth, Atmosphere and Ocean Sciences (AS), page 181
Geography - Physical Geography Option (AS), page 182
5.11.2 Faculty Programs

The Faculty Programs available to B.A. & Sc. students are listed here and are described in detail either below in the Arts & Science (AS) section or in the McGill School of Environment (E) section of the Calendar as indicated.

Cognitive Science (AS), page 180
Environment (E), page 396

5.11.3 Honours Programs

Currently there is only one Honours program available to the B.A. & Sc. Students. It is listed here and described in detail in “Honours Program in Environment”, section 13.10 of the Calendar.

Environment
Students interested in an Honours degree should also consider the joint honours programs in the next section.

5.11.4 Joint Honours Programs

Joint Honours programs in the B.A. & Sc. are created by combining a Joint Honours Program component from an Arts discipline with one from a Science discipline. Students must register for both Joint Honours Program components. Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

5.11.4.1 Arts

The Arts Joint Honours components available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

Anthropology, page 82
Art History, page 83
Classics, page 89
East Asian Studies, page 96
Economics, page 98
English - one of:
  Cultural Studies, Drama and Theatre, or Literature, page 102
  Geography, page 109
  German Studies, page 112
  Hispanic Studies, page 114
  History, page 115
  International Development Studies, page 118
  Italian Studies, page 121
  Jewish Studies, page 123
  Langue et littérature françaises - one of:
    Langue et littérature françaises - Lettres, or Lettres et traduction, page 105
    Linguistics, page 128
  Middle East Studies, page 131
  Philosophy, page 137
  Philosophy and Western Religions, page 139
  Political Science, page 144
  Religious Studies, page 153
  Russian, page 157
  Sociology, page 164
  Women's Studies, page 166

5.11.4.2 Science

There are currently only two Science Joint Honours components available to B.A. & Sc. students, which are listed here and are described in detail in the Faculty of Arts section of the Calendar.

Mathematics, page 130
Psychology, page 147

5.11.5 Minor Concentrations or Minors

5.11.5.1 Arts

The Arts Minor Concentrations available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

African Studies, page 79
Anthropology, page 81
Art History, page 83
Canadian Ethnic Studies, page 84
Canadian Studies, page 85
Classics, page 89
Comparative Politics - see Political Science, page 142
East Asian Language and Literature, page 92
East Asian Cultural Studies, page 92
East Asian Studies, Advanced, page 92
Economics, page 97
English - Cultural Studies, page 100
English - Drama and Theatre, page 100
English - Literature, page 100
Geography, page 107
Geography (Urban Systems), page 107
German Language, page 110
German Literature, page 110
German Literature and Culture in Translation, page 110
Hispanic Languages, page 113
Hispanic Literature and Culture, page 113
History, page 115
History and Philosophy of Science, page 116
Humanistic Studies, page 117
International Development Studies, page 118
International Relations - see Political Science, page 143
Italian Civilization, page 120
Italian Language and Literature, page 120
Jewish Law, page 122
Jewish Studies, page 122
Langue et littérature françaises - Langue française, page 104
Langue et littérature françaises - Langue et traduction, page 104
Langue et littérature françaises - Lettres, page 105
Langue et littérature françaises - Lettres et traduction, page 105
Langue et littérature françaises - Théorie et critique littéraires, page 105
Linguistics, page 127
Middle East Languages, page 131
Middle East Studies, page 130
North American Studies, page 134
Philosophy, page 136
Philosophy and Western Religions, page 138
Political Economy - see Political Science, page 143
Political Science, page 141
Political Science: Canada/Quebec, page 142
Politics, Law and Society - see Political Science, page 143
Quebec Studies, page 148
Russian, page 155
Russian Civilization, page 155
Scriptural Languages - see Religious Studies, page 151
Sexual Diversity Studies, page 160
Social Studies of Medicine, page 160
Sociology, page 164
South Asia - see Political Science, page 143
Women's Studies, page 165
World Religions - see Religious Studies, page 150

5.11.5.2 Science

The Science Minors (M) or Minor Concentrations (MC) available to B.A. & Sc. students are listed here and are described in detail in either the Faculty of Science (S) or Faculty of Arts (A), or Arts & Science (AS) section of the Calendar as indicated.

Atmospheric Science (M-S), page 317
Biology, Cell/Molecular (MC-AS), page 179
5.11.6 Integrative Courses

5.11.6.1 Required Integrative Course
All students pursuing a B.A. & Sc. must take BASC 201, normally in U1.

5.11.6.2 Complementary Integrative Course
Students in the B.A. & Sc. are required to complete at least one other integrative course (at least 3 credits), possibly within one of their programs, chosen from the following:
- ANTH 201 Prehistoric Archaeology
- ANTH 203 Human Evolution
- ANTH 227 Medical Anthropology
- ANTH 312 Zooarchaeology
- ATOC/EPSC 250 Natural Disasters
- ECON 347 Economics of Climate Change
- ENGC 200 Communications - Pre-Electronic Age
- ENGC 210 History of Communication - Electronic Age
- ENVR 200 The Global Environment
- ENVR 201 Society and Environment
- ENVR 202 The Evolving Earth
- ENVR 203 Knowledge, Ethics and Environment
- GEOG 200 Geographical Perspectives: World Environmental Problems
- GEOG 203 Environmental Systems
- GEOG 302 Environmental Management 1
- GEOG 350 Ecological Biogeography
- LING 390 Neuroscience of Language
- LING 555 Language Acquisition 2
- MATH 328 Computability and Mathematical Linguistics
- MATH 330 Mathematical Finance
- MATH 338 History and Philosophy of Mathematics
- PHIL 220 Introduction to History and Philosophy of Science 1
- PHIL 221 Introduction to History and Philosophy of Science 2
- PHIL 341 Philosophy of Science 1
- PHIL 350 History and Philosophy of Ancient Science
- PHIL 411 Topics in Philosophy of Logic and Mathematics
- PHIL 441 Philosophy of Science 2
- SOCI 225 Medicine & Health in Modern Society
- SOCI 234 Population and Society
- SOCI 235 Technology and Society
- SOCI 338 Intro. to Biomedical Knowledge
- SOCI 525 Health Care Systems in Comparative Perspective

As a substitute, students can fulfill the requirement for a complementary integrative course by conducting library or empirical research that integrates the components of their program as a 3- or 6-credit independent study course, thesis course, or research course.

5.12 Academic Programs

5.12.1 Required Integrative Course for B.A. & Sc.
BASC 201 (Arts & Science Integrative Topics) is a required course in the B.A. & Sc., normally taken in U1. It introduces students to a variety of interdisciplinary topics that exemplify the benefits of applying scholarship from Arts and Science to a problem. It also provides students in the degree with a common experience and a reference group. For details, see the Course section of the Faculty of Science.

5.12.2 Programs in Arts or in Science
All B.A. & Sc. Arts programs are described in detail in the Faculty of Arts section of the Calendar. B.A. & Sc. Science programs that are open to B.A. students (i.e., programs in Computer Science, Mathematics and Statistics, and Psychology as well as some in Geography) are described in the Faculty of Arts section. Science Minors that are open to B.A. & Sc. students are described in the Faculty of Science section. B.A. & Sc. Science programs that are open only to B.A. & Sc. students are described below.

For information about where each B.A. & Sc. program is listed, see "Programs in the B.A. & Sc.," section 5.11.

5.12.3 Biology (BIOL)
The Department of Biology, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

The minimum freshman science requirements in the B.A. & Sc. may not satisfy the introductory science requirements of all medical/dental schools (see section 5.3.5 "Program Requirements").

MAJOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION (36 credits)
The Major Concentration in Biology, Cell/Molecular Option, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 "Science for Teachers"), is a planned sequence of courses designed to permit a degree of specialization in cell/molecular biology.

Required Courses* (29 credits)
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- BIOL 205 (3) Biology of Organisms
- BIOL 215 (3) Introduction to Ecology and Evolution
- BIOL 300 (3) Molecular Biology of the Gene
- BIOL 301 (4) Cell and Molecular Laboratory
- BIOL 303 (3) Developmental Biology
- CHEM 212 (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 "Science for Teachers") must be replaced by 3-credit courses from the Complementary Course List. Regardless of the substitution, students must take at least 36 credits in this program.

Complementary Courses (7 credits minimum)
at least 7 credits selected from:
- BIOL 306 (3) Neurobiology and Behaviour
- BIOL 313 (3) Eukaryotic Cell Biology
- BIOL 314 (3) Molecular Biology of Oncogenes
- BIOL 370 (3) Human Genetics Applied
- BIOL 373 (3) Biometry
- BIOL 413 (1) Reading Project
- BIOL 568 (3) Topics on the Human Genome
- BIOL 575 (3) Human Biochemical Genetics

or other appropriate course at the 300 level or higher with permission of an adviser.

MAJOR CONCENTRATION IN BIOLOGY - ORGANISMAL OPTION (37 credits)
The Major Concentration in Biology, Organismal Option, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 "Science for Teachers") is a planned sequence of courses designed to permit a degree of specialization in organismal biology.
Required Courses* (28 credits)
BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOL 202 (3) Basic Genetics
BIOL 205 (3) Biology of Organisms
BIOL 206 (3) Methods in Biology of Organisms
BIOL 215 (3) Introduction to Ecology and Evolution
BIOL 304 (3) Evolution
BIOL 308 (3) Ecological Dynamics
CHEM 212 (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 “Science for Teachers”) must be replaced by 3-credit courses from the Complementary Course List. Regardless of the substitution, students must take at least 36 credits in this program.

Complementary Courses (9 credits)
9 credits selected from:
BIOL 303 (3) Developmental Biology
BIOL 305 (3) Animal Diversity
BIOL 306 (3) Neurobiology and Behaviour
BIOL 307 (3) Behavioural Ecology/Sociobiology
BIOL 331 (3) Ecology/Behaviour Field Course
BIOL 341 (3) History of Life
BIOL 350 (3) Insect Biology and Control
BIOL 351 (3) The Biology of Invertebrates
BIOL 352 (3) Vertebrate Evolution
BIOL 358 (3) Canadian Flora
BIOL 373 (3) Biometry
BIOL 427 (3) Herpetology
BIOL 435 (3) Natural Selection
BIOL 441 (3) Biological Oceanography
BIOL 442 (3) Marine Biology
BIOL 465 (3) Conservation Biology
or other appropriate course at the 300 level or higher with permission of an adviser.

MINOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION (18 or 19 credits)
The Minor Concentration in Biology, Cell/Molecular Option is restricted to students in the B.A. & Sc. It is a sequence of courses designed to yield a broad introduction to cell/molecular biology.

Required Courses* (13 credits)
BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOL 202 (3) Basic Genetics
CHEM 212* (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by approved complementary courses. Regardless of the substitution, students must take at least 18 credits in this program.

Complementary Courses (6 credits)
Any biology course at the 300 level or higher approved by an adviser.

MINOR CONCENTRATION IN BIOLOGY - ORGANISIMAL OPTION (18 or 19 credits)
The Minor Concentration in Biology, Organismal Option is restricted to students in the B.A. & Sc. It is a sequence of courses designed to yield a broad introduction to organismal biology.

Required Courses* (16 credits)
BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOL 205 (3) Biology of Organisms
BIOL 215 (3) Introduction to Ecology and Evolution
CHEM 212 (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by approved complementary courses. Regardless of the substitution, students must take at least 18 credits in this program.

Complementary Courses (3 credits)
Any biology course at the 300 level or higher approved by an adviser.

5.12.4 Biomedical Sciences

Major Concentration in Biomedical Sciences - Program Advisers:
Professor Teresa Trippenbach, Department of Physiology
McIntyre Medical Sciences Building, Room 1116
E-mail: teresa.trippenbach@mcgill.ca
Telephone: (514) 398-4331

Professor Ann Wechsler, Department of Physiology
McIntyre Medical Sciences Building, Room 1135
E-mail: ann.wechsler@mcgill.ca
Telephone: (514) 398-4341

The following departments jointly offer this B.A. & Sc. program:
Anatomy and Cell Biology (ANAT)
Biochemistry (BIOC)
Microbiology and Immunology (MIMM)
Pharmacology (PHAR)
Physiology (PHGY)

The individual departments, their disciplines, and specific courses offered by them are described in their respective entries in the Faculty of Science section of the Calendar.

The minimum freshman science requirements in the B.A. & Sc. may not satisfy the introductory science requirements of all medical/dental schools (see section 5.3.5 “Program Requirements”).

MAJOR CONCENTRATION IN BIOMEDICAL SCIENCES (36-38 credits)
The Major Concentration in Biomedical Sciences, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit students to survey the various biomedical sciences and acquire some additional in-depth exposure to one of them.

Required Courses (18 credits)
BIOC 212 (3) Molecular Mechanisms of Cell Function
BIOL 200 (3) Molecular Biology
BIOL 202 (3) Basic Genetics
MIMM 211 (3) Introductory Microbiology
PHGY 209 (3) Mammalian Physiology 1
PHGY 210 (3) Mammalian Physiology 2

Complementary Courses (18-20 credits)
3 credits selected from:
ANAT 214 (3) Systemic Human Anatomy
ANAT 262 (3) Introductory Molecular and Cell Biology

4 credits selected from:
ANAT 261 (4) Introduction to Dynamic Histology
BIOL 301 (4) Cell and Molecular Laboratory
CHEM 222 (4) Introductory Organic Chemistry 2

2-4 credits selected from:
MIMM 212** (2) Laboratory in Microbiology
PHGY 212 (1) Introductory Physiology Lab 1
PHGY 213 (1) Introductory Physiology Lab 2
CHEM 212** (4) Introductory Organic Chemistry 1

Or equivalent (with approval of Adviser)

* Registration in MIMM 212 is limited, students should apply to the Dept. of Microbiology and Immunology.
**Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by approved complementary courses. Regardless of the substitution, students must take at least 36 - 38 credits in this program.**

9 credits in one of the following disciplinary specializations.

**Biomedical Sciences Disciplinary Specializations:**

**ANATOMY and CELL BIOLOGY**

6 credits selected from:
- ANAT 321 (3) Circuity of the Human Brain
- ANAT 322 (3) Neuroendocrinology
- ANAT 365 (3) Cellular Trafficking
- ANAT 381 (3) Basis of Embryology
- PATH 300 (3) Human Disease

3 credits selected from:
- ANAT 458 (3) Membranes and Cellular Signalling
- ANAT 541 (3) Cell and Molecular Biology of Aging

**BIOCHEMISTRY**

6 credits:
- BIOC 311 (3) Metabolic Biochemistry
- BIOC 312 (3) Biochemistry of Macromolecules

3 credits selected from:
- BIOC 450 (3) Protein Structure and Function
- BIOC 454 (3) Nucleic Acids
- BIOC 455 (3) Neurochemistry
- BIOC 458 (3) Membranes and Cellular Signalling

**MICROBIOLOGY AND IMMUNOLOGY**

6 credits selected from:
- MIMM 314 (3) Immunology
- MIMM 323 (3) Microbial Physiology
- MIMM 324 (3) Fundamental Virology
- MIMM 387 (3) Applied Microbiology and Immunology

3 credits from 400- or 500-level MIMM courses

**PHARMACOLOGY AND THERAPEUTICS**

6 credits selected from:
- PHAR 300 (3) Drug Action
- PHAR 301 (3) Drugs and Disease
- PHAR 303 (3) Principles of Toxicology

3 credits from 500-level PHAR courses

**PHYSIOLOGY**

6 credits selected from:
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 312 (3) Intermediate Physiology 2
- PHGY 313 (3) Intermediate Physiology 3
- PHGY 314 (3) Integrative Neuroscience

3 credits from 400- or 500-level PHGY courses

**NEUROPHYSIOLOGY**

6 credits:
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 314 (3) Integrative Neuroscience

3 credits selected from:
- PHGY 451 (3) Advanced Neurophysiology
- PHGY 556 (3) Topics in System Neuroscience

**5.12.5 Chemistry (CHEM)**

The Department of Chemistry, the discipline, and specific courses are described in the Faculty of Science section of the Calendar. The Major Concentration in Chemistry is not certified by the Ordre des Chimistes du Québec. Students interested in pursuing a career in Chemistry in Quebec are advised to take an appropriate B.Sc. program in Chemistry. The minimum freshman science requirements in the B.A. & Sc. may not satisfy the introductory science requirements of all medical/dental schools (see section 5.3.5 "Program Requirements").

**MAJOR CONCENTRATION IN CHEMISTRY (36 credits)**

The Major Concentration in Chemistry, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 "Science for Teachers") is a planned sequence of courses designed to permit a degree of specialization in this discipline.

**Required Courses** (18 credits)

CHEM 219 (3) Introduction to Atmospheric Chemistry
CHEM 203 (3) Survey of Physical Chemistry
CHEM 212 (4) Introductory Organic Chemistry 1
CHEM 222 (4) Introductory Organic Chemistry 2
CHEM 257D1 (2) Introductory Analytical Chemistry
CHEM 257D2 (2) Introductory Analytical Chemistry
CHEM 281 (3) Inorganic Chemistry 1

* * Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. or B.Sc./B.Ed. must be replaced by courses from the Complementary Course List equal to or exceeding their credit value. Regardless of the substitution, students must take at least 36 credits in this program.

**Complementary Courses** (18 credits)

18 credits selected from:
- CHEM 219 (3) Introduction to Atmospheric Chemistry
- CHEM 302 (3) Introductory Organic Chemistry 3
- CHEM 307 (3) Analytical Chemistry of Pollutants
- CHEM 334 (3) Advanced Materials
- CHEM 363 (2) Physical Chemistry Laboratory 1
- CHEM 367 (3) Instrumental Analysis 1
- CHEM 381 (3) Inorganic Chemistry 2
- CHEM 382 (3) Organic Chemistry: Natural Products
- CHEM 531 (3) Chemistry of Inorganic Materials
- CHEM 571 (3) Polymer Synthesis
- CHEM 582 (3) Supramolecular Chemistry
- CHEM 591 (3) Bioorganic Chemistry

**5.12.6 Cognitive Science**

Cognitive Science is the multidisciplinary study of cognition in humans and machines. The goal is to understand the principles of intelligence with the hope that this will lead to better comprehension of the mind and of learning and to the development of intelligent devices that constructively extend human abilities. A Faculty Program in Cognitive Science (54 credits) is offered by the following departments, which are described fully in the Faculty of Arts or Faculty of Science section of the Calendar:

- Computer Science (COMP) (Science)
- Linguistics (LING) (Arts)
- Psychology (PSYC) (Science)

**FACULTY PROGRAM IN COGNITIVE SCIENCE** (54 credits)

The Faculty Program in Cognitive Science, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit students to focus on at least two relevant areas of study.

**Required Course** (3 credits)
- PSYC 532 (3) Cognitive Science

**Complementary Courses** (51 credits)

3 credits, one of:
- MATH 318 (3) Mathematical Logic
- PHYL 210 (3) Introduction to Deductive Logic 1

18 credits from List A in one of Computer Science, Linguistics, Neuroscience, Philosophy, or Psychology.

12 credits from List A in one of the four remaining units.

18 credits, at least 12 at the 400 level or higher, chosen from Lists A and/or B in Computer Science, Linguistics, Neuroscience, Philosophy, Psychology and/or Research Courses.

Note 1: Students are responsible for ensuring that they meet all pre- and corequisites for all their courses.

Note 2: With the permission of the Director of the Cognitive Science program, students may be able to substitute courses in cognate departments, such as Anatomy and Cell Biology, Biology, Neurology, or Physiology.
Note 3: B.A. & Sc. students who take Faculty Programs must take at least 30 credits in Arts and in Science across their Faculty Program and their Minor or Minor Concentration.

**COMPUTER SCIENCE**

**List A:**
- **MATH 240** (3) Discrete Structures 1
- **COMP 206** (3) Introduction to Software Systems
- **COMP 250** (3) Introduction to Computer Science
- **COMP 251** (3) Data Structures and Algorithms
- **COMP 302** (3) Programming Languages and Paradigms
- **COMP 424** (3) Topics: Artificial Intelligence 1
- **COMP 426** (3) Automated Reasoning

**List B:**
- **MATH 222** (3) Calculus 3
- **MATH 223** (3) Linear Algebra
- **MATH 328** (3) Computability and Mathematical Linguistics
- **COMP 360** (3) Algorithm Design Techniques
- **COMP 490** (3) Introduction to Probabilistic Analysis of Algorithms
- **COMP 526** (3) Probabilistic Reasoning and AI
- **COMP 531** (3) Theory of Computation
- **COMP 538** (3) Person-Machine Communication
- **COMP 558** (3) Fundamentals of Computer Vision

**LINGUISTICS**

**List A:**
- **LING 201** (3) Introduction to Linguistics
- **LING 230** (3) Phonetics
- **LING 331** (3) Phonology 1
- **LING 355** (3) Language Acquisition 1
- **LING 370** (3) Introduction to Semantics
- **LING 371** (3) Syntax 1
- **LING 390** (3) Neuroscience of Language
- **LING 419** (3) Linguistic Theory 1
- **LING 451** (3) Acquisition of Phonology
- **LING 455** (3) Second Language Syntax

**List B:**
- **LING 440** (3) Morphology
- **LING 531** (3) Phonology 2
- **LING 555** (3) Language Acquisition 2
- **LING 560** (3) Formal Methods in Linguistics
- **LING 571** (3) Syntax 2
- **LING 590** (3) Language Acquisition and Breakdown

**PHILOSOPHY**

**List A:**
- **PHIL 304** (3) Chomsky
- **PHIL 306** (3) Philosophy of Mind
- **PHIL 310** (3) Intermediate Logic
- **PHIL 341** (3) Philosophy of Science 1
- **PHIL 360** (3) 17th Century Philosophy
- **PHIL 370** (3) Problems in Analytic Philosophy
- **PHIL 415** (3) Philosophy of Language
- **PHIL 419** (3) Epistemology
- **PHIL 441** (3) Philosophy of Science 2
- **PHIL 506** (3) Seminar: Philosophy of Mind
- **PHIL 507** (3) Seminar: Cognitive Science

**List B:**
- **PHIL 410** (3) Advanced Topics in Logic 1
- **PHIL 411** (3) Topics in Philosophy of Logic and Mathematics
- **PHIL 421** (3) Metaphysics
- **PHIL 470** (3) Topics in Contemporary Analytic Philosophy
- **PHIL 474** (3) Phenomenology
- **PHIL 510** (3) Seminar: Advanced Logic 2
- **PHIL 511** (3) Seminar: Philosophy of Logic and Mathematics
- **PHIL 519** (3) Seminar: Epistemology
- **PHIL 521** (3) Seminar: Metaphysics
- **PHIL 560** (3) Seminar: 17th Century Philosophy

**PSYCHOLOGY**

**List A/B:**
- **PSYC 212** (3) Perception
- **PSYC 213** (3) Cognition
- **PSYC 301** (3) Learning
- **PSYC 305** (3) Statistics for Experimental Design
- **PSYC 308** (3) Behavioural Neuroscience 1
- **PSYC 311** (3) Human Cognition and the Brain
- **PSYC 317** (3) Genes and Behaviour
- **PSYC 318** (3) Behavioural Neuroscience 2
- **PSYC 329** (3) Introduction to Auditory Cognition
- **PSYC 340** (3) Psychology of Language
- **PSYC 343** (3) Language Learning in Children
- **PSYC 352** (3) Cognitive Psychology Laboratory
- **PSYC 353** (3) Laboratory in Human Perception
- **PSYC 410** (3) Special Topics in Neuropsychology
- **PSYC 413** (3) Cognitive Development
- **PSYC 470** (3) Memory and Brain
- **PSYC 472** (3) Scientific Thinking and Reasoning
- **PSYC 503** (3) Computational Psychology
- **PSYC 522** (3) Neurochemistry and Behaviour
- **PSYC 526** (3) Advances in Visual Perception
- **PSYC 529** (3) Music Cognition
- **PSYC 537** (3) Advanced Seminar in Psychology of Language
- **PSYC 561** (3) Methods: Developmental Psycholinguistics

**NEUROSCIENCE**

**List A/B:**
- **ANAT 321** (3) Circuity of the Human Brain
- **BIOL 530** (3) Neural Basis of Behaviour
- **BIOL 531** (3) Neurobiology Learning Memory
- **BIOL 588** (3) Molecular/Cellular Neurobiology
- **NEUR 310** (3) Cellular Neurobiology
- **PHGY 311** (3) Intermediate Physiology 1
- **PHGY 314** (3) Integrative Neuroscience
- **PHGY 520** (3) Ion Channels
- **PHGY 556** (3) Topics in Systems Neuroscience
- **PSYC 308** (3) Behavioural Neuroscience 1
- **PSYC 317** (3) Genes and Behaviour
- **PSYC 318** (3) Behavioural Neuroscience 2
- **PSYC 410** (3) Special Topics in Neuropsychology
- **PSYC 522** (3) Neurochemistry and Behaviour

**RESEARCH COURSES**
- **COGS 401** (3) Research Cognitive Science 1
- **COGS 402** (3) Research Cognitive Science 2

**5.12.7 Earth, Atmosphere and Ocean Sciences**

The following departments jointly offer a B.A. & Sc. program: Atmospheric and Oceanic Sciences (ATOC) and Earth and Planetary Sciences (EPSC). The departments, the disciplines, and specific courses are described in their respective entries in the Faculty of Science section of the Calendar.

**MAJOR CONCENTRATION IN EARTH, ATMOSPHERE AND OCEAN SCIENCES** (36 credits)

The Major Concentration in Earth, Atmospheric and Ocean Sciences, which is restricted to students in the B.A. & Sc. is a sequence of courses designed to permit a degree of specialization in these disciplines.

**Required Courses** (24 credits)
- **ATOC 214** (3) Introduction: Physics of the Atmosphere
- **ATOC 215** (3) Oceans, Weather and Climate
- **ATOC 220** (3) Introduction to Oceanic Sciences
- **ATOC 315** (3) Water in the Atmosphere
- **EPSC 210** (3) Introductory Mineralogy
B.A. & Sc. Degree

5.12.8 Environment

The requirements for the B.A. & Sc. Faculty Program and the Honours Program in Environment are described in detail in the section on McGill School of Environment. Please see section 13.7 "B.A. & Sc. Faculty Program in Environment" or see section 13.10 "Honours Program in Environment".

5.12.9 Geography (GEOG)

The Department of Geography, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

Note that students may take a Geography program either in Arts or in Science, but not in both.

The following are considered Arts programs in the B.A. & Sc. and are described in the Faculty of Arts section of the Calendar:

- Major Concentration in Geography
- Major Concentration in Geography (Urban Systems)
- Minor Concentration in Geography
- Minor Concentration in Geography (Urban Systems)

The following are considered Science programs in the B.A. & Sc. and are described either below (Major Concentration) or in the Faculty of Science section (Minors) of the Calendar:

- Major Concentration in Geography (Physical Geography)
- Minor in Geographical Information Systems
- Minor in Geography

MAJOR CONCENTRATION PHYSICAL GEOGRAPHY OPTION

(36 credits)

The Major Concentration in Geography, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in this discipline.

Required Courses (12 credits)

- GEOG 201 (3) Introductory Geo-Information Science
- GEOG 202 (3) Statistics and Spatial Analysis
- GEOG 203 (3) Environmental Systems
- GEOG 272 (3) Earth's Changing Surface

Complementary Courses (24 credits)

6 credits of analytical techniques selected from:
- GEOG 306 (3) Raster Geo-Information Science
- GEOG 308 or (3) Principles of Remote Sensing
- ATOC 308
- ATOC 351 (3) Quantitative Methods
- 3 credits of field courses selected from:
  - GEOG 495 (3) Field Studies - Physical Geography
  - GEOG 496 (3) Geographical Excursion
  - GEOG 497 (3) Ecology of Coastal Waters
  - GEOG 499 (3) Subarctic Field Studies

9 - 15 credits in systematic physical geography selected from:

- GEOG 305 (3) Soils and Environment
- GEOG 321 (3) Climatic Environments
- GEOG 322 (3) Environmental Hydrology
- GEOG 350 (3) Ecological Biogeography
- GEOG 372 (3) Running Water Environments

0 - 6 credits in integrative and advanced topics selected from:

- GEOG 302 (3) Environmental Management 1
- GEOG 501 (3) Modelling Environmental Systems
- GEOG 505 (3) Global Biogeochecmistry
- GEOG 506 (3) Advanced Geographic Information Science
- GEOG 536 (3) Geocryology
- GEOG 537 (3) Advanced Fluvial Geomorphology
- GEOG 550 (3) Historical Ecology Techniques

5.12.10 Physics (PHYS)

The Department of Physics, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN PHYSICS (36 credits)

The Major Concentration in Physics, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed., (see section 11.12.31 "Science for Teachers"), is a planned sequence of courses designed to permit a degree of specialization in this discipline.

Required Courses* (30 credits)

- MATH 222 (3) Calculus 3
- MATH 223 (3) Linear Algebra
- MATH 314 (3) Advanced Calculus
- MATH 315 (3) Ordinary Differential Equations
- PHYS 230 (3) Dynamics of Simple Systems
- PHYS 232 (3) Heat and Waves
- PHYS 257 (3) Experimental Methods 1
- PHYS 333 (3) Thermal and Statistical Physics
- PHYS 340 (3) Electricity and Magnetism
- PHYS 446 (3) Quantum Physics

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. or B.Sc./B.Ed. (see section 11.12.31 "Science for Teachers") must be replaced by courses from the Complementary Course List.

Complementary Courses (6 credits)

6 credits selected from:

- PHYS 214 (3) Introductory Astrophysics
- PHYS 225 (3) Musical Acoustics
- PHYS 241 (3) Signal Processing
- PHYS 258 (3) Experimental Methods 2
- PHYS 334 (3) Advanced Materials
- PHYS 534 (3) Nanoscience and Nanotechnology

or any 300- or 400-level course approved by an adviser
6 Faculty of Education

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6.1 The Faculty

6.1.1 Location
3700 McTavish Street
Montreal, QC, H3A 1Y2
Canada
Telephone: (514) 398-7042
Fax: (514) 398-4679
Website: www.mcgill.ca/education

6.1.2 Administrative Officers
Dean
Jamshid Beheshti; B.A.(S.Fraser), M.L.S., Ph.D.(W.Ont.)
Associate Dean (Administration)
Spencer Boudreau; B.A.(Don Bosco), B.A., M.A.(Sher.), Ph.D. (C’dia.)
Associate Dean (Teaching, Learning and Students)
Cathrine Le Maistre; B.Sc., Dip. Ed.(Exe.), M.Ed., Ph.D.(McG.)
Associate Dean (Graduate Studies)
Robert J. Bracewell; B.Sc., M.A.(McM.), Ph.D.(Tor.)
Acting Associate Dean (Graduate Studies)
France Bouthillier; B.Ed.(UQAM), MBS(Montr.), Ph.D.(Tor.)
Director, Graduate School of Library and Information Studies
Steven Jordan; B.A.(Kent), M.Sc.(Lond.), Ph.D.(McG.)
Chair, Department of Integrated Studies in Education
FACULTY OF EDUCATION

Hélène Perrault; B.Sc.(C’dia), M.Sc., Ph.D.(Montr.)
Chair, Department of Kinesiology and Physical Education
Susanne P. Lajoie; B.A., M.A.(McG), Ph.D.(Stan.)
Chair, Department of Educational and Counselling Psychology
Anne Farray
Assistant to the Dean/APR
Christine Zilberman
Senior Student Affairs Officer
Susan Mao Cheia
Financial Officer

6.1.3 The Faculty Then and Now

The Faculty of Education traces its beginnings back to 1857, when the McGill Normal School was established at McGill by agreement between the University and the Government of Quebec. In 1907, it was renamed the School for Teachers and was moved to Sainte-Anne-de-Bellevue, where it became part of MacDonal College. At this time also, the Macdonald Chair of Education was endowed at McGill University and a Department of Education was created in the Faculty of Arts and Science for the purpose of preparing candidates for the High School Diploma. The first graduate program was inaugurated in 1930, and in 1953, the University established the B.Ed. degree.

In 1955, the School for Teachers and the Department of Education were combined to become the Institute of Education within the Faculty of Arts and Science. To these was joined, in 1957, the McGill School of Physical Education (founded in 1912).

The Institute was reconstituted as the Faculty of Education in 1965 and the work continued on both the McGill and Macdonald Campuses. The St. Joseph Teachers College and the Faculty of Education were amalgamated in 1970 and relocated in a new building on the McGill Campus. In 1996, the Graduate School of Library and Information Studies became affiliated with the Faculty.

The Faculty serves approximately 2,000 students enrolled in undergraduate, graduate and professional development programs. The Faculty is organized into three departments and the Graduate School of Library and Information Studies. In addition, the Faculty has a number of research and service centres, several of an interdisciplinary nature.

Like other faculties of education in Quebec and Canada, the Faculty has had a traditional role in the initial training of teachers and leaders in education-allied occupations. It is also concerned with constructing knowledge through research and scholarship and with providing professional development services to the wider educational community.

In recent years a number of links have been established with counterparts in other countries for teaching, research and development purposes. Current active projects, some of which involve students as well as staff, include those in Japan, Indonesia, South Africa and Mexico.

6.1.4 Faculty Facilities

Centre for Educational Leadership (CEL)

CEL, a unit of the Department of Integrated Studies in Education, is committed to the development of leadership for all educational stakeholders through teacher preparation, graduate studies, research and different approaches to professional development. The Centre seeks to promote dialogue, partnerships and projects among teachers, policy makers and other educational leaders in the local community and beyond through credit and non-credit work, research and development activities.

Director: Dr. Lynn Butler-Kisber
CEL is located in the Faculty of Education (Room 422)
Telephone: (514) 398-6961 extension 1591
Fax: (514) 398-7436
Website: www.mcgill.ca/edu-integrated

Education Library and Curriculum Lab

The Education Library and Curriculum Lab are located on the first floor of the Education Building. The Library provides resources and services to support the teaching and research programs of the Faculty. The education collection includes over 118,000 monograph volumes, more than 500 periodical titles and access to full-text electronic journals, microforms, government publications and multimedia materials.

The Curriculum Lab adjoining the Library houses a collection of elementary and secondary school textbooks, teachers’ resource guides, videos, DVDs, audiotapes, CD-ROMs, games, kits, puppets, big books, and equipment for viewing and listening. The Children’s Literature Collection located at the back of the Lab includes fiction, non-fiction, poetry, folklore, and picture books.

Tours and instructional workshops are offered at the beginning of each term to introduce students to information skills that will help them with their assignments. They cover searching the Library Catalogue [MUSE], cross-searching a wide range of electronic resources and databases including ERIC; PsychINFO; and Education Full Text and creating references and bibliographies for papers using EndNote citation management software.

The Library provides computers for student use, wired study carrels to connect laptops, and is also a wireless zone. Students may select to work in quiet study areas in the Annex and E-Study Room, or prefer the group study area in the Curriculum Lab.

Visit the Education Library Website to learn more about library loans, hours, reserve readings, and links to important education sites.

Head Librarian: Marilyn Cohen
Telephone: (514) 398-8109
Website: www.education.mcgill.ca/edlibrary

Education Undergraduate Society

The Society is the students’ voice of undergraduates within the Faculty and its primary purpose is to serve and to inform the students. It also attempts to unify students through sponsorship of activities such as career placement, student orientation, participation in teachers’ conventions, library donations, and Career Fair. Other activities include the assignment of lockers for students, selling merchandise in the Spirit Store, the administration of a tutoring service, and the coordination of the Graduation Ball. Students are encouraged to participate and to make their opinions known. The Society Office is located in Room B179 of the Education Building.

Telephone: (514) 398-7048
Fax: (514) 398-2476
E-mail: edus@mcgill.edus.ca
Website: www.mcgilledus.ca

Media Services

Media Services specializes in helping all Education students and teaching staff use a broad selection of educational technologies. We feature experienced technical support staff and provide free access to a wide range of multimedia, computer and audiovisual equipment and facilities for course and research work.

Highlighted in our educational equipment inventory is a 30 seat mobile laptop computer lab. This lab provides wireless access to the Internet in most of our classrooms. We also boast an eight seat video editing lab featuring workstations with large 20” screens and DVD burners. While the lab is configured and used extensively for video editing, many other popular multimedia applications are also available. These include PowerPoint production, photo editing, audio editing, creation of PDF files and Website development.

For course and research work students and staff can select from the following equipment loan inventory:

- Windows laptop computers
- Macintosh laptop computers
- Mobile 30 seat wireless laptop lab
- Mobile computer presentation carts with data projectors
- Portable data projector for computer and video
- Digital video cameras

Website: www.mcgill.ca/edu-integrated
• Digital still cameras
• Digital audio recorders
• Analog audio recorders
• Portable stereos (CD, MP3 and cassette playback)

In-class technical support services are provided as needed, both by appointment and in urgent situations, as well as through ongoing maintenance of classroom technology facilities. All classrooms in the Faculty have Internet access, most being equipped with wireless (wi-fi) connectivity. Currently, fourteen classrooms are equipped with permanently installed data projectors for computer and video display. Students and teaching staff can connect to these using their own laptop computers or one borrowed from our equipment loan inventory.

To all teaching staff, we provide free technical production services for creating teaching materials and the recording of teaching events. This service requires advance reservation and carries charges for consumables. All free technical work is restricted to Faculty of Education courses. Production services include video, photography, Websites, PowerPoint, booklets, pamphlets, posters, banners, and media duplication when not prohibited by copyright. Production services are also available to research, administration and external clientele at competitive pricing.

Conferences sponsored by the Faculty and held in the Education building have access to a full range of technical support services including pre-conference planning, promotional and conference day materials preparation, and extensive conference-day technical support staff.

Instructional functions comprise small group workshops and Media Services facilities tours (both by appointment only), individual equipment and software operation assistance and troubleshooting, and technical support to courses.

Media Services manages and maintains the Faculty web server, participates in maintaining the Faculty Website and provides production services for the Faculty newsletter.

Sessional Hours (September to June):
Monday to Thursday 08:15 - 20:45
Friday 08:15 - 16:45

Summer Hours (July):
Monday to Thursday 08:15 - 16:45

Annual Closing (August):
Media Services re-opens one week before Fall classes begin. Please note that the above schedule varies slightly from year to year. Exact schedules will be posted at the Media Services entrance and on the Website: www.mcgill.ca/education/resources/media.

Media Services is closed on Saturdays, Sundays and holidays.

Media Services is located in Room 219 of the Faculty of Education.
Manager: Mr. Jim Harris
Telephone: (514) 398-6950
Website: www.mcgill.ca/education/resources/media

Computer Facilities
The Faculty has a large computer complex located in Room 328 of the Education Building. It houses a lab with Windows computers, a second lab with Apple Macintosh computers, and a smaller work area with additional computers. Colour and black-and-white laser printing and scanning facilities are available. Consultants are available for help. This facility is available for courses, workshops and individual use by Education students and staff.

Closed Sundays, holidays and during August.

Hours for the Fall and Winter terms are:
Monday to Thursday 09:00 - 21:00
Friday 09:00 - 17:00
Saturday 11:00 - 16:00
Website: www.education.mcgill.ca/resources/lab

McGill Career and Placement Service (CAPS)
Refer to the General University Information section for further information on this service.

For Information, contact:
Career Adviser: Alain Villemaire
Telephone: (514) 398-2484
E-mail: alain.villemaire@mcgill.ca
Website: www.mcgill.ca/edu-sao/careerandplacementservices

McGill Journal of Education
The McGill Journal of Education is published three times a year: Winter, Spring, and Fall. It includes work in English and French from local, national and international sources. The Journal publishes peer-reviewed research articles, essays, reports from the field, and book reviews. It is concerned with major issues in education from a variety of perspectives, practical and theoretical, personal and collective. Its policy is to bring new ideas and research into a context open to teacher educators and scholars, as well as to parents, teachers, and administrators.

For annual subscriptions, contact:
Faculty of Education
McGill Journal of Education
3700 McTavish Street, Room 345
Montreal, QC, H3A 1Y2
Telephone: (514) 398-4246
E-mail: ann.keenan@mcgill.ca
Website: www.mje.mcgill.ca

Current rates (applicable taxes are extra): $25.00 for Faculty of Education student subscriptions; $40.00 for Canadian subscriptions; and $60.00 for International subscriptions (airmail).

First Nations and Inuit Education (FNIE)
The Department of First Nations and Inuit Education coordinates the work which the Faculty of Education carries out cooperatively with various Indigenous communities and institutions. All courses are normally given off campus. In collaboration with the Nunavut Teacher Education Program, the Kativik School Board, the Cree School Board, the Kahnawake Education Centre, and various other indigenous communities in Quebec, FNIE delivers field-based teacher education programs leading to initial teacher certification and to the B.Ed.Cert. Teach. degree. FNIE also works with departments to meet other educational needs of indigenous peoples.

Director: Dr. Michael Doxtater
Office: Education Building, Room 244
Telephone: (514) 398-4533
Fax: (514) 398-2553
E-mail: michael.doxtater@mcgill.ca

The A.S. Lamb Learning Centre
The A.S. Lamb Learning Centre, integrated by the Reading Room and the Computer Laboratory, is located on the second floor of the Sir Arthur Currie Memorial Gymnasium. It houses 20 P4 computers with CDRW drives and 1 Apple iMac with DVD-R drive for video editing. Laser printing as well as scanning facilities are also available. This facility will be used for courses, workshops, and individually by students and staff. Users will also be able to access the McGill wireless network using their own notebook or laptop computer equipped with a wireless Network Interface Card (NIC).

Website: www.mcgill.ca/edu-kpe/facilities/complab

Hours: Monday to Friday 09:00 - 16:00

Evolution Education Research Centre (EERC)
Mission: “To advance the teaching and learning of biological evolution through research.” It opened its doors at McGill in 2001 with 4 McGill professors and 4 Harvard professors who have expertise in anthropology, biological evolution, educational psychology,
Adapted Physical Activity, Exercise Physiology, Biomechanics, Kinesiology and Physical Education. The five laboratories include The Seagram Sport Science Centre, opened in 1993, houses five laboratories for faculty and graduate students in the Department of Kinesiology and Physical Education. The five laboratories include Adapted Physical Activity, Exercise Physiology, Biomechanics, Health & Sport Psychology and Motor Control. The activities of the Centre include ongoing research programs funded in part by CIHR, NSERC and CFI grants, performance testing of elite athletes, joint research activities with other departments within McGill University.

The Centre is located in the Education Building, Room 244
Director: Dr. Anthony Paré
Telephone: (514) 398-6960

Seagram Sport Science Centre
The Seagram Sport Science Centre, opened in 1993, houses five laboratories for faculty and graduate students in the Department of Kinesiology and Physical Education. The five laboratories include Adapted Physical Activity, Exercise Physiology, Biomechanics, Health & Sport Psychology and Motor Control. The activities of the Centre include ongoing research programs funded in part by CIHR, NSERC and CFI grants, performance testing of elite athletes, joint research activities with other departments within McGill University and industry.

Director:
Dr. David Pearsall, Faculty of Education
Telephone: (514) 398-4184 ext. 0558

Office of Student Teaching (OST)
The Office of Student Teaching is responsible for the planning and implementation of field experiences and arranging with school boards and schools for the placement of student teachers in the Bachelor of Education programs. The Office coordinates student teaching among Departments within the Faculty, and develops partnerships with the education community. The Office offers training to colleagues in schools.

Office Hours: Monday to Friday 08:30 - 17:00
Director: Professor Fiona J. Benson
Office: Education Building, Room 430
Telephone: (514) 398-7046
Fax: (514) 398-3179

Student Affairs Office (SAO)
The Student Affairs Office is responsible for student records and registration as well as general academic information and advice on undergraduate program and degree requirements, course change, withdrawal, supplemental and deferred exams, rereads, academic standing, inter-faculty transfer, readmission, study away, scholarships and awards, graduation and teacher certification. Special requests can be made, in writing, to the Associate Dean (Teaching, Learning and Students).

Office: Education Building, Room 243
Telephone: (514) 398-7042
Fax: (514) 398-4679
E-mail: sao.education@mcgill.ca
Website: www.mcgill.ca/edu-sao

### Programs of Professional Development
For qualified teachers wishing to enhance their knowledge and skills, the Faculty offers programs of professional development leading to specialized Certificates and Diplomas. Most courses that are required to complete these programs are offered in the evenings and in the summer.

### Graduate Programs
The Faculty offers graduate programs for those already holding a university degree who wish to pursue advanced study and research leading to master’s and doctoral degrees in various fields of education and psychology, and library and information studies. Undergraduate programs of initial teacher education are described in this Calendar, programs of professional development are described in the 2006-07 Centre for Continuing Education Calendar, and graduate programs are described in the 2006-07 Graduate and Postdoctoral Studies Calendar.

#### 6.2.1 Undergraduate Education Programs
The Faculty of Education offers the following Undergraduate programs. Details of each program may be found in this Calendar under the headings of the appropriate department. The credit weights given are for students who have graduated from appropriate Quebec CEGEP programs; students who do not possess a Diplome d'études collégiales (DEC) are normally required to complete an additional 30 credits.

Normally, Bachelor of Education programs may only be followed on a full-time day basis.

Admission is competitive and it may not be possible to accept all applicants who meet the minimum requirements.

- For "Bachelor of Education Secondary Program", see section 6.5.1.1, page 196. A 120-credit program offered by the Department of Integrated Studies in Education.
- For "Bachelor of Education Kindergarten and Elementary Program", see section 6.5.1.4, page 199. A 120-credit program, offered by the Department of Integrated Studies in Education.
- For "Bachelor of Education Kindergarten and Elementary Program (Jewish Studies Option)", see section 6.5.1.6, page 199. Students taking this option take 126 credits, offered by the Department of Integrated Studies in Education.
- For "Baccalauréat en enseignement du français langue seconde", see section 6.5.1.7, page 199. A 120-credit program, offered by the Department of Integrated Studies in Education jointly with the Université de Montréal.
- For "Bachelor of Education in Teaching English as a Second Language", see section 6.5.1.8, page 200. A 120/121-credit program offered by the Department of Integrated Studies in Education.
- For "Bachelor of Education Physical Education", no new students will be admitted to this program; refer to previous Calendars for program details.
- For "Bachelor of Education Physical and Health Education", see section 6.6.1.1, page 205. A 120-credit program offered by the Department of Kinesiology and Physical Education.
- For "Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education Program)", see section 6.5.1.2, page 197. A 143/144-credit program offered jointly by the Department of Integrated Studies in Education and the Schulich School of Music. See also section 9.6.5 "B.Mus./B.Ed. Bachelor of Music and Bachelor of Education Concurrent Program".
- For "Concurrent Bachelor of Science (Major or Major Concentration with a Minor for Teachers) and Bachelor of Education Secondary Program", see section 6.5.1.3, page 198. This program is offered jointly by the Department of Integrated Studies in Education and the Faculty of Science.
- A student who successfully completes any of the above programs, and meets other requirements set out by the MEQ (Ministère de l'Éducation du Québec)) is recommended for

### 6.2 Faculty Programs
The Faculty of Education offers three different kinds of programs.

#### Undergraduate Programs
The Faculty offers programs leading to the Bachelor of Education (B. Ed.) degree for those wishing to become teachers, and a B.Sc. (Kinesiology). Advanced standing may be given to those already holding a university degree.
6.2.1.1 General Admission Requirements
Except for the Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) program for which application should be made to the Schulich School of Music (refer to section 6.2.1.2 "Additional Admission Requirements" and to section 6.5.1.2 "Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) Program"), application for all Bachelor of Education programs should be made to:

Admissions, Recruitment and Registrar’s Office
McGill University
845 Sherbrooke Street West
Montreal, QC H3A 2T5
Telephone: (514) 398-3910
Fax: (514) 398-4193
Website: www.mcgill.ca/applying

For application procedures and admission requirements for the Bachelor of Education and Bachelor of Science (Kinesiology) programs, see “2006-07 Undergraduate Admissions Guide (Appendix A)” or the Website: www.mcgill.ca/applying.

The Faculty of Education endorses the philosophy that teachers with diverse backgrounds should be available to the community and that Faculty programs be equally open to male and female applicants.

Residents of Canada 23 years of age or older who lack the academic qualifications required for admission may apply for entry as mature students. Please refer to “2006-07 Undergraduate Admissions Guide (Appendix A)” or at the Website: www.mcgill.ca/applying.

6.2.1.2 Additional Admission Requirements
Applicants to the B.Ed. programs in Teaching French as a Second Language, Baccalauréat en enseignement du français langue seconde, and the PIF Option are required to pass written and oral language tests set by the Department of Integrated Studies in Education. Please call (514) 873-3210 for an appointment.

Although no additional prerequisite courses are required, the Faculty recommends that applicants to the B.Ed. Secondary, Science & Technology, and B.Ed. Physical & Health Education programs have appropriate background science and mathematics courses, i.e., biology, chemistry, physics and mathematics. Students having other backgrounds will be considered for admission but will be required to complete prerequisite courses in mathematics and science that may increase the number of credits required for the degree.

6.2.1.3 Transfers and Readmission
Students interested in transferring to the Faculty of Education (Inter-Faculty) or transferring to a different program within the Faculty of Education (Intra-Faculty) can apply by completing the on-line application available through the Student Records Menu on Minerva. Former McGill students who wish to return to complete their degree (and have not completed a degree at another university), should apply for Readmission by completing the on-line application available through the Student Records Menu on Minerva.

Applicants to the teacher education programs are required to submit a letter stating why they wish to study for this profession, and provide information on any related experience.

Further information is posted on the Faculty Student Affairs Office Website at www.mcgill.ca/edu-sao/admissions/, as well as in section 3.3.12 “Inter-Faculty Transfer” of this Calendar.

6.2.1.4 Advanced Standing/Transfer Credits
Advanced standing credit will be granted on an individual basis depending upon the student’s academic background. A minimum of 60 credits must be completed at McGill in order to obtain a McGill degree. Courses taken more than 5 years before the time of admission are not permitted in subjects where there have been substantial content changes, nor in any pedagogy courses specific to the Quebec K-11 curriculum. Courses more than 5 years old in other subject areas may be considered on an individual subject basis by the program director. Please note that transfer credit evaluation can only be determined after the formal application and all necessary supporting documents have been received by the Admissions, Recruitment and Registrar’s Office. Students who wish to request a review of their advanced standing allocation must do so in the first year of their program. For more details, see “2006-07 Undergraduate Admissions Guide (Appendix A)”.

Students with formal teaching experience acquired before entering the B.Ed. programs may, under certain circumstances, be granted exemption for the first year Field Experience. Requests must be submitted with supporting documentation to the Director of the Office of Student Teaching upon confirmation of admission to the program. Detailed information is posted on the Office of Student Teaching Website at www.mcgill.ca/ost.

Once enrolled in the B.Ed. program, students may not normally apply retroactively for credit obtained in other programs.

6.2.1.5 Quebec Teacher Certification
Please note that graduates of teacher education programs are recommended by the University for Quebec Certification to the Quebec Ministère de l’Education, du Loisir et du Sport (MELS).

Teacher Certification in Quebec is the responsibility of the MELS. Students who complete requirements for the Bachelor of Education degree and who meet the MELS requirements (specified below) are recommended for certification.

All graduates of the 120-credit Bachelor of Education Teacher Education programs may apply for a permanent Teaching Diploma (Brevet) immediately upon graduation.

In order to be eligible for a “Permit to Teach” or a permanent Quebec Diploma, candidates must be either Canadian citizens or Permanent Residents.

In addition to meeting these requirements, candidates for Teacher certification must be recommended by McGill University in a series of core professional competencies specified in “Teacher Training Orientations – Professional Competencies” (MEQ 69-2099A).

Holders of a temporary Permit or of a permanent Diploma wishing to teach in another province or in another country must apply directly to the Teacher Certification Agency in the relevant province or country. Similarly, teachers from other provinces or countries who wish to teach in Quebec must apply to the Ministère de l’éducation, du Loisir et du sport (MEQ) 600 Fullum, 2e étage Montréal, QC H2K 4L1 Telephone: (514) 873-5224 (French) (514) 873-3210

It is recommended that applicants intending to teach in other provinces obtain information beforehand concerning the requirements for certification in the appropriate province.

Fluency (oral and written) in the language of instruction is a requirement for all those seeking certification.
6.2.2 Programs of Professional Development

The Faculty of Education offers programs of professional development in several fields. All such programs are 30 credits, unless otherwise indicated, and may be completed through part-time study. They are intended to provide an opportunity for teachers and other educators to enhance their existing knowledge and skills or to develop new ones, and thus are normally available only to those who are already certified as teachers.

Detailed information regarding general regulations, admission requirements and program profiles for the following certificates and diplomas may be found in the section for offering departments.

Faculty of Education
Office of Continuing Education
3700 McTavish Street, Room 243
Montreal, QC, H3A 1Y2
Telephone: (514) 398-7043
Fax: (514) 398-4679
Website: www.mcgill.ca/cont-ed-edu/

The Faculty of Education offers 30-credit certificate and diploma programs to university graduates in the following fields:

Courses offered through Continuing Education and Summer Studies
A wide range of courses, enabling students either to acquire pre-requisite credits or to earn credit towards their degree, is offered through Continuing Education and Summer Studies. For courses offered, please check Minerva.

Department of Educational and Counselling Psychology
Certificate in Educational Technology
Admission to this Certificate is temporarily suspended.
Certificate in Inclusive Education
Diploma in Human Relations and Family Life Education
Further information is available from the program secretary at (514) 398-4248.
Diploma in Psychology and Education of the Gifted
Admission to this Diploma is temporarily suspended.

Department of Integrated Studies in Education
Certificate in Teaching English as a Second Language (TESL)
This program will not accept students in 2006-2007.

6.2.3 Programs for First Nations and Inuit

The following programs are offered for First Nations and Inuit teachers by the Faculty of Education. Information can be obtained by contacting:

Office of First Nations and Inuit Education (OFNIE)
3700 McTavish Street, Room 244
Montreal, QC, H3A 1Y2
Telephone: (514) 398-4533
Fax: (514) 398-2553
Website: www.education.mcgill.ca/ofnie

Detailed information about the following programs may be found in section 6.5.2 “Programs for First Nations and Inuit”, B.Ed. for Certified Teachers (Elementary Education)
Certificate in Aboriginal Literacy Education
Certificate in Education for First Nations and Inuit
Certificate in First Nations and Inuit Student Personnel Services
This program is offered by the Department of Educational Psychology and Counselling through the Office of First Nations and Inuit Education. Restrictions apply to enrolment.
Certificate in Middle School Education in Aboriginal Communities
Certificate in First Nations and Inuit Educational Leadership
Certificate in Aboriginal Education for Certified Teachers

6.3 Faculty Regulations Undergraduate Programs

Please consult the General University Information section for regulations and procedures regarding registration, fees, course load, course change (drop/add), withdrawal, verification, examinations, inter-university transfer, and graduation. In addition, the following section provides regulations specific to Faculty of Education students.

Note: Each student in the Faculty of Education must be aware of and comply with the Faculty regulations as stated in this Calendar. While departmental and Faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for complete and correct course selection and registration, for compliance with, and completion of, program and degree requirements, and for the observance of regulations and deadlines, and for academic records, rests with the student. It is the student’s responsibility to seek guidance. Misunderstanding will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

Advising
Refer to section 3.4 “Undergraduate Advising”, and the Student Affairs Website, www.mcgill.ca/edu-sao/advisinginfo/advisors, for further information.

All newly admitted students are required to attend the academic advising sessions scheduled during August prior to the beginning of the Fall term. For a detailed description of advising and registration procedures, students should refer to Welcome to McGill, which is sent to all newly admitted students by Admission, Registrar’s and Recruitment Office upon their acceptance, as well as the Student Affairs Website, www.mcgill.ca/edu-sao/advisinginfo/new.

Academic advising for all returning students takes place in March for the upcoming academic year. Detailed advising and registration information is posted on the Student Affairs Website: www.mcgill.ca/edu-sao/advisinginfo/returning. Students entering their graduating year are encouraged to meet with their adviser during this advising period.

Assistance is also available by e-mailing sao.education@mcgill.ca.

Students are reminded that advisers are available to assist them with program planning; however, students are ultimately responsible for their academic record.

6.3.1 English Language Requirement

The Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS), and the Faculty of Education require that all students in teacher education programs demonstrate their proficiency in the language of instruction. To fulfill this obligation, all students are required to successfully pass an English Language Proficiency Test in the Fall term of their first year of admission to the Faculty. The test will be administered in the December examination period. Students who fail the test for the first time and who wish to remain in the program will have adequate opportunities to improve the quality of their English language skills. Students who were unsuccessful in their first test in the first year in the program will be required to register and take the test again in the Fall term of the second year of the program. Students who fail the second test will be placed in unsatisfactory standing and must withdraw from the program. Students who fail to register for the test in the Fall term of their first year in the program will be given only one opportunity to pass the test, in the Fall term of their second year. Students admitted with advanced standing requiring fewer than 75 credits who fail EDEC 215 at the first attempt in December must pass the examination in the following June.

Note: This requirement does not apply to students in the B.Ed. TFSL or the Certificate in Education for First Nations and Inuit programs.
Language Requirement for Applicants to B.Ed. TESL, TFSL Programs
Applicants to the B.Ed. TESL or TFSL programs are required to pass written and oral language tests in order to fulfill the admission requirements of these two programs.

6.3.2 Course Information

Course Load
Undergraduate Education programs can only be followed on a full-time basis and part-time study is not normally permitted. Students must take a minimum of twelve (12) credits per term unless the Associate Dean (Teaching, Learning and Students) gives them special permission. Special permission must be requested prior to the end of Course Add/Drop period.

Any absence or reduction in course load that may impact the regular progression of a student’s program must have written approval by the Associate Dean (Teaching, Learning and Students).

The normal course load per term is 15 credits. Students whose GPA is above 3.00 may take up to 18 credits per term. Overloads are not allowed in major field experience terms for students in the B.Ed. programs.

Time Limit for Completion of Degrees
Students are expected to complete their program in no more than five (5) years after their initial registration for the degree. Students who enter in a freshman year become subject to these regulations one year after their initial registration. Students who exceed these limits must apply to the Faculty for permission to continue.

Course Requirements
All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. A failure (F, J, KF, WF) in any level of field experience or the English Language Proficiency Test (EDEC 215), second attempt, places a student in an unsatisfactory standing requiring withdrawal from the University. Further details on requirements for field experience are listed in section 6.3.6 “Student Teaching/Field Experience”.

Courses Taken as Transfer Credit
Students may, with the approval of their adviser and the Student Affairs Office, elect to register at another university for three (3) credits, or in exceptional cases, six (6) credits per term towards their degree. This privilege will be granted if there are valid academic reasons. Only grades of C or better are accepted for transfer credit. Grades of C-, P, S are not acceptable for transfer credit. Please refer to section 3.6.5 “Transfer Credits” for further information. Students are not permitted to take transfer courses during their graduating term.

Courses Taken under Satisfactory/Unsatisfactory Option
Required or Complementary courses cannot be taken under this option. Please consult section 3.3.6 “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”.

Course Equivalencies
For the Bachelor of Education programs, the following 3-credit courses are considered equivalent:

- EDEC 233 First Nations and Inuit Education (formerly EDEE 441)
- EDEC 248 Multicultural Education
- EDEC 410 Multi-cultured/Multi-racial Class (retired Fall 2005)
- EDER 464 Intercultural Education (retired Fall 2005)

(Only one of these courses may be taken for credit.)

Also for the Bachelor of Education programs, the following 3-credit courses are considered equivalent:

- EDES 201 Effective Written Communication
- EDEC 202 Effective Communication
- EDEC 203 Communication in Education

(Only one of these courses may be taken for credit.) Credit for elementary Computing ACOM150, offered by the Faculty of Arts, will not be given if taken concurrently with or after EDPT 200.

Dress Regulations
All students enrolled in teacher certification programs are advised that school boards and individual schools may have regulations concerning acceptable attire. Students must adhere to any such regulations.

Students in Kinesiology and Physical Education programs are required to wear appropriate clothing for activity courses as approved by the instructor(s). Students may also be responsible for providing some items of personal equipment.

6.3.3 Registration

Course Selection
Students in Faculty of Education programs should register for the courses as outlined in the individual program overviews provided at the time of admission. The B.Ed. programs are very structured and students are advised to follow the sequence as outlined.

Student must register on-line using Minerva. Information is distributed at the time of admission and is also available on the Faculty Website, www.mcgill.ca/edu-sao.

Students in the B.Ed. programs who are required to be registered for Field Experience should consult section 6.3.6 “Student Teaching/Field Experience” for more information.

Withdrawals: There are three course withdrawal periods published in the Calendar and on the University Website www.mcgill.ca/students. Approval to withdraw after the published deadlines will be granted only in exceptional circumstances.

6.3.4 Attendance

The pattern of attendance necessary to satisfy the requirements of coursework will vary according to the nature of different subjects and the professors’ approaches to them. A course constitutes a contractual, professional, academic and social obligation between the professor and the student. It is, therefore, the responsibility of the professor to make students aware of the unique requirements of a course and the manner in which they may be fulfilled, and the responsibility of the student to meet these requirements.

Students will not be allowed to register for, or continue to attend, intensive (6-week to 7-week blocked) Education courses if they miss the entire first six hours of the course.

Field Experience Courses: Punctual attendance is required at the assigned school for the entire Field Experience. Absences are only excused in exceptional circumstances, and must be reported immediately to both the Faculty Office of Student Teaching and the cooperating teacher in the school to which they are assigned. Students will be required to make up for any absences.

Students enrolled in Teacher Education Programs should be aware that Field Experiences will not be interrupted during the University-scheduled Study Break. Refer to the Calendar of Dates.

Note: Some Field Experiences, normally second year, take place during the spring/summer term.

6.3.5 Grading and Examination

Method of Evaluation
Every instructor shall provide, with every course outline, a description of the means of evaluation to be used in the course. This includes:

- whether there will be a final examination in the course
- how term work will affect the final mark in the course
- how term work will be distributed through the term
- whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade.
**Academic Integrity**

The Code of Student Conduct and Disciplinary Procedures includes sections on plagiarism and cheating. The Code is included in the Student Rights and Responsibilities Handbook. Please refer to General Policies and Information, section 3.1.6 “Academic Integrity”, for further information.

**Incomplete Grades**

Instructors may grant an extension for the submission of required term work if they feel the student’s request is reasonable. In such cases the student is responsible for submitting an application for an extension (forms are available from the Student Affairs Office), along with supporting documents for the instructor’s approval before the end of the course. The deadline date for which the work is to be completed must be included. In such cases, the instructor will submit a grade of “K” (incomplete). The maximum extension for the submission of grades to the Student Affairs Office is as follows:

- Fall term courses - April 30
- Winter term courses - July 30
- Summer term courses - October 30

NB: Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time. If marks to clear the K grades have not been submitted to the Student Affairs Office by the above dates, the K is automatically changed to a KF, which counts as an F in the GPA. No additional extensions may be granted without the approval of the Associate Dean (Teaching, Learning and Students).

**Evaluation of Student Teachers – Field Experience Courses**

Students are responsible for familiarizing themselves with the objectives, evaluation criteria and forms for each level of Field Experience. Detailed information is included in the Student Teaching Handbook, available on the Website www.mcgill.ca/ost/handbooks.

A failure in any Field Experience places a student in unsatisfactory standing, requiring withdrawal from the teacher education program. Students with a grade of D who wish to remain in the program will be required to repeat the Field Experience course during the next normally scheduled session. Students will only be permitted to repeat a Field Experience course once during their program.

**Evaluation of Language Proficiency**

See section 6.3.1 “English Language Requirement”.

**Examinations**

Formal final examinations are held during an examination period following the term in which the course is given (Fall and Winter terms only). The dates of the examination periods are listed in the Calendar of Dates. Students must not make travel arrangements to leave Montreal prior to the scheduled end of any examination period. Not all courses have final examinations; standing in these courses is determined on the basis of term work and class tests. Students should refer to the Examinations section of the Calendar, and the Website www.mcgill.ca/student-records/exam for information about examinations.

**Supplemental Examinations**

Students may apply for permission to write a supplemental examination for certain courses that have formal examinations. The following conditions apply:

- students must be in satisfactory or probationary standing;
- students must have received a final grade of D, J, F, or U in the course;
- students must avail themselves of this privilege at the time of the next supplemental examination period;
- students must have submitted an application to write a supplemental examination before the first Friday in March for Fall courses, and before the second Friday in July for Winter courses and courses that span Fall/Winter.

Students should be aware of the following:

- special permission is required to write supplemental exams totaling more than 7 credits;
- only one supplemental examination is allowed in a course;
- the supplemental result may or may not include the same proportion of class work as did the original grade. Students should consult with the instructor;
- the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA. Supplemental applications are available at the Student Affairs Office. A non-refundable fee for each supplemental paper is payable at the time of application. Students must confirm supplemental examination dates with the faculty offering the course.

**Reassessment and Rereads**

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. If, after such discussion, students want to have a formal final examination or major paper reread, they must apply in writing to the Student Affairs Office.

Application for rereads must be made by March 31 for courses ending in the Fall term and by September 30 for courses ending in the Winter term. Students are assessed a fee for formal rereads of a final examination or major paper, which will be refunded only if the reread results in an increased letter grade. Requests for rereads in more than one course per term will not be permitted. Grades may be raised, lowered or unchanged as the result of a reread.

Application for rereads in courses in the Faculty of Education are subject to the deadlines, rules and regulations of the relevant faculty. Any request to have term work re-evaluated must first be made directly to the instructor concerned.

**6.3.6 Student Teaching/Field Experience**

The Office of Student Teaching (OST), www.mcgill.ca/ost, is responsible for arranging the placement and evaluation of all student teachers in supervised Field Experiences.

**Field Experiences:**

- Are required courses (with the subject code EDFE) for all students in the B.Ed. Program from 1st through 4th year.
- Are the sole responsibility of the OST, and under no circumstances should students make their own placement arrangements.
- Should be taken in required sequence.
- Require that 'Newly Admitted' and 'Returning Students' follow registration procedures (see below) or risk not being placed in a host school.
- Are completed in English schools in the province of Quebec in the majority of cases, with the exception of the B.Ed. TESL Program Field Experiences which take place in French schools in the province of Quebec.
- Can be specialized in some circumstances. Refer to the OST Website for information regarding such opportunities (distance, special needs, resource room, private school etc.).
- Could require that students travel some distance to their host school and should therefore budget a sum of money to offset such travel costs.
- Require that students be placed at host schools for specific periods of time ranging from 10-40 days.
- Continue during the University-scheduled Study Break in the Winter term (refer to the Calendar of Dates).
- Continue through May in the Summer term (refer to the OST Website).
Newly Admitted Students:
  • Must be registered for their first year Field Experience and submit their Student Teaching Placement form by August 31.
  • Who have acquired formal teaching experience prior to admission to the Bachelor of Education program may be granted exemption for the 1st year Field Experience. Written requests must be made to the Director of the OST by the same deadline that governs submission of the Student Teaching Placement Form (August 31). Requirements for supporting documentation can be found on the OST Website.

Returning Students:
  • Must register for Field Experience on Minerva at least three months prior to commencement of the term in which the Field Experience takes place.
  • Must submit a Student Teaching Placement Form to the OST by the same deadline.
  • Must be in satisfactory standing and have satisfied all pre-require and co-requisite course requirements (refer to www.mcgill.ca/edu-sao/advisinginfo/returning).
  • In the B.Ed. K/Elem, B.Ed. Secondary or B.Ed. TESL who wish to transfer from one program to the other will not be required to repeat 1st year Field Experience.

Because Field Experience registration procedures pertaining to ‘Newly Admitted’ and ‘Returning Students’ vary somewhat for students in the Physical and Health Education Program from those outlined above, those students are required to contact their program advisor for all Field Experience registration information, and to read the information pertaining to the Physical and Health Education Program on the OST Website.

Field Experience Protocols
Students are responsible for familiarising themselves with those guidelines governing their pedagogical and professional behaviour whilst on Field Experience (refer to the OST Website).

Students should not engage in any type of employment, nor register for any course that might interfere with the successful outcome of a Field Experience.

Field Experience Evaluation
Where a student is experiencing serious difficulties in a Field Experience but has demonstrated some potential to successfully reach the required standard, the student will be granted a “D” grade. In this case, the Director of the OST has the authority to grant special permission for a student to repeat a Field Experience during the next regularly scheduled session of the FE. This special permission will be granted once only in a student’s program.

Students must receive a Pass grade in order to proceed in the B.Ed. program. Failure (F, J, KF, WF) in any Field Experience places a student in “Unsatisfactory Standing”, requiring withdrawal from the Teacher Education Program. Students who fail in a Fall term Field Experience may be allowed to continue taking courses in the program to enable transfer to another faculty.

A student may appeal a failing grade or termination of a Field Experience by making a formal application to the Associate Dean (Teaching, Learning, and Students).

Withdrawal from Field Experience
• Withdrawal for any reason before commencing a Field Experience must be done at least 2 weeks prior to the start date of the Field Experience. The student is responsible for notifying the OST in writing by this deadline.
• Students having to withdraw for any reason from a field experience that is underway must immediately inform the OST. Based on the circumstances around the withdrawal, the Director of the OST will determine the final outcome of that Field Experience.

6.3.7 Code of Professional Conduct
Faculty of Education programs have professional components and field placements. In all aspects of any program, on campus and off, students are expected to demonstrate ethical, responsible, and professional behaviour in the performance of their duties, to conduct themselves in accordance with the law (e.g., Youth Protection), and to meet the expectations of schools, boards and other host institutions receiving them for field placements. This applies to all aspects of professional conduct, including but not limited to respect for persons, property and confidentiality, appropriate dress and punctuality. Failure to meet these expectations, regardless of performance in courses or other formal program requirements, will be taken into account in the assessment of the students’ overall academic standing in the program and, in the most serious instance, may result in a requirement to withdraw from the program.

A. PREAMBLE - A STUDENT-CENTRED PERSPECTIVE

Mandate
A joint subcommittee consisting of members from two standing committees of the Faculty of Education (Faculty of Education Ethical Review Board and Student Standing) was created to develop a Code of Ethics for Student Teachers and to examine the ways in which this Code will be communicated to students, faculty members and educational partners.

Goals and Rationale
The interests of the two Standing Committees of the Faculty of Education in promoting appropriate ethical and professional conduct have led us to develop the following Code of Ethics for Student Teachers. This code seeks to respond to and address the following needs:
• The Code addresses the interdependent duties, rights and responsibilities of student teachers, faculty members and educational partners.
• By addressing common issues and needs, the Code seeks to articulate and make explicit ethical principles that transcend disciplinary boundaries. These principles reflect the fundamental values that are expressed in the duties, rights and responsibilities of all involved in Teacher Education.
• The Code requires a reasonable flexibility in the implementation of common principles. It is designed to help those involved in Teacher Education, as a matter of sound ethical reasoning, to understand and respect the contexts in which they work and accommodate the needs of others.
• The Code seeks to encourage continued reflection and thoughtful response to ethical issues. It does not seek definitive answers to all ethical questions or situations. Rather, it seeks to outline the guiding principles to ethical conduct and to identify major issues which are essential to the development and implementation of this Code.

Context of an Ethics Framework for Student Teachers
The principles and norms guiding ethical conduct are developed within an ever-evolving complex societal context, elements of which include the need for reflective action and ethical principles. Education is premised on a fundamental moral commitment to advance and construct knowledge and to ensure human understanding and respect for individual and collective well-being and integrity.

The moral imperative of respect translates into the following ethical principles that assume a student-centred perspective as articulated in the Quebec Curriculum Reform and Competencies outlined for Teacher Education.

B. ACADEMIC FREEDOM AND RESPONSIBILITIES
Teachers enjoy, and should continue to enjoy, important freedoms and privileges. However, with freedoms come responsibilities and ethical challenges. This Code of Ethics is in keeping with the philosophy and spirit of the New Directions that are embedded in the document “Teacher Training: Orientations, Professional Competencies” (Ministry of Education 2001) and the reflective practice literature.
The role of the teacher and the contexts of teaching have changed. Thus, new resources (knowledge, skills, attitudes) are required to practice the profession and meet the challenges of teaching and learning in whatever contexts student teachers may find themselves and to engage in professional development individually and with others.

C. ETHICS AND LAW
"Teaching is governed by a legal and regulatory framework" (MEQ 2001, p. 120). The law affects and regulates the standards and norms of teaching behaviours in a variety of ways such as respecting privacy, confidentiality, intellectual property, competence. Human rights legislation prohibits discrimination and recognizes equal treatment as fundamental to human dignity and well being. Teachers should respect the spirit of the Canadian Charter of Rights and Freedoms, particularly the sections dealing with life, liberty and the security of the person as well as those involving equality and discrimination and the Education Act that sets out the obligations and rights of teachers.

D. GUIDING ETHICAL PRINCIPLES
Ethical student teachers should respect the following guiding ethical principles:
1. Respect for Human Dignity
   • Speaks and acts towards all students with respect and dignity; and deals judiciously with them at all times, always mindful of their individual rights and personal sensibilities.
   • Respects the dignity and responsibilities of cooperating teachers, peers, principals, parents and other professionals or para-professionals within the school, school board and community.
2. Respect for Vulnerable Persons
   • Respects and recognizes ethical obligations towards vulnerable persons. This principle recognizes that students are in a vulnerable position and that student teachers are in a privileged relationship with students and their families and will always refrain from exploiting that relationship in any form or manner.
3. Respect for Confidentiality and Privacy
   • Respects the confidential nature of all information related to students and their families and will share such information in an appropriate manner only with those directly concerned with their welfare.
   • Respects the confidential nature of all information related to all school personnel and will share such information in an appropriate manner.
4. Respect for Justice
   • Respects and recognizes the right of individuals to be treated with fairness and equity and the importance of avoiding conflicts of interest.
5. Respect for Safety of Students
   • Respects the right of individuals to expect that student teachers will engage in practices that aim to ensure the physical, psychological and emotional safety of students.
6. Respect for Existing Ethical Codes and Professional Standards
   • Respects the authority, roles and responsibilities of the cooperating teacher and agrees to adhere to the responsibilities and obligations for teachers as outlined in the Education Act, Faculty and University handbooks as well as all local agreements by host school boards and schools.
7. Balancing Harm and Benefits
   • Acknowledges that any potentially harmful practices (e.g., science labs and physical education activities) must be balanced with anticipated benefits and conducted in a prudent, informed manner.

E. PUTTING PRINCIPLES INTO PRACTICE: VENUES FOR COMMUNICATION
More than one principle may apply to a given case or situation.
Readmitted Unsatisfactory Standing

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing will have their standing changed to readmitted unsatisfactory standing. Their course load is specified in their letter of readmission, as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection. Students who have failed EDEC 215 twice must pass the examination as part of the readmission criteria.

 Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the Winter term. Students in interim unsatisfactory standing will not be permitted to proceed with the next normally scheduled Field Experience.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty, so they may not continue in their program.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

• Students will be placed in unsatisfactory standing (Winter or Summer term) or interim unsatisfactory standing (Fall term) if their CGPA falls or remains below 1.50.
• Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing if their TGPA falls below 2.50 and their CGPA is below 2.00.
• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.
• Students who receive a failure (F, J, KF, WF) in any level of student teaching/Field Experience course are automatically placed in unsatisfactory standing and must withdraw from the program.
• Students in Teacher Education Programs who receive a failure in the English Language Requirement Test for the second time are automatically placed in unsatisfactory standing and are required to withdraw from the program.

Students in either the Concurrent B.Sc./B.Ed. or B.Mus./B.Ed. program who receive an F or J in any English Field Experience course, or fail the English Language Proficiency Test for the second time, are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent program. They may, however, contact the Faculties of Science or Music regarding application to their general degrees.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean no later than May 1 for readmission to the Fall term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently. Students who were placed in unsatisfactory standing due to a failure in student teaching/Field Experience cannot apply for readmission for at least one full year. Please see section 6.2.1.3 "Transfers and Readmission".

Incomplete Standings

Standing awaits deferred or supplemental exams. Must clear K's, L's or Supplements.

Standing incomplete.

Students with incomplete standings in the Winter or Summer term may register for the Fall term, but their standing must be resolved by the end of the course change period for that term; students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory may not continue in their program.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean of Student Affairs as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Please see section 6.2.1.3 "Transfers and Readmission".

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

6.3.9 Graduation Requirements

To be eligible for a B.Ed. or the B.Sc. (Kinesiology) degree, students must fulfill all Faculty and program requirements. This includes completing the minimum credit requirements for the degree as stipulated in the letter of acceptance; obtaining a grade of C or better in all required and complementary courses; and achieving a minimum cumulative grade point average (CGPA) of 2.00. Students must satisfactorily complete a minimum of 60 credits at McGill University towards the fulfillment of the degree requirements. In addition, students must complete specific components of their program at McGill.

Students enrolled in Kinesiology and Physical Education programs are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

Students must complete the degree requirements within five (5) years of admission to a program of 90 credits or more, and within four (4) years of admission to a program of 60 credits. Students in the part-time B.Ed. for Certified Teachers and B.Ed. (Vocational) programs are allowed a maximum of 12 years to complete the requirements for the degree.

It is the student’s responsibility to ensure that all Faculty requirements are met before graduation.

In their graduating year all students should check with their adviser to make sure that they will meet all program requirements in time for graduation. It is essential that students in their final year indicate the expected date of graduation on Minerva and verify this date on Minerva. When a final-year student changes the expected date of graduation, the student must notify the Student Affairs Office immediately. It is also the student’s responsibility to complete the required forms for teacher certification, and to check that his/her name appears on the graduation list. For further information, contact the Student Affairs Office at (514) 398-7042.

Students are not permitted to take courses outside McGill University during the last term prior to graduation. Students who fail to graduate as expected and who do not re-register must apply to the Associate Dean (Teaching, Learning and Students) to graduate. Application to graduate must be made sufficiently in advance of the expected graduation date to allow the Faculty to verify the student’s record.

Information pertaining to the convocation ceremonies can be obtained on the McGill Website: www.mcgill.ca/secretariat/convocations.

6.3.10 Undergraduate Program Awards

Dean’s Honour List Designation for Graduating Students

The designation Dean’s Honour List may be awarded to graduating students under the following conditions:

• students must be among the top 10% of the Faculty’s graduating students;
• students must have completed a minimum of 60 McGill credits to be considered;
• the designation is based on the cumulative academic record (CGPA).
Dean's Honour List Designation for In-course Students
The designation Dean's Honour List may be awarded to in-course students under the following conditions:
• students must be among the top 10% of the Faculty's students;
• students must have completed at least 27 graded credits during the academic year;
• the designation is based on the sessional GPA.

Scholarships and Awards
Various scholarships and awards are open to both graduating and in-course students. Full details may be found in the Undergraduate Scholarships and Awards Calendar available on the Web at www.coursecalendar.mcgill.ca.

6.4 Department of Educational and Counselling Psychology
Faculty of Education
3700 McCatchi Street, Room 513
Montreal, QC, H3A 1Y2
Telephone: (514) 398-4241
Fax: (514) 398-6968
Website: www.mcgill.ca/edu-ecp

Chair — Susanne P. Lajoie
Emeritus Professors
Eigil Pedersen; B.A.(Sir G. Wms.), M.A.(McG.), Ed.D.(Harv.)
Howard A. Stutt; B.A.(Queen’s), B.Ed., M.Ed.(Montr.), F.C.C.T.

Professors
Mark W. Aulls; B.S.(Ball St.), M.Ed.(Ind.), Ed.D.(Georgia)
Robert J. Bracewell; B.S., M.A.(McM), Ph.D.(Tor.)
Jacob A. Burack; B.A.(Coll.), M.S., M.Phil., Ph.D.(Yale)
Jeffrey L. Derevensky; B.A.(C.W. Post), M.A., Ph.D.(McG.)
Janet G. Donald; B.A., M.A.(W. Ont.), Ph.D.(Tor.)
Carl H. Frederiksen; B.A.(Harv.), M.A., Ph.D.(Conn.)

Susanne P. Lajoie; B.A., M.A., Ph.D.(McG.), Ph.D.(Stan.) (James McGill Professor)
Lynn McAlpine; B.A.(McG.), M.A.(C’dia), Ph.D.(Tor.)

Associate Professors
F. Gillian Bramwell; B.A., M.A.(Sask.), Ph.D.(C’dia)
Alainoush Saroyan; B.A.(Pahlavi), M.Ed.(IZU), Ph.D.(McG.)
Bruce M. Shore; B.Sc., M.A., Ph.D.(Calg.)
Cynthia B. Weston; B.A. (G’town), M.L.S.(SUNY), D.Ed.( Wash.)

Professor

F. Gillian Bramwell; B.A., M.A.(Sask.), Ph.D.(C’dia)
Alainoush Saroyan; B.A.(Pahlavi), M.Ed.(IZU), Ph.D.(McG.)
Bruce M. Shore; B.Sc., M.A., Ph.D.(Calg.)
Cynthia B. Weston; B.A. (G’town), M.L.S.(SUNY), D.Ed.( Wash.)

Assistant Professors
Martin Drapeau; B.A. (Montr.), B.A. Ps.(UQTR), M.Ps.(Laval), Ph.D.(Montr.)
Frederick Grouzet, M.Sc. (Univ Blaise Pascal), Ph.D(UQAM)
Jeeson Park; B.A., M.A.(Yonsei), Ph.D.(Penn.)
Robert Savage; B.A.(Oxf.), M.Sc.(Camb.), M.Sc., Ph.D.(Lond.)
Steven R. Shaw; B.S., M.Ed., Ed.S., Ph.D. (Flor.)
Ronald Stringer; B.Sc., M.A., Ph.D.(Tor.)
Victoria Talwar; M.A. Hons(St. Andrews), M.A., Ph.D. (Qu.)

Adjunct Professors
Susan Butler; B.Ed. (McG.), M.A., Ph.D (Lond.)
Franco Carnevale; B.Sc,N, MScA, M.Ed., M.Sc., Ph.D(McG.)
Bertha Dawang; B.A.(Sir G. Wms.), M.Ed.(McG.)
Marcia A. Delcourt; M.A.B., B.Sc.(Bloomgs), M.A., Ph.D.(Conn.) (Western Connecticut)
Michael J. Dixon; B.A., B.S.(Trent), M.A., Ph.D.(C’dia) (Douglas Hospital)
Peter J. Doehring; B.A.(McG.), M.A., Ph.D.(C’dia) (Douglas Hospital)
Calvin Kalman; B.Sc. (McG.), M.A., Ph.D.(Roch.)
Annette Koerner; B.A., M.A., Ph.D.(Leipzig)
Elsa Lo; B.A.(Qu.), B.A.(Dal.), M.A., Ph.D.(McG.)
Leonard Shenker; B.Sc.(CCNY), Ph.D.(McG.)
David Shore; B.Sc.(McM), M.A., Ph.D. (Br.Coll.)
Laura Winer; B.A., M.A., Ph.D.(C’dia)

Associate Members
Mary H. Maguire; B.A., M.Ed., M.A.(Montr.), M.Ed.(McG.), Cert.Renting(McG.), Ph.D(Ariz.)
Joseph Rochford; B.A.(McG.), M.A.(Qu.), Ph.D.(C’dia)
Lalit K. Srivastava; B.Sc., M.Sc.(Allahabad), Ph.D.(Jawaharlal, New Delhi)
Claire-Dominique Walker; B.Sc.(Collège Calvin, Geneva); Ph.D(Salk Institute and U. of Geneva)

Part-time Instructors
Maureen Baron, Dianne Bateman, Andrew Bennett, Gloria Berdugo, Miriam Berkovic, Sam Bruszeeze, Clara Carpintero, Andrew Chiarella, Scott Conrod, Karen Gazith-Cohen, Erika Franz, Sandy Freedman, Andrew Hum, Judy McBride, Noel McDermott, Sharon Miller, Stephanie Mitelman, Carolyn Nelham, Judith Norton, Monica Oala, Olga Pazzia-Guiducci, Lisa Reisinger, Julie Ann Richards, Kerion Rogen, Christina Rudd, Niki Saros, Charmaine Wagner, Scott Waugh, Caroline Zanni-Dansereau.

Educational Psychology encompasses a) the theoretical and applied study of learning, cognition, and instruction in a variety of educational settings across ages and domains; b) instructional technology and computers as cognitive tools in learning; c) cognitive and social processes in learning; d) evaluation and enhancement of learning and teaching; e) education of learners with special needs or difficulties; f) relationships of these or related phenomena to issues in human development, especially for children and adolescents; and g) the impact of family and community on children’s learning and development. At the undergraduate level, the Department of Educational and Counselling Psychology is responsible for the B.A., see section 4.12.18 “Educational Psychology Minor Concentration”, under the Faculty of Arts, and for a variety of undergraduate courses in the areas of learning, cognition and development, inclusive education, gifted education, educational media and computers, and educational measurement and evaluation.

Professional development, the Department offers diploma or certificate programs in Human Relations and Family Life Education, Educational Technology, Inclusive Education, the Psychology and Education of the Gifted, and First Nations and Inuit Student Personnel Services. For more information, see section 6.2.2 “Programs of Professional Development” and see section 6.2.3 “Programs for First Nations and Inuit”.

At the graduate level, it offers a Graduate Certificate in Counselling Applied to Teaching. In addition, there are graduate programs leading to Ph.D., M.A. (thesis and non-thesis) and M.Ed. degrees in instructional psychology, applied cognitive psychology,
special populations of learners (special needs and gifted education), counselling psychology, school/ applied child psychology, family life education, computer applications in education, adult professional education, and the psychology of gender. For further information, consult the 2006-07 Graduate and Postdoctoral Studies Calendar.

Special services offered by the Department include the McGill-EMSB Gifted Summer School (Explorations), and the Psychoeducational and Counselling Clinic, Neuroscience Lab for Research and Education in Developmental Disorders and the International Centre for Youth Gambling and High Risk Behaviour.

### 6.5 Department of Integrated Studies in Education

Faculty of Education
3700 McTavish Street, Room 244
Montreal, QC, H3A 1Y2
Telephone: (514) 398-4525
Website: [www.mcgill.ca/edu-integrated](http://www.mcgill.ca/edu-integrated)

Undergraduate Programs: Graduate Programs:
Telephone: (514) 398-4527 Telephone: (514) 398-4531
Fax: (514) 398-4529 Fax: (514) 398-4529

**Chair** — Steven Jordan

**Director of Undergraduate Programs** — Caroline Riches

**Director of Graduate Programs** — Carolyn E. Turner

**Director of Music Education** — Joan Russell

**Emeritus Professors**
- Patrick X. Dias; B.A., M.A.(Karachi), B.Ed., Ph.D.(Montr.)
- Wayne C. Hall; B.A., M.A.(Bishop’s) *(William C. Macdonald Emeritus Professor of Education)*

**Professors**
- David Dillon; B.A.(St. Columban’s), M.S.(SW Texas St.), Ph.D.(Texas)
- Ratna Ghosh; C.M., B.A.(Calc.), M.A., Ph.D.(Calg.) F.R.S.C., *(William C. Macdonald Professor of Education)* *(James McGill Professor)*
- Barry Levy; B.A., M.A., BRE(Yeshiva), Ph.D.(NYU)
- Denise Lussier; B.A.(Coll. Jesus Marie de Sillery), M.Ed.(Boston), M.A., Ph.D.(Laval)
- Claudia A. Mitchell; B.A.(Brandon), M.A.(St. Vincent), Ph.D.(Alta.) *(James McGill Professor)*
- Bernhard Shapiro; B.A.(McG.), M.A.T., Ed.D.(Harv.)

**Associate Professors**
- Helen Amoriggi; B.Sc., M.A.(Rhode Is.), Ed.D.(Boston)
- Ann J. Beer; B.A.(Oxf.), M.A.(Tor.), D.Phil.(Oxf.)
- Janet Donin; B.A.(Tor.), M.A.(Ill.), Ph.D.(Calg.) *(joint appoint. with Educational and Counselling Psychology)*
- Michael Doxtater; B.A.(McM.), M.Sc.(C’nell), Ph.D.(C’nell)
- Steven Jordan; B.A.(Kent), M.Sc.(Lond.), Ph.D.(McG.)
- Yarema G. Kelebay; B.A., B.Ed.(Montr.), M.A.(Sir G.Wms.), Ph.D.(C’dia)

**Assistant Professors**
- Spencer Boudreau; B.A.(Don Bosco), B.A., M.A.(Sherb.), Ph.D.(C’dia)
- Eric Caplan; B.A.(Tor.), M.A.(Hebrew), Ph.D.(McG.)
- Michael Hoechsmann; B.A., M.A.(S. Fraser), Ph.D.(Tor.)
- Dip Kapoor; B.Com., MBA., Ph.D.(Alta)
- Bronwen Low; B.A.(Qu.), M.A.(Br. Col.), Ph.D.(York)
- Joan Russell; B.Mus., L.Mus., M.Ed., Ph.D.(McG.)
- Mela Sarkar; B.A.(McG.), M.A., Ph.D.(C’dia)
- Marc Schwartz; B.S., M.Ed.(New Hamp.), Ed.D.(Harv.)
- Shaheen Shariff; B.A., M.A.(S. Fraser)
- Sylvia Sklar; Dip.Ed.(McG.), B.A.(C’dia), M.Ed.(McG.)
- Doreen Starke-Meyerring; B.Ed.(Potsdam), M.A.(North Dakota), Ph.D.(Minn.)

**Faculty Lecturers**
- Linda Cooper; B.A.(C’dia), M.A.(McM.)
- Diane Eyre; B.A.(Montr.)
- Kathleen Greenfield; B.A.(McG.), B.A.(Wat.), M.Ed.(McG.)
- Mark Hegin; B.A.(Wat.)
- Charlotte Hussey; B.A.(Wheaton), M.A.(C’dia), M.F.A. *(W. Wilson), Ph.D.(McG.)*
- Carolyn Pittenger; B.A., M.A.(SUNY, Albany), M.Ed.(McG.)
- Caroline Riches; B.A., M.Sc.(Alta), Ph.D.(McG)
- Diane Russell; B.Sc.(Am.), M.Ed.(Boston)
- Louise Savoie; B.S.S.(Laval), M.A.(Ott.)
- Donna Lee Smith; B.A., M.A.(C’dia)
- Sharron Wall; B.A., Dip.Human Relations, M.A.(McG.)

**Adjunct Professors**
- Betsy Annahatak; B.Ed., M.Ed.(McG.)
- Luci Bobbish-Salt; B.Ed.(UQAC)
- Tino Bordonaro; B.A.(Bishop’s), M.A.(McG.)
- Noel Burke; B.Ed., M.Ed.(McG.)
- Gretta Chambers; B.A.(McG.)
- Jessie Clunas; B.Ed. (McG.)
- Thomas Cobb; B.A., M.A.(Manit.), Cert. Ed.(Wales), Ph.D.(C’dia)
- Scott G. Conrod; B.Sc.(Sir G. Wms.), M.Ed.(McG.)
- William E. Corrigan; M.T.(C’dia)
- Deborah House-Cox; B.Ed.(Queb.)
- Edward Cross; B.A.(Carl.), M.Ed.(McG.)
- Elaine Freeland; M.A.(Montr.)
- Sarah Grey; B.Ed (McG.)
- James M. Heywood; B.A.(C’dia), M.Ed.(Montr.)
- Kanahstatsi Howard; B.A.(C’dia), Dip.Ed.(McG.)
- Kaia’takte Jacobs; B.Ed.(Queb.)

Charles S. Lusthaus; B.S., M.S.(Canisius), Ph.D.(SUNY)
Roy Lyster; B.A.(Regina), M.A.(Paris VII), B.Ed., M.Ed., Ph.D.(Tor.)
Kevin McDonough; B.A., B.Ed., M.Ed.(Alta.), Ph.D.(Ill.)
Christopher S. Milligan; B.A.(Sir G.Wms.), M.Ed.(McG.), Ed.D.(Tor.)
Ronald Morris; B.Ed., M.A., Ph.D.(McG.)
Anthony Pare; B.Ed, M.Ed., Ph.D.(McG.)
Howard N. Rigg; B.Ed.(Alta.), M.A., Ph.D.(Minn.)
Carolyn E. Turner; B.A.(Ariz.), M.Ed., Ph.D.(McG.)
Boyd White; B.A.(Sir G.Wms.), B.F.A.(C’dia), M.F.A. *(Inst. Allende, Guanajuato), Ph.D.(C’dia)*
Lise Winer; B.A.(Pitt.), M.A.(Minn.), Cert. Ped.(C’dia), Ph.D.(West Indies)
Bachelor of Education: Secondary Program (120 credits)

The aim of the B.Ed. Secondary is to prepare strong beginning teachers for the secondary school level. This integrated 120-credit program provides students with the opportunity to attain a Bachelor of Education degree and a Bachelor of Science degree in a vocational area. (This program will not accept students in 2006-07.)

6.5.1 Bachelor of Education Programs

6.5.1.1 Bachelor of Education Secondary Program

ACADEMIC COMPONENTS

A sequence of courses normally to be taken in the Faculties of Arts, Science and Education showing a sequence of levels and totalling 54 credits, including required and complementary courses, and at least 36 credits in one “teachable” academic subject. Academic courses must be selected in consultation with an academic advisor. Additionally, students who have selected the Social Sciences Profile are required to take: HIST 202, HIST 203 and HIST 303 or HIST 353. Students who select the English Profile are required to take at least 2 of: EDSL 305, EDSL 350, ENGL 340, LING 200, LING 201, LING 355.

PROFESSIONAL COMPONENTS

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PROFESSIONAL SEMINARS 7

Required Courses

EDEC 201 First Year Professional Seminar 1
EDEC 306 Third Year Professional Seminar 3
EDEC 404 Fourth Year Professional Seminar 3
FIELD EXPERIENCES  
**Required Courses**  
EDFE 200 First Year Field Experience  
EDFE 254 Second Field Experience (Sec)  
EDFE 351 Third Year Field Experience (Sec.)  
EDFE 451 Fourth Year Field Experience (Secondary)  
**FOUNDATION COURSES**  
**Required Courses**  
EDEC 215 English Language Requirement  
EDEC 247 Policy Issues in Quebec Education  
EDPE 300 Educational Psychology  
**Complementary Course**  
EDEC 260 Philosophical Foundations  
EDEC 261 Philosophy of Catholic Education  
**PEDAGOGY COURSES**  
**Required Courses**  
EDPI 309 Exceptional Students  
EDPI 341 Instruction in Inclusive Schools  
**Complementary Courses**  
Two methodology courses chosen from the following list, depending on the teaching profile:  
EDEC 334 Teaching Secondary Social Studies  
EDEC 335 Teaching Secondary Science  
EDEC 338 Secondary School - Mathematics  
EDER 372 Ethics & Religion (Sec School)  
EDES 353 Secondary School Mathematics  
EDES 361 Secondary School English  
EDES 370 Teaching General Science  
EDES 389 Issues in Social Studies  
EDES 461 Secondary School English  
**PEDAGOGICAL SUPPORT COURSES**  
**Required Courses**  
EDPE 304 Measurement and Evaluation  
EDES 350 Classroom Practices (Secondary)  
**Complementary Courses**  
One 3-credit course in Multicultural Education from the following list:  
EDEC 233 First Nations and Inuit Education  
EDEC 248 Multicultural Education  
EDEC 262 Media, Technology and Education  
EDPE 310 Educational Computer Applications  
EDPT 200 Integrating Educational Technology in Classrooms  
EDPT 204 Educational Media  
For students with a background in computers or other media applications in education, the following courses may be substituted for the above:  
EDPT 341 Instructional Programming  
EDPT 420 Media Literacy for Education  
**ELECTIVE COURSES**  
**TOTAL CREDITS**  

### 6.5.1.2 Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) Program

The Bachelor of Education in Music is an integrated four-year 120/121-credit program of initial teacher training that leads to certification as a teacher in the Province of Quebec. When offered concurrently with the Bachelor of Music (Major in Music Education), the program offers students the opportunity to obtain a Bachelor of Education degree and a Bachelor of Music degree after the completion of 143/144 credits, normally five years (173/174 credits or six years for out-of-province students). The concurrent program combines academic studies in music, professional studies and field experience. The two degrees are awarded during the same convocation period.

Applicants to the music specialist teacher training program should apply to the Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) program. Students who have partially completed a Bachelor of Music program are eligible to apply for advanced standing in the Concurrent program.

Application to the Concurrent B.Ed./B.Mus. program may be made on-line at [www.mcgill.ca/applying](http://www.mcgill.ca/applying). Information is available on that site or may be obtained from:

**Admissions Office**  
McGill University  
Schulich School of Music  
555 Sherbrooke Street West  
Montreal, QC H3A 1E3  
Telephone: (514) 398-4546

Those who have completed a Bachelor of Music degree may apply for advanced standing in the Bachelor of Education in Music program. Application to the Bachelor of Education in Music may be made on-line at [www.mcgill.ca/applying](http://www.mcgill.ca/applying). Information is available on that site or may be obtained from:

**Admissions, Recruitment and Registrar’s Office**  
McGill University  
845 Sherbrooke Street West  
Montreal, QC H3A 2T5  
Telephone: (514) 398-3910  
Fax: (514) 398-4193

Program details are available from:

**Professor Joan Russell, Program Director**  
Department of Integrated Studies in Education  
Telephone: (514) 398-2447

The components of the 143/144-credit Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) are as follows:

- 53/54 professional credits,
- 78 music credits,
- 12 elective credits.

Students who wish to complete only the Bachelor of Education in Music have the option of doing so after the successful completion of the first two years of the concurrent program and MUIN 321 Concentration Exam or equivalent. Students who decide to complete only a Bachelor of Music may transfer at any time into the Bachelor of Music, Faculty Program.

Students who opt for the Bachelor of Education in Music would be required to complete 61 music credits, 6 elective credits, and 53/54 professional credits from the program given below, with the following notes:

1. These credits are required for the Bachelor of Music only.
2. These credits are required for the Bachelor of Music, complimentary for the Bachelor of Education in Music.

For prerequisite requirements for the Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) Program, see section 9.6.5 “B.Mus./B.Ed. Bachelor of Music and Bachelor of Education Concurrent Program” of the Schulich School of Music chapter in this calendar.

**ACADEMIC COMPONENTS**

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<thead>
<tr>
<th>THEORY COURSES (REQUIRED)</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUTH 210 Tonal Theory and Analysis 1</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 211 Tonal Theory and Analysis 2</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 310 Mid and Late 19th-Century Theory and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 311 20th-Century Theory and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 461 Choral and Keyboard Arranging 1 (see Note 1 above)</td>
<td>2</td>
</tr>
</tbody>
</table>

**MUSICIANSHIP COURSES (REQUIRED)**

<table>
<thead>
<tr>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSP 229 Musicanship 3</td>
</tr>
<tr>
<td>MUSP 231 Musicanship 4</td>
</tr>
<tr>
<td>MUSP 329 Musicanship 5</td>
</tr>
<tr>
<td>MUSP 331 Musicanship 6</td>
</tr>
</tbody>
</table>
PERFORMANCE COURSES (REQUIRED) 16
Practical Concentration 8
Basic Ensemble Training 8

COMPLEMENTARY MUSIC HISTORY COURSES 6
(see Note 1 above)
3 credits chosen from Music History (MUHL) offerings at the 300 level
3 credits of Music History/Literature chosen from:
MUHL 389 Orchestral Literature
MUHL 397 Choral Literature after 1750
MUHL 398 Wind Ensemble Literature after 1750

MUSIC EDUCATION COURSES (REQUIRED) 25
MUCT 235 Vocal Techniques 3
MUCT 215 Basic Conducting Techniques 1
MUCT 356 Music for Children 1: Philosophy and Techniques 3
MUCT 357 Music for Children 2: Philosophy and Techniques (see Note 2 above) 3
MUCT 411 Issues in Music Education (see Note 1 above) 3
MUJT 202 Woodwind Techniques 3
MUJT 203 Brass Techniques 3
MUJT 204 Percussion Techniques 3
MUJT 356 Jazz Instruction: Philosophy and Techniques (see Note 2 above) 3

COMPLEMENTARY MUSIC EDUCATION COURSES 9
MUJT 201 String Techniques 3
or MUJT 250 Guitar Techniques
MUJT 315 Choral Conducting 1 3
or MUJT 315 Instrumental Conducting
EDEA 362 Movement, Music and Communication 3
or any course with a prefix of MUIT or MUGT

ELECTIVE 12

PROFESSIONAL COMPONENTS 53-54
PROFESSIONAL SEMINARS 4

Required Courses
EDEA 206 1st Year Professional Seminar 1
EDEA 407 Final Year Professional Seminar Music 3

FIELD EXPERIENCE 20
Required Courses
EDFE 205 1st Field Experience Music 2
EDFE 207 2nd Field Experience Music 4
EDFE 305 3rd Field Experience Music 7
EDFE 407 4th Field Experience Music 7

FOUNDATION COURSES 12

Required Courses
EDEC 215 English Language Requirement 0
EDEC 247 Policy Issues in Quebec Education 3
EDPE 300 Educational Psychology 3
EDPI 309 Exceptional Students 3

Complementary Courses
EDEC 260 Philosophical Foundations
or EDEC 261 Philosophy of Catholic Education

PEDAGOGY COURSES 6

Required Courses
EDEA 442 Elementary Music Curriculum and Instruction 3
EDEA 472 Secondary Music Curriculum and Instruction 3

PEDAGOGICAL SUPPORT COURSES 11-12
one of:
EDEC 248 Multicultural Education 3
EDEC 233 First Nations and Inuit Education 2

EDEE 352 Classroom Practices (2 credits)
EDES 350 Classroom Practices (Secondary)
one of:
EDEC 262 Media, Technology and Education
umentary courses in their respective B.Sc. Major or Major Concentration with a Minor.

B. Students in the Concurrent B.Sc./B.Ed. program must take EDEC 262 Media, Technology and Education.

6.5.1.4 Bachelor of Education Kindergarten and Elementary Program

The four-year program begins with the foundation courses in the first term and has a higher concentration of academic courses in the first two years. The professional courses and practicum have a heavier weight in the final two years. The practicum consists of school-based experiences and a series of professional seminars that provide an opportunity for students to reflect on that experience in a systematic way.

ACADEMIC COMPONENT

This component provides background in the subject areas of the elementary school curriculum. Students must select academic courses in “teachable” subjects in consultation with an academic advisor.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 203</td>
<td>Communication in Education</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 230</td>
<td>Elementary School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 270</td>
<td>Elementary School Science</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 280</td>
<td>Geography, History and Citizenship Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
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</table>

PROFESSIONAL COMPONENT

This component includes the practicum, theoretical aspects of pedagogy, the pedagogical support for the practicum and foundation courses, divided as follows:

PRACTICUM

Required Courses

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>EDFE 200</td>
<td>First Year Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>EDFE 253</td>
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<td>4</td>
</tr>
<tr>
<td>EDFE 303</td>
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<tr>
<td>EDFE 406</td>
<td>Fourth Field Experience (K/Elem)</td>
<td>7</td>
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</table>

PROFESSIONAL SEMINARS

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 201</td>
<td>First Year Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EDEC 405</td>
<td>Fourth Year Professional Seminar (K/Elem)</td>
<td>3</td>
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</tbody>
</table>

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B. Students in the Concurrent B.Sc./B.Ed. program must take EDEC 262 Media, Technology and Education.

6.5.1.4 Bachelor of Education Kindergarten and Elementary Program

The four-year program begins with the foundation courses in the first term and has a higher concentration of academic courses in the first two years. The professional courses and practicum have a heavier weight in the final two years. The practicum consists of school-based experiences and a series of professional seminars that provide an opportunity for students to reflect on that experience in a systematic way.

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<tr>
<td>EDFE 406</td>
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Complementary Courses

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PROFESSIONAL SEMINARS

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<tr>
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</thead>
<tbody>
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<td>First Year Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EDEC 405</td>
<td>Fourth Year Professional Seminar (K/Elem)</td>
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</tbody>
</table>

FOUNDDATIONS

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 215</td>
<td>English Language Requirement</td>
<td>0</td>
</tr>
<tr>
<td>EDEC 247</td>
<td>Policy Issues in Quebec Education</td>
<td>3</td>
</tr>
<tr>
<td>EDPI 309</td>
<td>Exceptional Students</td>
<td>3</td>
</tr>
<tr>
<td>EDPI 341</td>
<td>Instruction in Inclusive Schools</td>
<td>3</td>
</tr>
<tr>
<td>EDPE 300</td>
<td>Educational Psychology</td>
<td>3</td>
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</table>

Complementary Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 260</td>
<td>Philosophical Foundations</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 261</td>
<td>Philosophy of Catholic Education</td>
<td>2</td>
</tr>
</tbody>
</table>

PEDAGOGY

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEE 223</td>
<td>Language Arts Part 1</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 250</td>
<td>The Kindergarten Classroom</td>
<td>2</td>
</tr>
</tbody>
</table>

6.5.1.5 Programme intensif de français Elementary Option

This option is currently under revision. Admission is suspended for 2006-07.

6.5.1.6 Bachelor of Education Kindergarten and Elementary Program (Jewish Studies Option)

Students who have already been accepted into the B.Ed. (Kindergarten/Elementary) program may apply for the Jewish Studies Option. This Option allows qualified candidates an opportunity to select specific academic and pedagogical Jewish Studies courses in place of selected education electives and academic courses. Additionally, students will have an opportunity to have one of their major field placements in a Jewish school environment.

Students who wish to follow this option should contact:

Professor Eric Caplan
Department of Integrated Studies in Education
Faculty of Education
Telephone: (514) 398-6544
E-mail: eric.caplan@mcgill.ca

6.5.1.7 Baccalauréat en enseignement du français langue seconde

This program is offered jointly by the Université de Montréal and McGill University. Students will be admitted into, and registered at, one of the two as their “home” university. Courses will be offered at the Université de Montréal during the Fall term and at McGill during the Winter term.

Students admitted to this program are required to take a diagnostic test in mathematics administered by the Université de Montréal. A student who fails this test will be required to pass a remedial course in mathematics in addition to the regular program.

The Baccalauréat en enseignement du français langue seconde (B.Ed. in Teaching French as a Second Language) is a four-year program. It prepares specialist teachers to teach French as a second language, in Core French programs, immersion programs, intensive programs and classes d’accueil, at both the elementary and the secondary levels.

This integrated 120-credit program (150 credits for out-of-province students) includes studies in language and language learning from linguistic, literary, cultural and psychological perspectives accompanied by Field Experiences. The academic components aim to increase students’ general competence, mostly in literature,
linguistics. In addition, complementary courses combine academic content with methodology. The professional components allow students to learn how to teach subjects taught at the elementary or secondary levels, how to teach the different programs offered in FSL and how to intervene with the various clientele. They revolve around school-based Field Experiences which are supported by studies in pedagogy and educational foundations.

### ACADEMIC COMPONENTS

#### Required Courses
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSL 264</td>
<td>Phonétique et phonologie</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 265</td>
<td>Acquisition-apprentissage-langues</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 266</td>
<td>Mathématiques au primaire</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 267</td>
<td>Didactique des arts plastiques</td>
<td>1</td>
</tr>
<tr>
<td>EDSL 270</td>
<td>Morphologie et syntaxe</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 271</td>
<td>Lexique et sémantique</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 341</td>
<td>Littératie et Littérature Jeunesse en FLS</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 491</td>
<td>Didactique des mathématiques en langues secondes</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 492</td>
<td>Didactique des sciences-technologies</td>
<td>3</td>
</tr>
<tr>
<td>FREN 251</td>
<td>Littérature française depuis 1800</td>
<td>3</td>
</tr>
<tr>
<td>FREN 252</td>
<td>Littérature québécoise</td>
<td>3</td>
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</tbody>
</table>

#### Complementary Courses
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 credits, one of:</td>
<td>EDEC 248 Multicultural Education</td>
<td>3</td>
</tr>
<tr>
<td>9 credits to increase the student’s proficiency level in the teaching of French, the following courses (or equivalent courses if not available):</td>
<td>LING 350 Linguistic Aspects of Bilingualism</td>
<td>9</td>
</tr>
<tr>
<td>FREN 239</td>
<td>Stylistique comparée</td>
<td>3</td>
</tr>
<tr>
<td>FREN 245</td>
<td>Grammaire avancée</td>
<td>3</td>
</tr>
<tr>
<td>FREN 334</td>
<td>Méthodes d’analyse des textes littéraires</td>
<td>1</td>
</tr>
<tr>
<td>6 credits of study of a second or third language, to be chosen from University offerings, so that students experience the learning processes that take place in the learning of a language.</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

#### ACADEMIC OR PROFESSIONAL COMPONENT
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSL 493</td>
<td>Sciences humaines au primaire (Academic Component)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 494</td>
<td>Didactique de l'univers social et TIC (Academic Component)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 495</td>
<td>Recherche-résolution de problèmes (Professional Component: Pedagogical Support)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 496</td>
<td>Laboratoire de formation professionnelle (Professional Component: Pedagogical Support)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL 497</td>
<td>Problématique en éducation préscolaire (Professional Component: Foundation)</td>
<td>3</td>
</tr>
</tbody>
</table>

#### PROFESSIONAL COMPONENTS
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDFE 260</td>
<td>Stage de familiarisation (Field Exp.)</td>
<td>1</td>
</tr>
<tr>
<td>EDFE 261</td>
<td>Stage d'assistant - 2e année (Field Exp.)</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 260</td>
<td>Séminaire professionnel - 2e (Prof. Sem.)</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Required Courses
<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>EDFE 362</td>
<td>Stage d'enseignement en français langue seconde</td>
<td>7</td>
</tr>
<tr>
<td>EDSL 320</td>
<td>Séminaire 3 professionnel</td>
<td>1</td>
</tr>
<tr>
<td>EDFE 361</td>
<td>Stage d'enseignement 1</td>
<td>7</td>
</tr>
<tr>
<td>EDSL 394</td>
<td>Séminaire de stage-3e</td>
<td>1</td>
</tr>
<tr>
<td>EDFE 461</td>
<td>Stage d'enseignement - immersion</td>
<td>9</td>
</tr>
<tr>
<td>EDSL 420</td>
<td>Séminaire 4 professionnel</td>
<td>2</td>
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#### FOUNDATION COURSES
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>EDFE 460</td>
<td>Stage d'enseignement 2</td>
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</tr>
<tr>
<td>EDSL 499</td>
<td>Séminaire de stage-4e</td>
<td>2</td>
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### PEDAGOGICAL SUPPORT COURSES
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</table>

### TOTAL CREDITS

6.5.1.8 Bachelor of Education in Teaching English as a Second Language

The B.Ed. in Teaching English as a Second Language (TESL) program prepares specialists to teach English as a second language (ESL) at both the elementary school and secondary school levels. This integrated 121-credit program (151 credits for out-of-province students) includes studies in language and language learning from linguistic, literary, social, cultural, and psychological perspectives, accompanied by field experiences. The academic components aim to increase students’ academic knowledge, with emphasis on language, linguistics and literature. Complementary courses address both academic and professional concerns. The professional components revolve around school-based Field Experiences which are supported by studies in pedagogy and educational foundations. These prepare students to teach ESL at both the elementary school level (including regular and intensive ESL) and the secondary school level (including regular ESL and ESLA - English Second Language Arts), and provide a base for adult and other ESL teaching.
6 - 12 credits from courses with the prefix ENGL
(Department of English)
12 - 18 credits must be taken from the following areas:
Foreign Languages (0-12 credits)
Academic courses (0-18 credits)

PROFESSIONAL COMPONENTS

PROFESSIONAL SEMINARS 8
Required Courses
EDSL 210 First Professional Seminar 1
EDSL 255 Second Professional Seminar 2
EDSL 315 Third Year Professional Seminar 2
EDSL 415 Fourth Professional Seminar 3

FIELD EXPERIENCES 20
Required Courses
EDFE 209 First Year Field Experience 2
EDFE 255 Second Year Field Experience (TESL) 3
EDFE 359 Third Year Field Experience (ESL/FSL) 8
EDFE 459 Fourth Year Field Experience (ESL/FSL) 7

FOUNDATION COURSES
9 credits, one of the following courses:
EDED 260 Philosophical Foundations
EDDE 261 Philosophy of Catholic Education

PEDAGOGY COURSES 12
Required Courses
EDSL 330 L2 Literacy Development 3
EDSL 412 Assessment in TESL 3
EDSL 447 Third-Year Methods in TESL 3
EDSL 458 Fourth-Year Methods in TESL 3

PEDAGOGICAL SUPPORT COURSES 21
Required Course
EDSL 311 Pedagogical Grammar 3
EDSL 334 Teaching Oral Skills in ESL 3

Complementary Course
3 credits, one of the following courses:
EDEC 233 First Nations and Inuit Education
EDEC 248 Multicultural Education

3 credits, one of the following courses:
EDEC 262 Media, Technology and Education
EDPT 200 Integrating Educational Technology in Classrooms

EDPT 204 Educational Media 1
EDPT 341 Instructional Programming 1
EDPT 420 Media Literacy for Education

9 credits, three of the following courses:
EDPI 309 Exceptional Students
EDPI 341 Instruction in Inclusive Schools
EDPI 441 Students with Behaviour Difficulties
EDPI 442 Students with Learning Difficulties
EDSL 390 Teaching English as a Second Language in the Community

ELECTIVES 6

TOTAL CREDITS 121

6.5.2 Programs for First Nations and Inuit

The following programs are offered in First Nations and Inuit communities for First Nations and Inuit teachers through the:
Faculty of Education
First Nations and Inuit Education (FNIE)
3700 McTavish Street, Room 244
Montreal, QC, H3A 1Y2
Telephone: (514) 398-4533
Fax: (514) 398-2553
Website: www.education.mcgill.ca/ofnie

6.5.2.1 Certificate in Education for First Nations and Inuit

This 60-credit program provides an opportunity for Algonquin, Cree, Inuit, Mi'kmaq and Kanienkehaka (Mohawk) people to become qualified as teachers. It is offered on a part-time basis in Indigenous communities throughout Quebec in collaboration with the Cree School Board, the Kativik School Board, and various Mi'kmaq, Mohawk and Algonquin education authorities. A full-time and part-time program is also available in Inuit in Nunavut, in collaboration with the Nunavut Teacher Education Program of Nuna-vut Arctic College, Iqaluit, NU.

Admission to the Certificate in Education for First Nations and Inuit

An applicant will normally be employed as a teacher or as a classroom assistant, have a valid teaching authorization from the appropriate teaching authority or a community education committee, be recommended by the school principal and an officer of the education authority, be recommended by a local community education committee, and be at least 21 years of age. Younger applicants will be considered for admission if they hold a Grade 12 High School Diploma or a Diploma of Collegial Studies. The right of final decision for acceptance of candidates rests with McGill.

Those intending to complete the programs offered in cooperation with the Kativik School Board or the Nunavut Teacher Education Program must be fluent and literate in Inuktitut/Inuinnaqtun. Fluency in Algonquin, Cree, Mi'kmaq or Mohawk is not a condition for admission. Courses are available in all four of these languages for those teaching in immersion classes and other teaching situations where a knowledge of the First Languages is essential.

Time Limit

The time limit for completion of the 60-credit Certificate in First Nations and Inuit Education is 12 years. The University reserves the right to request that a student retake a course or courses after a 5-year period if it is felt that too long a break has occurred in the ongoing nature of the training.

PROGRAM PROFILE – CERTIFICATE IN EDUCATION FOR FIRST NATIONS AND INUIT (60 credits)

On completion of the Certificate requirements, trainees may apply for admission to the B.Ed. for Certified Teachers program with up to 30 credits advanced standing. Certain non-credit academic upgrading courses may be required of B.Ed. applicants.

6 A) THE ABORIGINAL SCHOOL AND CLASSROOM

Required Courses
EDEE 202 Educational and Administrative Institutions 3
EDEE 245 Orientation to Education 3

B) LANGUAGE

FOR INUIT STUDENTS

Required Courses
EDEE 249 Inuktitut Orthography and Grammar (The term “Inuktitut” in all course descriptions includes “Inuittut” and “Inuinnaqtun.”) 3
Complementary Courses
One 3-credit course from Language complementary course list.

FOR ALGONQUIN, CREE, MI'KMAQ AND KANIEKENHAKA (MOHAWK) STUDENTS

Required Courses
Two of the following according to language group and fluency:
EDEE 293 (3) Algonquin Second Language 1
EDEC 234 (3) Algonquin Second Language 2
EDEE 294 (3) Algonquin Language 1
EDEE 295 (3) Algonquin Language 2
EDEE 291 (3) Cree Language 1
EDEE 292 (3) Cree Language 2
EDEE 237 (3) Mi'kmaq Second Language 1
EDEE 238 (3) Mi'kmaq Second Language 2
EDEC 236 (3) Mohawk Second Language 1
EDEC 237 (3) Mohawk Second Language 2
EDEE 297 (3) Mohawk Language 1
EDEE 298 (3) Mohawk Language 2

(c) CONTENT AND TEACHING METHODS
( at least 18 credits)

Required Courses
EDEA 242 Cultural Skills 3
Complementary Courses
At least five 3-credit courses from Content and Teaching Methods complementary course list.
At least three of these five courses should be in different subject content areas.

For trainees specializing in Physical Education:

Required Courses
EDKP 241 Aboriginal Physical Activities (replaces EDEE 242 Cultural Skills) 3
EDKP 342 Physical Education Methods 3
EDKP 493 Administration 3
(EDKP 342 and EDKP 493 replace any two of the Content and Teaching Methods courses.)

Complementary Courses
At least three 3-credit courses from Content and Teaching Methods complementary course list.

(d) PSYCHOLOGICAL, SOCIAL AND PHYSICAL DEVELOPMENT OF THE CHILD
12

Required Courses
EDPI 211 Social and Emotional Development 3
EDPI 212 Perceptual Motor Development 3
EDPI 341 Instruction in Inclusive Schools 3
EDEE 246 Cultivating Language and Thought 3

For all students except Nunavut Teacher Education Program students

Required Courses
EDFE 214 Aboriginal Education Practicum 1 3
EDFE 325 Aboriginal Education Practicum 2 3
EDFE 425 Aboriginal Education Practicum 4 3
(Students in the physical education concentration will do 6 of their total practicum credits in physical education settings.)

For Nunavut Teacher Education Program students

Required Courses
EDFE 214 Aboriginal Education Practicum 1 3
EDFE 325 Aboriginal Education Practicum 2 3
EDFE 326 Aboriginal Education Practicum 3 3
(EDFE 425 is an option for students enrolled in the Nunavut Teacher Education Program. These students can take an additional complementary course in lieu of EDFE 425.)
6.5.2.2 Certificate in Aboriginal Literacy Education

This 30-credit program is designed for Algonquin, Cree, Inuit, Mi'kmaq and Kaniienkehaka (Mohawk) students who wish to gain a deeper understanding of their indigenous language, especially in its written form. It is aimed mainly at those who will be teaching their indigenous language and is only available through partnerships with the communities concerned.

Admission to the Program in Aboriginal Literacy Education

Students admitted to this program will be recommended by their communities (as is presently the case with the Certificate in Education for First Nations and Inuit). If the program is used for professional development, students will be Indigenous teachers employed in local schools. As with the Certificate in Education for First Nations and Inuit, they must be mature students, or hold a Secondary V diploma or equivalent.

This certificate may be taken concurrently and completed within the B.Ed. for Certified Teachers if the required B.Ed. profile is fulfilled. See section 6.5.2.5 "Bachelor of Education for Certified Teachers (Elementary Education)".

PROGRAM PROFILE – CERTIFICATE IN ABORIGINAL LITERACY EDUCATION (30 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A beginning course in the indigenous language as a first language (e.g., EDEC 241 Cree Language 1)</td>
<td>3</td>
</tr>
<tr>
<td>A second-level course in the same language (e.g., EDEC 242 Cree Language 2)</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 342 Intermediate Inuktitut/Amerindian Language</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 344 Advanced Inuktitut/Amerindian Language</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four courses to be chosen from the following list:</td>
<td>12</td>
</tr>
<tr>
<td>EDEA 242 (3) Cultural Skills</td>
<td></td>
</tr>
<tr>
<td>EDEC 220 (3) Curriculum Development</td>
<td></td>
</tr>
<tr>
<td>EDEC 403 (3) The Dialects of Inuktitut</td>
<td></td>
</tr>
<tr>
<td>EDEE 223 (3) Language Arts Part 1</td>
<td></td>
</tr>
<tr>
<td>EDEE 224 (3) Language Arts Part 2</td>
<td></td>
</tr>
<tr>
<td>EDEE 240 (3) Use and Adaptation of Curricula</td>
<td></td>
</tr>
<tr>
<td>EDEE 243 (3) Reading Methods in Inuktitut/Cree</td>
<td></td>
</tr>
<tr>
<td>EDEE 247 (6) Individualized Instruction</td>
<td></td>
</tr>
<tr>
<td>EDEE 248 (3) Reading and Writing Inuktitut/Cree</td>
<td></td>
</tr>
<tr>
<td>EDEE 345 (3) Literature and Creative Writing 1</td>
<td></td>
</tr>
<tr>
<td>EDEE 346 (3) Literature and Creative Writing 2</td>
<td></td>
</tr>
<tr>
<td>EDES 365 (3) Experiences in Communications</td>
<td></td>
</tr>
<tr>
<td>EDPE 304 (3) Measurement and Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

| Elective Courses | 6 |
| Two suitable 3-credit courses approved by the Director of the Office of First Nations and Inuit Education |

TOTAL CREDITS 30

6.5.2.3 Certificate in Middle School Education in Aboriginal Communities

This 30-credit program focuses on developing the particular skills and abilities required of the Indigenous teacher in the middle school of his/her community. It does not lead to provincial certification. Rather, it prepares Indigenous teachers who are bilingual or have some knowledge of their indigenous language and who have already established themselves as teachers to teach students at this level in ways that are developmentally and culturally appropriate. The program focuses on the particular psychological, emotional and social needs of Aboriginal adolescents and the teacher’s role in facilitating the transition between elementary and high school.

Admission to the Certificate in Middle School Education in Aboriginal Communities

Applicants will normally have completed or be completing their B.Ed. for Certified Teachers. It is strongly recommended that they have some competence in their indigenous language as indicated by the successful completion of at least two language courses. For those applying with degrees from other universities, additional courses may be required to match the McGill B.Ed. for Certified Teachers profile. As the program and courses will be delivered in the partnership communities, applicants must be recommended by their school boards or teaching authorities.

PROGRAM PROFILE – CERTIFICATE IN MIDDLE SCHOOL EDUCATION IN ABORIGINAL COMMUNITIES (30 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 245 Middle School Teaching</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 246 Middle School Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 302 Language and Learning - Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 210 Middle School Practicum</td>
<td>3</td>
</tr>
<tr>
<td>EDPE 377 Adolescence and Education</td>
<td>3</td>
</tr>
</tbody>
</table>

| Elective Course | 3 |
| One chosen from: | |
| EDEA 241 (3) Basic Art Media for Classroom | |
| EDEC 220 (3) Curriculum Development | |
| EDEC 243 (3) Teaching: Multigrade Classrooms | |
| EDEE 291 (3) Cultural Values and Socialization | |
| EDEE 444 (3) First Nations and Inuit Curriculum | |
| EDCP 241 (3) Aboriginal Physical Activities | |
| EDPT 200 (3) Integrating Educational Technology in Classrooms | |
| EDSL 247 (3) Second Language Education in Aboriginal Communities | |
| EDSL 305 (3) L2 Learning: Classroom Settings | |

TOTAL CREDITS 30

This certificate may be taken concurrently and completed within the "Bachelor of Education for Certified Teachers (Elementary Education)", see section 6.5.2.5, if the required B.Ed. profile is fulfilled.

6.5.2.4 Certificate in First Nations and Inuit Educational Leadership

This 30-credit program is designed for First Nations and Inuit organizations to develop their role as leaders within the educational community. The program will focus on developing the core competencies of educational leaders, e.g., decision making and problem solving; fostering a self-reflective leader able to partner with parents to create community outreach; cultivating awareness of the holistic learning and developmental cycles of a child and the role of the educational leader in enhancing that development; maintaining the continuity of community and cultural values and aspirations within the structure of the administration of the school and other educational milieu; and understanding and supporting the pedagogical objectives and the administrative framework of the educational system.

Admission to the Certificate in First Nations and Inuit Educational Leadership

Students admitted to this program will be recommended by their communities (as is presently the case with the Certificate in Education for First Nations and Inuit). As with the Certificate in Education for First Nations and Inuit, they must be mature students...
INUIT EDUCATIONAL LEADERSHIP

PROGRAM PROFILE – CERTIFICATE IN FIRST NATIONS AND
INUIT EDUCATIONAL LEADERSHIP (30 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 221</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 222</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 311</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 312</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 233</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five of the following:</td>
<td></td>
</tr>
<tr>
<td>EDEC 220 (3)</td>
<td></td>
</tr>
<tr>
<td>EDEC 244 (3)</td>
<td></td>
</tr>
<tr>
<td>EDEE 240 (3)</td>
<td></td>
</tr>
<tr>
<td>EDEE 245 (3)</td>
<td></td>
</tr>
<tr>
<td>EDEE 340 (3)</td>
<td></td>
</tr>
<tr>
<td>EDEM 202 (3)</td>
<td></td>
</tr>
<tr>
<td>EDES 365 (3)</td>
<td></td>
</tr>
<tr>
<td>EDPI 341 (3)</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CREDITS 30

This certificate may be taken concurrently and completed within the "Bachelor of Education for Certified Teachers (Elementary Education)", see section 6.5.2.5, if the required B.Ed. profile is fulfilled.

It may also be followed concurrently with the "Certificate in Education for First Nations and Inuit", see section 6.5.2.1.

6.5.2.5 Bachelor of Education for Certified Teachers
(Elementary Education)

The Faculty of Education offers a 90-credit program for teachers who are already certified to teach in elementary schools and who wish to earn a B.Ed. degree. Normally, a minimum of 60 credits must be taken in the program, and no more than 30 credits may be transferred from other institutions. Credits may be transferred from programs leading to the Certificates in Educational Technology, Second Language Teaching, Inclusive Education, or Aboriginal Literacy Education taken concurrently. Credit may also be transferred from the Certificate in Education for First Nations and Inuit, which is normally completed before the B.Ed.

Students completing the Bachelor of Education for Certified Teachers following the Certificate in Education for First Nations and Inuit will have accumulated a total of 120 credits, 60 for the Certificate and a further 60 for the B.Ed.

Admission Requirements for the B.Ed. for Certified Teachers

Applicants apply on the basis of having completed the Certificate in Education for First Nations and Inuit or equivalent and must have the continued support of their education authority to attend the field-based program.

PROGRAM PROFILE – B.ED. FOR CERTIFIED TEACHERS
(90 credits)

Candidates enrolled in the program complete coursework within the following general pattern:

<table>
<thead>
<tr>
<th>COMPLEMENTARY COURSES</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Concentration</td>
<td>30</td>
</tr>
</tbody>
</table>

In five (5) subject areas relevant to elementary education in a 12-9-3-3-3 pattern (i.e., 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas), or 30 academic credits in three subject areas in a 15-9-6 pattern.

Note: Subject areas relevant to elementary education, in broad terms, are the Arts (Art, Music and Drama), English, French, Science, Mathematics, Physical Education, Moral and Religious Education, Social Studies, Educational Technology, or an Aboriginal language.

<table>
<thead>
<tr>
<th>CULTURAL DEVELOPMENT</th>
<th>15</th>
</tr>
</thead>
</table>
| Chosen from courses which will enhance the candidate's cultural development. These are to be chosen in consultation with the Director of the First Nations and Inuit Education.

<table>
<thead>
<tr>
<th>ELECTIVE COURSES</th>
<th>15</th>
</tr>
</thead>
</table>
| Courses selected by the candidate after consultation with the Director of the First Nations and Inuit Education.

<table>
<thead>
<tr>
<th>EDUCATION CONCENTRATION</th>
<th>30</th>
</tr>
</thead>
</table>
| Normally the Education concentration is completed within the Certificate in Education for First Nations and Inuit.

TOTAL CREDITS 90

Students having completed the Certificate in Education for First Nations and Inuit and following the Bachelor of Education for Certified Teachers accumulate a total of 120 credits, 60 for the Certificate and a further 60 for the B.Ed.

The Certificate in Aboriginal Literacy Education, the Certificate in Middle School Education in Aboriginal Communities, or the Certificate in First Nations and Inuit Educational Leadership may be taken concurrently and completed within the B.Ed. for Certified Teachers if the required B.Ed. profile is fulfilled.

This program does not lead to further certification.

6.5.2.6 Certificate in Aboriginal Education for Certified Teachers

This 30-credit professional development program provides training to assist mainstream teachers in becoming more effective teachers in First Nations and Inuit communities. It is designed to address subjects of particular interest and need in First Nations and Inuit schools, such as cultural socialization, cooperative learning, second language teaching, and curriculum development.

Admission to the Certificate in Aboriginal Education for Certified Teachers

Applicants must provide the following:

- a Diploma of Collegial Studies (DEC) or its equivalent;
- evidence of having completed teacher training at an approved institution;
- a letter of recommendation from a competent authority.

All courses (except EDEE 441) are normally given off-campus and are normally limited to students enrolled in off-campus programs delivered through First Nations and Inuit Education.

PROGRAM PROFILE – CERTIFICATE IN ABORIGINAL EDUCATION FOR CERTIFIED TEACHERS (30 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 220</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 240</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 291</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 233</td>
<td>3</td>
</tr>
<tr>
<td>EDEE 444</td>
<td>3</td>
</tr>
</tbody>
</table>
Admission Requirements
1. Speak, read, and write fluently the language of instruction as agreed upon between the Department and the contracting school board.
2. Hold a student adviser position in an Aboriginal community. This may be a new appointment concurrent with registration in the program. The position must be sufficient to meet the practical requirements of the program.
3. Be recommended by the local education authority.
4. Be at least 23 years of age (except for special permission). By means of students will qualify for admission as Mature Students under McGill regulations, and thereby not be required to have a Diploma of Collegial Studies (DEC).
5. Be recommended and selected by the school administration in collaboration with McGill personnel.

PROGRAM PROFILE – CERTIFICATE IN FIRST NATIONS AND INUIT STUDENT PERSONNEL SERVICES

Required Courses
- EDPC 201 (3) Introduction to Student Advising
- EDPC 202 (3) Helping Skills Practicum 1
- EDPC 203 (3) Helping Skills Practicum 2
- EDPC 205 (3) Career/Occupational Development
- EDPC 208 (3) Native Families’ Social Problems
- EDPC 210 (3) Field Experience

Complementary Courses
- EDPC 204 (3) Group Leadership Skills
- EDPC 207 (3) Aboriginal Adolescent Development
- EDPC 211 (3) Special Topics in Student Personnel Services
- EDPI 211 (3) Social and Emotional Development or any other suitable course approved by the Program Coordinator.

TOTAL CREDITS 30

Registration in EDEM 202, EDKP 204 or any other courses offered by departments other than Educational and Counselling Psychology; or in other programs of this Department is dependent on availability (e.g., through a concurrently offered program) or through an arrangement made with that department or program. The Program Coordinator will attempt to make these contacts whenever required.

6.6 Department of Kinesiology and Physical Education

Currie Gym
475 Pine Avenue West
Montreal, QC, H2W 1S4
Telephone: (514) 398-4184
Fax: (514) 398-4186
Website: www.mcgill.ca/edu-kpe/
E-mail: kin.physed@mcgill.ca

Chair — Hélène Perrault
Director of Undergraduate Programs — Gordon Bloom
Director of Graduate Programs — René A. Turcotte

Professors
- Hélène Perrault; B.Sc.(C’dia), M.Sc., Ph.D.(Montr.)
- Greg Reid; B.Ed.(P.E.) (McG.), M.S. (Calif.), Ph.D. (Penn. State)

Associate Professors
- Gordon Bloom; M.A.(W.Ont.), M.A.(York), Ph.D.(Ott.)
- David J. Pearsall; B.A., BPHE, M.Sc., Ph.D.(Queen’s)
- René A. Turcotte; H.B.P.H.E.(Lauren.), M.Sc., Ph.D.(Alta.)

Assistant Professors
- Julie Côté; B.Sc., M.Sc.(University of Wisconsin-Madison), Ph.D.(Montr.)
- Enrique García; BPE, INEF(Madrid), M.Sc.(Laval), Ph.D.(Alta.)
- Paul James Stapley; B.A. (Leeds Poly.), M.Sc. (Northumbria), Ph.D. (Université de Bourgogne)

Adjunct Professors
- Bernard Aguianiu; M.D., Ph.D.(Grenoble)
- Robert Boushel; B.A.(P.E.) (Acadia), M.A.(S. Florida), D.Sc.(Boston)
- Karen Johnston; B.Sc., M.D., Ph.D.(Tor.)

The Department offers programs at the graduate level leading to a B.Ed. degree, one program leading to a B.Sc. degree and a Minor in “Kinesiology for Science Students”, see section 11.12.16.

The Department also offers programs at the graduate level leading to an M.A. and M.Sc., and possibilities for doctoral studies. For further information, see the 2006-07 Graduate and Postdoctoral Studies Calendar.

6.6.1 Bachelor of Education Programs

6.6.1.1 Bachelor of Education Physical and Health Education

This four-year, 120-credit (150 credits for out-of-province students) specialist program prepares students to teach physical and health education at the elementary and secondary levels. This pro-
gram interweaves academic studies, professional coursework, and teaching practices in mutually beneficial ways throughout the four years.

Graduation Requirement
All students in Physical Education programs are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

PROGRAM PROFILE – B.ED. PHYSICAL AND HEALTH EDUCATION (120 credits)

ACADEMIC COMPONENTS

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDFE 204 Health Education</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 208 Biomechanics</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 261 Motor Development</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 292 Nutrition and Wellness</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 293 Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 307 Evaluation in Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 330 Physical Activity and Health</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 391 Physiology in Sport and Exercise</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 393 Skill Learning and Expertise</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 394 Historical Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>EDFE 396 Adapted Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>EDFK 498 Sport Psychology</td>
<td>3</td>
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</tbody>
</table>

| PROFESSIONAL COMPONENTS | 66 |

<table>
<thead>
<tr>
<th>PHYSICAL ACTIVITY COURSES</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDFK 213 Aquatics 1</td>
<td>1</td>
</tr>
<tr>
<td>EDFK 214 Basketball 1</td>
<td>1</td>
</tr>
<tr>
<td>EDFK 217 Track and Field/Cross Country</td>
<td>2</td>
</tr>
<tr>
<td>EDFK 218 Volleyball 1</td>
<td>1</td>
</tr>
<tr>
<td>EDFK 223 Basic Games</td>
<td>2</td>
</tr>
<tr>
<td>EDFK 233 Soccer</td>
<td>1</td>
</tr>
<tr>
<td>EDFK 252 Racquet Sports</td>
<td>2</td>
</tr>
<tr>
<td>EDFK 253 Gymnastics</td>
<td>2</td>
</tr>
<tr>
<td>EDFK 254 Principles of Dance</td>
<td>2</td>
</tr>
<tr>
<td>Complementary Courses</td>
<td>5</td>
</tr>
<tr>
<td>five physical activity credits offered by the Department of Kinesiology and Physical Education</td>
<td></td>
</tr>
</tbody>
</table>

FIELD EXPERIENCES | 20 |
|------------------|----|

FOUNDATION COURSES | 12 |
|-------------------|----|

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC 215 English Language Requirement</td>
<td>0</td>
</tr>
<tr>
<td>EDEC 247 Policy Issues in Quebec Education</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 260 Philosophical Foundations</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 208 Personality and Social Development</td>
<td>3</td>
</tr>
<tr>
<td>EDEP 300 Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEDAGOGY COURSES</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>EDFK 342 Physical Education Methods</td>
<td>3</td>
</tr>
<tr>
<td>EDFK 442 Physical Education Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>EDFK 494 Physical Education Curriculum Development</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEDAGOGICAL SUPPORT COURSES</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary Courses</td>
<td></td>
</tr>
<tr>
<td>A 3-credit course in Multicultural Education from the following list</td>
<td></td>
</tr>
<tr>
<td>EDEC 233 First Nations and Inuit Education</td>
<td>3</td>
</tr>
<tr>
<td>EDEC 248 Multicultural Education</td>
<td></td>
</tr>
</tbody>
</table>

A 3-credit course in Media, Technology, Computers and Education from the following list:

- EDEC 262 Media, Technology and Education
- EDPE 310 Educational Computer Applications
- EDPT 200 Integrating Educational Technology in Classrooms
- EDPT 204 Educational Media

For students with a background in computers or other media applications in education, the following courses may be substituted for the above:

- EDPT 341 Instructional Programming
- EDPT 420 Media Literacy for Education

ELECTIVE COURSES | 18 |
|------------------|----|

18 credits chosen from any of the University's offerings to contribute to the student's academic proficiency and professional preparation.

TOTAL CREDITS | 120 |

6.6.2 Bachelor of Science (Kinesiology)

The focus of the 90-credit (120 credits for out-of-province students) Bachelor of Science (Kinesiology) is a comprehensive understanding of human movement. Kinesiology is a multidisciplinary field viewing human movement from social, historical, psychological, or biological perspectives. The program provides students with a breadth of theoretical knowledge as well as an opportunity to explore related areas in greater depth, including Minor programs available elsewhere within the University.

Students may opt for either General or Applied emphasis, with an Honours program available for particularly strong students. Students must obtain a CGPA of 3.3 after two years in Kinesiology to qualify for the Honours Program, and must retain this CGPA until graduation.

Students admitted into 120-credit B.Sc.(Kinesiology) must register in and successfully complete the Science Freshman Program, which is designed to provide the basic science foundation for the subsequent three-year Major program. The Science requirements are as follows: two terms each of calculus, general physics, biology, and general chemistry. For a more detailed description of the Science Freshman Program, students should consult the B.Sc.(Kinesiology) Freshmen Student information available on the Department Website: www.mcgill.ca/edu-kpe.

Students in the B.Sc. (Kinesiology) Major are encouraged to select a Minor program in a given discipline or interdisciplinary area. A maximum of 6 credits of overlap is allowed between the Minor and the primary program. Science Minors consist of up to 24 credits. Arts Minor Concentrations consist of 18 credits. A minimum of 18 new credits must be completed in the Minor or Minor Concentration. For a list of approved Minors and Minor Concentrations, please refer to the Faculty of Science, "Minor Programs", see section 11.11.6, and "Faculty of Arts Major and Minor Concentration Programs Available to Science Students", see section 11.11.10.

Graduation Requirement
Students are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

B. Sc. (KINESIOLOGY) – MAJOR IN APPLIED KINESIOLOGY (90 credits)

Required Courses (40 credits)

- CHEM 212 (4) Introductory Organic Chemistry
- EDK 206 (3) Biomechanics of Human Movement
- EDK 261 (3) Motor Development
- EDK 292 (3) Nutrition and Wellness
- EDK 330 (3) Physical Activity and Health
- EDK 393 (3) Skill Learning and Expertise
- EDK 394 (3) Historical Perspectives
- EDK 395 (3) Exercise Physiology
- EDK 396 (3) Adapted Physical Activity
<table>
<thead>
<tr>
<th>Required Courses (90 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.SC. (KINESIOLOGY) – MAJOR IN GENERAL KINESIOLOGY</td>
</tr>
<tr>
<td>3 credits, one of the following courses:</td>
</tr>
<tr>
<td>ANAT 315 (4) Anatomy/Limbs and Back</td>
</tr>
<tr>
<td>EDKP 205 (3) Structural Anatomy</td>
</tr>
<tr>
<td>6 credits, one of the following course sets:</td>
</tr>
<tr>
<td>PHGY 201 (3) Human Physiology: Control Systems</td>
</tr>
<tr>
<td>and PHGY 202 (3) Human Physiology: Body Functions</td>
</tr>
<tr>
<td>or PHGY 209 (3) Mammalian Physiology 1</td>
</tr>
<tr>
<td>and PHGY 210 (3) Mammalian Physiology 2</td>
</tr>
</tbody>
</table>

**Complementary Courses (33 credits)**

- **ANAT 214 (3)** Systemic Human Anatomy or equivalent
- 3 credits, one of the following courses:
  - ANAT 315 (4) Anatomy/Limbs and Back
  - EDKP 205 (3) Structural Anatomy
- 6 credits, one of the following course sets:
  - PHGY 201 (3) Human Physiology: Control Systems
  - and PHGY 202 (3) Human Physiology: Body Functions
  - or PHGY 209 (3) Mammalian Physiology 1

**Elective Courses (17 credits)**

Students are encouraged to obtain some of their remaining program credits by completing one of the Minor/Minor Concentrations (18 - 24 credits) available in the Faculties of Arts and of Science.

**B.SC. (KINESIOLOGY) – HONOURS IN KINESIOLOGY**

(90 credits)

**Required Courses (43 credits)**

<table>
<thead>
<tr>
<th>CHEM 212 (4) Introductory Organic Chemistry 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP 206 (3) Biomechanics of Human Movement</td>
</tr>
<tr>
<td>EDKP 261 (3) Motor Development</td>
</tr>
<tr>
<td>EDKP 292 (3) Nutrition and Wellness</td>
</tr>
<tr>
<td>EDKP 330 (3) Physical Activity and Health</td>
</tr>
<tr>
<td>EDKP 393 (3) Skill Learning and Expertise</td>
</tr>
<tr>
<td>EDKP 394 (3) Historical Perspectives</td>
</tr>
<tr>
<td>EDKP 395 (3) Exercise Physiology</td>
</tr>
<tr>
<td>EDKP 396 (3) Adapted Physical Activity</td>
</tr>
<tr>
<td>EDKP 443 (3) Research Methods</td>
</tr>
<tr>
<td>EDKP 485 (3) Exercise Pathophysiology 1</td>
</tr>
<tr>
<td>EDKP 495 (3) Scientific Principles of Training</td>
</tr>
<tr>
<td>EDKP 498 (3) Sport Psychology</td>
</tr>
</tbody>
</table>

**Complementary Courses (27 credits)**

- **ANAT 214 (3)** Systemic Human Anatomy or equivalent
- 3 credits, one of the following courses:
  - ANAT 315 (4) Anatomy/Limbs and Back
  - EDKP 205 (3) Structural Anatomy
- 6 credits, one of the following course sets:
  - PHGY 201 (3) Human Physiology: Control Systems
  - and PHGY 202 (3) Human Physiology: Body Functions
  - or PHGY 209 (3) Mammalian Physiology 1

**Elective Courses (26 credits)**

Students are encouraged to obtain some of their remaining program credits by completing one of the Minor/Minor Concentrations (18 - 24 credits) available in the Faculties of Arts and of Science.

**B.SC. (KINESIOLOGY) – HONOURS IN KINESIOLOGY**

(90 credits)

Students must obtain a CGPA of 3.3 after two years in Kinesiology to qualify for the Honours Program, and must retain this CGPA until graduation.

**Required Courses (43 credits)**

<table>
<thead>
<tr>
<th>CHEM 212 (4) Introductory Organic Chemistry 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP 206 (3) Biomechanics of Human Movement</td>
</tr>
<tr>
<td>EDKP 261 (3) Motor Development</td>
</tr>
<tr>
<td>EDKP 292 (3) Nutrition and Wellness</td>
</tr>
<tr>
<td>EDKP 330 (3) Physical Activity and Health</td>
</tr>
<tr>
<td>EDKP 393 (3) Skill Learning and Expertise</td>
</tr>
<tr>
<td>EDKP 394 (3) Historical Perspectives</td>
</tr>
<tr>
<td>EDKP 395 (3) Exercise Physiology</td>
</tr>
<tr>
<td>EDKP 396 (3) Adapted Physical Activity</td>
</tr>
<tr>
<td>EDKP 443 (3) Research Methods</td>
</tr>
<tr>
<td>EDKP 453 (3) Research Practicum in Kinesiology</td>
</tr>
<tr>
<td>EDKP 485 (3) Exercise Pathophysiology 1</td>
</tr>
<tr>
<td>EDKP 495 (3) Scientific Principles of Training</td>
</tr>
<tr>
<td>EDKP 498 (3) Sport Psychology</td>
</tr>
</tbody>
</table>

**Complementary Courses (27 credits)**

- **ANAT 214 (3)** Systemic Human Anatomy or equivalent
- 3 credits, one of the following courses:
  - ANAT 315 (4) Anatomy/Limbs and Back
  - EDKP 205 (3) Structural Anatomy
- 6 credits, one of the following course sets:
  - PHGY 201 (3) Human Physiology: Control Systems
  - and PHGY 202 (3) Human Physiology: Body Functions
  - or PHGY 209 (3) Mammalian Physiology 1

**Elective Courses (26 credits)**

Students are encouraged to obtain some of their remaining program credits by completing one of the Minor/Minor Concentrations (18 - 24 credits) available in the Faculties of Arts and of Science.
The Graduate School of Library and Information Studies focuses upon the knowledge and skills necessary to identify, acquire, organize, retrieve and disseminate information so as to meet people's varied information needs.

The Graduate School of Library and Information Studies offers four programs at the graduate level. Its 48-credit Master of Library and Information Studies (MLIS) has three areas of specialization: Archival Studies, Knowledge Management and Librarianship. Accredited by the American Library Association, the MLS program prepares professionals to manage information resources and services in libraries and the wider information industries. Its 30-credit Graduate Diploma in Library and Information Studies and 15-credit Graduate Certificate in Library and Information Studies are designed to provide a formal environment in which information professionals can update, specialize, and redirect their careers for advanced responsibilities. Its Ph.D. (ad hoc) program provides an opportunity to undertake research at the doctoral level in library and information studies within an interdisciplinary context.

For further information concerning programs, requirements, and courses, consult the Graduate School of Library and Information Studies section of the 2006-07 Graduate and Postdoctoral Studies Calendar or the Website.
# Faculty of Engineering, including Schools of Architecture and Urban Planning

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## 7.1 The Faculty

### 7.1.1 Location

Macdonald Engineering Building  
817 Sherbrooke Street West  
Montreal, QC H3A 2K6  
Canada  
Website: [www.mcgill.ca/engineering](http://www.mcgill.ca/engineering)

Faculty of Engineering Student Affairs Office:  
Macdonald Engineering Building, Room 378  
Telephone: (514) 398-7257

### 7.1.2 Administrative Officers

Christophe Pierre; Ph.D. (Duke), M. Sc. (Princ.), B. Eng. (École Centrale, Paris), (Canada Research Chair) **Dean**  
Jim Nicell; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P.Eng.  
**Associate Dean (Student Affairs)**  
James Clark; B.Sc., Ph.D.(Br.Col.)  
**Associate Dean (Academic)**  
Frank Ferrie; B.Eng., Ph.D.(McG.)  
**Associate Dean (Research)**

David Covo; B.Sc.(Arch.), B.Arch.(McG.), M.R.A.I.C., O.A.Q.  
**Director, School of Architecture**
David F. Brown; B.A.(Bishop’s), M.U.P.(McG.), Ph.D. (Sheff.)
Chair, School of Urban Planning

Dimitrios Berk; B.Sc.(Bosphorus), M.E.Sc.(W.Ont.), Ph.D.(Calg.), P.Eng.
Chair, Department of Chemical Engineering

Denis Mitchell; B.A.Sc., M.A.Sc., Ph.D.(Tor.), F.A.C.I., Eng.
Chair, Department of Civil Engineering and Applied Mechanics

David A. Lowther; B.Sc.(Lond.), Ph.D.(C.N.A.A.), P.Eng. Chair, Department of Electrical and Computer Engineering

Arun K. Misra; B.Tech.(Indian IT, Kharagpur), Ph.D. (Br. Col.), P.Eng.
Chair, Department of Mechanical Engineering

Robin A.L. Drew; B.Tech.(Brad.), Ph.D.(Newcastle) Chair, Department of Mining, Metals and Materials Engineering

Jonathan Rousham Building Administrator

Ronald Gehr; B.Sc. (Eng.)(Rand), M.A.Sc., Ph.D.(Tor.), P.Eng.
Chair, Department of Chemical Engineering

Tania Chomyk Assistant to the Dean

Enza De Martinis Financial Officer

Judy Pharo Senior Faculty Student Adviser

Stacey Comeau Records Student Affairs Officer (Acting)

Debbie Morzajew Manager, EMF

Susie Vodopivec Banner SIS Trainer

7.1.3 Historical Note
The Faculty of Engineering began in 1871 as the Department of Practical and Applied Science in the Faculty of Arts with degree programs in Civil Engineering and Surveying, Mining Engineering and Assaying, and Practical Chemistry. Diploma courses had been offered from 1859, and by 1871 the staff and enrolments had increased sufficiently to justify the creation of the Department. Continued growth led to the formation of the Faculty of Applied Science in 1878. By 1910 there were ten degree programs offered, including Architecture and Railroad Engineering. Subsequent changes in the overall pattern of the University led to the creation of the Faculty of Engineering in 1931 with a departmental structure very similar to that which exists at present.

7.1.4 The Faculty Today
The Faculty currently includes five engineering departments and two schools:

The Departments

- Chemical Engineering
- Civil Engineering and Applied Mechanics
- Electrical and Computer Engineering
- Mechanical Engineering
- Mining, Metals and Materials Engineering

The Schools

- Architecture
- Urban Planning

The Faculty serves approximately 2,300 undergraduate students and 700 graduate students in a wide variety of academic programs. Undergraduate programs leading to professional bachelor degrees are offered in all Engineering Departments. These programs are designed to qualify the graduates for immediate employment in a wide range of industries and for membership in the appropriate professional bodies. Additionally, a non-professional undergraduate degree is offered in the School of Architecture for those who plan to work in related fields not requiring professional qualification. The curricula are structured to provide suitable preparation for those who plan to continue their education in postgraduate studies either at McGill or elsewhere. The professional degrees in Architecture and Urban Planning are offered at the Master’s level and are described in the Graduate and Postdoctoral Studies Calendar.

The academic programs are divided into required and complementary sections. The required courses emphasize those basic principles which permit graduates to keep abreast of progress in technology throughout their careers. Exposure to current technology is provided by the wide variety of complementary courses which allow students to pursue in depth a particular interest. For program details refer to section 7.5 “Academic Programs”.

An internship program involving a paid 8- to 16-month industrial work experience is available to Engineering and Science students. Generally, students will enter the internship program before starting their final year of undergraduate studies. Details can be found in section 7.2.8 “IYES: Internship Year for Engineering and Science”. In addition, CO-OP programs are offered in Mining Engineering and in Metals and Materials Engineering.

Postgraduate programs leading to Master’s and doctoral degrees are offered in all sectors of the Faculty. Numerous areas of specialization are available in each of the departments and schools. All postgraduate programs, including the professional degree programs in Architecture and in Urban Planning are described in the Graduate and Postdoctoral Studies Calendar.

7.1.5 Special Facilities and Related Programs

7.1.5.1 Engineering Microcomputing Facility
In addition to the services provided by the Computing Centre, the Faculty, in conjunction with its departments and schools, maintains specialized computing and information resources in support of teaching and research. These vary from desktop PCs distributed throughout the Engineering complex to very high performance scientific workstations found in the research laboratories. Each unit organizes and maintains facilities that are designed around specific roles, e.g., CAD/CAM, microelectronic design, software engineering, circuit simulation, process control, polymers, structural mechanics, metal processing, etc., in addition to systems dedicated to administrative support.

The role of the Faculty is to provide access to computing resources on a 24-hour basis and to provide services that are not covered by individual units. The Faculty works in close cooperation with the McGill Computing Centre, which provides remote access to the Faculty network.

7.1.5.2 Bioresource Engineering
The Faculty of Engineering cooperates with the Faculty of Agricultural and Environmental Sciences in providing courses of instruction for a curriculum in agricultural and biosystems engineering to meet requirements for a professional degree awarded in the Faculty of Agricultural and Environmental Sciences. The second term of the penultimate year of the program is given by the Faculty of Engineering on the downtown campus. For details of the curriculum, see section 12.6.3 “Department of Bioresource Engineering”.

Some of the courses offered by the Department of Bioresource Engineering (Subject Code BREE) may be of interest to students in the Faculty of Engineering.

7.1.5.3 Department of Biomedical Engineering
Lyman Duff Medical Sciences Building
3775 University Street
Montreal, QC H3A 2B4
Telephone: (514) 398-8278
Engineering undergraduates who are interested in the biomedical applications of engineering techniques should contact the Chair of their department or the graduate Chair of Biomedical Engineering. Some of the courses offered by the Department (Subject Code BMDE) may be of interest to Engineering students, and may be approved as complementary courses. For more information, students should refer to “Course Information, Regulations and Descriptions (Appendix B)”.
7.1.6 Library Facilities


7.2 General Information

7.2.1 Admission Requirements

The Faculty of Engineering offers programs leading to the degrees of B.Eng. and B.Sc.(Arch.). Enrolment in some programs is limited.

Specific information on admissions requirements for Quebec students, students from provinces of Canada other than Quebec, and applicants from outside of Canada can be found in “2006-07 Undergraduate Admissions Guide (Appendix A)”. "

7.2.2 Exchange Programs

The Faculty of Engineering participates in a number of bilateral exchange programs that provide undergraduates with an opportunity to study in Australia, Austria, Canada, Denmark, France, Germany, Hong Kong, Mexico, New Zealand, Singapore, Sweden, United Kingdom, and the US. Applicants must have completed at least one year of study and have maintained an average of 3.00 or better. Further information may be obtained from the Faculty of Engineering Student Affairs Office, or the Exchange Officer, Admissions, Recruitment and Registrar’s Office.

7.2.3 Transfer Credits

In certain cases, credit may be granted for courses passed with a grade of C or better at other universities, up to a maximum of 45 credits for Engineering and 42 credits for Architecture. For further information, please see see section 3.6.5 “Transfer Credits”.

7.2.4 Registration

Students who are currently registered and intend to return to the same degree program in the following academic session are required to register following procedures outlined in this Calendar, see section 3.3 “Registration”. It is mandatory for all returning students to see a Departmental Academic adviser in their department for course confirmation during the first two weeks of the Fall term and, if changes are being made, during the first two weeks of the Winter term.

Information regarding course registration is sent to new students at the time of admission. All new students must see a Departmental Academic adviser during the advising period.

7.2.5 Advising

All students are required to seek academic advising about their programs from the department in which they study. Additional information may be obtained by calling:

- Student Affairs Office (514) 398-7257
- Architecture (514) 398-6702
- Chemical Engineering (514) 398-4494
- Civil Engineering (514) 398-6860
- Electrical and Computer Engineering (514) 398-3943
- Mechanical Engineering (514) 398-8070
- Materials Engineering (514) 398-4755 ext. 3465
- Mining Engineering (514) 398-4755 ext. 5073
- Urban Planning (514) 398-4075

7.2.6 Student Activities

The campus offers a wide variety of extracurricular activities for students. All are encouraged to participate. Many of these are organized within the Faculty under the auspices of the Engineering Undergraduate Society (EUS), or the Architectural Student Association (ASA). Both of these organizations publish handbooks describing their operations and the activities of various Faculty clubs and societies. All undergraduate students automatically become members of the EUS or the ASA, as appropriate.

7.2.7 Scholarships and Bursaries

Scholarships, bursaries and loans are open to students in the Faculty of Engineering. Students should consult the Undergraduate Scholarships and Awards Calendar available at www.mcgill.ca or from the Admissions, Recruitment and Registrar’s Office. Specific information concerning these awards may be obtained from the Student Affairs Office, Faculty of Engineering.

7.2.8 IYES: Internship Year for Engineering and Science

IP: INDUSTRIAL PRACTICUM

Employers value experience. The IYES Program (8, 12 or 16 months) and the IP course (4 months) allow undergraduate students in Engineering and Science to gain professional work experience during the course of their undergraduate studies while at the same time earning a salary within the average range of those for entry-level professional positions. Other benefits include:

- improved chance of obtaining a job upon graduation and at a higher starting salary;
- the opportunity to test a career choice before launching into a full time job after graduation;
- the opportunity to develop communication skills and to acquire a business perspective that cannot be learned in school.

Employment begins in January, May or September. IYES internships are for a duration of 8, 12 or 16 months, while the IP is for 4 months. Employers choose the most suitable students for their organization through the application and interview process. While employed by the participating companies, students work on
assignments related to their field of study. Students doing an IYES internship switch to the Internship Program from the regular program when they accept an Internship placement. Successful completion of an 8, 12 or 16 month internship will qualify the student to graduate with the Internship Program designation, which will be noted on the student's permanent record. The Industrial Practicum (IP) is a zero credit course which will appear on the student's permanent record.

**STUDENT ELIGIBILITY**
All students participating in the IYES Program or the IP course must:
- have a good academic record (GPA of 2.5 or higher);
- be registered full time in their program;
- remain a degree candidate while on internship;
- return to complete studies at McGill (internship students will receive an automatic extension for the completion of their studies). Students are not allowed to complete their undergraduate degree during the internship period.

**COST**
- There is no application fee;
- Every student hired through the IYES Program or the IP course will be assessed an administrative fee. Students will be billed this amount through their McGill Student Account once their internship has started;
- Participating companies are invited to match the student's contribution in the form of a tax deductible donation to IYES; 

Further information can be obtained at www.mcgill.ca/engineering/newstudents or by sending an e-mail to info.mec@mcecc.ca.

### 7.2.9 Calculators in Faculty Tests and Examinations

The use of calculators during tests and examinations is at the discretion of the course instructor. If a calculator is permitted in the examination, the Faculty requires that the students use a Faculty Standard Calculator, i.e., the CASIO fx-991 or the Sharp EL-546L, R, V(VB) and G only. These calculators are non-programmable, inexpensive, available through local dealers, i.e., EUS General Store in McConnell Engineering Building, and have many features of interest to Engineering students. Any model fx-991 or EL-546 is acceptable, regardless of the letter suffix which appears after the model number. All Engineering students are expected to own one of the two Faculty Standard Calculators.

### 7.3 Academic Requirements

#### 7.3.1 Degree Requirements

In order to obtain a Bachelor's degree, students must complete one of the departmental programs described in section 7.5 "Academic Programs".

**7.3.1.1 Entrance Requirements**

The degree programs in the Faculty of Engineering are designed for students who have completed a general and basic science program. This basic science requirement consists of two terms of calculus, chemistry, physics, one term of vectors, matrices and analytical geometry and one term of humanities or social sciences. Students entering the Faculty of Engineering from Quebec complete these courses at CEGEP and enter a seven-term program.

Students entering from outside Quebec with a high school diploma generally enter an eight-term program and complete the basic science requirements at McGill. Students who have completed Advanced Placement Exams, Advanced Levels, the International Baccalaureate, the French Baccalaureate, or McGill placement and/or advanced credit examinations may receive exemptions and/or credits for all or part of the basic science requirements. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits. Please see www.mcgill.ca/engineering/newstudents/credit for specific information on transfer credits.

#### 7.3.1.2 Basic Science Requirements for Students Entering from Outside Quebec

Generally, students admitted to Engineering from outside Quebec are required to complete the basic science requirements outlined below, in addition to the departmental programs described in section 7.5 "Academic Programs".

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110</td>
<td>4</td>
<td>General Chemistry 1</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>4</td>
<td>General Chemistry 2</td>
</tr>
<tr>
<td>MATH 140</td>
<td>3</td>
<td>Calculus 1</td>
</tr>
<tr>
<td>or MATH 139</td>
<td>4</td>
<td>Calculus</td>
</tr>
<tr>
<td>or MATH 150</td>
<td>4</td>
<td>Calculus A</td>
</tr>
<tr>
<td>MATH 141</td>
<td>4</td>
<td>Calculus 2</td>
</tr>
<tr>
<td>or MATH 152</td>
<td>4</td>
<td>Calculus E</td>
</tr>
<tr>
<td>MATH 133</td>
<td>3</td>
<td>Vectors, Matrices and Geometry</td>
</tr>
<tr>
<td>PHYS 131</td>
<td>4</td>
<td>Mechanics and Waves</td>
</tr>
<tr>
<td>PHYS 142</td>
<td>4</td>
<td>Electromagnetism and Optics</td>
</tr>
</tbody>
</table>

Students who have completed one, or more, McGill Placement Tests will obtain credit for the equivalent(s), i.e., CHEM 110, CHEM 120, MATH 140, MATH 141, MATH 133, PHYS 131, PHYS 142. Details are provided on the Faculty Website at www.mcgill.ca/engineering/newstudents.

Students entering with advanced standing credits (Advanced Placements, Advanced Levels, International Baccalaureate examinations, McGill Placement Tests) are required to meet with the Faculty Student Adviser, Faculty of Engineering Student Affairs Office, to finalize their program of studies. (This must be done prior to meeting with the Departmental adviser.) An information session will be held prior to the advising sessions to process these advanced credits. Information is available on the Faculty Website at www.mcgill.ca/engineering/newstudents.

#### 7.3.1.3 Architecture – Basic Science Requirements for Students Entering from Outside Quebec

Generally, students admitted to Architecture from outside Quebec are required to complete the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110</td>
<td>4</td>
<td>General Chemistry 1</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>4</td>
<td>General Chemistry 2</td>
</tr>
<tr>
<td>MATH 139</td>
<td>4</td>
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<td>or MATH 140</td>
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<td>Calculus 1</td>
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<tr>
<td>MATH 141</td>
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<td>Vectors, Matrices and Geometry</td>
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<tr>
<td>PHYS 131</td>
<td>4</td>
<td>Mechanics and Waves</td>
</tr>
<tr>
<td>PHYS 142</td>
<td>4</td>
<td>Electromagnetism and Optics</td>
</tr>
</tbody>
</table>

Students may write McGill Placement Tests to obtain credit for CHEM 110, CHEM 120, MATH 140, MATH 141, MATH 133, PHYS 131 and PHYS 142, in the event that they have studied similar material previously. Details on the advanced placement examinations are provided in Welcome to McGill. Information is also available at www.mcgill.ca/engineering/newstudents.
7.3.2 Degrees and Requirements for Professional Registration

Non-Professional:
Bachelor of Science (Architecture)

The first professional degree in architecture is the Master of Architecture. The description of the M.Arch. I program can be found in the Graduate and Postdoctoral Studies Calendar.

Professional:
Bachelor of Engineering
Bachelor of Engineering (Honours)
Bachelor of Software Engineering

The B.Eng. programs are accredited by the Accreditation Board of the Canadian Council of Professional Engineers (CCPE) and fulfill the academic requirements for admission to the provincial engineering professional organizations. The CCPE has also negotiated agreements with engineering organizations in other countries to grant Canadian licensed engineering the same privileges accorded to professional engineering in those countries. See the CCPE website for further information (www.ccpe.ca). All students are encouraged to seek professional registration after graduation.

To become a Professional Engineer in Canada, a graduate must pass an examination on legal aspects as well as on the principles of professional practice, and acquire two to four years of engineering experience, depending on the province. Only persons duly registered may use the title of "engineer" and perform the professional activities reserved for engineers by the provincial laws and regulations.

In Quebec, the professional engineering body is the Ordre des ingénieurs du Québec (OIQ). In order to better prepare new graduates for the practice of their profession, McGill organizes seminars in cooperation with the OIQ on various aspects of the profession. The OIQ also has a student section. As soon as students have accumulated 60 credits in a B.Eng. program, they can join the Student Section of the OIQ. Registration is free.


7.3.3 Prerequisites and/or Corequisites

Prerequisites and/or corequisites must be completed prior to course registration, if applicable. If a student has registered for a course and did not satisfy the prerequisites and/or corequisites, the course may be dropped from his/her record automatically by Minerva.

Those students who have received advance credits/exemptions or passed a placement exam, and are blocked from registration in a course due to a prerequisite and/or corequisite block, must complete a Course Authorization Form and submit it to the Faculty of Engineering Student Affairs Office. A Departmental adviser must sign and make a notation on the Course Authorization Form indicating that the prerequisite and/or corequisite has been satisfied.

Further information may be obtained from the Faculty of Engineering Student Affairs Office, Macdonald Engineering Building, Room 378.

7.3.4 Complementary Studies

Engineering students must complete 6 credits of additional complementary courses as follows:

I) Three credits on the impact of technology on society are to be chosen from the following list of courses:

- CHEE 230 Environmental Aspects of Technology
- CHEE 430 Technology Impact Assessment
- CIVE 469 Infrastructure and Society
- ECON 225 Economics of the Environment
- ENVR 201 Society and Environment
- ENVR 480 Topics in Environment 2
- GEOG 200 Geographical Perspectives: World Environmental Problems
- GEOG 203 Environmental Systems
- GEOG 205 Global Change: Past, Present and Future
- GEOG 302 Environmental Management 1
- MIME 308 Social Impact of Technology
- PHIL 343 Biomedical Ethics
- SOCI 235 Technology and Society
- SOCI 312 Industrial Sociology

II) Three credits in the humanities and social sciences, administrative studies and law are to be chosen from the following list of courses:

A. Humanities and Social Sciences

Any course at the 200 level or above from the departments of:
- Anthropology (Subject Code ANTH)
- Economics (any 200- or 300-level course excluding ECON 208, ECON 217, ECON 227, ECON 259 and ECON 337)
- History (Subject Code HIST)
- Philosophy (excluding PHIL 210)
- Political Science (Subject Code POLI)
- Psychology (excluding PSYC 204, PSYC 305 and PSYC 435 but including PSYC 100)
- Religious Studies (Subject Code RELG)
- School of Social Work (Subject Code SWRK)
- Sociology (excluding SOCI 350)

or

ARCH 350 The Material Culture of Canada
ENVR 203 Knowledge, Ethics and Environment
ENVR 400 Environmental Thought
MATH 338 History and Philosophy of Mathematics

B. Administrative Studies and Law

Faculty of Engineering
FACC 220 Law for Architects and Engineers
FACC 500 Technology Business Plan Design
FACC 501 Technology Business Plan Project

Desautels Faculty of Management
(Management courses have limited enrolment and registration dates, see Calendar of Dates.)
BUSA 465 Technological Entrepreneurship
INDR 294 Introduction to Labour-Management Relations
MGCR 222 Introduction to Organizational Behaviour
MGCR 320 Managing Human Resources
MGCR 352 Marketing Management 1
MGCR 360 Social Context of Business
MRKT 360 Marketing of Technology
ORGB 321 Leadership

C. Language Courses

Any language course which is deemed by the academic adviser to have a sufficient cultural component or, in the case of a student who was not already proficient in a specific language, program credit will be given for the second of two successfully completed, academically approved 3-credit language courses.

7.3.5 Student Progress

The B.Eng. programs may be completed in seven terms. The B.Sc.(Arch.) program may be completed in six or eight terms, depending upon point of entry.

A student must successfully complete the B.Eng. or B.Sc.(Arch.) programs within six years of entry. Candidates admitted to a lengthened program, or to a shortened program because of advanced standing, or who are participating in the IYES Program, will have a correspondingly greater or lesser period in which to complete their program. Extensions may be granted by the Committee on Standing in cases of serious medical problems or where other similarly uncontrollable factors have affected a student's progress.
7.3.5.1 Letter Grades
In the Faculty of Engineering, letter grades are assigned according to the grading scheme adopted by the professor in charge of a particular course. They have the designations:

- A, A+ Very Good
- A-, A Good
- B+, B Good
- B-, C Good
- C+, C Satisfactory
- C, D Conditional Pass
- K Incomplete
- F Failed

Grades A, B and C indicate satisfactory results. Grade D indicates marginal results which may be acceptable for peripheral courses but not for core courses required by the program. The classification of a course as core or peripheral depends on the individual student's program and will be decided by the department concerned. Grade F is a permanent grade indicating unsatisfactory results. Grade J indicates an unexcused failure to submit assignments or an unexcused absence from an examination. It is equivalent to an F grade.

7.3.5.2 Incomplete Course Deadlines
Those students with a K grade (incomplete) MUST complete the course within three (3) months, after which the student will be given a grade of KF (incomplete/failed).

If the student is unable to complete the course within the given deadlines, a request for an extension must be forwarded to the Associate Dean (Student Affairs). If an extension has already been permitted, the Faculty will make the necessary corrections. Students who have a K in their final term can expect delays in graduation.

7.3.5.3 Satisfactory/Unsatisfactory Option
The Satisfactory/Unsatisfactory Option (S/U) may be used for complementary studies involving a Social Science/Humanities course, or a course dealing with the impact of technology on society; or to elective courses taken outside the School of Architecture by architecture students. It does not apply to the "technical complementaries" or "architectural complementaries", or to any other category of the Engineering or Architecture programs.

Students must specify courses as S/U at the time of registration. The option will not be manually added or removed from a student's record after the Add/Drop deadline. Once a mark has been submitted, this option will not be reversed.

- A C grade is considered a pass under the University Satisfactory/Unsatisfactory option. (Students should note that the Faculty of Engineering accepts a D grade as a pass when courses eligible for the S/U option are taken in the conventional manner.)
- Only students in satisfactory standing will be permitted to take a course under the Satisfactory/Unsatisfactory option. Only one course (3 credits) per term, to a maximum of 10% of a student's credits taken at McGill, may be taken this way. Grades will be reported in the normal fashion by the instructor and the grades of C and above will be converted to Satisfactory (S) and grades of D and F will be converted to Unsatisfactory (U).
- The courses taken under this option will be excluded from the GPA, but will be included in the number of credits.
- Note For Faculty of Engineering Students Only: If the S/U option is selected for a core course and not removed by the Course Change deadline, the Student Affairs Office will remove the option and notify the student of the change.

Note: To be considered for scholarships/renewal of awards, students must complete at least 27 credits in the regular academic session exclusive of courses completed under this option.

7.3.5.4 Course Credits
The credit assigned to a particular course reflects the amount of effort it demands of the student. One credit normally represents three hours total work per week. This is, in general, a combination of lecture hours and other contact hours such as laboratory periods, tutorials and problem periods as well as personal study hours. As a guide, the average division of time for a course is indicated in hours in the course listing after the course credit. For example, (3) (3-0-6) indicates a three-credit course consisting of three lecture hours per week, no other contact hours and six hours of personal study per week.

7.3.5.5 Extra Courses
Courses that a student elects to take which lie outside their program may be classified as "extra", provided the student chooses this option at the time of registration. Extra courses are indicated on the student's transcript and grades earned in those courses do not affect the grade point average. The option will not be added to a student's record after the Add/Drop deadline. Courses that are taken to satisfy the student's engineering program or a Minor cannot be designated as extra.

7.3.5.6 Academic Standing Decisions
In the Faculty of Engineering, a decision on the student's academic standing is based on the CGPA (Cumulative Grade Point Average) according to the criteria listed below.

- Satisfactory standing - CGPA equal to 2.00 or greater.
- Probationary standing - CGPA less than or equal to 1.99 or equal to or greater than 1.20.
- Unsatisfactory standing - CGPA less than 1.20 (if this is the student's first term, the student is normally readmitted to Probationary Standing by Faculty decision).

Note: The Faculty makes academic standing decisions after the completion of each term (Fall, Winter, Summer) based on academic results to date. Thus, if a student has been granted permission to defer one or more examinations, the standing decision will be made regardless of such deferrals.

Please see below for further information about academic standing decisions.

Satisfactory Standing
Students in satisfactory standing may proceed, with the following conditions:

- All core courses in which D or F grades were obtained must either be repeated successfully (grade C or better) or be replaced by an alternative approved course which is completed successfully.
- All other courses in which F grades were obtained must either be repeated successfully at some point before graduation or be replaced by some alternative approved course which is completed successfully before graduation.

Students in poor academic standing are strongly urged to contact the Student Affairs Office to discuss their situation. Office staff are available to help guide students and to provide useful advice to help students achieve their goals. Helpful workshops are provided by Student Services, e.g., study skills, stress management, test anxiety. Students who are experiencing difficulties are encouraged to explore these avenues.

Probationary Standing
Students placed on Probationary Standing may proceed with their studies under the following conditions.

- Students must reduce their credit load to a maximum of 13 credits per term and must achieve at the end of the term either a CGPA of 2.00 or better, or a term GPA (TGPA) of 2.50 or better in order to continue.
- A student whose TGPA is 2.50 or better, but whose CGPA is less than 2.00, may continue on with his/her studies but will remain on Probationary Standing.

Failure to achieve either the TGPA or CGPA requirements noted above will result in the student being placed on "Unsatisfactory Standing" (see below). Students will remain on probationary standing until they achieve a CGPA equal to or exceeding 2.00, at which time their standing will be changed to "satisfactory".

Students placed on Probationary Standing who need to reduce their credit load but are unable to drop course(s) must complete a
Course Authorization Form and submit it to the Student Affairs Office. The course(s) will then be deleted manually from the student's record.

Unsatisfactory Standing
Students who have been placed on Unsatisfactory Standing will be asked to withdraw from the Faculty of Engineering for a minimum of one term. Courses for which the student is currently registered will be deleted automatically from the student's record by the Faculty.

After a minimum of one term away, the student can apply for readmission no later than November 1 (Winter term) and June 1 (Fall term). Students whose most recent academic standing is currently unsatisfactory as indicated on Minerva, and who wish to return to the Faculty of Engineering after a compulsory absence of a minimum of one term, must apply for readmission on Minerva, www.mcgill.ca/engineering/student/information/facultytransfer_readmission/readmission. Upon readmission, the student will be placed back on Probationary Standing. Students will remain on probationary standing until they achieve a CGPA greater than or equal to 2.00, at which time their standing will be changed to "satisfactory".

While on probation during that term and subsequent terms, the student must reduce his/her credit load to a maximum of 13 credits per term, and must meet or exceed a TGPA greater than or equal to 2.50 or a CGPA greater than or equal to 2.00. Students who fail to achieve the minimum TGPA required by their department will be required to permanently withdraw from the program with no chance of readmission. In addition, students who have returned to satisfactory standing, but whose CGPA falls below 2.00 in a subsequent term, will be required to permanently withdraw from the program with no chance of readmission.

Reassessment and Reread of a Grade

Students who fail the required results in a course must either repeat it successfully or complete a substitute course approved by their department. For students who fail prerequisite courses which are offered only in the Fall or Winter, the department responsible may, in appropriate cases, arrange "reading courses" during the other term or during the Summer months. Such courses taken during a Fall or Winter term constitute a normal part of the candidate's work load. If the student is on probation, these courses must be included in the workload reduction.

Repeated Courses
Students who fail to achieve the required results in a course must either repeat it successfully or complete a substitute course approved by their department. For students who fail prerequisite courses which are offered only in the Fall or Winter, the department responsible may, in appropriate cases, arrange "reading courses" during the other term or during the Summer months. Such courses taken during a Fall or Winter term constitute a normal part of the candidate's work load. If the student is on probation, these courses must be included in the workload reduction.

Reassessment and Reread of a Grade
In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. If, after discussion with the instructor, a student decides to request a formal reread of a final exam, the student must apply in writing, complete the Reread form and submit it to the Faculty of Engineering Student Affairs Office.

The following conditions apply:
• requests for rereads in more than one course per term will not be accepted, unless permission is given by the Faculty of Engineering;
• grades may be either raised or lowered as the result of a reread;
• rereads in courses not in the Faculty of Engineering are subject to the deadlines, rules and regulations of the relevant faculty;
• any request to have term work re-evaluated must be made directly to the instructor concerned.

The deadlines to make an application for a formal reread of a final exam are:
• the last working day of March for Fall courses,
• the last working day of July for Winter courses, and
• the last working day of November for Summer courses.

A $35 fee for each reread will be assessed directly to the student’s McGill account if the result remains the same or is lowered. If the grade is increased, no charge is made.

For further information, students may consult the Faculty of Engineering Student Affairs Office.

Examination Regulations
For information regarding examination regulations and procedures in the Faculty of Engineering, please refer to the Engineering Website at www.mcgill.ca/engineering.

Supplemental Examinations
Courses administered by the Faculty of Engineering do not have supplemental examinations; however, Engineering students may be eligible to write supplemental examinations in courses administered by the Faculties of Arts and Science (i.e., typically Humanities and Social Science courses and freshman (U0) courses).

The following conditions apply:
• students must be in satisfactory or probationary standing; those with an unsatisfactory standing are not permitted to write supplementals;
• students are permitted to write a supplemental for courses in which they have received a mark of D, F, J or U;
• students must write the supplemental exam at the time of the next supplemental examination period;
• special permission of the Associate Dean (Student Affairs), Faculty of Engineering, is required if a student wishes to write supplemental exams totalling more than seven (7) credits.
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for the course by the end of the course change period;
• the supplemental result will not erase the grade originally obtained; both the original grade and the supplemental result will be calculated in the CGPA;
• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course.

The supplemental examination period for Fall courses is during the months of April and May, and for Winter courses and courses spanning Fall/Winter during the last week of August. It is the student’s responsibility to confirm the date and time of the supplemental exam (www.mcgill.ca/engineering/student/policies/exam/supplementals). Supplemental exam applications are available from the Faculty of Engineering Student Affairs Office. Alternately, students may print out the Supplemental Examination Request Form from the Faculty Website and return it by mail or submit it to the Student Affairs Office.

The deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter terms.

There is a $35 non-refundable fee per each supplemental exam, which is charged directly to the student’s McGill student account.

Students should consult the Faculty of Engineering Student Affairs Office for more information.

Deferred Examinations
Students who have missed a final examination due to illness or family affliction must submit the following documentation to the Faculty of Engineering Student Affairs Office, Room 378, Macdonald Building:
• an original medical certificate or other documentation that covers the date of the missed examination, and the nature and duration of the illness;
• a completed Deferral Request Form;
• a detailed letter justifying the request for a deferral.

Students must also attest that they have completed all course-work up to date, which will be verified with the instructor(s). The Student Affairs Office must be informed of the reasons for
absences from final examination no later than one week after the date of the final examination that was missed. A student's signature on the Deferral Request Form will allow the Faculty to verify the authenticity of the medical certificate and the nature of the illness, or any other documentation provided. If the form is not signed, it will result in the assignment of a J grade in the course.

If a student becomes ill during a formal examination, he/she must inform the invigilator as soon as possible. If necessary, the student will be escorted to the Health Services. As stated above, the student must return to the Faculty of Engineering Student Affairs Office with medical certification within one week of the exam. IMPORTANT: If a student completes the exam in routine fashion, the grade received CANNOT be changed.

Students are advised that deferrals are granted ONLY for compelling reasons. If the request for deferral is denied by the Associate Dean (Student Affairs) the student will receive a "J" grade (absent) in the course. For the purpose of calculating GPAs and CGPAs, the grade of "J" is treated as an "F" (failed, 0%). Students will be contacted regarding the approval of a deferral initially via e-mail approximately two weeks after the end of examination period. A formal letter will be mailed at a later date. Students granted a deferral will be given an "L" grade which will be replaced by a "J" should the students miss the next deferred or regular examination in the course, whichever occurs first. Please note that you are ONLY allowed to write the final exam for the course in which you have been granted a deferral. You are NOT allowed to redo any portion of the coursework such as assignments, projects, labs, midterms, quizzes, etc. without the prior explicit permission of the Associate Dean, Student Affairs. Such permission is ONLY granted in exceptional circumstances, which you can request by providing a detailed justification of your reasons in a letter to the Associate Dean.

If a deferral is granted, the maximum number of courses that a student may register for will be limited to ensure that no more than 18 credits of course work are to be satisfied in a single term or no more than 6 exams are to be written, whichever is greater. This will provide a student with sufficient time during the term and the exam period to properly prepare for deferred examinations. For Engineering and Management courses, students granted a deferral MUST write the final exam the NEXT time it is offered. Students should be aware that a deferred examination might not be available until the next term. Students must be given an "L" grade, which will be replaced by a "J" should the students miss the next deferred or regular examination in the course, whichever occurs first. Please note that you are ONLY allowed to write the final exam for the course in which you have been granted a deferral. You are NOT allowed to redo any portion of the coursework such as assignments, projects, labs, midterms, quizzes, etc. without the prior explicit permission of the Associate Dean, Student Affairs. Such permission is ONLY granted in exceptional circumstances, which you can request by providing a detailed justification of your reasons in a letter to the Associate Dean.

For Arts and Science courses, students MUST write the supplemental examination offered during either May (for Fall courses) or August (for Winter courses). Consult the Calendar of Dates for the dates set for supplemental exams, and the supplemental examination schedule posted on the Web for the exact date and time of a specific exam. Please note, deferrals are not permitted for Summer courses. Students may be permitted to withdraw from a course without refund instead.

For Continuing Education courses, students granted a deferral should contact the Centre for Continuing Education directly for more information. For further information, refer to section 3.7.2.2 "Deferred Examinations".

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7.5 Academic Programs
The curricula described in the following pages, and the courses listed under "Course Information, Regulations and Descriptions (Appendix B)", have been approved for the 2006-07 session, but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

7.5.1 School of Architecture
Macdonald-Harrington Building, Room 201
815 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-6700
Fax: (514) 398-7372
Website: www.mcgill.ca/architecture

Director — David Covo
Emeritus Professors
Derek Drummond; B.Arch.(McG.), F.R.A.I.C., O.A.A. (William C. Macdonald Emeritus Professor of Architecture)

Professors
Avi Friedman; B.Arch., B.Art.(Technion), M.Arch.(McG.), Ph.D.(Montr.), O.A.Q., I.A.A.
Alberto Pérez-Gómez; Dipl.Eng.(Nat.Pol.Inst.Mexico), M.A., Ph.D.(Essex) (Saidye Rosner Bronfman Professor of Architectural History)
Adrian Sheppard; B.Arch.(McG.), M.Arch.(Yale), F.R.A.I.C., O.A.Q., A.A.P.P.Q.
program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture. While graduation from a CACB-accredited program does not assure registration, the accrediting process is intended to verify that each accredited program substantially meets those standards that, as a whole, comprise an appropriate education for an architect.

PROGRAMS OF STUDY

McGill’s professional program in architecture is structured as a four-and-a-half-year, or nine-term, course of study divided into two parts.

The first part, for students entering with the Diploma of Collegiate Studies in Pure and Applied Science or the equivalent, is a six-term design program leading to a non-professional degree, Bachelor of Science (Architecture). [Most students from outside Quebec are admitted to an eight-term B.Sc. (Arch.) program and enter a first year which includes courses outlined in section 7.3.1.3 “Architecture – Basic Science Requirements for Students Entering from Outside Quebec.”]

The second part, for students with the B.Sc. (Arch.) degree, is a one-and-a-half-year, or three-term, program leading to the professional Master of Architecture degree. The professional M.Arch. I is accredited by the Canadian Architectural Certification Board (CACB), and is recognized as accredited by the National Council of Architectural Registration Boards (NCARB) in the USA.

Students in the B.Sc. (Arch.) program who intend to proceed to the professional degree must satisfy certain minimum requirements including:

1. complete the B.Sc. (Arch.) degree, including the series of required and complementary courses stipulated for professional studies, with a minimum CGPA of 3.00;
2. submit a portfolio of work executed in the sequence of six design studios, as well as samples of professional and personal work;
3. complete the minimum period of relevant work experience according to the current Work Experience Guidelines.

Further information on the professional M.Arch. I program is available at www.mcgill.ca/architecture.

Student Exchanges

A limited number of qualified students may participate in an exchange with schools of architecture at other universities which have agreements with the McGill School of Architecture, for a maximum of one term in the second year of the B.Sc. (Arch.) program. These include: Istituto Universitario di Architettura di Venezia, Venice, Italy; Fakultät für Raumplanung und Architektur, Technische Universität Wien, Vienna, Austria; Institut Supérieur d’Architecture, Saint-Luc Bruxelles, Brussels, Belgium; École d’architecture de Grenoble, Grenoble, France; École d’architecture Clermont-Ferrand, Clermont-Ferrand, France; Facolta di Architettura Civile, Politecnico di Milano (Bovisa); Virginia Polytechnic Institute and State University, Faculty of Architecture; Alexandria Centre for Architecture and Urban Studies (M.Arch. only), Universidad Nacional Autonoma de Mexico, Facultad de Arquitectura; Technologico de Monterrey (Campus Queretero and Campus Monterrey), Departamento de Arquitectura; University of Florida, School of Architecture; Ball State University, Department of Architecture; University of Texas at Austin, School of Architecture.

ANCILLARY ACADEMIC FACILITIES

Laboratories and Workshops

Architectural Workshops – David Speller, Technician
Communications Laboratory, including Photo Lab – Carrie Henzie, Media Technician
Computers in Architecture Laboratories – Professor Robert Mellin

Building Science Resource Centre – Dr. Avi Friedman

Library

Blackader-Lauterman Library of Architecture and Art, located in the Redpath Library – Marilyn Berger
The School of Architecture Website at www.mcgill.ca/architecture.

Current information on program structure and courses is posted on

CURRICULUM FOR THE B.Sc.(Arch.) DEGREE

Current information on program structure and courses is posted on the School of Architecture Website at www.mcgill.ca/architecture.

REQUIRED COURSES

COURSE CREDIT

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
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<tbody>
<tr>
<td>CIVE 284 Structural Engineering Basics</td>
<td>4</td>
</tr>
<tr>
<td>CIVE 385* Structural Steel and Timber Design</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 389* Foundations and Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 492* Structures</td>
<td>2</td>
</tr>
<tr>
<td>FACC 220 Law for Architects and Engineers</td>
<td>3</td>
</tr>
</tbody>
</table>

* Candidates intending not to proceed to the M.Arch. I degree may substitute other courses of equal total weight for any of these.

Architectural Subjects

ARCH 201 Communication, Behaviour and Architecture | 6 |
ARCH 202 Architectural Graphics and Design | 6 |
ARCH 217 Freehand Drawing 1 | 1 |
ARCH 218 Freehand Drawing 2 | 1 |
ARCH 240 Organization of Materials in Building | 3 |
ARCH 241 Architectural Structures | 3 |
ARCH 242 Digital Representation. | 2 |
ARCH 250 Architectural History 1 | 3 |
ARCH 251 Architectural History 2 | 3 |
ARCH 303 Design and Construction 1 | 6 |
ARCH 304 Design and Construction 2 | 6 |
ARCH 321 Freehand Drawing 3 | 1 |
ARCH 322 Freehand Drawing 4 | 1 |
ARCH 324 Sketching School 1 | 1 |
ARCH 354 Architectural History 3 | 3 |
ARCH 355 Architectural History 4 | 3 |
ARCH 375 Landscape | 2 |
ARCH 377 Energy, Environment and Buildings | 3 |
ARCH 405 Design and Construction 3 | 6 |
ARCH 406 Design and Construction 4 | 6 |
ARCH 447 Lighting | 2 |
ARCH 451 Building Regulations and Safety | 2 |

COMPLEMENTARY COURSES

Students must complete 9 credits of architectural complementaries, from the following list in order to qualify for the B.Sc.(Arch.) degree.

ARCH 318 Design Sketching | 3 |
ARCH 319 The Camera and Perception | 3 |
ARCH 350 The Material Culture of Canada | 3 |
ARCH 352 Art and Theory of House Design | 3 |
ARCH 355 Structure, Organization and Form | 2 |
ARCH 372 History of Architecture in Canada | 2 |
ARCH 378 Site Usage | 3 |
ARCH 379 Summer Course Abroad | 4 |
ARCH 383 Geometry/Architecture/Environment | 3 |
ARCH 388 Introduction to Historic Preservation | 2 |
ARCH 461 Freehand Drawing and Sketching | 1 |
ARCH 471 Computer-Aided Building Design | 2 |
ARCH 490 Selected Topics in Design | 2 |
ARCH 512 Architectural Modelling | 3 |
ARCH 514 Community Design Workshop | 3 |
ARCH 515 Sustainable Design | 3 |
ARCH 520 Montreal: Urban Morphology | 3 |
ARCH 521 Structure of Cities | 3 |
ARCH 522 History of Domestic Architecture in Quebec | 3 |
ARCH 523 Significant Texts and Buildings | 3 |
ARCH 524 Seminar on Architectural Criticism | 3 |
ARCH 525 Seminar on Analysis and Theory | 3 |
ARCH 526 Philosophy of Structure | 3 |
ARCH 527 Civic Design | 3 |
ARCH 528 History of Housing | 3 |
ARCH 529 Housing Theory | 3 |
ARCH 531 Architectural Intentions Vitruvius - Renaissance | 3 |
ARCH 532 Origins of Modern Architecture | 3 |
ARCH 533 New Approaches to Architectural History | 3 |
ARCH 534 Architectural Archives | 3 |
ARCH 540 Selected Topics in Architecture 1 | 3 |
ARCH 541 Selected Topics in Architecture 2 | 3 |
ARCH 554 Mechanical Services | 3 |
ARCH 555 Environmental Acoustics | 3 |
OCC1 442 Enabling Environments | 2 |

ELECTIVE COURSES

6 credits must be completed outside the School of Architecture, subject to approval by the Student adviser.

TOTAL 100

7.5.2 Department of Chemical Engineering

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3610 University Street
Montreal, QC H3A 2B2
Telephone: (514) 398-4494
Fax: (514) 398-6678
Website: www.mcgill.ca/chemeng

Chair — Dimitrios Berk

Emeritus Professors

John M. Dealy; B.S.(Kansas), M.S.E., Ph.D.(Mich.), Eng.
Musa R. Kamal; B.S.(Ill.) M.S., Ph.D.(Carn. Mell.), Eng.
Richard J. Munz; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(McG.), Eng.
Juan H. Vera; B.Mat.(Chile), Ing.Quim.(U.T.E.), M.S.(Calif., Berk.), Dr.Ing.(Santa Maria), Ing.

Emeritus Professors

David G. Cooper; B.Sc., Ph.D.(Tor.)
Richard J. Munz; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(Mcg.), Eng.
Alejandro D. Rey; B.Ch.Eng.(CCNY), Ph.D.(Calif., Berk.) (James McGill Professor)

Associate Professors

Dimitrios Berk; B.Sc.(Bosphorus), M.E.Sc.(W.Ont.), Ph.D.(Calg.), P.Eng.
Jean-Luc Meunier; Dipl. Ing., EPFL (Lausanne), M.Sc., Ph.D., INRS(Varennes), Ing.

Assistant Professors

Sylvain Coulombe; B.Sc., M.Sc.A.(Sherb.), Ph.D.(Mcg.)
Reghan James Hill; B.Eng., Ph.D.(Cornell)
Richard L. Leask; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(Tor.)
Corey Leclerc; B.Sc., Ph.D.(Minn.)
Milan Maric; B.Sc., B.Eng. Mgmt(Mcif.), Ph.D.(Minn.)
Sasha Omanovic; B.Sc., Ph.D.(Zagreb)
Phillip Servio; B.Sc., Ph.D.(Minn.)
Nathalie Tufenkji; B.Eng.(McG.), M.Sc., Ph.D. (Yale)
Viviane Yargeau; B.Eng., M. Sc.A., Ph.D.(Sher.)

Post-Retirement

W.J. Murray Douglas; B.Sc.(Qu.), M.S.E., Ph.D.(Mich.)

Adjunct Professors

PAPRICAN Adjunct Professor

George J. Kubes; B.Eng., M.Eng.(Arad.), Ph.D.(Bratislava)

Adjunct Professors

The central purpose of engineering is to pursue solutions to technological problems in order to satisfy the needs and desires of society. Chemical engineers are trained to solve the kinds of problems that are typically found in the “chemical process industries”, which include the chemical manufacturing, plastics, water treatment, pulp and paper, petroleum refining, ceramics, and paint industries as well as substantial portions of the food processing, textile, nuclear energy, biochemical and pharmaceutical industries. The technological problems and opportunities in these industries are often closely linked to social, economic and environmental concerns. For this reason, practitioners of chemical engineering often deal with these questions when they are working in management, pollution abatement, product development, marketing and equipment design.

The discipline of chemical engineering is distinctive in being based equally on physics, mathematics and chemistry. Application of these three fundamental sciences is basic to a quantitative understanding of the process industries. Those with an interest in the fourth major science, biology, will find several courses in the chemical engineering curriculum which integrate aspects of the biological sciences relevant to process industries such as food processing, fermentation and water pollution control. Courses on the technical operations and economics of the process industries are added to this foundation. The core curriculum concludes with process design courses taught by practising design engineers. Problem-solving, experimenting, planning and communication skills are emphasized in courses throughout the core curriculum.

By means of complementary courses, students can also obtain further depth in technical areas and breadth in non-technical subjects. Some students elect to complete a minor in biotechnology, management, materials engineering, computer science, environmental engineering or chemistry.

The solution to many environmental problems requires an understanding of technological principles. A chemical engineering degree provides an ideal background. In addition to relevant material learned in the core program, a selection of environmental complementary courses and minor programs is available. The involvement of many chemical engineering staff members in environmental research provides the opportunity for undergraduate students to carry out research projects in this area.

The curriculum also provides the preparation necessary to undertake postgraduate studies leading to the M.Eng. or Ph.D. degrees in chemical engineering. Students completing this curriculum acquire a broad, balanced education in the natural sciences with the accent on application. Thus, for those who do not continue in chemical engineering, it provides an exceptionally balanced education in applied science. For others, it will form the basis of an educational program that may continue with a variety of studies such as business administration, medicine or law. Versatility is, then, one of the most valuable characteristics of the graduate of the chemical engineering program.

ACADEMIC PROGRAM

For those who have completed the Quebec CEGEP-level program in Pure and Applied Sciences, the Chemical Engineering Program comprises 111 credits as outlined below. Certain students who take advantage of summer session courses can complete the departmental programs in three calendar years. Students who have passed Chemistry 202 or 302 at the CEGEP level may be exempt from course CHEM 212 or CHEM 234, respectively (Introductory Organic Chemistry 1 and Selected Topics in Organic Chemistry), the corresponding courses are transferred from required courses to electives.

For appropriately qualified high school graduates from outside Quebec, an extended credit program is available, as described in section 7.3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”.

In some cases students from university science disciplines have sufficient credits to complete the requirements for the B.Eng. (Chemical) program in two years. Those concerned should discuss this with their adviser.

Students must obtain a C grade or better in all core courses. For the Department of Chemical Engineering, core courses include all required courses (departmental and non-departmental) as well as complementary courses (departmental).

CURRICULUM FOR THE B.ENG. DEGREE IN CHEMICAL ENGINEERING

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>COURSE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Departmental Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 212 Introductory Organic Chemistry 1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 234 Topics in Organic Chemistry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMP 208 Computers in Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 262 Intermediate Calculus</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 264 Advanced Calculus</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MIME 221 Engineering Professional Practice</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MIME 310 Engineering Economy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical Engineering Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEE 200 Introduction to Chemical Engineering</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 204 Chemical Manufacturing Processes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 220 Chemical Engineering Thermodynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 291 Instrumental Measurements Laboratory</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 310 Physical Chemistry for Engineers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 314 Fluid Mechanics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 315 Heat and Mass Transfer</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 340 Process Modelling</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 351 Separation Processes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 360 Technical Paper 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEE 370 Elements of Biotechnology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 380 Materials Science</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 392 Project Laboratory 1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 393 Project Laboratory 2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>CHEE 423 Chemical Reaction Engineering</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 453 Process Design</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 455 Process Control</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEE 456 Design Project 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEE 457 Design Project 2</td>
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<td></td>
</tr>
<tr>
<td>CHEE 462 Technical Paper 2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEE 474 Biochemical Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEE 484 Materials Engineering</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

COMPLEMENTARY COURSES

Courses to be selected from those approved by the Department (see list of technical complementsaries below)

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

TOTAL 111

For students starting their B.Eng. studies in September who have completed the Quebec Diploma of Collegial Studies, a program for the first two terms of study is given below:

Term 1

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEE 200 Introduction to Chemical Engineering</td>
<td>4</td>
</tr>
<tr>
<td>CHEE 291 Instrumental Measurement Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212 Introductory Organic Chemistry 1</td>
<td>4</td>
</tr>
<tr>
<td>MATH 262 Intermediate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MIME 221 Engineering Professional Practice</td>
<td>2</td>
</tr>
</tbody>
</table>

Term 2

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEE 204 Chemical Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>CHEE 220 Chemical Engineering Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 234 Topics in Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>COMP 208 Computers in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MATH 263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Students entering their second year of study or who are starting in January must plan their program of studies in consultation with their Departmental adviser.
### TECHNICAL COMPLEMENTARIES

A minimum of 9 credits of complementary courses must be chosen from a list of technical complementaries approved by the Department. The purpose of this requirement is to provide students with an area of specialization within the broad field of chemical engineering. Alternatively, some students use the technical complementaries to increase the breadth of their chemical engineering training.

At least two (2) technical complementary courses are to be selected from those offered by the Department (list below). Permission is given to take the third complementary course from other suitable undergraduate courses in the Faculty of Engineering.

The Technical Complementary courses currently approved by the Department are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOT 505</td>
<td>Selected Topics in Biotechnology</td>
</tr>
<tr>
<td>CHEE 363</td>
<td>Projects Chemical Engineering 1</td>
</tr>
<tr>
<td>CHEE 438</td>
<td>Engineering Principles in Pulp and Paper Processes</td>
</tr>
<tr>
<td>CHEE 452</td>
<td>Particulate Systems</td>
</tr>
<tr>
<td>CHEE 458</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>CHEE 464</td>
<td>Projects in Chemical Engineering 2</td>
</tr>
<tr>
<td>CHEE 471</td>
<td>Industrial Water Pollution Control (or CIVE 430)</td>
</tr>
<tr>
<td>CHEE 487</td>
<td>Chemical Processing Electronics Industry</td>
</tr>
<tr>
<td>CHEE 494</td>
<td>Research Project and Seminar 1</td>
</tr>
<tr>
<td>or CHEE 495 Research Project and Seminar 2</td>
<td></td>
</tr>
<tr>
<td>or CHEE 496 Environmental Research Project</td>
<td></td>
</tr>
<tr>
<td>CHEE 541</td>
<td>Electrochemical Engineering</td>
</tr>
<tr>
<td>CHEE 543</td>
<td>Plasma Engineering</td>
</tr>
<tr>
<td>CHEE 563</td>
<td>Biofluids and Cardiovascular Mech. or MECH 563</td>
</tr>
<tr>
<td>CHEE 571</td>
<td>Small Computer Applications: Chemical Engineering</td>
</tr>
<tr>
<td>CHEE 582</td>
<td>Polymer Science &amp; Engineering</td>
</tr>
<tr>
<td>CHEE 584</td>
<td>Polymer Processing</td>
</tr>
<tr>
<td>CHEE 591</td>
<td>Environmental Bioremediation</td>
</tr>
<tr>
<td>CHEE 592</td>
<td>Industrial Air Pollution Control</td>
</tr>
<tr>
<td>or MECH 534 Air Pollution Engineering</td>
<td></td>
</tr>
<tr>
<td>CHEE 595</td>
<td>Energy Recovery, Use, &amp; Impact</td>
</tr>
</tbody>
</table>

Courses CHEE 582 and CHEE 584 comprise a Polymeric Materials sequence. Additional courses in this area are available in the Chemistry Department (e.g., CHEM 455) or at the graduate level (CHEE 681 to CHEE 684). The Department has considerable expertise in the polymer area.

Courses CHEE 370 and CHEE 474 make up a sequence in Biochemical Engineering-Biotechnology. Students interested in this area may take additional courses, particularly those offered by the Department of Food Science and Agricultural Chemistry, Faculty of Agricultural and Environmental Sciences, and courses in biochemical and microbiology. The food, beverage and pharmaceutical industries are large industries in the Montreal area and these courses are relevant to these industries and to the new high-technology applications of biotechnology.

The third area in which there is a sequence of courses is Pollution Control. The Department offers three courses in this area: CHEE 471, CHEE 591 and CHEE 592. As some water pollution control problems are solved by microbial processes, course CHEE 474 is also relevant to the pollution control area. Likewise, as the solution to pollution problems frequently involves removal of particulate matter from gaseous or liquid streams, course CHEE 452 is also relevant. Additional courses in this area are listed under section 7.6.8 "Environmental Engineering Minor".

A Minor in Biotechnology is also offered in the Faculties of Engineering and of Science with emphasis on Molecular Biology and Chemical Engineering Processes. A full description of the program appears in section 7.6.3 "Biotechnology Minor".

### ELECTIVE COURSES

Students who have obtained exemptions for courses, i.e., for CEGEP courses equivalent to CHEM 212 or CHEM 234, or who take more than the minimum requirements for the degree, may choose university-level courses in any field. Approval of an elective course requires only that no timetable conflicts are created and that it not be a repetition of material already covered in the curriculum or already mastered by the student.

### CURRICULUM COMMITTEE

The Curriculum Committee is composed of three students, elected by their classes, and two staff members. This Committee provides a forum for all matters involving undergraduate student/staff interactions. While the primary concern is with matters of curriculum and courses (their content, evaluation, scheduling, etc.), the Committee has also taken up a number of other matters in recent years, e.g., working space, facilities (equipment and libraries), etc.

### CANADIAN SOCIETY FOR CHEMICAL ENGINEERING

The Chemical Engineering Student Society has for many years been affiliated both with the CSChE (Canadian Society for Chemical Engineering) and with the AIChE (American Institute of Chemical Engineers). For a nominal fee students receive Canadian Chemical News, a monthly publication, and the AIChE Student Members Bulletin as well as other privileges of student membership in the two societies. The student chapter also organizes a series of local social, educational and sporting events. For example, recent events have included student-professor banquets and Christmas parties, dances, speakers, broomball games and joint meetings with the Montreal Section of the CSChE. The latter gives students a chance to mix with practising chemical engineers.

### 7.5.3 Department of Civil Engineering and Applied Mechanics

Macdonald Engineering Building, Room 492
817 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-6860
Fax: (514) 398-7361
Website: www.mcgill.ca/civil

Chair — Denis Mitchell

Emeritus Professors
Stuart B. Savage; B.Eng. (McG.), M.S.Eng. (Calif.Tech.), Ph.D. (McG.), F.R.S.C.

Professors
Vincent H. Chu; B.S.Eng. (Taiwan), M.A.Sc. (Tor.), Ph.D. (MIT), Eng.

Note that many of the technical complementaries are offered only in alternate years. Students should, therefore, plan their complementaries as far ahead as possible. With the approval of the instructor and academic adviser, students may take graduate (CHEE 500-level) courses as technical complementaries.
Civil engineers have traditionally applied scientific and engineering knowledge to the task of providing the built environment, from its conception and planning to its design, construction, maintenance and rehabilitation. Examples include buildings, bridges, roads, railways, dams, and facilities for water supply and treatment, and waste disposal. With the aging and deterioration of an already vast infrastructure, its maintenance and rehabilitation has become an increasingly important role of the civil engineering profession. Also, with worldwide concern about the detrimental impact of human activities on the environment, civil engineers are now in the forefront of developing and providing the means for both prevention and remediation of many aspects of environmental pollution.

The program in Civil Engineering is comprehensive in providing the fundamentals in mechanics and engineering associated with the diverse fields of the profession, in offering choices of specialization, and in fully reflecting the advances in science, mathematics, engineering and computing that have transformed all fields of engineering in recent years. The resulting knowledge and training enables graduates to not only enter the profession thoroughly well prepared, but also to adapt to further change.

The required courses ensure a sound scientific and analytical basis for professional studies through courses in solid mechanics, fluid mechanics, soil mechanics, environmental engineering, water resources management, structural analysis, systems analysis and mathematics. Fundamental concepts are applied to various fields of practice in both required and complementary courses. By a suitable choice of complementary courses, students can attain advanced levels of technical knowledge in the specialized areas mentioned above. Alternatively, students may choose to develop their interests in a more general way by combining complementary courses within the Department with several from other departments or faculties. Students who wish to extend their knowledge in certain areas beyond the range that the program complementary courses allow can also take a Minor program. Minors are available in fields such as Arts, Economics, Management, Environmental Engineering, and Construction Engineering and Management. These require additional credits to be taken from a specified list of topics relating to the chosen field. Further information on the various Minor programs may be found in section 7.6 “Minor Programs”. Details of how the Minors can be accommodated within the Civil Engineering program will be made available at the time of preregistration counselling.

**ACADEMIC PROGRAMS**

Considerable freedom exists for students to influence the nature of the program of study which they follow in the Department of Civil Engineering and Applied Mechanics. A variety of advanced complementary courses is offered in five main groupings: Environmental Engineering, Geotechnical and Geoenvironmental Engineering, Water Resources and Hydraulic Engineering, Structural Engineering, and Transportation Engineering.

Guidance on the sequence in which required core courses should be taken is provided for students in the form of a sample program which covers the entire period of study. The technical complementary courses selected, usually in the last two terms of the program, will depend upon the student’s interests. All students must meet with their advisor each term to confirm the courses for which they are registered.

Courses taken in Term 3 or later will depend on a student’s interests and ability. Information and advice concerning different possibilities are made available in the Department prior to registration. All programs require the approval of a staff advisor. Programs for students transferring into the Department with advanced standing will be dependent upon the academic credit previously achieved, and such a program will be established only after consultation with a staff advisor.

### CURRICULUM FOR THE B.ENG. DEGREE IN CIVIL ENGINEERING

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 208</td>
<td>Computers in Engineering 3</td>
</tr>
<tr>
<td>EDEC 206</td>
<td>Communication in Engineering 3</td>
</tr>
<tr>
<td>EPSC 221</td>
<td>General Geology 3</td>
</tr>
<tr>
<td>MATH 262</td>
<td>Intermediate Calculus 3</td>
</tr>
<tr>
<td>MATH 263</td>
<td>Ordinary Differential Equations and Linear Algebra 3</td>
</tr>
<tr>
<td>MATH 264</td>
<td>Advanced Calculus 3</td>
</tr>
<tr>
<td>MECH 261</td>
<td>Measurement Laboratory 2</td>
</tr>
<tr>
<td>MECH 289</td>
<td>Design Graphics 3</td>
</tr>
<tr>
<td>MIME 221</td>
<td>Engineering Professional Practice 2</td>
</tr>
<tr>
<td>MIME 310</td>
<td>Engineering Economy 3</td>
</tr>
</tbody>
</table>

#### Departmental courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE 202</td>
<td>Construction Materials 4</td>
</tr>
<tr>
<td>CIVE 205</td>
<td>Statics 3</td>
</tr>
<tr>
<td>CIVE 206</td>
<td>Dynamics 3</td>
</tr>
<tr>
<td>CIVE 207</td>
<td>Solid Mechanics 4</td>
</tr>
<tr>
<td>CIVE 208</td>
<td>Civil Engineering Systems Analysis 3</td>
</tr>
<tr>
<td>CIVE 210</td>
<td>Surveying 2</td>
</tr>
<tr>
<td>CIVE 225</td>
<td>Environmental Engineering 4</td>
</tr>
<tr>
<td>CIVE 290</td>
<td>Thermodynamics and Heat Transfer 3</td>
</tr>
<tr>
<td>CIVE 302</td>
<td>Probabilistic Systems 3</td>
</tr>
<tr>
<td>CIVE 311</td>
<td>Geotechnical Mechanics 4</td>
</tr>
<tr>
<td>CIVE 317</td>
<td>Structural Engineering 1 3</td>
</tr>
<tr>
<td>CIVE 318</td>
<td>Structural Engineering 2 3</td>
</tr>
<tr>
<td>CIVE 319</td>
<td>Transportation Engineering 3</td>
</tr>
<tr>
<td>CIVE 320</td>
<td>Numerical Methods 4</td>
</tr>
<tr>
<td>CIVE 323</td>
<td>Hydrology and Water Resources 3</td>
</tr>
<tr>
<td>CIVE 324</td>
<td>Construction Project Management 3</td>
</tr>
<tr>
<td>CIVE 327</td>
<td>Fluid Mechanics and Hydraulics 1 4</td>
</tr>
<tr>
<td>CIVE 418</td>
<td>Design Project 3</td>
</tr>
<tr>
<td>CIVE 432</td>
<td>Technical Paper 1</td>
</tr>
</tbody>
</table>

#### COMPLEMENTARY COURSES

A minimum of six credits is to be selected from list (a) and the remaining nine credits to be selected from lists (a) or (b) or from other suitable undergraduate or 500-level courses.

**(a) Design Technical Complementaries**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE 416</td>
<td>(3) Geotechnical Engineering</td>
</tr>
<tr>
<td>CIVE 421</td>
<td>(3) Municipal Systems</td>
</tr>
<tr>
<td>CIVE 428</td>
<td>(3) Water Resources and Hydraulic Engineering</td>
</tr>
<tr>
<td>CIVE 430</td>
<td>(3) Water Treatment and Pollution Control</td>
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<tr>
<td>CIVE 462</td>
<td>(3) Design of Steel Structures</td>
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<tr>
<td>CIVE 463</td>
<td>(3) Design of Concrete Structures</td>
</tr>
</tbody>
</table>

**(b) General Technical Complementaries**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
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<tbody>
<tr>
<td>CIVE 433</td>
<td>(3) Urban Planning</td>
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<tr>
<td>CIVE 440</td>
<td>(3) Traffic Engineering</td>
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</table>
**TOTAL CREDITS 109**

### 7.5.4 Department of Electrical and Computer Engineering

Department of Electrical & Computer Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>(3) Construction Engineering</td>
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<tr>
<td>CIVE 451</td>
<td>(3) Geoenvironmental Engineering</td>
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<tr>
<td>CIVE 460</td>
<td>(3) Matrix Structural Analysis</td>
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<tr>
<td>CIVE 470</td>
<td>(3) Research Project</td>
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<td>CIVE 512</td>
<td>(3) Advanced Civil Engineering Materials</td>
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<tr>
<td>CIVE 526</td>
<td>(3) Solid Waste Management</td>
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<tr>
<td>CIVE 527</td>
<td>(3) Renovation and Preservation: Infrastructure</td>
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<tr>
<td>CIVE 540</td>
<td>(3) Urban Transportation Planning</td>
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<td>CIVE 541</td>
<td>(3) Rail Engineering</td>
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<tr>
<td>CIVE 550</td>
<td>(3) Water Resources Management</td>
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<tr>
<td>CIVE 553</td>
<td>(3) Stream Pollution and Control</td>
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<tr>
<td>CIVE 555</td>
<td>(3) Environmental Data Analysis</td>
<td></td>
</tr>
<tr>
<td>CIVE 570</td>
<td>(3) Waves and Coastal Engineering</td>
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<tr>
<td>CIVE 572</td>
<td>(3) Computational Hydraulics</td>
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<tr>
<td>CIVE 573</td>
<td>(3) Hydraulic Structures</td>
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<tr>
<td>CIVE 574</td>
<td>(3) Fluid Mechanics of Water Pollution</td>
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<tr>
<td>CIVE 576</td>
<td>(3) Hydrodynamics</td>
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<td>CIVE 577</td>
<td>(3) River Engineering</td>
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<td>CIVE 579</td>
<td>(3) Water Power Engineering</td>
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<tr>
<td>CIVE 585</td>
<td>(3) Groundwater Hydrology</td>
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<tr>
<td>CIVE 586</td>
<td>(3) Earthwork Engineering</td>
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<tr>
<td>CIVE 587</td>
<td>(3) Pavement Design</td>
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</table>

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

**TOTAL CREDITS 6**

*Note: The information provided is a partial listing and the full document contains additional courses and information.*
The program in Electrical Engineering gives students a broad understanding of the key principles that are responsible for the extraordinary advances in the technology of computers, microelectronics, automation and robotics, telecommunications and power systems. These areas are critical to the development of our industries and, more generally, to our economy. A graduate of this program is exposed to all basic elements of electrical engineering and can function in any of our client industries. This breadth is what distinguishes an engineer from, say, a computer scientist or physicist.

The program in Electrical Engineering (Honours) is designed for students who wish to pursue postgraduate work and look to a career in advanced research and development. The technical complementsaries are selected from graduate courses, facilitating the transition to graduate studies. Students in this curriculum benefit from smaller classes and have more contact with professional staff and graduate students. However, the program is quite demanding. Students are expected to register for at least 14 credits per term; they may register for a smaller number only with the permission of the Chair of this Department. Students in the Honours program must maintain a minimum GPA of 3.30. Those who fail to maintain this standard are transferred to the regular program.

The program in Computer Engineering provides students with greater depth and breadth of knowledge in the hardware and software aspects of computers. Students are exposed to both theoretical and practical issues of both hardware and software in well-equipped laboratories. Although the program is designed to meet the growing demands by industry for engineers with a strong background in modern computer technology, it also provides the underlying depth for graduate studies in all fields of Computer Engineering.

The Department, jointly with the School of Computer Science, offers a Bachelor of Software Engineering program. Graduates of this program should be eligible for accreditation (once accreditation standards for Software Engineers have been adopted). This program offers students the opportunity to focus their studies on the skills needed to design and develop complex software systems. This emerging field of engineering is a major component of the growing Information Technology (IT) sector of the economy, in which the demand for qualified personnel continues to outstrip supply. Graduates of this program will have a solid foundation for careers in the software industry. [The School of Computer Science offers a B.Sc. Major program in Software Engineering, which will not lead to accreditation. For further information on the B.Sc. program see section 11.12.9 “Computer Science (COMP)”.

In addition to technical complementsary courses, students in all three programs take general complementsary courses in social sciences, administrative studies and humanities. These courses allow students to develop specific interests in areas such as psychology, economics, management or political science.

Entry into the Honours Program

The Honours program is a limited enrolment program and entry is highly competitive. There is no direct entry to the Honours program in the first year. Students may enter the Honours program in the following ways:

- Students from CEGEP will be admitted, on the basis of their grades, at the start of the third term.
- Students from outside Quebec will be admitted, on the basis of their grades, at the start of the fifth term.

Though not required to do so, students in the Honours program or wishing to enter the Honours program are encouraged to take the following advanced math and physics courses:

- MATH 325 Honours Ordinary Differential Equations
- MATH 247 Honours Linear Algebra
- MATH 248 Honours Advanced Calculus
- MATH 249 Honours Complex Variables
- PHYS 251 Classical Mechanics

To remain in the Honours program and to be awarded the Honours degree, a student must have completed at least 14 credits in each term since entering Electrical and Computer Engineering, except for the final two terms of their degree, and maintained a CGPA of at least 3.30 since entering Electrical and Computer Engineering. In either of their final two full terms (i.e., Fall and Winter, or Winter and Fall) students may drop below 14 credits, provided the combined load for the two terms is at least 16 credits. For more information, please contact the Departmental office at (514) 398-3943.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (HONOURS)

 REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>Non-Departmental Courses</td>
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</tr>
<tr>
<td>COMP 202</td>
<td>3</td>
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<tr>
<td>EDEC 206</td>
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<tr>
<td>MATH 262</td>
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<td>MATH 247*</td>
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<tr>
<td>MATH 248*</td>
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<tr>
<td>MATH 249</td>
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<td>MATH 271</td>
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<td>PHYS 251</td>
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<td>PHYS 271</td>
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<table>
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<tr>
<th>Required Courses</th>
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<tr>
<td>MATH 247</td>
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<tr>
<td>MATH 248</td>
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<tr>
<td>MATH 264</td>
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<tr>
<td>MATH 381</td>
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<td>MATH 325</td>
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<td>MIME 221</td>
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<tr>
<td>MIME 310</td>
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<tr>
<td>PHYS 251</td>
</tr>
<tr>
<td>PHYS 271</td>
</tr>
</tbody>
</table>

* CGPA of 3.30 is required to register for MATH 247 and MATH 248.

Departmental Courses

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>ECSE 200</td>
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<td>ECSE 210</td>
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<td>ECSE 221</td>
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<td>ECSE 291</td>
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<td>ECSE 352</td>
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<td>ECSE 361</td>
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<td>ECSE 498</td>
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<td>ECSE 499</td>
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COMPLEMENTARY COURSES

Technical Complementsary Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>CREDIT</th>
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</thead>
<tbody>
<tr>
<td>Computer Systems Technology</td>
<td></td>
</tr>
<tr>
<td>ECSE 427</td>
<td>3</td>
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<tr>
<td>ECSE 525</td>
<td>3</td>
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<tr>
<td>ECSE 532</td>
<td>3</td>
</tr>
<tr>
<td>ECSE 548</td>
<td>3</td>
</tr>
<tr>
<td>ECSE 501</td>
<td>3</td>
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</tbody>
</table>

Five technical complementsary courses (15 credits), which must be ECSE courses at the 500 level (or ECSE 427, ECSE 451). Students must choose their technical complementsary courses so that they complete at least 9 credits in one of the following specializations. However, with Departmental approval, the Honours Thesis 1 and 2 (ECSE 498 and ECSE 499) can count as 6 of the 9 credits. The remaining courses may be any at the 500 level offered by the Department. The choice is not restricted.
ECSE 504  Sampled Data Control
ECSE 505  Nonlinear Control Systems
ECSE 507  Optimization and Control
ECSE 509  Probability and Random Sig. 2
ECSE 510  Stochastic Processes and Systems
ECSE 512  Digital Signal Processing 1
ECSE 529  Image Processing and Communication
ECSE 531  Real Time Systems

Integrated Circuits and Electronics
ECSE 451  EM Transmission & Radiation
ECSE 522  Asynchronous Circuits and Systems
ECSE 527  Optical Engineering
ECSE 530  Logic Synthesis
ECSE 533  Physical Basis of Semiconductor Devices
ECSE 534  Analog Microelectronics
ECSE 536  RF Microelectronics
ECSE 545  Microelectronics Technology
ECSE 548  Introduction to VLSI Systems
ECSE 571  Optoelectronic Devices
ECSE 573  Microwave Electronics
ECSE 597  Circuit Simulators

Power Engineering
ECSE 549  Expert Systems in Electrical Design
ECSE 559  Flexible AC Transmission Systems
ECSE 573  Microwave Electronics
ECSE 581  Complex Variables and Transforms
MIME 221  Engineering Professional Practice
MIME 310  Engineering Economy

Telecommunications
ECSE 451  EM Transmission and Radiation
ECSE 509  Probability and Random Sig. 2
ECSE 511  Introduction to Digital Communication
ECSE 512  Digital Signal Processing 1
ECSE 521  Digital Communications 1
ECSE 523  Speech Communications
ECSE 527  Optical Engineering
ECSE 528  Telecommunication Network Architecture
ECSE 571  Optoelectronic Devices
ECSE 593  Antennas and Propagation
ECSE 596  Optical Waveguides

Laboratory Complementaries 4
Two of the following eleven 400-level laboratory courses:
ECSE 426  Microprocessor Systems
ECSE 431  Introduction to VLSI CAD
ECSE 435  Mixed-Signal Test Techniques
ECSE 436  Signal Processing Hardware
ECSE 450  Electromagnetic Compatibility
ECSE 485  IC Fabrication Laboratory
ECSE 486  Power Laboratory
ECSE 487  Computer Architecture Laboratory
ECSE 488  High Frequency Laboratory
ECSE 490  Digital Signal Processing Laboratory
ECSE 491  Communication Systems Laboratory
ECSE 492  Optical Communications Laboratory
ECSE 493  Control and Robotics Laboratory

General Complementaries 6
Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

TOTAL CREDITS 108

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (REGULAR)

REQUIRED COURSES

Non-Departmental Courses
CIVE 281  Analytical Mechanics
or PHYS 251  Classical Mechanics 1 (3)
COMP 202  Introduction to Computing 1
EDEC 206  Communication in Engineering

Departmental Courses
ECSE 200  Fundamentals of Electrical Engineering
ECSE 210  Circuit Analysis
ECSE 221  Introduction to Computer Engineering
ECSE 291  Electrical Measurements Laboratory
ECSE 303  Signals and Systems 1
ECSE 304  Signals and Systems 2
ECSE 322  Computer Engineering
ECSE 323  Digital System Design
ECSE 330  Introduction to Electronics
ECSE 351  Electromagnetic Fields
ECSE 352  EM Waves and Optics
ECSE 361  Power Engineering
ECSE 494  Electrical Engineering Design Project
ECSE 483  Multidisciplinary Project 1

COMPLEMENTARY COURSES

Technical Complementaries 18
Six courses (18 credits) from the list of 400-level courses in Electrical Engineering that must include 9 credits (3 courses) from one of the areas of specialization listed below:

Computer Systems Technology
ECSE 421  Embedded Systems
ECSE 424  Human-Computer Interaction
ECSE 425  Computer Organization and Architecture
ECSE 427  Operating Systems

Control and Automation
ECSE 404  Control Systems
ECSE 412  Discrete Time Signal Processing
ECSE 426  Microprocessor Systems
ECSE 436  Signal Processing Hardware

Integrated Circuits and Electronics
ECSE 425  Computer Organization and Architecture
ECSE 431  Introduction to VLSI CAD
ECSE 432  Physical Basis: Transistor Devices
ECSE 435  Mixed-Signal Test Techniques
ECSE 450  Electromagnetic Compatibility
ECSE 451  EM Transmission & Radiation

Phototonics
ECSE 423  Fundamentals of Photonics
ECSE 430  Photonic Devices and Systems
ECSE 432  Physical Basis: Transistor Devices

Power Engineering*
ECSE 404  Control Systems
ECSE 460  Appareillage électrique (Electrical Power Equipment)
ECSE 462  Electromechanical Energy Conversion
ECSE 463  Matériaux de l’électricité
ECSE 464  Power System Analysis 1
ECSE 465  Power Electronic Systems
ECSE 467  Comportement des réseaux élect
Selection process for the scholarship may involve an interview with the committee presided by Hydro-Québec. There is a possibility of an internship with Hydro-Québec.

Curriculum requirements for selected students: Generally, unless the University has authorized specific substitutions, students must complete the degree requirements set out in the 2006-07 Undergraduate Programs Calendar with the following specifications:

Technical Complementary and Laboratories: Courses to be taken from the Power Engineering Technical Complementary Course list in consultation with the Departmental Adviser.

**Curriculum for the B.Eng. Degree in Computer Engineering**

**Required Courses**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
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<tbody>
<tr>
<td>MATH 262</td>
<td>Intermediate Calculus</td>
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<tr>
<td>MATH 263</td>
<td>Ordinary Differential Equations and Linear Algebra</td>
</tr>
<tr>
<td>or MATH 325</td>
<td>Honours Ordinary Differential Equations (3)</td>
</tr>
<tr>
<td>MATH 264</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>or MATH 248</td>
<td>Honours Advanced Calculus (3)</td>
</tr>
<tr>
<td>MATH 270</td>
<td>Applied Linear Algebra</td>
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<tr>
<td>or MATH 247</td>
<td>Honours Applied Linear Algebra (3)</td>
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<tr>
<td>MATH 363</td>
<td>Discrete Mathematics</td>
</tr>
<tr>
<td>MATH 381</td>
<td>Complex Variables and Transforms</td>
</tr>
<tr>
<td>CIVE 281</td>
<td>Analytical Mechanics</td>
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<tr>
<td>or PHYS 251</td>
<td>Classical Mechanics 1 (3)</td>
</tr>
<tr>
<td>MIME 221</td>
<td>Engineering Professional Practice</td>
</tr>
<tr>
<td>MIME 310</td>
<td>Engineering Economy</td>
</tr>
<tr>
<td>COMP 202</td>
<td>Introduction to Computing</td>
</tr>
<tr>
<td>COMP 250</td>
<td>Introduction to Computer Science</td>
</tr>
<tr>
<td>COMP 302</td>
<td>Programming Paradigms</td>
</tr>
<tr>
<td>EDEC 206</td>
<td>Communication in Engineering</td>
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<tr>
<td><em>CGPA of 3.30 is required to register for MATH 247 and MATH 248.</em></td>
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**Departmental Courses**

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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>ECSE 200</td>
<td>Fundamentals of Electrical Engineering</td>
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<td>ECSE 210</td>
<td>Circuit Analysis</td>
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<tr>
<td>ECSE 221</td>
<td>Introduction to Computer Engineering</td>
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<tr>
<td>ECSE 291</td>
<td>Electrical Measurements Laboratory</td>
</tr>
<tr>
<td>ECSE 303</td>
<td>Signals and Systems 1</td>
</tr>
<tr>
<td>ECSE 304</td>
<td>Signals and Systems 2</td>
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<tr>
<td>ECSE 305</td>
<td>Probability and Random Sig. 1</td>
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<tr>
<td>ECSE 321</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td>ECSE 322</td>
<td>Computer Engineering</td>
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<tr>
<td>ECSE 323</td>
<td>Digital System Design</td>
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<tr>
<td>ECSE 330</td>
<td>Introduction to Electronics</td>
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<td>ECSE 334</td>
<td>Introduction to Microelectronics</td>
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<td>ECSE 353</td>
<td>Electromagnetic Fields and Waves</td>
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<tr>
<td>ECSE 425</td>
<td>Computer Organization and Architecture</td>
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<td>ECSE 426</td>
<td>Microprocessor Systems</td>
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<td>ECSE 427</td>
<td>Operating Systems</td>
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<td>ECSE 494</td>
<td>Electrical Engineering Design Project</td>
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<tr>
<td>or ECSE 483</td>
<td>Multidisciplinary Project 1</td>
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<tr>
<td>and ECSE</td>
<td>Multidisciplinary Project 2</td>
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**Complementary Courses**

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>ECSE 404</td>
<td>Control Systems</td>
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<tr>
<td>ECSE 411</td>
<td>Communications Systems</td>
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<tr>
<td>ECSE 412</td>
<td>Discrete Time Signal Processing</td>
</tr>
<tr>
<td>ECSE 414</td>
<td>Introduction to Telecommunication Networks</td>
</tr>
<tr>
<td>or COMP 535</td>
<td>Computer Networks</td>
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<tr>
<td>ECSE 420</td>
<td>Parallel Computing</td>
</tr>
<tr>
<td>ECSE 421</td>
<td>Embedded Systems</td>
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</table>
ECSE 422 Fault Tolerant Computing
ECSE 424 Human-Computer Interaction
ECSE 428 Software Engineering Practice
ECSE 429 Software Validation.
ECSE 431 Introduction to VLSI CAD
ECSE 436 Signal Processing Hardware
ECSE 450 Electromagnetic Compatibility.
ECSE 526 Artificial Intelligence
ECSE 530 Logic Synthesis
ECSE 531 Real Time Systems
ECSE 532 Computer Graphics
ECSE 548 Introduction to VLSI Systems
COMP 420 Secondary Storage Algorithms and Data Structures
COMP 431 Algorithms for Engineers
COMP 575 Fundamentals of Distributed Algorithms
Automation Complementaries 4
Two of the following 400-level laboratory courses:
ECSE 431 Introduction to VLSI CAD
ECSE 435 Mixed-Signal Test Techniques
ECSE 436 Signal Processing Hardware
ECSE 450 Electromagnetic Compatibility
ECSE 486 Power Laboratory
ECSE 487 Computer Architecture Laboratory
ECSE 489 Telecommunication Network Lab
ECSE 490 Digital Signal Processing Laboratory
ECSE 491 Communication Systems Laboratory
ECSE 493 Control and Robotics Laboratory
General Complementaries  6
Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 "Complementary Studies" for further information.
TOTAL CREDITS  114
CURRICULUM FOR THE BACHELOR OF SOFTWARE ENGINEERING (B.S.E.)
REQUIRED COURSES COURSE CREDIT
COMP 202 Introduction to Computing 1  3
COMP 206 Introduction to Software Systems  3
COMP 250 Introduction to Computer Science  3
COMP 251 Data Structures and Algorithms  3
COMP 302 Programming Languages and Paradigms  3
COMP 330 Theoretical Aspects: Computer Science  3
COMP 360 Algorithm Design Techniques  3
COMP 361 Systems Development Project  3
COMP 420 Secondary Storage Algorithms and Data Structures  3
ECSE 221 Introduction to Computer Engineering  3
ECSE 321 Introduction to Software Engineering  3
ECSE 322 Computer Engineering  3
ECSE 420 Parallel Computing  3
ECSE 427 Operating Systems  3
ECSE 428 Software Engineering Practice  3
ECSE 429 Software Validation  3
ECSE 495 Software Engineering Design Project  3
MATH 262 Intermediate Calculus  3
MATH 263 Ordinary Differential Equations and Linear Algebra  3
MATH 264 Advanced Calculus  3
MATH 270 Applied Linear Algebra  3
MATH 363 Discrete Mathematics  3
MATH 381 Complex Variables and Transforms  3
Engineering Breadth Required Courses
ECSE 200 Fundamentals of Electrical Engineering  3
ECSE 210 Circuit Analysis  3
ECSE 291 Electrical Measurements Laboratory  2
ECSE 303 Signals and Systems  1  3
ECSE 305 Probability and Random Sig.  1  3
ECSE 330 Introduction to Electronics  3
MDEC 206 Communication in Engineering  3
MIME 310 Engineering Economy  3
MIME 221 Engineering Professional Practice  2  25
Technical Complementaries  12 - 14
Students should take 12-14 credits of which 6 credits must be taken from group A and 6-8 credits from group B. It is possible that not all the courses listed will be offered in a given year. Please refer to the up-to-date course assignments before selecting any course. Permission will not be granted to take Technical Complementary courses that are not on this list.
Group A Technical Complementaries
COMP 350 Numerical Computing
COMP 409 Concurrent Programming
COMP 424 Topics: Artificial Intelligence 1
COMP 433 Personal Software Engineering
COMP 520 Compiler Design
COMP 566 Discrete Optimization 1
COMP 575 Fundamentals of Distributed Algorithms
ECSE 304 Signals and Systems 2
ECSE 526 Artificial Intelligence
ECSE 529 Image Processing and Communication
Group B Technical Complementaries
ECSE 323 Digital Systems Design
ECSE 404 Control Systems
ECSE 411 Communications Systems 1
ECSE 412 Discrete Time Signal Processing
ECSE 413 Communications Systems 2
ECSE 414 Introduction to Telecommunication Networks
ECSE 504 Sampled Data Control
ECSE 522 Asynchronous Circuits and Systems
ECSE 530 Logic Synthesis
ECSE 531 Real Time Systems
ECSE 532 Computer Graphics
ECSE 557 Fundamentals of Computer Graphics
COMP 410 Mobile Computing
COMP 412 Software for E-commerce
General Complementaries  6
Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 "Complementary Studies" for further information.
TOTAL CREDITS  114/114*

Post-Retirement
Glen Bach; B.Sc.(Alta.), M.Sc.(Birm.), Ph.D.(McG.)

Professors
Bamtalal V. Bhatia; B.Tech.(Indian IT), M.Sc.(Case West.), Ph.D.(Minn.)
Wagdi G. Habashi; B.Eng., M. Eng.(McG.), Ph.D.(C’nell), P. Eng., F.C.A.E., F.A.S.M.E., NSERC-J. Armand Bombardier Industrial Research Chair in Multidisciplinary CFD, Honorary Prof. (Tongji University, Shanghai)
John H.S. Lee; B.Eng(McG.), M.Sc.(MIT), Ph.D.(McG.), P. Eng., F.R.S.C.
Christophe Pierre; B. Eng. (École Centrale, Paris), M. Sc. (Princ.), Ph.D. (Duke), (Canada Research Chair)
Stuart J. Price; B. Sc., Ph.D.(Brist.), P. Eng.

Associate Professors
Luca Cortezezi; M.Sc., Ph.D.(Calif. Tech.)
Andrew J. Higgin; B.Sc.(Ill.), M.S., Ph.D.(Wash.)
Tim Lee; M.S.(Port. St.), Ph.D.(Idaho)
(Graduate Program Coordinator)
Laurent Mydlarski; B.A.Sc.(Wat.), Ph.D.(C’nell), Eng.
Meyer Nahon; B.Sc.(Qu.), M.Sc.(Tor.), Ph.D.(McG.), P.Eng.
(PDProgram Director)
James A. Nemes; B.Sc.(Md.), M.S., D.Sc(GWU) P.E., P.Eng.
(William Dawson Scholar)
Peter Radziszewski; B. A.Sc.(Br. Col.), M.Sc., Ph.D.(Laval); Ing.
Inna Sharf; B.A.Sc.(Tor.), Ph.D.(Tor.), P.Eng., Honours Program Coordinator
Vince Thomson; B.Sc.(Windsor), Ph.D.(McM.) (Werner Graupe Professor of Manufacturing Automation)

Assistant Professors
Pascal Hubert; B.Eng., M.Sc.(École Polytechnique), Ph.D.(U.B.C.), P.Eng. (Canada Research Chair)
Silva Nadarajah; B.Sc.(Math), B.Sc.(Aerospace Eng.) (Kansans), M.Sc., Ph.D.(Stan.)
Damiano Pasini; M.Sc.(Pavia); Ph.D.(Brist.), P.Ing.
Evgeny V. Timofeev; M.Sc., Ph.D.(STU, St. Peters.), Eng., S.M.A.I.A.A.
Srikar T. Vengallatore; B.Tech(BHU), Ph.D.(MIT) (Canada Research Chair)

Laboratory Superintendents
A. Micozzi, G. Savard, G. Tewfik

Associate Members
R.E. Kearney; B.Eng., M.Eng., Ph.D.(McG.), Biomedical Engineering Unit
B.HK. Lee; B.Eng., M.Eng., Ph.D.(McG.)

Adjunct Professors

Mechanical engineers are traditionally concerned with the conception, design, implementation and operation of mechanical systems. Typical fields of work are aerospace, energy, manufacturing, machinery, and transportation. Because of the very broad nature of the discipline there is usually a high demand for mechanical engineers.

Many mechanical engineers follow other career paths. Graduate studies are useful for the specialists working in research establishments, consulting firms, or in corporate research and development.

To prepare the mechanical engineer for a wide range of career possibilities, there is a heavy stress in our curriculum on the fundamental analytical disciplines. This is balanced by a sequence of experimental and design engineering courses which include practice in design, manufacture and experimentation. In these courses students learn how to apply their analytical groundwork to the solution of practical problems.

Specialist interests are satisfied by selecting appropriate complementary courses from among those offered with a specific subject concentration, such as management, industrial engineering, computer science, controls and robotics, bio-engineering, aerodynamics, combustion, systems engineering, etc.

The Department offers an Honours Program which is particularly suitable for those with a high aptitude in mathematics and physics and which gives a thorough grounding in the basic engineering sciences. The complementary courses in this program can be utilized to take courses with applied engineering orientation, such as those offered in the regular program, or if preferred, to obtain an even more advanced education in engineering science.

Concentrations in Aeronautical Engineering, Mechatronics and Design are available for students in either the Regular or Honours programs who wish to specialize in these areas.

While the program is demanding, there is time for many extracurricular activities. Students are active in such professional societies as CASI (Canadian Aeronautics and Space Institute), SAE (Society of Automotive Engineers), and ASME (American Society of Mechanical Engineers) and in various campus organizations. Relations between faculty and students are extremely close. Social functions, at which students and professors meet to exchange views and get to know each other better, are organized frequently.

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR)

REQUIREDFOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR)

COURSE
CREDIT
Non-Departmental Subjects
CIVE 207 Solid Mechanics 4
COMP 208 Computers in Engineering 3
ECSE 461 Electric Machinery 3
EDEC 206 Communication in Engineering 3
MATH 262 Intermediate Calculus 3
MATH 263 Ordinary Differential Equations and Linear Algebra 3
MATH 264 Advanced Calculus 3
MATH 271 Linear Algebra and Partial Differential Equations 3
MIME 221 Engineering Professional Practice 2
MIME 260 Materials Science and Engineering 3
MIME 310 Engineering Economy 3

Departmental Courses
MECH 201 Introduction to Mechanical Engineering 2
MECH 210 Mechanics 1 2
MECH 220 Mechanics 2 4
MECH 240 Thermodynamics 1 3
MECH 260 Machine Tool Laboratory 2
MECH 262 Statistics and Measurement Laboratory 3
MECH 289 Design Graphics 3
MECH 292 Conceptual Design 3
MECH 309 Numerical Methods in Mechanical Engineering 3
MECH 314 Dynamics of Mechanisms 3
MECH 315 Mechanics 3 4
MECH 321 Mechanics of Deformable Solids 3
MECH 331 Fluid Mechanics 1 3
MECH 341 Thermodynamics 2 3
MECH 346 Heat Transfer 3
MECH 362 Mechanical Laboratory 1 2
MECH 383 Applied Electronics and Instrumentation 3
MECH 393 Machine Element Design 3
MECH 412 Dynamics of Systems 3
MECH 430 Fluid Mechanics 2 3
MECH 463D1 Mechanical Engineering Project 3
MECH 463D2 Mechanical Engineering Project 3 64

**COMPLEMENTARY COURSES** 15

2 courses (6 credits) at the 300 level or higher to be selected from Mechanical Engineering, one of these two courses must be chosen from the following list:

MECH 497 Value Engineering
MECH 498 Interdisciplinary Design Project 1
MECH 499 Interdisciplinary Design Project 2
MECH 513 Control Systems
MECH 524 Computer Integrated Manufacturing
MECH 526 Manufacturing and the Environment
MECH 528 Product Design
MECH 541 Kinematic Synthesis
MECH 543 Design with Composite Materials
MECH 553 Design and Manufacture of Microdevices
MECH 554 Microprocessors for Mechanical Systems
MECH 557 Mechatronic Design
MECH 565 Fluid Flow and Heat Transfer Equipment
MECH 573 Mechanics of Robotic Systems
MECH 577 Optimum Design
MECH 593 Design Theory and Methodology

1 course (3 credits) at the 300 level or higher from the Faculty of Science, including Mathematics. Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

**TOTAL CREDITS** 112

Students entering in September or January must plan their program of studies in accordance with the regulations posted on the Faculty Website at www.mcgill.ca/engineering. After registering, students must consult with their academic adviser.

Additional information can be found in section 7.3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”.

**CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (HONOURS)**

**REQUIRED COURSES**

**COURSE**

**CREDIT**

**Non-Departmental Subjects**

CIVE 207 Solid Mechanics 4
EDEC 206 Communication in Engineering 3
COMP 208 Computers in Engineering 3
MATH 262 Intermediate Calculus 3
MATH 263 Ordinary Differential Equations and Linear Algebra
MATH 264 Advanced Calculus 3
MATH 271 Linear Algebra and Partial Differential Equations
MIME 221 Engineering Professional Practice 2
MIME 310 Engineering Economy 3 27

**Departmental Courses**

MECH 201 Introduction to Mechanical Engineering 2
MECH 210 Mechanics 1 2
MECH 220 Mechanics 2 3
MECH 240 Thermodynamics 1 3
MECH 260 Machine Tool Laboratory 2
MECH 262 Statistics and Measurement Laboratory 3
MECH 289 Design Graphics 3
MECH 292 Conceptual Design 3
MECH 309 Numerical Methods in Mechanical Engineering 3
MECH 321 Mechanics of Deformable Solids 3
MECH 331 Fluid Mechanics 1 3
MECH 341 Thermodynamics 2 3
MECH 346 Heat Transfer 3
MECH 362 Mechanical Laboratory 1 2
MECH 383 Applied Electronics and Instrumentation 3
MECH 403D1 Thesis (Honours) 3
MECH 403D2 Thesis (Honours) 3
MECH 404 Honours Thesis 2 3
MECH 419 Advanced Mechanics of Systems 4
MECH 430 Fluid Mechanics 2 3
MECH 494 Honours Design Project 3 61

**COMPLEMENTARY COURSES** 24

1 course from the following (3 credits):
To be chosen with the approval of either the thesis supervisor or the coordinator of the Honours Program, when a thesis supervisor has not as yet been secured.

MATH 327 Matrix Numerical Analysis
MATH 381 Complex Variables and Transforms
MATH 417 Mathematical Programming

plus 2 of the following three courses (6 credits):

MECH 546 Finite Element Methods in Solid Mechanics
MECH 562 Advanced Fluid Mechanics
MECH 578 Advanced Thermodynamics

2 courses (6 credits) at the 300 level or higher to be selected from Mechanical Engineering, one of these two courses must be chosen from the following list:

MECH 497 Value Engineering
MECH 498 Interdisciplinary Design Project 1
MECH 499 Interdisciplinary Design Project 2
MECH 513 Control Systems
MECH 524 Computer Integrated Manufacturing
MECH 526 Manufacturing and the Environment
MECH 528 Product Design
MECH 541 Kinematic Synthesis
MECH 543 Design with Composite Materials
MECH 553 Design and Manufacture of Microdevices
MECH 554 Microprocessors for Mechanical Systems
MECH 557 Mechatronic Design
MECH 565 Fluid Flow and Heat Transfer Equipment
MECH 573 Mechanics of Robotic Systems
MECH 577 Optimum Design
MECH 593 Design Theory and Methodology

1 course (3 credits) at the 300 level or higher from the Faculty of Engineering or MIME 260 or an approved course in the Faculty of Science, including Mathematics. Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

**TOTAL CREDITS** 112

Students entering in September or January must plan their program of studies in accordance with the regulations posted on the Faculty Website at www.mcgill.ca/engineering. After registering, students must consult with their academic adviser.

Additional information can be found in section 7.3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”. 
McGill University, Undergraduate Programs 2006-2007

ENGINEERING – MECHANICAL ENGINEERING

Faculty Website at www.mcgill.ca/engineering. After registering, students must consult with their academic adviser.

Additional information can be found in section 7.3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”.

LIST OF COMPLEMENTARY COURSES (DEPARTMENTAL)

(Each is 3 credits)

MECH 432 Aircraft Structures
MECH 434 Turbomachinery
MECH 447 Combustion
MECH 474 Selected Topics in Operations Research
MECH 497 Value Engineering
MECH 498 Interdisciplinary Design 1
MECH 499 Interdisciplinary Design 2
MECH 500 Selected Topics in Mechanical Engineering
MECH 501 Special Topics: Mechanical Engineering
MECH 513 Control Systems
MECH 515 Unsteady Gasdynamics 1
MECH 522 Production Systems
MECH 524 Computer Integrated Manufacturing
MECH 526 Manufacturing and the Environment
MECH 528 Product Design
MECH 529 Discrete Manufacturing Systems
MECH 530 Mechanics of Composite Materials
MECH 531 Aeroelasticity
MECH 532 Aircraft Performance, Stability and Control
MECH 533 Subsonic Aerodynamics
MECH 534 Air Pollution Engineering
MECH 537 High-Speed Aerodynamics
MECH 538 Unsteady Aerodynamics
MECH 539 Computational Aerodynamics
MECH 541 Kinematic Synthesis
MECH 542 Spacecraft Dynamics
MECH 543 Design with Composite Materials
MECH 544 Advanced Processing of Composite Materials
MECH 546 Finite Element Methods in Solid Mechanics
MECH 552 Advanced Applied Mathematics
MECH 553 Design and Manufacture of Microdevices
MECH 554 Microprocessors for Mechanical Systems
MECH 557 Mechatronic Design
MECH 561 Biomechanics of Musculoskeletal Systems
MECH 562 Advanced Fluid Mechanics
MECH 563 Biofluids and Cardiovascular Mechanics
MECH 565 Fluid Flow and Heat Transfer Equipment
MECH 572 Introduction to Robotics
MECH 573 Mechanics of Robotic Systems
MECH 576 Computer Graphics and Geometrical Modelling
MECH 577 Optimum Design
MECH 578 Advanced Thermodynamics
MECH 593 Design Theory and Methodology

TYPICAL PROGRAM OF STUDIES FOR REGULAR OR HONOURS

For students starting their B.Eng. studies in September 2004 who have completed the Quebec Diploma of Collegial Studies, a program for the first two terms of study is given below. Students will be advised by the Department whether they should follow Stream A or Stream B.

STREAM A:

Term 1 (Fall)
COMP 208 Computers in Engineering
MATH 262 Intermediate Calculus
MECH 201 Introduction to Mechanical Engineering
MECH 210 Mechanics 1
MECH 260 Machine Tool Laboratory
MIME 221 Engineering Professional Practice

Term 2 (Winter)
MATH 263 Differential Equations
MATH 264 Advanced Calculus
MECH 220 Mechanics 2
MECH 262 Statistics and Measurement Laboratory
MECH 289 Design Graphics

STREAM B:

Term 1 (Fall)
COMP 208 Computers in Engineering
MATH 262 Intermediate Calculus
MECH 201 Introduction to Mechanical Engineering
MECH 260 Machine Tool Laboratory
MECH 289 Design Graphics
MIME 221 Engineering Professional Practice

Term 2 (Winter)
MATH 263 Differential Equations
MATH 264 Advanced Calculus
MECH 210 Mechanics 1
MECH 262 Statistics and Measurement Laboratory
MIME 260 Materials Science and Engineering

For all Minors and Concentrations, students should complete a special form available from the Undergraduate Program Secretary indicating their intention to take the Minor or the Concentration.

AERONAUTICAL ENGINEERING CONCENTRATION

Students in this Concentration should take five courses in the area of Aeronautical Engineering.

Required Courses (6 credits):
MECH 532 (3) Aircraft Performance, Stability and Control
MECH 533 (3) Subsonic Aerodynamics

Complementary Courses (9 credits)

at least one of the following two courses:
MECH 432 (3) Aircraft Structures
MECH 434 (3) Turbomachinery

the remaining two courses may be chosen from the above or from the following courses:
MECH 531 (3) Aeroelasticity
MECH 537 (3) High-Speed Aerodynamics
MECH 538 (3) Unsteady Aerodynamics
MECH 539 (3) Computational Aerodynamics
MECH 565 (3) Fluid Flow and Heat Transfer Equipment

All courses must be passed at a level C or better.

Students should also discuss the matter with their adviser and complete a special form indicating their intention to take this Concentration.

DESIGN CONCENTRATION

Students in this Concentration should take five courses in the area of Design, including the completion of an interdisciplinary design project.

Of the five courses, two are required:
MECH 498 Interdisciplinary Design Project 1
MECH 499 Interdisciplinary Design Project 2

The remaining three courses are to be chosen from the list below:
ABEN 412 Machinuty Systems Engineering
ARCH 515 Sustainable Design
CHEE 453 Process Design
MECH 497 Value Engineering
MECH 526 Manufacturing and the Environment
MECH 528 Product Design
MECH 530 Mechanics of Composite Materials
MECH 541 Kinematic Synthesis
MECH 543 Design with Composite Materials
MECH 544 Advanced Processing of Composite Materials
MECH 545 Microprocessors for Mechanical Systems
MECH 557 Mechatronics Design
MECH 565 Fluid Flow and Heat Transfer Equipment
MECH 576 Computer Graphics and Geometric Modeling
MECH 577 Optimum Design
MECH 593 Design Theory and Methodology
MECHATRONICS CONCENTRATION
Students in this Concentration should take six courses in the area of Control, Robotics and/or CAD/CAM. They must take the following four required courses:
MECH 513 Control Systems
MECH 554 Microprocessors for Mechanical Systems
MECH 557 Mechatronic Design
MECH 572 Introduction to Robotics

and two of the following:
MECH 528 Product Design
MECH 541 Kinematic Synthesis
MECH 573 Mechanics of Robotic Systems
MECH 576 Computer Graphics and Geometrical Modelling

7.5.6 Department of Mining, Metals and Materials Engineering

Wong Building, Room 2160
3610 University Street
Montreal, QC H3A 2B2
Website: www.mcgill.ca/minmet
Materials –
Telephone: (514) 398-1040 Fax: (514) 398-4492
Mining –
Telephone: (514) 398-2215 Fax: (514) 398-7099
Chair — Robin A.L. Drew
Emeritus Professors
John E. Gruzleski; B.Sc., M.Sc.(Qu.), Ph.D.(Tor.), Eng. (Gerald G. Hatch Emeritus Professor)
William M. Williams; B.Sc., M.Sc.(Brist.), Ph.D.(Tor.), Eng. (Henry Birks Emeritus Professor)

Professors
George P. Demopoulos; Dipl. Eng.(NTU Athens), M.Sc., Ph.D.(McG.), Eng.
Roussos Dimitrakopoulos; B.Sc. M.Sc.(Alta.), Ph.D.(École Poly., Montr.)
James A. Finch; B.Sc.(Birm.), M.Eng., Ph.D.(McG.), Eng. (Gerald G. Hatch Professor)
Raynald Gauvin; B.Eng., Ph.D.(Montr.), Eng.
Rod I.L. Guthrie; B.Sc., Ph.D.(Lond.), D.I.C., A.R.S.M., Eng. (William C. MacDonald Emeritus Professor)
Ralph Harris; B.Sc.(Qld), M.Eng., Ph.D.(McG.), Eng.
Fararazm (Ferri) P. Hassani; Ph.D.(Nott.), (George Boyd Webster Professor)
Hani S. Mitri; B.Sc.(Cairo), M.Eng., Ph.D.(McM.), Eng.
Jerzy Szpunar; B.Sc., M.Sc., M.Eng., Ph.D., D.Sc.(Krakow), (Henry Birks Professor)
Steve Yue; B.Sc., Ph.D.(Leeds)

Associate Professors
Mainul Hasan; B.Eng.(Bang), M.Sc.(Dhakaran), Ph.D.(McG.)
Janusz A. Kozinski; B.A., M.Eng., D.Sc.(Krakow) (William Dawson Scholar)
André Lapierre; B.Sc., M.A.Sc.(Montr.), Ph.D.(Tor.), Eng.
Jacques Ouelfet; B.A.Sc.(Laval), M.A.Sc., Ph.D.(Montr.), Eng.
Mitriban Pekguleyzz; B.Eng., M.Eng.(Flor.), Ph.D. (McG.)

Assistant Professors
Mathieu Brochu; B.Eng.(Laval), Ph.D.(McG.)
Post-Retirement Professor — John J. Jonas; B.Eng.(McG.), Ph.D.(Cantab.), Eng.

Faculty Lecturers
Genevieve Snider (Materials)

Adjunct Professors
Marc Bélourmay, William Caley, Carl Fuerst, Brynn Harris, Ahmad Hemami, Mohamad Jahazi, Raad Jassim, Eric Lifshin, Martin Pugh, John Root

CO-OP Program Liaison Officers
Michel Vachon (Mining)

The Department of Mining, Metals and Materials Engineering offers programs leading to the Bachelor of Engineering degree in Materials Engineering or Mining Engineering. In addition to regular courses and laboratories, the curriculum includes seminars, colloquia and student projects reinforced by field trips to industrial operations.

Materials Engineering (CO-OP) The Materials Engineering degree is a cooperative program leading to a B.Eng. and includes formal industrial work periods. It is built on a strong background of mathematics, basic sciences, computer skills and applications, and specific engineering and design courses to provide up-to-date training in materials engineering. Students take core courses covering processing, fabrication, applications and performance of materials, namely metals, ceramics, polymers and composites.

Materials Engineering (CO-OP) is fully accredited by the Canadian Engineering Accreditation Board (CEAB) and is designed to offer students exceptional training for employment in the field. The core courses are supplemented by complementary courses which provide a diverse selection of specialties for the graduating engineer. The course structure is reinforced with laboratory exercises. Graduates find employment in a wide range of industries, including the resource and manufacturing sectors. Students in the CO-OP program benefit from practical learning experience gained on part-time employment in meaningful engineering jobs, as well as nontangible learning experiences arising from the responsibilities required to obtain and successfully complete the work terms.

Students pay a two-credit course fee for each of the following work terms: MIME 280, MIME 380 and MIME 480. (Students who entered the program prior to September 2005 will also pay a 2-credit course fee for MIME 481.) An amount of $200 will be billed during 10 consecutive terms for a total amount of $2,000 before graduation. This latter amount covers expenses directly related to the operation of the CO-OP program. Students must register for each of the above-mentioned industrial training courses and pay the associated fees by the Minerva course registration deadlines or late fees will apply.

Mining Engineering (CO-OP) McGill, which has the oldest mining engineering program in Canada, has traditionally been known for the excellence of its courses as well as the training it provides in mining technology, mineral economics and mining practice. Graduates in mining engineering are in demand not only in Canada but throughout the world. There have been rapid technical developments in recent years, presenting a challenge to the imaginative student with a strong engineering interest. The Department offers a cooperative program leading to the B.Eng. degree in Mining Engineering. The CO-OP program is offered in collaboration with the Département des génies civil, géologue et des mines at École Polytechnique de Montréal, and includes formal industrial work periods. Students registered at McGill are required to take a series of technical mining courses at École Polytechnique in the latter part of the program. These courses are designated as such in the program outline (Subject Code MPMC).

Scholarships
The Department offers renewable Entrance Scholarships each year, valued at $3,000. A substantial number of other scholarships and bursaries are also awarded by the Department as well as by the Canadian Mineral Industry Education Foundation.

Student Advising
Students entering the Mining or Materials Engineering programs must plan their schedule of studies in consultation with one of the departmental advisers: Professor Brochu, Ms. Nikki Middlemiss (Materials), or Mr. J. Mossop (Mining).
### CURRICULUM FOR THE B.ENG. DEGREE IN MATERIALS ENGINEERING – CO-OP PROGRAM

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Departmental Courses</td>
<td></td>
</tr>
<tr>
<td>CHEE 481 Polymer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 233 Topics in Physical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 205 Statics</td>
<td>3</td>
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<tr>
<td>CIVE 207 Solid Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>COMP 208 Computers in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MATH 262 Intermediate Calculus</td>
<td>3</td>
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<tr>
<td>MATH 263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
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<tr>
<td>MATH 264 Advanced Calculus</td>
<td>3</td>
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<tr>
<td>MECH 289 Design Graphics</td>
<td>3</td>
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<tr>
<td>Departmental Courses</td>
<td></td>
</tr>
<tr>
<td>MIME 202 Engineering Communication Skills</td>
<td>2</td>
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<tr>
<td>MIME 209 Mathematical Applications</td>
<td>3</td>
</tr>
<tr>
<td>MIME 212 Engineering Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MIME 221 Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>MIME 250 Introduction to Extractive Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MIME 261 Structure of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 280 Industrial Training 1</td>
<td>2</td>
</tr>
<tr>
<td>MIME 310 Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>MIME 311 Modelling and Automatic Control</td>
<td>3</td>
</tr>
<tr>
<td>MIME 317 Analytical and Characterization Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MIME 337 Electrotechnology</td>
<td>2</td>
</tr>
<tr>
<td>MIME 341 Introduction to Mineral Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 350 Extractive Metallurgical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MIME 352 Hydrochemical Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 356 Heat, Mass and Fluid Flow</td>
<td>4</td>
</tr>
<tr>
<td>MIME 360 Phase Transformations: Solids</td>
<td>3</td>
</tr>
<tr>
<td>MIME 362 Mechanical Properties</td>
<td>3</td>
</tr>
<tr>
<td>MIME 367 Electronic Properties of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 380 Industrial Training 2</td>
<td>2</td>
</tr>
<tr>
<td>MIME 442 Modelling and Control: Mineral Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 452 Process and Materials Design</td>
<td>4</td>
</tr>
<tr>
<td>MIME 455 Advanced Process Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MIME 456 Steelmaking and Steel Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 465 Ceramic Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MIME 480 Industrial Training 3</td>
<td>2</td>
</tr>
</tbody>
</table>

#### COMPLEMENTARY COURSES

9 - 12 credits from the following:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEE 581 (3) Polymer Composites Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 512 (3) Advanced Civil Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 530 (3) Mechanics of Composite Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 410 (3) Research Project</td>
<td>3</td>
</tr>
<tr>
<td>MIME 457 (3) Light Metals Extraction and Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 512 (3) Corrosion and Degradation of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 544 (3) Analysis: Mineral Processing Systems 1</td>
<td>2</td>
</tr>
<tr>
<td>MIME 545 (3) Analysis: Mineral Processing Systems 2</td>
<td>3</td>
</tr>
<tr>
<td>MIME 551 (3) Electrochemical Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 552 (3) Environmental Controls in Metallurgical Plants</td>
<td>3</td>
</tr>
<tr>
<td>MIME 555 (3) Corrosion and Degradation of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 556 (3) Sustainable Materials Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 558 (3) Engineering Nanomaterials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 559 (3) Aluminum Physical Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MIME 560 (3) Joining Processes</td>
<td>3</td>
</tr>
<tr>
<td>MIME 561 (3) Advanced Materials Design</td>
<td>3</td>
</tr>
<tr>
<td>MIME 563 (3) Hot Deformation of Metals</td>
<td>3</td>
</tr>
<tr>
<td>MIME 564 (3) X-ray Diffraction Analysis of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 565 (3) Aerospace Metallic-Materials and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MIME 566 (3) Texture, Structure &amp; Properties of Polycrystalline Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 567 (3) Aluminum Casting Alloys</td>
<td>3</td>
</tr>
<tr>
<td>MIME 568 (3) Topics in Advanced Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME 569 (3) Electron Beam Analysis of Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

0 - 3 credits from the following:

- BMDE 504 (3) Biomaterials and Bioperformance
- CHEM 455 (3) Introductory Polymer Chemistry
- CHEM 585 (3) Colloid Chemistry
- PHYS 558 (3) Solid State Physics

### General Complementaries

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

### TOTAL

117

### CURRICULUM FOR THE B.ENG. DEGREE IN MINING ENGINEERING – CO-OP PROGRAM

#### REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>Non-Departmental Courses</td>
<td></td>
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<tr>
<td>CIVE 205 Statics</td>
<td>3</td>
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<tr>
<td>CIVE 207 Solid Mechanics</td>
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<tr>
<td>COMP 208 Computers in Engineering</td>
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<tr>
<td>EPSC 221 General Geology</td>
<td>3</td>
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<tr>
<td>EPSC 225 Properties of Minerals</td>
<td>1</td>
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<tr>
<td>MATH 262 Intermediate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH 263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 264 Advanced Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MECH 289 Design Graphics</td>
<td>3</td>
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<tr>
<td>Departmental Mining Courses</td>
<td></td>
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<tr>
<td>MIME 200 Introduction to the Minerals Industry</td>
<td>3</td>
</tr>
<tr>
<td>MIME 202 Engineering Communication Skills</td>
<td>2</td>
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<tr>
<td>MIME 203 Mine Surveying</td>
<td>2</td>
</tr>
<tr>
<td>MIME 209 Mathematical Applications</td>
<td>3</td>
</tr>
<tr>
<td>MIME 221 Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>MIME 260 Materials Science and Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MIME 290 Industrial Work Period 1</td>
<td>2</td>
</tr>
<tr>
<td>MIME 291 Industrial Work Period 2</td>
<td>2</td>
</tr>
<tr>
<td>MIME 310 Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>MIME 332 Rock Fragmentation</td>
<td>3</td>
</tr>
<tr>
<td>MIME 333 Rock and Soil Mass Characterization</td>
<td>3</td>
</tr>
<tr>
<td>MIME 335 Mineral Industry Economics</td>
<td>3</td>
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<tr>
<td>MIME 333 Materials Handling</td>
<td>3</td>
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<tr>
<td>MIME 337 Electrotechnology</td>
<td>2</td>
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<tr>
<td>MIME 340 Applied Fluid Dynamics</td>
<td>3</td>
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<tr>
<td>MIME 341 Introduction to Mineral Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME 362 Mechanical Properties</td>
<td>3</td>
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<tr>
<td>MIME 420 Feasibility Study</td>
<td>3</td>
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<tr>
<td>MIME 422 Mine Ventilation</td>
<td>3</td>
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<tr>
<td>MIME 426 Development and Services</td>
<td>3</td>
</tr>
<tr>
<td>MIME 484 Mining Project</td>
<td>3</td>
</tr>
</tbody>
</table>

#### COMPLEMENTARY COURSES

12

9 - 12 credits from the following:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE 504 (3) Metallurgical Plants</td>
<td>3</td>
</tr>
<tr>
<td>MINE 544 (3) Analysis: Mineral Processing Systems 1</td>
<td>2</td>
</tr>
<tr>
<td>MINE 545 (3) Analysis: Mineral Processing Systems 2</td>
<td>3</td>
</tr>
<tr>
<td>MINE 551 (3) Electrochemical Processing</td>
<td>3</td>
</tr>
<tr>
<td>MINE 552 (3) Environmental Controls in Metallurgical Plants</td>
<td>3</td>
</tr>
<tr>
<td>MINE 555 (3) Corrosion and Degradation of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 556 (3) Sustainable Materials Processing</td>
<td>3</td>
</tr>
<tr>
<td>MINE 558 (3) Engineering Nanomaterials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 559 (3) Aluminum Physical Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MINE 560 (3) Joining Processes</td>
<td>3</td>
</tr>
<tr>
<td>MINE 561 (3) Advanced Materials Design</td>
<td>3</td>
</tr>
<tr>
<td>MINE 563 (3) Hot Deformation of Metals</td>
<td>3</td>
</tr>
<tr>
<td>MINE 564 (3) X-ray Diffraction Analysis of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 565 (3) Aerospace Metallic-Materials and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MINE 566 (3) Texture, Structure &amp; Properties of Polycrystalline Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 567 (3) Aluminum Casting Alloys</td>
<td>3</td>
</tr>
<tr>
<td>MINE 568 (3) Topics in Advanced Materials</td>
<td>3</td>
</tr>
<tr>
<td>MINE 569 (3) Electron Beam Analysis of Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

0 - 3 credits from the following:

- BMDE 504 (3) Biomaterials and Bioperformance
- CHEM 455 (3) Introductory Polymer Chemistry
- CHEM 585 (3) Colloid Chemistry
- PHYS 558 (3) Solid State Physics

### Total Credits

359
COMPLEMENTARY COURSES

Either Choice I or II 8 or 9

Choice I (8 credits)

MIME 494 (2) Industrial Work Period 4
and
(6) two Technical Complementaries

or Choice II (9 credits)

MIME 350 (3) Extractive Metallurgical Engineering
MIME 544 (3) Analysis: Mineral Processing Systems 1
and
(3) one Technical Complementary

General Complementaries 6

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 7.3.4 “Complementary Studies” for further information.

TOTAL 119/120

Technical Complementaries

Courses selected from those listed below or any other approved technical course(s) in Engineering, Management or Science. Note: not all courses are given annually; verification with course instructor is advised.

MIME 320 (3) Extraction of Energy Resources
MIME 442 (3) Modelling and Control: Mineral Processing
MIME 520 (3) Stability of Rock Slopes
MIME 521 (3) Stability of Underground Openings
MIME 525 (3) Stochastic Orebody Modelling.
MIME 526 (3) Mineral Economics
MIME 528 (3) Mining Automation
MIME 544 (3) Analysis: Mineral Processing Systems 1
MIME 545 (3) Analysis: Mineral Processing Systems 2
MPMC 327 (3) Hydrogéologie appliquée
MPMC 424 (2) Gérance d’exploitation minière
MPMC 525 (3) Recherche opérationnelle minière II

A fee of $300 is assessed by the University for each Industrial Work Period course.

7.5.7 School of Urban Planning

Macdonald-Harrington Building
815 Sherbrooke Street West
Montreal, QC H3A 2K6

Telephone: (514) 398-4075
Fax: (514) 398-8376
E-mail: admissions.planning@mcgill.ca
Website: www.mcgill.ca/urbanplanning

Director — David F. Brown

Emerita Professor
Jeanne M. Wolfe; B.Sc.(Lond.), M.Sc.(W.Ont.), M.A.(McG.)
Professor
Jane M. Glenn; B.A., LL.B.(Qu.), D. en Droit(Stras.)
Associate Professors
David F. Brown; B.A.(Bishop’s), M.U.P.(Mcg.), Ph.D.(Sheffield)
Raphaël Fischler; B.Eng. (V. Tech. Eindhoven), M.S. Arch.S., M.C.P.(MIT), Ph.D.(Calif., Berk.)

Assistant Professors
Madhav G. Badami; B.Tech., M.S.(Indian IT, Madras)
M.E.Des.(Calg.), Ph.D.(Br. Col.) (joint appoint. with McGill School of Environment)
Lisa Bornstein; B.Sc.(Calif., Berk.), M.R.P.(Cnell), Ph.D.(Calif., Berk.)
Murtaza Haider; B.Sc.(Peshawar), M.A.Sc., Ph.D.(Tor.) (joint appoint. with Civil Engineering)

Associate Professor
Gordon O. Ewing; M.A.(Glas.), M.A., Ph.D.(McG.)

Instructors
François Dufaux; B.Arch.(Laval), M.U.P.(McG.)

Adjunct Professors
David Farley; B.Arch.(McG.), M.Arch., M.C.P.(Harv.)
Mario Polèse; B.A.(CUNY), M.A., Ph.D.(Penn.)
Ray Tomalty; B.A., M.P.A.(Qu.), Ph.D.(Wat.)

Guest Lecturers
Cameron Charlebois, Luc Danielse, Marc Denhez, Miguel Escobar, Andrew Hoffmann, Paul le Cavalier, Damaris Rose, Alain Trudeau, Martin Wexler, etc.

Modern urban planning developed into a profession in the early decades of the 20th century, largely as a response to the appalling sanitary, social and economic conditions of rapidly developing industrial cities. Initially, the disciplines of architecture, landscape architecture, civil engineering and public health provided the nucleus of concerned professionals; beautification schemes and infrastructure works marked the early stages of public intervention in the 19th century. Architects, engineers and public health specialists were joined by economists, sociologists, lawyers and geographers as the complexities of the city’s problems came to be more fully understood and public pressure mounted for their solution. Contemporary urban and regional planning techniques for survey, analysis, design and implementation developed from an interdisciplinary synthesis of these various fields.

Today, urban planning can be described as the collective management of urban development. It is concerned with the welfare of communities, control of the use of land, design of the built environment, including transportation and communication networks, and protection and enhancement of the natural environment. It is at once a technical and a political process which brings together actors from the public, private and community spheres. Planners participate in that process in a variety of ways, as designers and analysts, advocates and mediators.

McGill University was the first institution in Canada to offer a full-time planning program. An interdisciplinary program was established in 1947, in which students combined a master’s degree in Urban Planning with one in a related field. An autonomous program was established in 1972. It became the School of Urban Planning in 1976.

Students come to the School from diverse backgrounds, the physical sciences, the traditional professions, such as architecture and engineering, and the social sciences. Alumni of the School work as planners and designers at various levels of government, in non-profit organizations and with private consulting firms. Their expertise ranges from historic preservation to transportation planning, from housing development to computer imaging. They devote their efforts in increasing numbers to environmental planning and sustainable development.

The School is a partner in the Montreal Interuniversity Group "Urbanization and Development", a consortium recognized by CIDA as a Centre of Excellence, which is devoted to the study of urban problems and the formulation of policies in developing regions. Faculty and students collaborate actively with members of other McGill departments, notably Architecture, Geography, Civil Engineering and Law, and with colleagues at other institutions in Canada and abroad.

The objective of the School is to produce qualified professional urban planners for the public, private and not-for-profit sectors. Training is provided at the postgraduate level; the degree offered is the Master of Urban Planning (M.U.P.). Upon completion of the two-year program of studies, graduates are expected to have acquired basic planning skills, a broad understanding of urban issues, and specialized knowledge in a field of their own choice.

The program of study offered by the School is fully recognized by the Ordre des Urbanistes du Québec (O.U.Q.) and the Canadian Institute of Planners (C.I.P.). Graduates can become full members of the O.U.Q. and other provincial planning associations by meeting their respective internship and examination requirements; this, in turn, will make them eligible for membership in the C.I.P. Admission to the American Institute of Certified Planners...
and other such organizations is also possible on the basis of the M.U.P degree. 

For details of the M.U.P. admission requirements and curriculum, consult the Graduate and Postdoctoral Studies Calendar, available at www.mcgill.ca.

The following undergraduate courses are taught by the faculty of the School:

- ARCH 550 Urban Planning and Development
- URPB 201 Planning the 21st Century City
- URPB 501 Principles and Practice 1
- URPB 505 Geographic Information Systems
- URPB 506 Environmental Policy and Planning
- URPB 507 Planning and Infrastructure
- URPB 519 Sustainable Development Plans

### 7.6 Minor Programs

Minors are coherent sequences of courses which may be taken in addition to the courses required for the B.Eng. degree. Minor programs normally consist of 18-24 credits, allowing 9-12 credits of overlap with the degree program. The real credit cost to the student is typically 9 to 15 credits, representing one term beyond the B.Eng. degree program. All courses in a Minor program must be passed with a grade of C or better.

Students of the Faculty have a considerable variety of complementary course choices, which fall into the categories of technical and complementary studies. Students should refer to their respective departments for information concerning complementary course selections. Departments also publish, in this Calendar and in separate documents, information regarding the choice of courses. Students should also consult their course advisers.

General information concerning Minors that are designed for students registered in the Faculty of Engineering is listed below. In addition, students are also permitted to register for Minor Concentrations offered through the various departments in the Faculty of Arts. Students are advised to seek approval from the specific department in the Faculty of Arts as well as the Faculty of Engineering Student Affairs Office, Room 378, Macdonald Engineering Building, prior to embarking on these Minors.

#### 7.6.1 Arts Minor

Engineering students may obtain a Minor in Arts as part of their B.Eng. degree by satisfying the 24-credit requirement described below. In general, complementary studies courses given in the Faculty of Arts and listed under: (i) “3 credits of studies of the Impact of Technology on Society” and (ii) “the remaining credits to be social science and humanities courses” (see section 7.3.4 “Complementary Studies”) may be used to satisfy some of these requirements. In no case will more than 9 credits taken from these complementary studies requirements be credited towards the Minor in Arts.

**Requirements**

1. The program must consist of 24 credits as follows:
   - a) at least two areas of concentration from within the Faculty of Arts must be chosen, with the minimum number of credits in any one area being 6;
   - b) at least 12 credits must be at the 300 or above level.
2. All courses in the Minor program must be passed with a grade of C or better.
3. The selection of courses for the Minor is to be done in consultation with the Minor adviser, Ms. Judy Pharo, Faculty of Engineering Student Affairs Office.

For further information, contact Professor B. Haskel, Political Science, or Ms. J. Pharo, Student Affairs Office, Faculty of Engineering.

#### 7.6.2 Biomedical Engineering Minor

The Minor in Biomedical Engineering is intended to allow interdisciplinary preparation by providing access to otherwise unavailable courses in either the basic life sciences or the applied math tools required in the interdisciplinary field of Biomedical Engineering.

The Minor consists of 21 - 25 credits as outlined below.

**Complementary Introductory Courses in Live Sciences (3-7 credits)**

- One course from the following list: (equivalents can be approved)
  - ANAT 212 Molecular Mechanisms of Cell Function
  - BIOL 200 Molecular Biology
  - BIOL 201 Cell Biology and Metabolism
  - BIOL 212 Molecular Mechanisms of Cell Function
  - CHEM 212 Introductory Organic Chemistry 1
  - PHGY 201 Human Physiology: Control Systems
  - PHGY 202 Human Physiology: Body Functions
  - PHGY 209 Mammalian Physiology
  - PHGY 210 Mammalian Physiology 2

**Specialization Courses (Minimum of 12 credits)**

A minimum of 6 credits must be taken from a department other than the student’s department and at least 1 BMDE course must be selected. These BMDE courses are best taken near the end of the program, when prerequisites are satisfied.

- **Artificial Cells and Organs**
  - BMDE 505 Cell and Tissue Engineering
  - PHGY 311 Intermediate Physiology 1
  - PHGY 312 Intermediate Physiology 2
  - PHGY 313 Intermediate Physiology 3
  - PHGY 517 Artificial Internal Organs
  - PHGY 518 Artificial Cells

- **Bioinformatics, Genomics and Proteomics**
  - ANAT 365 Cellular Trafficking
  - ANAT 458 Membranes and Cellular Signaling
  - CHEM 212 Introductory Organic Chemistry
  - BMDE 506 Molecular Biology Techniques
  - COMP 302 Programming Languages and Paradigms
  - COMP 360 Algorithm Design Techniques
  - COMP 421 Database Systems
  - COMP 424 Topics: Artificial Intelligence 1
  - COMP 462 Computational Biology Methods
  - COM 526 Probabilistic Reasoning and AI

- **Biomaterials, Biosensors & Nanotechnology**
  - BMDE 504 Biomaterials and Bioperformance
  - BMDE 505 Cell and Tissue Engineering
  - CHEE 380 Materials Science
  - CHEE 581 Polymer Composites Engineering
  - ECSE 424 Human-Computer Interaction
  - MECH 530 Design and Manufacture of Microdevices
  - MIME 360 Phase Transformations: Solids
  - MIME 362 Mechanical Properties
  - PHYS 534 Nanoscience and Nanotechnology

- **Biomechanics and Prosthetics**
  - BMDE 503 Biomedical Instrumentation
  - CHEE 563 Biofluids and Cardiovascular Mechanics
  - MECH 315 Mechanics 3
  - MECH 530 Mechanics of Composite Materials
  - MECH 561 Biomechanics of Musculoskeletal Systems
  - MIME 360 Phase Transformations: Solids
  - MIME 362 Mechanical Properties

- **Medical Physics and Imaging**
  - BMDE 519 Biomedical Signals and Systems
  - COMP 302 Programming Languages and Paradigms
  - COMP 360 Algorithm Design Techniques
Biocomplementary Courses (Maximum of 6 credits)

Up to 6 credits in the Bachelor’s program can also be credited to the Minor, where permitted by the department and to be approved by the Minor Coordinator. In particular, the 200 level and above pre-requisite courses to certain Specialization Courses would be eligible. As a result, by careful selection among the complementary courses, the 21-25 credit Minor can be satisfied with 9 additional credits in the undergraduate program or a maximum of 12 credits overlap with the degree program.

To complete the Minor in Biomedical Engineering, students must obtain a grade of C or better in all approved courses in the Minor and satisfy the requirements of both the Bachelor’s program and the Minor.

7.6.3 Biotechnology Minor

The Faculties of Engineering and of Science offer a Minor in Biotechnology for students interested in taking additional courses in this area. For Engineering students, the Minor has been designed specifically for students within the Chemical Engineering Department; however, other Engineering students are invited to contact the Minor program supervisor, Professor Bennett, or Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, for further information.

Students should identify an interest in the Minor to their academic advisor and the supervisor of the program during the U1 year, and at the time of registration for the U2 year. With the agreement of the academic advisor, students should submit their course list to the program supervisor, who will certify that the proposed program conforms to the requirements for the Minor.

The Biotechnology Minor Program is administered for the Faculties of Engineering by Judy Pharo, Senior Faculty Adviser, Student Affairs Office, Macdonald Engineering Building, Room 376, phone (514) 398-7257, and of Science by Prof. H. Bennett, Sheldon Biotechnology Centre (Lyman Duff Building), phone (514) 398-3998.

PROGRAM FOR STUDENTS IN THE FACULTY OF ENGINEERING*

Required Courses (12 credits)
- BIOL 505  (3) Selected Topics in Biotechnology
- CHEM 502  (3) Advanced Organic Chemistry
- CHEM 503  (3) Advanced Inorganic Chemistry
- CHEM 504  (3) Advanced Physical Chemistry
- CHEM 505  (3) Biochemistry

Complementary Courses (12 credits)
selected from courses outside the department of the main program, these may be taken from those listed as required courses for Science students. Alternatively, or in addition, courses may be taken from the lists below, in which case at least three courses must be taken from one area of concentration as grouped.

* As 18 credits must be applied exclusively to the Minor, approved substitutions must be made for any of the specified courses which are part of the student's main program.

Biomedicine
- ANAT 541  Cell and Molecular Biology of Aging
- EXMD 504  Biology of Cancer
- PATH 300  Human Disease
7.6.4 Chemistry/Chemical Engineering Minor

The Departments of Chemistry and Chemical Engineering offer a Minor Program in Chemistry, of particular interest to Chemical Engineering students, and a Minor in Chemical Engineering, of interest to Chemistry students (described under the Faculty of Science). The Minor in Chemistry consists of 25 credits as follows:

1. Required courses, 10 credits: CHEM 212 and CHEM 234 (or CEGEP equivalent) and either CHEM 233 or CHEE 310.

2. At least 15 credits from the following list, two of which must be laboratory courses ("*" indicates lab). Note that CHEM 212 is a prerequisite for most of the courses listed below. If students take CHEM 222* instead of CHEM 234, they will receive credit for one of the two laboratories that are required but they must have a total of 25 Chemistry credits for the Minor.

Inorganic Chemistry

CHEM 281 Inorganic Chemistry 1
CHEM 371 Inorganic Chemistry Laboratory*
CHEM 381 Inorganic Chemistry 2
CHEM 591 Bioinorganic Chemistry

Analytical Chemistry

CHEM 257D1 Introductory Analytical Chemistry*
CHEM 257D2 Introductory Analytical Chemistry*
or CHEM 277D1 Analytical Chemistry*
CHEM 277D2 Analytical Chemistry*
CHEM 307 Analytical Chemistry of Pollutants
CHEM 367 Instrumental Analysis 1
CHEM 377 Instrumental Analysis 2

Organic Chemistry

CHEM 302 Introductory Organic Chemistry 3
CHEM 352 Structural Organic Chemistry
CHEM 362 Advanced Organic Chemistry Laboratory*
CHEM 382 Organic Chemistry: Natural Products
CHEM 402 Advanced Bio-organic Chemistry

Physical Chemistry

CHEM 345 Molecular Properties and Structure 1
CHEM 355 Molecular Properties and Structure 2
CHEM 363 Physical Chemistry Laboratory 1*
CHEM 393 Physical Chemistry Laboratory 2*
CHEM 455 Introductory Polymer Chemistry

Please consult the program coordinators for more information; Professor D. Cooper (Chemical Engineering) and Dr. G. Wilczek (Chemistry). A passing grade for courses within the Minor is a C.

7.6.5 Computer Science Courses and Minor Program

The School of Computer Science offers an extensive range of courses for Engineering students interested in computers. The course explicitly for Engineering students (COMP 208) and other courses in the core of the various Engineering programs are listed below. Descriptions of these and other Computer Science courses can be found on Class Schedule or in the Courses section.

COMP 202 Introduction to Computing 1
COMP 208 Computers in Engineering
COMP 250 Introduction to Computer Science
COMP 302 Programming Languages and Paradigms

Engineering students may obtain a Minor in Computer Science as part of their B.Eng. degree by satisfying the 24-credit requirement described below. In general, some complementary courses within Engineering departmental programs may be used to satisfy some of these requirements, but the Minor in Computer Science will typically require at least 12 to 15 credits beyond those needed for the B.Eng. degree. Students should consult their departments about the use of complementaries, and credits that can be double counted.

Students should see the Undergraduate Secretary in the Lorne Trottier Building, Room 2060, to obtain the appropriate forms and to make an appointment to see the Minor adviser for approval of their course selection. Forms must be approved before the end of the Add/Drop period of the student’s final term.

For further information, please check the School of Computer Science Website, www.cs.mcgill.ca/acadpages/undergrad.

Minor in Computer Science for Engineering Students

The program must consist of 24 credits, from courses passed with a grade of C or better, as follows:

Required Course (3 credits)
COMP 302 (3) Programming Languages and Paradigms

Complementary Courses (21 credits)
3 credits – one of the following courses:
COMP 203 (3) Introduction to Computing 2
COMP 250 (3) Introduction to Computer Science

3 credits – one of the following courses:
COMP 206 (3) Introduction to Software Systems
ECSE 221 (3) Introduction to Computer Engineering

9 credits chosen from Computer Science courses numbered 251 or at the 300 level or higher. Courses from other departments making considerable use of computing and approved by the School of Computer Science may also be selected. Students should consult with their advisers about counting specific courses.

Note:
A. COMP 202 and COMP 208 (compulsory for some Engineering students) do not form part of the Minor.
B. COMP 203 and COMP 250 are considered to be equivalent from a prerequisite point of view, and cannot both be taken for credit. Students with a substantial high-level language programming course may forego this prerequisite. Some additional make-up effort may be needed at the start of the course.
C. COMP 208 cannot be taken for credit with or after COMP 250.

7.6.6 Construction Engineering and Management Minor

Students in the Faculty of Engineering may obtain a Minor in Construction Engineering and Management by completing 24 to 25 credits chosen from the required and complementary courses listed below. By a careful selection of complementary courses, a Civil Engineering student may obtain this Minor by completing as few as 9 additional credits. Students in other departments would typically require 12 to 15 additional credits to complete the Minor.

For further information, contact Professor L. Chouinard at (514) 398-6446, Room 488, Macdonald Engineering Building.

Prerequisites:
CIVE 208 Civil Engineering Systems Analysis
or an equivalent course in Operations Research
CIVE 302 Probabilistic Systems or equivalent
COMP 208 Computers in Engineering or equivalent
MIME 310 Engineering Economy

Requirements:
The 24 to 25 credits listed below must be completed with a grade of C or higher in order to fulfill the requirements of the Minor.

1. Management and Law: 15 credits, as follows:
FACC 220 (3) Law for Architects and Engineers
INDR 294 (3) Introduction to Labour-Management Relations
MGR 211 (3) Introduction to Financial Accounting
MGR 341 (3) Finance 1

and one of:
CIVE 324 (3) Construction Project Management
MECH 472 (3) Case Studies in Project Mgmt
2. Either 3 or 4 credits, as follows:
   a) 4 credits - Any two of the following relating to Building Structures:
      - ARCH 447 (2) Lighting
      - ARCH 451 (2) Building Regulations and Safety
      - ARCH 554 (2) Mechanical Services
      - CIVE 492 (2) Structures
   or
   b) 3 credits - One of the following relating to Heavy Construction:
      - MIME 322 (3) Rock Fragmentation
      - MIME 333 (3) Materials Handling

3. Other Construction-Related Complementaries: 6 credits
   Any two of the following:
   - BREE 411 (3) Off-Road Power Machinery
   - BUSA 462 (3) Management of New Enterprises
   - CIVE 446 (3) Construction Engineering
   - CIVE 527 (3) Renovation and Preservation: Infrastructure
   - CIVE 586 (3) Earthwork Engineering
   - ECSE 461 (3) Electric Machinery
   - FINE 445 (3) Real Estate Finance
   - MIME 520 (3) Stability of Rock Slopes
   - MIME 521 (3) Stability of Underground Openings
   - MPMC 321 (3) Mécanique des roches et contrôle des terrains

7.6.7 Economics Minor
The Minor consists of 18 credits in courses given in the Economics Department. It consists of required courses and complementaries. In addition, it is presumed that all Engineering students will have a sufficient background in statistics. Engineering Economy, MIME 310, does not form part of this Minor. For more information see the Department of Economics, Room 443, Leacock Building.

Required Courses (9 credits)
- ECON 230D1* Microeconomic Theory
- ECON 230D2* Microeconomic Theory
- ECON 209** Macroeconomic Analysis and Applications

Complementary Courses (9 credits) from:
- ECON 225 Economics of the Environment
- ECON 302D2 Money and Banking
- ECON 303D1 Canadian Economic Policy
- ECON 303D2 Canadian Economic Policy
- ECON 305 Industrial Organization
- ECON 306D1 Labour Economics and Institutions
- ECON 306D2 Labour Economics and Institutions
- ECON 308 Public Policies Toward Business
- ECON 311 United States Economic Development
- ECON 313 Economic Development 1
- ECON 314 Economic Development 2
- ECON 316 The Underground Economy
- ECON 321 The Quebec Economy
- ECON 326 Ecological Economics
- ECON 329 Economics of Confederation
- ECON 330D1 Macroeconomic Theory
- ECON 330D2 Macroeconomic Theory
- ECON 331 Economic Development: Russia and USSR
- ECON 332 Comparative Economic Systems
- ECON 333 Comparative Economic Systems
- ECON 335 The Japanese Economy
- ECON 337 Introductory Econometrics 1
- ECON 344 The International Economy, 1830 - 1914
- ECON 345 The International Economy Since 1914
- ECON 347 Economics of Climate Change
- ECON 348 Urban Economics
- ECON 404 Transportation
- ECON 405 Natural Resource Economics
- ECON 406 Topics in Economic Policy
- ECON 408D2 Public Sector Economics
- ECON 411 Economic Development: A World Area
- ECON 416 Topics in Economic Development 2
- ECON 420 Topics in Economic Theory
- ECON 423D1 International Trade and Finance
- ECON 423D2 International Trade and Finance
- ECON 426 Labour Economics
- ECON 434 Current Economic Problems
- ECON 440 Health Economics
- ECON 447 Economics of Information and Uncertainty
- ECON 467D1 Econometrics - Honours
- ECON 467D2 Econometrics - Honours
- ECON 525 Project Analysis
- ECON 534 Pensions Crisis
- ECON 546 Game Theory

Mining Engineering students will be permitted to include Mineral Economics (MIME 526) among these 18 credits.
* Students may, with consent of instructor, take ECON 250D1/ECON 250D2 Introduction to Economic Theory: Honours, in place of ECON 230D1/ECON 230D2.
** This requirement is waived for students who choose ECON 330D1/ECON 330D2 from the list of complementaries. Students may **not** take both ECON 209 and ECON 330D1/ECON 330D2.

7.6.8 Environmental Engineering Minor
The Environmental Engineering Minor Program is administered by the Department of Civil Engineering and Applied Mechanics. Further information may be obtained from Professor S. Ghoshal, Room 475C, Macdonald Engineering Building.

Note: Not all courses listed are offered every year. Students should consult with the department concerned about the courses that are offered in a given year.

Minor Requirements (21 credits)
Introductory course (3 credits minimum) – one of:
- CHEE 230 (3) Environmental Aspects of Technology
- CIVE 225 (4) Environmental Engineering
plus a minimum of 18 credits, either:
   - 15 credits* (minimum) Engineering courses and
   - 3 credits (minimum) Non-Engineering courses, from the course lists below:
* A minimum of 6 credits must be from outside the student’s principal departmental program. A maximum of 6 credits of research project courses may be counted towards this category provided the project has sufficient environmental engineering content (project proposal requires approval of project supervisor and Coordinator of the Minor).

OR
15 credits specified for the section 14.2.2 "Barbados Field Study Semester", provided the project for CIVE/AGRI/URBP 519 Sustainable Development Plans has sufficient environmental engineering content (project proposal requires approval of the Coordinator of the Minor) and
3 credits chosen from the Engineering Course list below, excluding CHEE 496.
### Engineering Course List

#### (Environmental Engineering Minor)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BREE 217 (3)</td>
<td>Hydrology and Water Resources (not open to students who have passed CIVE 323)</td>
</tr>
<tr>
<td>BREE 322 (3)</td>
<td>Organic Waste Management</td>
</tr>
<tr>
<td>BREE 330 (3)</td>
<td>GIS for Biosystems Engineering</td>
</tr>
<tr>
<td>BREE 416 (3)</td>
<td>Engineering for Land Development</td>
</tr>
<tr>
<td>BREE 518 (3)</td>
<td>Bio-Treatment of Wastes</td>
</tr>
<tr>
<td>CHEE 351 (3)</td>
<td>Separation Processes</td>
</tr>
<tr>
<td>CHEE 370 (3)</td>
<td>Elements of Biotechnology</td>
</tr>
<tr>
<td>CHEE 430 (3)</td>
<td>Technology Impact Assessment (not open to students who have passed WILD 437)</td>
</tr>
<tr>
<td>CHEE 452 (3)</td>
<td>Industrial Water Pollution Control (offered in alternate years)</td>
</tr>
<tr>
<td>CHEE 471 (3)</td>
<td>Industrial Water Pollution Control (not open to students who have passed CIVE 430)</td>
</tr>
<tr>
<td>CHEE 472 (3)</td>
<td>Industrial Air Pollution Control</td>
</tr>
<tr>
<td>CHEE 496 (3)</td>
<td>Environmental Research Project</td>
</tr>
<tr>
<td>CHEE 591 (3)</td>
<td>Environmental Bioremediation</td>
</tr>
</tbody>
</table>

#### Chemical Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE 225 (4)</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td>CIVE 323 (3)</td>
<td>Hydrology and Water Resources (not open to students who have passed BREE 217)</td>
</tr>
<tr>
<td>CIVE 421 (3)</td>
<td>Water Treatment and Pollution Control (not open to students who have passed CHEE 471)</td>
</tr>
<tr>
<td>CIVE 430 (3)</td>
<td>Environmental Hydrology</td>
</tr>
<tr>
<td>CIVE 451 (3)</td>
<td>Geoenvironmental Engineering</td>
</tr>
<tr>
<td>CIVE 526 (3)</td>
<td>Solid Waste Management</td>
</tr>
<tr>
<td>CIVE 550 (3)</td>
<td>Water Resources Management</td>
</tr>
<tr>
<td>CIVE 553 (3)</td>
<td>Stream Pollution and Control</td>
</tr>
<tr>
<td>CIVE 555 (3)</td>
<td>Environmental Data Analysis</td>
</tr>
<tr>
<td>CIVE 572 (3)</td>
<td>Advanced Hydraulics</td>
</tr>
<tr>
<td>CIVE 574 (3)</td>
<td>Fluid Mechanics of Water Pollution</td>
</tr>
<tr>
<td>CIVE 577 (3)</td>
<td>River Engineering</td>
</tr>
<tr>
<td>CIVE 585 (3)</td>
<td>Groundwater Hydrology</td>
</tr>
</tbody>
</table>

#### Mechanical Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH 343 (3)</td>
<td>Energy Conversion</td>
</tr>
<tr>
<td>MECH 434 (3)</td>
<td>Turbomachinery</td>
</tr>
<tr>
<td>MECH 447 (3)</td>
<td>Combustion</td>
</tr>
<tr>
<td>MECH 525 (3)</td>
<td>Intro. to Nuclear Engineering</td>
</tr>
<tr>
<td>MECH 526 (3)</td>
<td>Manufacturing and the Environment</td>
</tr>
<tr>
<td>MECH 534 (3)</td>
<td>Air Pollution Engineering</td>
</tr>
</tbody>
</table>

#### Mining, Metals and Materials Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MME 412 (3)</td>
<td>Corrosion and Degradation</td>
</tr>
<tr>
<td>MME 451 (3)</td>
<td>Environmental Controls: Met'l Plants</td>
</tr>
<tr>
<td>MME 555 (3)</td>
<td>Corrosion and Degradation of Materials</td>
</tr>
<tr>
<td>MPME 327 (3)</td>
<td>Hydrogéologie appliquée</td>
</tr>
<tr>
<td>MPME 328 (3)</td>
<td>Environnement et gestion des rejets miniers</td>
</tr>
<tr>
<td>MPME 422 (3)</td>
<td>Ventilation minière et hygiène du travail</td>
</tr>
</tbody>
</table>

#### Urban Planning

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBP 506 (3)</td>
<td>Environmental Policy and Planning</td>
</tr>
</tbody>
</table>

#### Non-Engineering Course List

#### (Environmental Engineering Minor)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEBI 200 (3)</td>
<td>Biology of Organisms</td>
</tr>
<tr>
<td>AEBI 201 (3)</td>
<td>Biology of Organisms 2</td>
</tr>
<tr>
<td>AEBI 205 (3)</td>
<td>Principles of Ecology</td>
</tr>
<tr>
<td>AEPH 510 (3)</td>
<td>Agricultural Micrometeorology</td>
</tr>
<tr>
<td>ENTO 380 (3)</td>
<td>Food Systems and the Environment</td>
</tr>
<tr>
<td>MICR 230 (3)</td>
<td>Introductory Microbiology (not open to students who have passed CHEE 370)</td>
</tr>
<tr>
<td>MICR 331 (3)</td>
<td>Microbial Ecology (not open to students who have passed CHEE 370)</td>
</tr>
<tr>
<td>MICR 341 (3)</td>
<td>Mechanisms of Pathogenicity</td>
</tr>
<tr>
<td>SOIL 210 (3)</td>
<td>Principles of Soil Science (not part of the Minor for Agricultural Engineering Students)</td>
</tr>
<tr>
<td>SOIL 331 (3)</td>
<td>Soil Physics</td>
</tr>
<tr>
<td>WILD 333 (3)</td>
<td>Physical and Biological Aspects of Pollution</td>
</tr>
<tr>
<td>WILD 375 (3)</td>
<td>Issues: Environmental Sciences</td>
</tr>
<tr>
<td>WILD 415 (3)</td>
<td>Conservation Law</td>
</tr>
<tr>
<td>WILD 437 (3)</td>
<td>Assessing Environmental Impact (not open to students who have passed CHEE 430)</td>
</tr>
<tr>
<td>WOOD 420 (3)</td>
<td>Environmental Issues: Forestry</td>
</tr>
<tr>
<td>ZOOL 315 (3)</td>
<td>Science of Inland Waters</td>
</tr>
</tbody>
</table>

**Anthropology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 206 (3)</td>
<td>Environment and Culture</td>
</tr>
</tbody>
</table>

**Atmospheric and Oceanic Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC 210 (3)</td>
<td>Introduction to Atmospheric Science (not open to students who have passed GEOG 321)</td>
</tr>
<tr>
<td>ATOC 220 (3)</td>
<td>Introduction to Oceanic Sciences</td>
</tr>
</tbody>
</table>

**Biology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 205 (3)</td>
<td>Biology of Organisms</td>
</tr>
<tr>
<td>BIOL 208 (3)</td>
<td>Introduction to Ecology</td>
</tr>
<tr>
<td>BIOL 432 (3)</td>
<td>Limnology</td>
</tr>
<tr>
<td>BIOL 470 (3)</td>
<td>Lake Management</td>
</tr>
</tbody>
</table>

**Chemistry**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 307 (3)</td>
<td>Analytical Chemistry of Pollutants</td>
</tr>
</tbody>
</table>

**Earth and Planetary Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPSC 243 (3)</td>
<td>Environmental Geology (not open to students who have passed or who will take EPSC 221)</td>
</tr>
<tr>
<td>EPSC 549 (3)</td>
<td>Groundwater Hydrology</td>
</tr>
</tbody>
</table>

**Economics**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 225 (3)</td>
<td>Economics of the Environment</td>
</tr>
<tr>
<td>ECON 326 (3)</td>
<td>Ecological Economics</td>
</tr>
<tr>
<td>ECON 347 (3)</td>
<td>Economics of Climate Change</td>
</tr>
</tbody>
</table>

**Geography**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 200 (3)</td>
<td>Geographical Perspectives: World Environmental Problems</td>
</tr>
<tr>
<td>GEOG 201 (3)</td>
<td>Introductory Geo-Information Science</td>
</tr>
<tr>
<td>GEOG 203 (3)</td>
<td>Environmental Systems</td>
</tr>
<tr>
<td>GEOG 205 (3)</td>
<td>Global Change: Past, Present and Future</td>
</tr>
<tr>
<td>GEOG 302 (3)</td>
<td>Environmental Management 1</td>
</tr>
<tr>
<td>GEOG 308 (3)</td>
<td>Principles of Remote Sensing</td>
</tr>
<tr>
<td>GEOG 321 (3)</td>
<td>Climatic Environments (not open to students who have passed ATOC 210)</td>
</tr>
<tr>
<td>GEOG 404 (3)</td>
<td>Environmental Management 2</td>
</tr>
</tbody>
</table>

**Law**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPL 580 (3)</td>
<td>Environment and the Law</td>
</tr>
</tbody>
</table>

**Microbiology and Immunology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIMM 211 (3)</td>
<td>Introductory Microbiology</td>
</tr>
</tbody>
</table>

**Religious Studies (Macdonald Campus)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 270 (3)</td>
<td>Religious Ethics and the Environment</td>
</tr>
</tbody>
</table>

**Sociology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 328 (3)</td>
<td>Environmental Sociology</td>
</tr>
</tbody>
</table>

### 7.6.9 Minor in Environment

Environmental studies involve the interactions between humans and their natural or technological environment. Environmental problems are frequently comprehensive and complex, and their satisfactory solutions require the synthesis of humanitarian, scientific, and institutional knowledge.

The Minor in Environment is offered and administered by the McGill School of Environment (MSE). Inquiries should be directed to Mr. Peter Barry, MSE Program Coordinator, e-mail pete.barry@mcgill.ca or telephone (514) 398-4306.

Since the program comprises a total of 18 credits for the Minor, additional credits beyond those needed for the B.Eng. degree are required. Students wishing to receive the Minor should prepare a program and have it approved by both their regular Engineering
adviser and the MSE adviser. For program details, see "Minor in Environment", in section 13.5.

7.6.10 Management Courses and Minor Program

Many engineers begin to assume management functions within a few years of graduation. They can, at this stage, take up the study of economics, behavioural science and other management subjects. Students wishing to include such studies in their undergraduate program can take suitable courses from Engineering and Management as listed below.

Engineering Economy MIME 310 introduces the concept of costs into evaluations of engineering projects and architectural proposals. Prerequisite to entry to this Minor is a grade C or better in MIME 310.

Several additional courses are available, subject to timetable requirements, from the core program of the Desautels Faculty of Management. Other courses from the Management core program have considerable overlap with Engineering courses and thus are not available to Engineering students.

Note: Course MGCR 211, a course in statistics, and a course in micro-economics are prerequisite for MGCR 341. If included in the Minor in Management, MGCR 423 should be taken at the end of the program.

Engineering students may obtain a Minor in Management by completing 15 credits of courses from the following list of Desautels Faculty of Management courses with a grade of C or better. Successful completion of this Minor is noted on a student's transcript.

Required Courses (6 credits)
MGCR 211 Introduction to Financial Accounting
MGCR 320 Managing Human Resources

Complementary Courses (9 credits)
3 credits, one of List A:
MGCR 213 Introduction to Management Accounting
MGCR 341 Finance 1
MGCR 373 Operations Research 1
MGCR 382 International Business

3 credits, one of List B:
BUSA 462 Management of New Enterprises
or BUSA 465 Technological Entrepreneurship
MGCR 222 Introduction to Organizational Behaviour
MGCR 352 Marketing Management 1
or MRKT 360 Marketing of Technology
MGCR 360 Social Context of Business
MGCR 423 Organizational Policy

3 credits, any available 300- or 400-level Management course (for which the prerequisites, if any, have been met).

An Engineering course deemed equivalent by the Desautels Faculty of Management may be substituted for course MGCR 373. There are three courses in Engineering that qualify: CIVE 208, MECG 474 and MPMC 326. It should be noted that MGCR 373 does not count as a technical complementary course.

A student embarking on the Minor must be prepared to take credits additional to the normal Engineering program. The student may choose the non-technical complementary course(s) required in his/her program from list B above, but under no circumstances will more than 6 credits of non-technical complementary courses count towards both the Engineering program and the Minor. Students considering this Minor should consult their adviser or the Faculty of Engineering Student Affairs Office.

7.6.11 Materials Engineering Minor

Engineering students may obtain a Minor in Materials Engineering by completing 24 credits chosen from the required and complementary courses listed below. By a careful selection of complementary courses, Engineering students may obtain this Minor with a minimum of 15 additional credits. It should be noted that some departments (e.g., Mechanical Engineering) will allow their students to take courses from this list providing they complete the Minor prior to graduation. For further information, please contact the coordinator, Prof. J. Szpunar, Room 2M020, Wong Building.

Required Courses (15 credits)
MIME 260 Materials Science and Engineering
or CHEE 380 Materials Science
MIME 367 Electronic Properties of Materials
MIME 465 Ceramic Engineering
CHEE 481 Polymer Engineering
CHEE 484 Materials Engineering

Complementary Courses (9 credits)
Three courses to be chosen from the following list:
CHEE 381 Polymer Technology
CHEE 483 Industrial Rheology
CHEE 487 Chemical Processing Electronics Industry
CHEE 530 Structure and Properties of Paper
CHEE 581 Polymer Composites Engineering
CHEM 455 Introductory Polymer Chemistry
ECSE 545 Microelectronics Technology
MECH 530 Mechanics of Composite Materials
MIME 360 Phase Transformations: Solids
MIME 361 Liquid State Processing of Materials
MIME 362 Mechanical Properties
MIME 412 Corrosion and Degradation
MIME 560 Joining Processes
MIME 561 Advanced Materials Design
MIME 563 Hot Deformation of Metals
MIME 564 X-Ray Diffraction Analysis of Materials
MIME 566 Texture, Structure & Properties of Polycrystalline Materials
MIME 569 Electron Beam Analysis of Materials

7.6.12 Mathematics Minor

The Minor in Mathematics for students in the Faculty of Engineering requires satisfactory passes in 24 credits of approved courses in Mathematics not including the following:
MATH 247 (or MATH 223)
MATH 260 (or MATH 262 or MATH 222)
MATH 261 (or MATH 263 or MATH 315 or MATH 325)
MATH 265 (or MATH 264 or MATH 248 or MATH 314)
MATH 266
MATH 270
MATH 319

At least 18 credits must be chosen from the Mathematics and Statistics courses approved for the Mathematics Majors or Honours program, or from MATH 249, MATH 363, MATH 381, MATH 386. The remaining credits may be chosen from mathematically allied courses.

In addition to an Engineering adviser, each student in the Minor program must have an adviser designated by the Department of Mathematics and Statistics, normally beginning in the U2 year. The selection of courses for the Minor is to be done in conjunction with the Minor adviser. Please consult the Department of Mathematics and Statistics for an adviser.

Students in Engineering may obtain a minor in Mining Engineering by completing 24 credits chosen from the required and complementary courses listed below.

One of the required courses is a work term for which enrollment may be limited. Interested students should contact the coordinator, Professor J. Ouellet, Room 115, Adams Building.

Required Courses (12 credits)
MIME 200 Introduction to the Minerals Industry
MIME 291 Industrial Work Period 2
MIME 313 Mining Science and Technology Seminar
MIME 322 Rock Fragmentation
MIME 333 Materials Handling
### Complementary Courses (12 credits)
Courses to be chosen from the following lists:

**List A: Mining Engineering (minimum 6 credits)**
- MIME 320 Extraction of Energy Resources
- MIME 323 Rock and Soil Mass Characterization
- MIME 325 Mineral Industry Economics
- MIME 341 Introduction to Mineral Processing
- MIME 419 Surface Mining
- MIME 426 Development and Services
- MIME 520 Stability of Rock Slopes.
- MIME 521 Stability of Underground Openings
- MIME 526 Mineral Economics

**List B: Mechanical Engineering (maximum 6 credits)**
- MECH 497 Value Engineering
- MECH 554 Microprocessors for Mechanical Systems
- MECH 557 Mechatronic Design
- MECH 572 Introduction to Robotics
- MECH 573 Mechanics of Robotic Systems
- MECH 577 Optimum Design

**List C: Civil Engineering (maximum 6 credits)**
- CIVE 416 Geotechnical Engineering
- CIVE 451 Geoenvironmental Engineering
- CIVE 462 Design of Steel Structures
- CIVE 463 Design of Concrete Structures
- CIVE 527 Renovation and Preservation: Infrastructure

**List D: Chemical Engineering (maximum 6 credits)**
- CHEE 453 Process Design
- CHEE 455 Process Control
- CHEE 484 Materials Engineering

### 7.6.13 Physics Minor
Students in Honours Electrical Engineering may obtain a Minor in Physics as part of their B.Eng. degree by satisfying the 18-credit requirement listed below:
- PHYS 253 Thermal Physics
- PHYS 357 Quantum Physics 1
- PHYS 457 Quantum Physics 2
and at least 9 credits chosen from the following:
- PHYS 332 Physics of Fluids
- PHYS 362 Statistical Mechanics
- PHYS 451 Classical Mechanics
- PHYS 514 General Relativity
- PHYS 551 Quantum Theory
- PHYS 557 Nuclear Physics
- PHYS 558 Solid State Physics
- PHYS 559 Advanced Statistical Mechanics
- PHYS 562 Electromagnetic Theory
- PHYS 567 Particle Physics

Students who take PHYS 357 and PHYS 457 can omit PHYS 271 from their normal Electrical Engineering program. Candidates must go to the Department of Physics at registration time in their U3 year to fill out a Minor Program Form.

### 7.6.14 Technological Entrepreneurship Minor
Engineering students may obtain a Minor in Technological Entrepreneurship by completing 6 courses (18 credits) as listed below. Up to two courses (6 credits) may be double-counted for credit towards the Humanities and Social Sciences Complementary Courses.

This Minor is offered jointly by the Faculties of Engineering and Management. It will appeal to those students who have a concept, process or product idea in mind and who want to explore the opportunity of commercializing it. It will also be of interest to students who have a general interest in entrepreneurship and intend to pursue a career in small and medium-sized high technology/ engineering companies.

Students considering the Minor should consult Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, e-mail judy.pharo@mcgill.ca.

### Complementary Courses (18 credits)
*Approved SCTP 19.05.05 before Faculty of Science in order to fast track before summer break.

**Courses to be chosen from the following list:**
- BUSA 465 (3) Technological Entrepreneurship
- FACC 500 (3) Technology Business Plan Design
- FACC 501 (3) Technology Business Plan Project
- MGCR 320 (3) Managing Human Resources
- MGCR 423 (3) Organizational Policy
- MRKT 360 (3) Marketing of Technology
- ORGB 321 (3) Leadership

### 7.6.15 Software Engineering Minor
This Minor will prepare an engineering student for a career in software engineering. It will provide a foundation in basic computer science, computer programming and software engineering practice.

The Minor consists of 24 credits (8 courses). Up to four of the courses (12 credits) may be double-counted for credit towards the B. Eng. degree in Electrical Engineering or Computer Engineering. Students in other programs may double-count up to three courses (9 credits).

Students considering this Minor should contact Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, e-mail judy.pharo@mcgill.ca.

**Required Courses (9 credits)**
- COMP 302 (3) Introduction to Computing 2
- COMP 335 (3) Software Engineering Methods
- COMP 421 (3) Database Systems
- COMP 424 (3) Topics: Artificial Intelligence 1
- COMP 426 (3) Automated Reasoning
- COMP 431 (3) Algorithms for Engineers
- COMP 433 (3) Personal Software Engineering
- COMP 538 (3) Person-Machine Communication

**Complementary Courses (15 credits)**
- ECSE 221 (3) Introduction to Computer Engineering
- ECSE 321 (3) Introduction to Software Engineering
- ECSE 428 (3) Software Engineering Practice
- ECSE 532 (3) Computer Graphics
- ECSE 531 (3) Real Time Systems
- ECSE 526 (3) Artificial Intelligence
- ECSE 527 (3) Operating Systems
- ECSE 528 (3) Software Engineering Practice
- ECSE 529 (3) Computer Engineering
- MECH 474 (3) Selected Topics in Operations Research
- MECH 524 (3) Computer Integrated Manufacturing
- MECH 539 (3) Computational Aerodynamics
- MECH 545 (3) Advanced Stress Analysis
- MECH 547 (3) Computer Graphics and Geometrical Modelling

No more than two courses (6 credits) can be selected from the following list of courses offered by the School of Computer Science:
- COMP 300 (3) Programming Languages and Paradigms
- COMP 335 (3) Software Engineering Methods
- COMP 420 (3) Secondary Storage Algorithms and Data Sources
- COMP 421 (3) Database Systems
- COMP 424 (3) Topics: Artificial Intelligence 1
- COMP 426 (3) Automated Reasoning
- COMP 431 (3) Algorithms for Engineers
- COMP 433 (3) Personal Software Engineering
- COMP 538 (3) Person-Machine Communication

Sources
- Faculty of Science: Complementary Courses
- Faculty of Engineering: Complementary Courses

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8 Desautels Faculty of Management

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8.1 The Faculty

8.1.1 Location
Samuel Bronfman Building
1001 Sherbrooke Street West
Montreal, QC H3A 1G5
Canada
Telephone: (514) 398-4068
Website: www.mcgill.ca/management

8.1.2 Administrative Officers
Peter Todd; B.Com. (McG.), Ph.D.(Br.Col.) Dean
Emine Sarigöllü; B.A., M.B.A.(Bogazici), M.A., Ph.D.(Penn.) Director (Acting)
Helen Van Eyk Associate Director, B.Com. Program

8.1.3 The Faculty Then and Now
The Faculty was established in 1968, incorporating the Graduate School of Business with the School of Commerce of the Faculty of Arts and Science, where courses in commerce had been offered since 1906.
Since 1971 the Faculty has been located at the corner of Sherbrooke and McTavish, easily accessible to the community it serves, in the Samuel Bronfman Building, named in
The faculty has gained a worldwide reputation as one of Canada's leading international business schools and attracts top students and faculty members from every continent. The academic programs in management offer strong international content in conjunction with a variety of functional specializations and include an opportunity for students to participate in exchange programs with many leading universities in Europe, Asia, Australia, the United States and South America. This recognition of the global nature of business was further reflected by the introduction of a Faculty Program in International Management as part of the B.Com. program in 1997. In November 2005, the Faculty was named in honour of Marcel Desautels, who gave the largest donation to a business school in Canadian history.

8.2 General Information

8.2.1 Aims of the B.Com. Program

The primary objective of the undergraduate program in management is to prepare students for effective professional and managerial careers. At a general level this preparation includes developing in students a capacity for critical thinking, for integrating knowledge across different disciplines, and for utilizing current theory in approaching practical business problems. Students are also expected to become comfortable with taking risks and working as part of a team, and to develop the necessary skills to lead others. At a more specific level, students must acquire the critical management competencies which will enable them to respond to the ever-changing, increasingly complex global marketplace.

The B.Com. curriculum offers students both breadth and depth. Breadth is achieved through a broad-based core of required courses which provide the necessary quantitative, analytical, and communication skills, while grounding students in applied theory and practice across the major management disciplines. Depth is achieved through three alternate streams of study designed to meet the needs of a highly diverse student body with a wide range of career interests and priorities.

In Stream I, General Management, students pursue focused study in at least two different areas. They must choose one Concentration in Management, and for their second area of study, they have three options: 1) choosing a second Concentration in Management; 2) pursuing a Minor in another faculty; or 3) custom designing their own sequence of higher level courses around a theme, with approval from the Area Coordinator of their Concentration or from the Associate Director of the B.Com. Program.

In Stream II, Majors and Honours, students focus their study in only one area in order to get maximum exposure to their chosen field.

In Stream III, International Management, students have a chance to pursue interdisciplinary study of a particular world region – East Asia, Latin America and the Caribbean, Western Europe, or North America. Language, social science, and humanities courses are taken to expand understanding of other cultures and to gain the necessary perspective for an international business career.

8.2.2 Part-time B.Com. Program

Students taking fewer than four courses per term are considered to be part-time students. Such students generally follow their program through evening courses offered by the Centre for Continuing Education. The range of Management and non-Management course offerings in an evening program is more restricted than in the day program. It is not possible to complete certain Concentrations, Honours or Majors, or the Faculty Program by taking only evening courses. Further information on program requirements for students who change from the full- to part-time program, or vice versa, can be obtained from the Student Affairs Office by calling (514) 398-4068 or e-mailing bcom.mgmt@mcgill.ca.

8.2.3 Summer Studies

Students wishing to make up deficiencies in their background, or to accelerate their progress to the degree, may do so by taking summer courses at this University. Should students wish to pursue the courses at some other institution, they must apply to the Associate Director, B.Com. Program. Credit will be granted for such work only if it fits into the student’s overall program, and if written permission to do such work for credit has been obtained in advance. A grade of C or better is also required; C- or less is not acceptable for transfer credit. A course which overlaps with course material already completed in the student’s program, or a language course which does not substantially progress beyond corresponding language courses already taken by the student, will not receive credit approval.

Each summer, from early May to mid-August, many Core courses and several elective courses are offered by the Desautels Faculty of Management for full credit. They are available to Management students, and to students from other faculties and universities with the necessary course prerequisites. The University also offers a number of summer courses in various disciplines at different levels. Information on Management summer courses is available from the Student Affairs Office at (514) 398-4068 or bcom.mgmt@mcgill.ca, or from the Summer Studies Office, at (514) 398-5212 or summer.studies@mcgill.ca.

Students working full or part-time during the summer will be allowed to take only one course in each of the two Summer Sessions.

Students who are not working and wish to follow a full-time period of study will be permitted to enrol for more than six credits per period only with special permission of the Associate Dean or the Associate Director. In no circumstance will they be allowed to take more than 9 credits in either period of the Summer Studies, and may take no more than 18 credits in a single summer.

8.2.4 International Student Exchange Program

Students are encouraged to participate in the International Student Exchange Program to gain a broader international perspective. Through this program, students may study and earn academic credits at over 50 universities in countries around the world. Exchange opportunities are open to students in all streams.

More information may be obtained from the Student Affairs Office at (514) 398-4068, e-mail bcom.mgmt@mcgill.ca, or on the McGill Website at www.mcgill.ca/studyabroad.

8.2.5 Transfer Credit Guidelines for Courses Taken Outside the Faculty of Management

Students who transfer course credit from faculties outside of the Faculty of Management either at McGill or at another institution may transfer up to a maximum of 30 credits under the following conditions:

- Only courses passed with a grade of C or better will be transferred. Grades of C- are not acceptable. Grades of P or S are acceptable only if transferred from faculties within McGill. The letter grades applied by the former home institution or host institution (for exchanges and study away) take precedence over the numerical grades if provided.
- Decision on whether a course is outside the Faculty of Management will be based on the original faculty in which the course was taken.
- For exchange or study away purposes, it is highly recommended that course and credit approval is obtained before courses are taken at the host institution.

8.2.6 Career Centre

The Career Centre is a career planning resource, an active promoter of students to employers and a source of career-related information, offering a gamut of services such as résumé and cover letter review, interview preparation, taped mock interviews,
career planning (CareerLeader), Career Day, company presenta-
tions and the opportunity to participate in our on-line resume book.

The Career Centre helps, directs and guides students to make
the job search process easier. The centre organizes a series of
activities designed to assist students in networking and meeting
various employers throughout the course of the year. Most events
tend to be concentrated in the fall, during the “On-Campus Recruit-
ing Season” (OCR).

The Career Centre Website has restricted access and is only
available to Management students. With a password, students can
access job postings, useful job search links, employer database,
on-line registration to company information sessions as well as
CareerLeader.

Workshops include: "How to Survive the OCR Process", a work-
shop to help prepare students for the upcoming recruiting season,
and "Resume & Cover Letter Writing", "Interview Preps", "Taped
Mock Interviews", "Cold Calling" and "Networking Essentials".

Career Day is the Desautels Faculty of Management's biggest
career fair. Over 45 firms are recruited to participate in a fair held
off campus in the month of September. It is an opportunity for stu-
dents to practice their networking skills, gain valuable contacts and
learn more about firms.

The Career Centre also coordinates a variety of employer
development visits in Montreal, Toronto and New York City. During
the visits students have the opportunity to tour company facilities,
meet decision makers and learn more about their industry of
choice.

Students are encouraged to come see our team of profession-
als and to visit our Website at www.mcgill.ca/management/career.

8.2.6.1 Career Centre Internship Program

Students wishing to integrate valuable hands-on work experience
in their academic studies are encouraged to apply to the Internship
Program. This program provides students an opportunity to work
for four or eight months in a business environment where they can
apply their theoretical knowledge into practice.

The program is very competitive and requires that students sub-
mit a thorough application and pass an interview. To be eligible,
students must meet the following requirements: be registered in
the full-time Bachelor of Commerce program, have a minimum
CGPA of 3.0/4.0, have completed a minimum set of core courses
and have at least 12 credits remaining in the program. Students may
register for internships starting in the Fall, Winter or Summer.

A student who is completing an internship will receive a mid-
term and final performance evaluation. After completing the inter-
ship, the student is required to submit a written project report to the
Internship Manager and return to McGill to complete the Bachelor
of Commerce program. Students who have successfully com-
pleted the Internship Program will receive one credit for each four-
month internship appointment, up to a maximum of two credits,
and will receive the Internship Program notation on their transcript.

The fees associated with the program include a $25 enrolment
fee and a $400 internship fee for each appointment the student
undertakes, as well as the cost assessed for each credit. More
information is available on our the Website at www.mcgill.ca/man-
agement/career or contact the Internship Program Manager at the
Career Centre by telephone: (514) 398-2071 or by e-mail:
intern.mgmt@mcgill.ca.

Note: The list of course requirements is available on our Website and
is subject to change without prior notice.

8.2.7 Scholarships, Prizes and Medals

Registered students are automatically considered by the Faculty
Scholarships Committee for each award for which they are eligi-
able, with the following exceptions: Sheila Wellington BMO Finan-
cial Group Awards, KPMG Scholarship, Commerce '55
Scholarships, Export Development Corporation International
Studies Scholarships, Stephen S. Goldbloom Memorial Prize,
Donald R. McBirnie Award, Great-West Life & London Life Schol-
arship, Hugh Howson Memorial Prize, Dr. Alex Paterson Scholar-
ship, Paul-Hervé Desrosiers Scholarship in Entrepreneurial

Studies, Richter Scholarship, and Shirin Yeganegi Memorial
Scholarship. For these, the Faculty Scholarships Committee wel-
comes applications and recommendations, substantiated by cur-
riculum vitae, from individual students, student groups and clubs.
Such information should be forwarded to the Associate Dean,
B.Com. Program. A minimum of 27 graded credits must have been
completed in the year to be eligible; 14 credits in one term.

For information, see section 3.9 "Scholarships and Financial
Aid".

8.2.8 Management Undergraduate Society

The Management Undergraduate Society (MUS) represents all
undergraduate students in the Desautels Faculty of Management
and hosts a wide range of events, activities and resources, which
add value to the quality of student life. The MUS offers countless
services ranging from academic tutoring to fun-filled social gather-
ings to business contact opportunities. Through extra-curricular
involvement with the MUS, students increase the value of their
education and are provided with the opportunity to gain essential
skills that are directly applicable in the business world. There are
over 150 positions under the MUS that offer students the opportu-
nity to get involved, meet new people and enhance their university
experience.

Activities sponsored by the MUS include: Management Wel-
come Week, Management Winter Carnival, Management Achieve-
ment Awards Luncheon, Jeux du Commerce/Commerce Games,
the AIDS benefit fashion show, the Cancer Auction, a Faculty
newspaper and magazine, a yearbook and a Graduation Ball. The
MUS is also the umbrella organization under which the McGill
Investment Club, the Information Systems Club, the Marketing
Network, the International Management Society and the McGill
Accounting Society all operate. Each club organizes career infor-
mation sessions, guest speakers, peer tutorial programs, social
activities, as well as other activities that complement regular
classes.

8.3 B.Com. Program Requirements

8.3.1 Academic Requirements for Graduation

A student is graduated upon satisfactory completion of the full
number of credits indicated in the letter of acceptance, subject to
the curriculum requirements. For students entering with a CEGEP
Diploma, the number of credits will generally be 90. Students from
outside the province of Quebec who have not completed the equiv-
alent of CEGEP graduation will normally be required to complete
120 credits.

All students are expected to conform to the curriculum set out
below. It is the student’s responsibility to make sure his/her course
of study conforms with the curriculum requirements as described.
A student wishing to depart from that program must obtain written
permission from the Associate Dean.

A student who has transferred with advanced standing to the
Desautels Faculty of Management from another university is nor-
mally required to complete a minimum of 60 credits while regis-
tered in the Bachelor of Commerce program, including such
required courses as are deemed necessary, to become eligible for
the degree of Bachelor of Commerce.

Completion of the 90-credit degree requirements normally will
require three years of study. A maximum of five years is permitted,
however, for completion of the requirements for the degree. In
exceptional circumstances, this maximum requirement may be
extended by the Associate Director.

8.3.2 Academic Advising

Students entering the Faculty for the first time are required to
attend an Orientation and Advising Session during the last week of
August, at which the Associate Director and advising staff (Helen
Van Eyk, Giulia Campofredano, Ron Critchley and Heather

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McCombie) from the B.Com. Office provide information on all aspects of the B.Com. program. Students who have had difficulty registering for their courses have the opportunity to resolve the problem at this session.

Counselling is available throughout the year with area coordinators to discuss study plans and potential career paths. Appointments may be made after the first week of class to discuss such issues.

In February or March, an Information Session takes place which enables the student to select a course of study.

In April, students continuing in the B.Com. program plan their studies for the following year by completing a Study Plan Form, using the requirements as listed in the Calendar as a guide to their course selection, calling upon their Area Adviser or other faculty members for advice where appropriate. Students then register on-line using Minerva at www.mcgill.ca/minerva-students. The Study Plan Form must be signed by one of the Advisers, Helen Van Eyk, Ron Critchley, Giulia Campofredano or Heather McCombie.

Students in Stream I choosing to do a Minor in another Faculty as their second area of study should meet with the appropriate department adviser to plan their courses and obtain an authorized Desautels Faculty of Management Minor Approval Form. Students in Stream I custom designing their own sequence of six courses as “structured electives” in their second area of study must get approval from the Area Coordinator of their Concentration or the Associate Director before taking more than two courses out of the six required at the 300- or 400-level. It should be noted that Minors must have a minimum of 18 credits not overlapping with other program requirements. Students taking the Minor in Economics MUST see an adviser for approval of their program.

Students in Stream II, Honours or Majors programs in Economics or Mathematics must have their Study Plan Form initially authorized by the appropriate Area Coordinator or Department Adviser prior to submission to the Student Affairs Office. Please see Giulia Campofredano in the Student Affairs Office for final program approval.

Students in Stream III should meet with the appropriate International Management faculty adviser(s) in the Desautels Faculty of Management and/or Arts at least once a year to plan their course of study.

Students continuing in the part-time (evening) B.Com. program have their Study Plan Form authorized by Ron Critchley.

Students requesting general information about the program, or encountering difficulties (academic or personal) during the session, should contact Giulia Campofredano, Ron Critchley or Heather McCombie.

8.3.3 Registration

Course Selection: Full-time students must register on-line using Minerva. Additional information for new students is distributed at the time of admission and is also available on the Faculty Website at www.mcgill.ca/management under Degree Programs - B.Com. - Accepted Students.

Information for returning students and part-time students is available at the B.Com. Office.

Course Change: Students who wish to change the courses for which they are registered within the course change period must do so on-line using Minerva. Students should complete and return to the B.Com. Office a Course Change Form after they have successfully made their course changes using Minerva.

Withdrawals: Students wishing to withdraw from a course after the course change deadline must do so on-line using Minerva by the withdrawal deadline. A grade of “W” will be indicated on the transcript. See the Calendar Of Dates 2006-07, section 2, for details on withdrawal deadlines.

Approval to withdraw after the withdrawal deadline will be granted only in exceptional circumstances.

Students whose circumstances require withdrawal from their complete program should report to the B.Com. Office.

8.3.4 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course taken for credit at McGill, CEGEP, at another university, or advanced placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate Diploma.

It is the student’s responsibility to consult the Student Affairs Office as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

8.3.5 Academic Standing

Academic standing is based primarily on students’ cumulative grade point averages (CGPA), but may also be affected by their term grade point averages (TGPA). Academic standing is assessed in January for the Fall term, in May for the Winter term, and in September for the Summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the Fall term are based on grades that are available in January. Grades for courses in which students have deferred examinations and Fall-term grades for courses that span the Fall and Winter terms do not affect academic standing for the Fall term, even though they will ultimately affect students’ Fall TGPA’s. Therefore, academic standings for the Fall term are designated as “interim” and should be interpreted as advisory. Note that interim standing will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.

• New students are admitted to satisfactory standing.

• Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing

Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult with Ronald Critchley or Heather McCombie in the Student Affairs Office, before the withdrawal deadlines, about their course selection for the Winter term.

• Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.

• Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the Summer term.

• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.

• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Director will be placed in probationary standing if their CGPA is less than 2.00. To remain in the program, students must satisfy relevant conditions specified in their letter of readmission.

Readmitted Unsatisfactory Standing

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Director will have
their standing changed to readmitted unsatisfactory standing. Their course load is specified in their letter of readmission, as are the conditions they must meet to be allowed to continue in their program. They should see their faculty adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a faculty adviser, before the withdrawal deadlines, about their course selection for the Winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Director no later than July 15 for readmission to the Fall term and November 15 for the Winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

- Students will be placed in unsatisfactory standing (Winter or Summer term) or interim unsatisfactory standing (Fall term) if their CGPA falls or remains below 1.50.
- Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing if their TGPA falls below 2.50 and their CGPA is below 2.00.
- Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Director and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

Incomplete Standings

Standing awaits deferred exam. Standing Incomplete.

Students with incomplete standings in the Winter or Summer term may register for the Fall term, but their standing must be resolved by the end of the course change period for that term; otherwise, their registration will be cancelled. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

8.3.6 Academic Distinctions

- Full-time students will be given the designation "Dean's Honour List" when their academic standing is in the upper 10% of the B.Com. student body. The designation, while carrying no monetary reward, is an official recognition of the student's achievements and will be noted on the student's transcripts. A minimum of 27 graded credits must have been completed during the academic year to be eligible; 14 credits in one term.
- Students not in an Honours program who graduate with a CGPA of 3.50 or better will be awarded their degrees with "Great Distinction". Those with a CGPA between 3.30 and 3.49 will receive their degrees with "Distinction". In the case of transfer students or transfer credits, consideration is given to the quality of the work done elsewhere in addition to the CGPA requirement.
- The designation of Dean's Honour List for graduating students will be awarded by the Faculty to a maximum of 10% of its graduating students. The award will be made on the basis of the CGPA, with the minimum standard being set at a CGPA not lower than 3.50.

8.3.7 Examinations

The following is supplemental to that which is listed under section 3.7 “Examinations”.

Supplemental Examinations

Supplemental examinations are not offered in undergraduate courses administered by the Desautels Faculty of Management. A student required to improve his/her standing in a course must repeat the course in a subsequent term, completing all course requirements to the satisfaction of the instructor.

Deferred Examinations

Students should apply in writing to their Associate Director within five days of the final examination for deferred examination privileges. If approved, such a deferred examination will generally be written within the next formal period for which there is an examination in the course. Special arrangements may be made where a student has an authenticated case of long-term illness.

8.3.8 Verification of Grades and Rereads

Every student has the right to arrange a meeting with the instructor to review the examination questions and see the corrected solutions. The instructor has the option of meeting with the student to answer any questions that the student may have about the grading of the paper, or alternatively, the instructor may provide the student with a sheet containing the correct answers to the examination questions. The student may review this in the presence of the faculty member or designate, but may not take the material away. Students must exercise their right to see their papers by the end of the third week of classes in September for preceding Winter and Summer courses, or by the end of the third week of classes in January for preceding Fall courses.

In a case where a student feels that an error has been made in arriving at the final grade, a Verification of Grade Application must be completed in the Student Affairs Office, requesting the instructor to carry out a detailed check that all questions have been marked, and that the final grade has correctly been computed on the basis of the term work, final examination, etc. However, during the course of the term, any requests to have term work re-evaluated should initially be made directly to the instructor.

Students may apply to the Student Affairs Office for rereads of written coursework. Rereads for computer-scored examinations are not possible, but students may request verification of their final grade.

The deadline for applying for a Verification of Grade or Reread for the Winter and Summer term courses is the end of September; the deadline for Fall term courses is the end of January. There is no charge for Verification of Grades; students will pay a fee (which will be billed to their account) for each Reread. Verification of Grades or Rereads in courses not offered by the Desautels Faculty of Management are subject to the deadlines, rules and regulations of the particular faculty concerned.

When a Reread is requested, a second reader will be appointed, and will review the examination paper and several other papers in the same general mark range, and will be concerned with actual errors of marking, whether they be errors of omission or judgment. The recommendation of the second reader will stand, whether this recommendation involves an upgrading or a downgrading of the original mark. In a case where the original mark has been upgraded, the Reread fee will be refunded to the student.
8.3.9 Honours and First Class Honours

Graduating students registered in an Honours program may be awarded Honours or First-Class Honours under the following conditions:

- for Honours, the CGPA at graduation must be at least 3.0
- for First-Class Honours, the CGPA of all Honours courses and the over-all CGPA must be at least 3.5

Students in an Honours program whose GPA or CGPA is below 3.0, or who did not satisfy certain additional program requirements, must consult their adviser to determine if they are eligible to graduate in a program other than Honours.

8.4 B.Com. Program Structure

The Bachelor of Commerce (B.Com) degree program is a three- or four-year program when taken full-time. It can also be pursued on a part-time evening basis.

Although the language of instruction at McGill is English, those who plan to be part of the Quebec business environment are reminded of the importance of competence in both written and oral French.

8.4.1 Stream I, General Management

<table>
<thead>
<tr>
<th>B.Com. General Management</th>
<th>90-credit</th>
<th>120-credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year Requirements</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Core</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>One Concentration</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>A Second Concentration (15), a Minor or Minor Concentration (minimum of 18), or 18 approved credits at the 300 level or higher</td>
<td>15 - 24</td>
<td>15 - 24</td>
</tr>
<tr>
<td>Non-Management Electives</td>
<td>0 - 12</td>
<td>0 - 12</td>
</tr>
<tr>
<td>Free Electives</td>
<td>12 - 21</td>
<td>21 - 30</td>
</tr>
</tbody>
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- Finance, page 248
- International Business, page 249
- Management Science, page 249
- Operations Management, page 250
- Organizational Behaviour and Human Resource Management, page 250

Minors/Minor Concentrations

Although only the Mathematics and Statistics Minors are outlined in this section, a wide variety of programs are available as listed in the sections for the Faculties of Arts and Science. Popular choices include Anthropology, Canadian Studies, Computer Science, English - Literature, Environmental Studies, Geological Sciences, German, History, International Development, Political Science, Women's Studies, etc.

Students interested in the Minor in Economics (Stream I) must see an adviser in the B.Com. Office for Faculty approval.

It should be noted that a minimum of 18 credits of the Minor’s requirements must not overlap with any other part of the student’s program.

8.4.2 Stream II, with Major or with Honours

<table>
<thead>
<tr>
<th>B.Com. with Major or with Honours</th>
<th>90-credit</th>
<th>120-credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year Requirements</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Core</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Major or Honours requirements as per discipline</td>
<td>30 - 39</td>
<td>30 - 39</td>
</tr>
<tr>
<td>Non-Management Electives</td>
<td>0 - 12</td>
<td>0 - 12</td>
</tr>
<tr>
<td>Free Electives</td>
<td>12 - 24</td>
<td>21 - 33</td>
</tr>
</tbody>
</table>

8.4.3 Stream III, Faculty Program in International Management

<table>
<thead>
<tr>
<th>B.Com. Faculty Program in International Management</th>
<th>90-credit</th>
<th>120-credit</th>
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</thead>
<tbody>
<tr>
<td>Freshman Year Requirements</td>
<td>0</td>
<td>30</td>
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<tr>
<td>Core</td>
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<td>36</td>
</tr>
<tr>
<td>Regional Interdisciplinary Area of Specialization</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Advanced Management Courses on Integrative or International Topics</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Non-Management Electives</td>
<td>0 - 12</td>
<td>0 - 12</td>
</tr>
<tr>
<td>Free Electives</td>
<td>6 - 18</td>
<td>15 - 27</td>
</tr>
</tbody>
</table>

Areas of specialization:
- Canada, page 258
- Latin America and the Caribbean, page 255
- United States, page 258
- Western Europe (France, Germany, Italy, or Spain), page 257

8.5 Management Core

All B.Com. students take the 36-credit Core curriculum set out below, except where modifications are specifically required by a Major or Honours program. Any other student wishing to deviate from this program must obtain written permission from the Associate Director.

A grade of C or better is required for all Core courses. If a D is obtained in a Core course, the grade must be improved the following term.

The distribution of Core courses over the years differs depending upon whether the student is in the 90-credit program (3 years) or the 120-credit program (4 years). (Students who have completed the CEGEP program enter the 90-credit program; students from outside Quebec who have been accepted on the basis of high school enter the 120-credit program.)
8.5.1 90-credit Program, Core Course Distribution

**Required Courses (36 credits)**

- **ECON 295** (3) Macroeconomic Policy
- **MGCR 211** (3) Introduction to Financial Accounting
- **MGCR 222** (3) Introduction to Organizational Behaviour
- **MGCR 271** (3) Statistics 1
- **MGCR 293** (3) Managerial Economics
- **MGCR 331** (3) Information Systems
- **MGCR 341** (3) Finance 1
- **MGCR 352** (3) Marketing Management 1
- **MGCR 360** (3) Social Context of Business
- **MGCR 382** (3) International Business
- **MGCR 423** (3) Organizational Policy
- **MGCR 472** (3) Operations Management

**Program Footnotes:**

1. Students considering a Major or Minor in Mathematics replace MGCR 271 with MATH 324. Students considering an Honours or Joint Honours Program in Economics replace MGCR 271 with ECON 257D1/ECON 257D2.

2. Students entering an Economics program replace MGCR 293 with either ECON 230D1/ECON 230D2 (for the Majors program) or ECON 250D1/ECON 250D2 (for the Honours Program); and replace ECON 295 in U2 with either ECON 330D1/ECON 330D2 (for the Majors program) or ECON 352D1/ECON 352D2 (for the Honours Program) taken in U2.

**Also note that:**

- A maximum of 6 credits will be permitted within the B.Com. program for MGCR 293 and ECON 230D1/ECON 230D2 or ECON 250D1/ECON 250D2.

- A maximum of 6 credits will be permitted within the B.Com. program for ECON 295 and ECON 330D1/ECON 330D2 or ECON 352D1/ECON 352D2.

8.5.2 120-credit Program, Freshman Course Distribution

Students admitted to a program requiring 97-120 credits (four years) register in a Freshman Year in which they must complete MATH 122 and MATH 123 (or equivalents) as well as the 12 credits of Complementary Courses specified below.

A minimum grade of C is required for all Core and Freshman Complementary courses.

The Freshman courses are distributed as follows:

**U0 Required Courses (6 credits)**

- **MATH 121** (3) Calculus for Management
- **MATH 123** (3) Linear Algebra and Probability

**U0 Complementary Courses (12 credits)**

- 6 credits of Humanities or Language courses, as specified below.
- 6 credits of Social Science or Science courses, as specified below.

**U0 Elective Courses (12 credits)**

**Freshman Social Sciences/Sciences Course List**

Any course at the 100 or 200 level with these Subject Codes:

- ANTH (Anthropology)
- ATOC (Atmospheric and Ocean Sciences)
- BIOL (Biology)
- CANC (Canadian Studies)
- CHEM (Chemistry)
- CHEM 150, CHEM 160, CHEM 170, CHEM 180
- ECON (Economics)
- ECON 208, ECON 209, ECON 217, ECON 227, ECON 230, ECON 250, ECON 257, ECON 295
- EPSC (Earth and Planetary Sciences)
- EPSC 200, EPSC 201
- GEGG (Geography)
- HIST (History)
- LING (Linguistics)
- PHGY (Physiology)
- PHYS (Physics)
- POLI (Political Science)
- PSYC (Psychology)
- SOCI (Sociology)
- SSMD (Social Studies of Medicine)
- WMST (Women’s Studies)

Any course at the 200 level with these Subject Codes:

- COMP (Computer Science)
- MATH (Mathematics)

**NOTE:** Chosen courses from the above-mentioned Subject Codes need to be approved by the offering Department. Additional courses may be taken with approval of a Faculty Adviser.

**Freshman Humanities/Languages Course List**

Any course at the 100 or 200 level with these Subject Codes:

- ARTH (Art History)
- CANCS (Canadian Studies)
- CLAS (Classics)
- EAS (Asian Languages and Literature)
- ENG (English Communications)
- ENGL (English)
- FREN (French)
- FRSL (French as a Second Language)
- GERM (German)
- HISP (Hispanic Studies)
- ITAL (Italian)
- JWST (Jewish Studies)
- PHIL (Philosophy)
- RELG (Religious Studies)
- RUSS (Russian)

And the following Faculty of Education courses: EDEA 204, EDEA 205, EDEE 325.

**NOTE:** Chosen courses from the above-mentioned Subject Codes need to be approved by the offering Department. Any language courses offered through the Faculty of Arts, with approval from the appropriate department. Additional courses may be taken with approval of a Faculty Adviser.

**Program Footnotes:**

1. Students considering a Major or Minor in Mathematics, or an Honours or Joint Honours program in Economics replace MATH 122 and MATH 123 with three of the following courses, or demonstrated proficiency through appropriate McGill Placement tests.

- **MATH 133** (3) Vectors, Matrices and Geometry
- **MATH 139** (4) Calculus
- **MATH 140** (3) Calculus 1
- **MATH 141** (4) Calculus 2

Six of these credits would be counted in the Freshman Year requirements, the remaining credits would be counted as Humanities or Science Complementary.

**Also note that:**

- Management students cannot receive credit for ACOM 150, COMP 102, ECON 208, ECON 217, ECON 227, ECON 230, ECON 250 or ECON 257, or MATH 203, MATH 204, as Freshman complementary or elective courses.

8.5.3 120-credit Program, Core Course Distribution

Core courses may only be taken after the freshman year and are distributed as follows:

**Required Courses (36 credits)**

- **ECON 295** (3) Macroeconomic Policy
- **MGCR 211** (3) Introduction to Financial Accounting
- **MGCR 222** (3) Introduction to Organizational Behaviour
- **MGCR 271** (3) Statistics 1
- **MGCR 293** (3) Managerial Economics
- **MGCR 331** (3) Information Systems
- **MGCR 341** (3) Finance 1
- **MGCR 352** (3) Marketing Management 1
- **MGCR 360** (3) Social Context of Business
- **MGCR 382** (3) International Business
- **MGCR 423** (3) Organizational Policy
- **MGCR 472** (3) Operations Management

Any course at the 200 level with these Subject Codes:

- COMP (Computer Science)
- MATH (Mathematics)

**NOTE:** Chosen courses from the above-mentioned Subject Codes need to be approved by the offering Department. Additional courses may be taken with approval of a Faculty Adviser.

**Freshman Humanities/Languages Course List**

Any course at the 100 or 200 level with these Subject Codes:

- ARTH (Art History)
- CANCS (Canadian Studies)
- CLAS (Classics)
- EAS (Asian Languages and Literature)
- ENG (English Communications)
- ENGL (English)
- FREN (French)
- FRSL (French as a Second Language)
- GERM (German)
- HISP (Hispanic Studies)
- ITAL (Italian)
- JWST (Jewish Studies)
- PHIL (Philosophy)
- RELG (Religious Studies)
- RUSS (Russian)

And the following Faculty of Education courses: EDEA 204, EDEA 205, EDEE 325.

**NOTE:** Chosen courses from the above-mentioned Subject Codes need to be approved by the offering Department. Any language courses offered through the Faculty of Arts, with approval from the appropriate department. Additional courses may be taken with approval of a Faculty Adviser.

**Program Footnotes:**

1. Students considering a Major or Minor in Mathematics, or an Honours or Joint Honours program in Economics replace MATH 122 and MATH 123 with three of the following courses, or demonstrated proficiency through appropriate McGill Placement tests.

- **MATH 133** (3) Vectors, Matrices and Geometry
- **MATH 139** (4) Calculus
- **MATH 140** (3) Calculus 1
- **MATH 141** (4) Calculus 2

Six of these credits would be counted in the Freshman Year requirements, the remaining credits would be counted as Humanities or Science Complementary.

**Also note that:**

- Management students cannot receive credit for ACOM 150, COMP 102, ECON 208, ECON 217, ECON 227, ECON 230, ECON 250 or ECON 257, or MATH 203, MATH 204, as Freshman complementary or elective courses.
8.6 Concentrations

In order to complete a Concentration, the student must achieve a grade of C or better in all the courses which comprise the Concentration. The student who has failed to earn 15 satisfactory credits will be required to embark on a new Concentration, repeat the course(s) in question or, where possible, to replace the course(s) with a satisfactory option from the Concentration courses.

In general, the student will begin taking courses from the chosen Concentration in the U2 year.

An adviser is appointed for each Management Concentration to assist students in choosing a Concentration and provide additional information regarding course selection.

Second Concentration:

Students who choose to take a second Concentration will be required to complete 15 non-overlapping credits at a satisfactory level with a minimum grade of C in each course.

8.6.1 Accounting Concentration

Adviser: Professor F.W. Valliant

This Concentration is designed to meet the needs of Management students who want to have a good basic understanding of accounting but do not intend to become professional accountants or accounting specialists. It is primarily oriented towards users of financial information and emphasizes breadth of knowledge in a coherent selection of courses.

The Accounting Concentration complements or forms part of the B.Com., General Management Program. The individual courses in the Concentration also act as service courses for other areas in the Faculty for their Majors or Concentrations.

Required Courses (12 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 351</td>
<td>3</td>
<td>Intermediate Financial Accounting 1</td>
</tr>
<tr>
<td>ACCT 352</td>
<td>3</td>
<td>Intermediate Financial Accounting 2</td>
</tr>
<tr>
<td>ACCT 361</td>
<td>3</td>
<td>Intermediate Management Accounting 1</td>
</tr>
<tr>
<td>ACCT 362</td>
<td>3</td>
<td>Intermediate Management Accounting 2</td>
</tr>
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Complementary Course (3 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 385</td>
<td>3</td>
<td>Principles of Taxation</td>
</tr>
<tr>
<td>ACCT 454</td>
<td>3</td>
<td>Financial Reporting</td>
</tr>
<tr>
<td>ACCT 463</td>
<td>3</td>
<td>Advanced Management Accounting</td>
</tr>
<tr>
<td>ACCT 475</td>
<td>3</td>
<td>Principles of Auditing</td>
</tr>
</tbody>
</table>

or another approved course at the 300 level or above in other Areas of the Faculty.

NOTE: It is strongly advised to take 5 accounting courses in U2 so as to have the option of continuing in the Majors/Honours Accounting programs.

8.6.4 Information Systems Concentration

Adviser: Professor R. Donovan

This 15-credit concentration prepares students for a multitude of IT and IT-related career opportunities. The IS concentration is an ideal complement to the majors and concentrations of several other areas. It employs a blend of theoretical concepts, hands-on tools, actual case studies and real-life projects to train students to identify business challenges that can benefit from information systems support and implement appropriate solutions.

Graduates completing a concentration in IS can expect to find employment as business or system analysts in the IT field or as IT specialists within their own field, including but not limited to, banking, insurance, manufacturing, retailing, and consulting.

Required Courses (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINE 343</td>
<td>3</td>
<td>Topics in Finance</td>
</tr>
<tr>
<td>FINE 442</td>
<td>3</td>
<td>Capital Markets and Institutions</td>
</tr>
<tr>
<td>FINE 445</td>
<td>3</td>
<td>Real Estate Finance</td>
</tr>
<tr>
<td>FINE 448</td>
<td>3</td>
<td>Derivatives and Risk Management</td>
</tr>
<tr>
<td>FINE 449</td>
<td>3</td>
<td>Market Risk Models</td>
</tr>
<tr>
<td>FINE 451</td>
<td>3</td>
<td>Fixed Income Analysis</td>
</tr>
<tr>
<td>FINE 480</td>
<td>3</td>
<td>Global Investments</td>
</tr>
<tr>
<td>FINE 482</td>
<td>3</td>
<td>International Finance</td>
</tr>
<tr>
<td>FINE 492</td>
<td>3</td>
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</tr>
<tr>
<td>FINE 541</td>
<td>3</td>
<td>Applied Investments</td>
</tr>
<tr>
<td>FINE 547</td>
<td>3</td>
<td>Advanced Finance Seminar</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tr>
<td>INDR 492</td>
<td>(3)</td>
<td>Public Policy in Industrial Relations</td>
</tr>
<tr>
<td>INDR 459</td>
<td>(3)</td>
<td>International Labour Relations</td>
</tr>
<tr>
<td>INDR 449</td>
<td>(3)</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>INDR 434</td>
<td>(3)</td>
<td>Topics: Labour-Management Relations</td>
</tr>
<tr>
<td>INDR 496</td>
<td>(3)</td>
<td>Collective Bargaining</td>
</tr>
<tr>
<td>INDR 294</td>
<td>(3)</td>
<td>Introduction to Labour-Management Relations</td>
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<tr>
<td>ORGB 380</td>
<td>(3)</td>
<td>Cross Cultural Management</td>
</tr>
<tr>
<td>MRKT 483</td>
<td>(3)</td>
<td>International Marketing Management</td>
</tr>
<tr>
<td>MGPO 469</td>
<td>(3)</td>
<td>Managing Globalization</td>
</tr>
<tr>
<td>FINE 478</td>
<td>(3)</td>
<td>Information Technology Challenges in Electronic Business</td>
</tr>
<tr>
<td>INSY 444</td>
<td>(3)</td>
<td>Managing Knowledge with Information Technology</td>
</tr>
<tr>
<td>INSY 450</td>
<td>(3)</td>
<td>Information Systems Project Management</td>
</tr>
<tr>
<td>INSY 454</td>
<td>(3)</td>
<td>Technological Foundation for E-Commerce</td>
</tr>
<tr>
<td>INSY 454</td>
<td>(3)</td>
<td>Information Systems for Electronic Business</td>
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<td>INSY 450</td>
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<td>Information Systems Project Management</td>
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<td>INSY 444</td>
<td>(3)</td>
<td>Managing Knowledge with Information Technology</td>
</tr>
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<td>INSY 440</td>
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<td>Information Technology Challenges in Electronic Business</td>
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<tr>
<td>INSY 438</td>
<td>(3)</td>
<td>Interface Design and Prototyping</td>
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<td>INSY 440</td>
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<td>Information Technology Challenges in Electronic Business</td>
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<td>INSY 444</td>
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<td>INSY 450</td>
<td>(3)</td>
<td>Information Systems Project Management</td>
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<td>INSY 454</td>
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<td>Technological Foundation for E-Commerce</td>
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<tr>
<td>RGSC 300</td>
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<td>Cross Cultural Management</td>
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</table>

### MANUFACTURING AND MANAGEMENT SYSTEMS CONCENTRATIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MRKT 438</td>
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<td>Brand Management</td>
</tr>
<tr>
<td>MRKT 453</td>
<td>(3)</td>
<td>Advanced Management</td>
</tr>
<tr>
<td>MRKT 455</td>
<td>(3)</td>
<td>Sales Management</td>
</tr>
<tr>
<td>MRKT 456</td>
<td>(3)</td>
<td>Business to Business Marketing</td>
</tr>
<tr>
<td>MRKT 459</td>
<td>(3)</td>
<td>Retail Management</td>
</tr>
<tr>
<td>MRKT 461</td>
<td>(3)</td>
<td>Advertising Practices</td>
</tr>
<tr>
<td>MRKT 483</td>
<td>(3)</td>
<td>International Marketing Management</td>
</tr>
<tr>
<td>MRKT 557</td>
<td>(3)</td>
<td>Marketing Productivity</td>
</tr>
</tbody>
</table>

### INTERNATIONAL BUSINESS CONCENTRATION

**Adviser:** Professor H. Etemad

The objective of this Concentration is to help students develop the conceptual and analytical skills needed to formulate feasible and effective management policies in an international setting. With economic and business activity becoming increasingly internationalized, the program provides useful preparation for careers in a variety of internationally oriented organizations, including local business firms involved in international trade, licensing or financial arrangements; headquarters or subsidiaries of multinational companies; banks and other international financial institutions; and various governmental organizations.

**Required Course (3 credits)**

- MGPO 383 (3) International Business Policy

**Complementary Courses (12 credits)**

- BUSA 391 (3) International Business Law
- BUSA 394 (3) Asia/Pacific Management
- BUSA 395 (3) European Economy and Business
- BUSA 434 (3) Topics in Management
- BUSA 481 (3) North America: Global Markets
- BUSA 493 (3) Global Economic Competitiveness
- FINE 478 (3) International Financial Management
- MGPO 469 (3) Managing Globalization
- MRKT 483 (3) International Marketing Management
- ORGB 390 (3) Cross Cultural Management

### LABOUR-MANAGEMENT RELATIONS CONCENTRATION

**Adviser:** Professor R. Hebdon

The objective of this Concentration is to provide a general understanding of the factors affecting employer-employee relations, both at the micro-level and in relation to the socio-economic context in which they occur. Students interested in more intensive study of this area are urged to consider the Major Program in Labour-Management Relations.

**Required Courses (6 credits)**

- INDR 294 (3) Introduction to Labour-Management Relations
- INDR 496 (3) Collective Bargaining

**Complementary Courses (9 credits)**

- INDR 434 (3) Topics: Labour-Management Relations
- INDR 449 (3) Occupational Health and Safety
- INDR 459 (3) International Labour Relations
- INDR 492 (3) Public Policy in Industrial Relations
- INDR 494 (3) Labour Law
- INDR 495 (3) Labour Relations: Public Sector
- INDR 497 (3) Contract Administration

### MANAGEMENT SCIENCE CONCENTRATION

**Advisers:** Professors S. Li and S. Ray

This Concentration prepares students for careers as management scientists, systems analysts, and applied statisticians in business, government and consulting firms. Most courses in the Concentration are currently offered jointly to MBA students.

Management Science courses stress conceptual and problem-solving skills and familiarize students with modern mathematical and computational decision-making tools. The use of computers and spreadsheets is extensive. Students in other management areas who wish to complement their studies with valuable analytical training might consider these courses:

- Marketing students: MGSC 632, MGSC 676;
- Finance students: MGSC 675, MGSC 679;
- IS or Operations Management students: MGSC 678.

(Concentration revision awaiting University approval)

**Required Courses (6 credits)**

- MGSC 671 (3) Statistics for Business Decisions
- MGSC 679 (3) Applied Deterministic Optimization

**Complementary Courses (9 credits)**

- MGSC 676 (3) Applied Multivariate Data Analysis
- MGSC 678 (3) Simulation of Management Systems
- MGSC 680 (3) Applied Deterministic Optimization

### MARKETING CONCENTRATION

**Advisers:** Professors M.S. Jo, E. Sarigollu and D. Vakratsas

This Concentration prepares the student for a wide variety of career opportunities. Marketing graduates historically have found employment in the fields of product management, advertising, sales management, marketing management, pricing, marketing research, distribution and retailing. The Marketing Concentration provides a balance between courses focusing on fundamental, theoretical and “need to know” material, and courses with a strong practical and applied orientation.

**Required Courses (12 credits)**

- MRKT 354 (3) Marketing Management 2
- MRKT 357 (3) Marketing Planning 1
- MRKT 451 (3) Marketing Research (to be taken in U2)
- MRKT 452 (3) Consumer Behaviour

**Complementary Course (3 credits)**

- MRKT 351 (3) Marketing in Society
- MRKT 355 (3) Services Marketing
- MRKT 365 (3) New Products
- MRKT 434 (3) Topics in Marketing
- MRKT 438 (3) Brand Management
- MRKT 453 (3) Advanced Marketing
- MRKT 455 (3) Sales Management
- MRKT 456 (3) Business to Business Marketing
- MRKT 459 (3) Retail Management
- MRKT 461 (3) Advertising Practices
- MRKT 483 (3) International Marketing Management
- MRKT 557 (3) Marketing Productivity
8.6.9 Operations Management Concentration

Advisers: Professors S. Li and S. Ray

This Concentration prepares the student for a variety of career opportunities. Graduates typically begin their career in one of three kinds of jobs: 1) line positions involving production and material management; 2) operations analyst positions at the corporate or strategic planning level, analyzing programs and investment options involving operations; or 3) consulting positions. The OM Concentration provides rigorous analytical training and links different functional areas in business with areas in operations such as technology management, production planning, inventory control, distribution systems, quality management, etc. Most courses in the Concentration are currently offered jointly to M.B.A. students. (Concentration revision awaiting University approval)

Required Courses (9 credits)
- MGSC 601 (3) Management of Technology in Manufacturing
- MGSC 602 (3) Manufacturing Strategy
- MGSC 603 (3) Logistics Management
- MGSC 671 (3) Statistics for Business Decisions
- MGSC 675 (3) Applied Time Series Analysis Managerial Forecasting
- MGSC 678 (3) Simulation of Management Systems
- MGSC 679 (3) Applied Deterministic Optimization
- MGSC 680 (3) Applied Sequential Optimization

Complementary Courses (6 credits)
two courses chosen from:
- MGSC 434 (3) Topics in Management Science
- MGSC 600 (3) Applications: Operations Management
- MGSC 602 (3) Manufacturing Strategy
- MGSC 603 (3) Logistics Management
- MGSC 671 (3) Statistics for Business Decisions
- MGSC 675 (3) Applied Time Series Analysis Managerial Forecasting
- MGSC 678 (3) Simulation of Management Systems
- MGSC 679 (3) Applied Deterministic Optimization
- MGSC 680 (3) Applied Sequential Optimization

Adviser: Professor A. Jaeger

This Concentration provides an opportunity for students to increase their awareness of behavioural issues encountered in job and organizational settings, and prepare themselves for graduate study in the behavioural sciences or for careers in general management or human resource management.

Complementary Courses (15 credits)
five of:
- ORGB 321 (3) Leadership
- ORGB 325 (3) Negotiations and Conflict Resolutions
- ORGB 380 (3) Cross Cultural Management
- ORGB 409 (3) Organizational Research Methods
- ORGB 420 (3) Managing Organizational Teams
- ORGB 421 (3) Managing Organizational Change
- ORGB 429* (6) Organizational Behaviour for Course Counsellors
- ORGB 434 (3) Advanced Topics in Organizational Behaviour
- ORGB 435 (3) Women as Global Leaders and Managers
- ORGB 525 (3) Compensation Management

* If ORGB 429 is taken, only 3 credits will count towards the Concentration, the other 3 will be counted as elective.

8.6.10 Organizational Behaviour and Human Resource Management Concentration

Adviser: Professor A. Jaeger

This Concentration provides an opportunity for students to increase their awareness of behavioural issues encountered in job and organizational settings, and prepare themselves for graduate study in the behavioural sciences or for careers in general management or human resource management.

Complementary Courses (15 credits)
five of:
- ORGB 321 (3) Leadership
- ORGB 325 (3) Negotiations and Conflict Resolutions
- ORGB 380 (3) Cross Cultural Management
- ORGB 409 (3) Organizational Research Methods
- ORGB 422 (3) Managing Organizational Change
- ORGB 429* (6) Organizational Behaviour for Course Counsellors
- ORGB 434 (3) Advanced Topics in Organizational Behaviour
- ORGB 435 (3) Women as Global Leaders and Managers
- ORGB 525 (3) Compensation Management

* If ORGB 429 is taken, only 3 credits will count towards the Concentration, the other 3 will be counted as elective.

8.6.11 Strategic Management Concentration

Advisers: Professors J. Jorgensen and O. Toulan

There are two options offered in the Strategic Management Concentration: Global Strategy and Social Context.

The Global Strategy option is intended for students who want to learn strategic management and analysis with special attention to the not-for-profit, or civil sector, or who want to focus on broader or more complex social issues within the for-profit sector. The civil sector – made up of voluntary and non-governmental organizations and foundations – is the sector that has been the fastest growing employer for the past decade. Students who focus on this stream will be challenged to place a high priority on environmental issues, as well as issues of sustainability, corporate social responsibility, and social impact. They will also investigate the social tools and mechanisms necessary to employ cross-sectoral collaboration to achieve desired social outcomes.

GLOBAL STRATEGY OPTION

Required Courses (9 credits)
three courses chosen from:
- MGPO 383 (3) International Business Policy
- MGPO 445 (3) Industry Analysis & Competitive Strategy
- MGPO 460 (3) Managing Innovation
- MGPO 469 (3) Managing Globalization
- MGPO 470 (3) Strategy and Organization
- MGPO 475 (3) Strategies for Developing Countries
- MGPO 562 (3) Seminar in Organizational Strategy
- MGPO 563 (3) Seminar in Organizational Strategy

Complementary Courses (6 credits)
two courses chosen from:
- BUSA 391 (3) International Business Law
- ECON 219 (3) Current Economic Problems: Topics
- ECON 305 (3) Industrial Organization
- MGPO 434 (3) Topics in Policy
- MGPO 440 (3) Strategies for Sustainability
- MGPO 450 (3) Ethics in Management
- MGPO 468 (3) Managing Organizational Politics
- MGPO 475 (3) Strategies for Developing Countries
- MGPO 562 (3) Seminar in Organizational Strategy

SOCIAL CONTEXT OPTION

Required Courses (9 credits)
three courses chosen from:
- MGPO 440 (3) Strategies for Sustainability
- MGPO 450 (3) Ethics in Management
- MGPO 468 (3) Managing Organizational Politics
- MGPO 475 (3) Strategies for Developing Countries
- MGPO 475 (3) Strategies for Developing Countries
- MGPO 479 (3) Managing Globalization
- MGPO 480 (3) Strategy and Organization
- MGPO 562 (3) Seminar in Organizational Strategy
- MGPO 567 (3) Business in Society

8.7 Minors

B.Com. Program Minors Adviser: Ron Critchley

The Minor programs offered in the Faculties of Arts and Science may be taken in conjunction with any B.Com. program.

Students doing a Minor program must have a Desautels Faculty of Management Minor Approval Form, listing the courses being applied to the Minor, signed by the Minor adviser.
The Minor in Mathematics and the Minor in Statistics are detailed below. For all other Minors, please refer to the Arts and Science Faculty sections.

For the Minor in Economics, students must complete 18 credits of material which does not overlap with Management course content. A maximum of 6 credits will be permitted within the B.Com. program for MGCR 293 and ECON 230D1/D2 or ECON 250D1/D2, and a maximum of 6 for ECON 295 and ECON 330D1/D2 or ECON 352D1/D2. Students interested in this Minor must obtain approval from Ron Critchley in the Student Affairs Office.

Students should begin the Minor in Mathematics and the Minor in Statistics no later than the penultimate year and should immediately consult the appropriate adviser in the Department of Mathematics and Statistics.

Students planning to take the Minor in Mathematics or the Minor in Statistics are advised to substitute MATH 324 for MGCR 271. That course will then count as 3 credits towards the Minor. If the decision to take a Minor program is made after MGCR 271 has been taken, students who wish to take MATH 324 will receive three additional credits; however MATH 324 will only count towards the 24-credit Minor requirement.

8.7.1 Minor in Mathematics
Adviser: Professor D. Leisen, Department of Mathematics and Statistics, Faculty of Science

Required Courses (6 credits)
MATH 222 (3) Calculus 3
MATH 315 (3) Ordinary Differential Equations

Complementary Courses (18 credits)
MATH 223 (3) Linear Algebra
MATH 235 (3) Algebra 1
MATH 236 (3) Algebra 2

The remaining credits may be freely chosen from the Required and Complementary courses for Majors and Honours students in Mathematics (MATH 324 is strongly recommended), with the obvious exception of courses that involve duplication of material.

Alternatively, up to six credits may be allowed for appropriate courses from other departments. These include MGSC 630, MGSC 632 (if MATH 425 is not taken), MGSC 633, MGSC 671, MGSC 675, MGSC 678, MGSC 679, MGSC 680.

All courses counted towards the Minor must be passed with a grade of C or better. No more than six credits of overlap are permitted between the Minor and the primary program.

8.7.2 Minor in Statistics
Adviser: Professor K. Worsley, Department of Mathematics and Statistics, Faculty of Science

Required Courses (6 credits)
MATH 222 (3) Calculus 3
MATH 423 (3) Regression and Analysis of Variance

Complementary Courses (18 credits)
MATH 223 (3) Linear Algebra
MATH 235 (3) Algebra 1
MATH 236 (3) Algebra 2

The remaining credits may be freely chosen from the Required and Complementary courses for Majors and Honours students in Mathematics (MATH 324 is strongly recommended), with the obvious exception of courses that involve duplication of material.

Alternatively, up to six credits may be allowed for appropriate courses from other departments. These include MGSC 630, MGSC 632 (if MATH 425 is not taken), MGSC 633, MGSC 671, MGSC 675, MGSC 678, MGSC 679, MGSC 680.

All courses counted towards the Minor must be passed with a grade of C or better. No more than six credits of overlap are permitted between the Minor and the primary program.

8.8 Majors

B.Com. Program Majors Adviser: Ron Critchley


Because of the heavier demands of Major programs, students desiring to pursue a program of this type are advised to declare their intention at the beginning of the program. Students are then assigned an adviser from the appropriate department and a suitable program is worked out. Only grades of C or better may count towards the Major requirements.

8.8.1 Major in Accounting
Adviser: Professor L. Goldsman

This 30-credit major is designed to meet the increased demand for accounting options within the B.Com. Program.

Required Courses (18 credits)
ACCT 351 (3) Intermediate Financial Accounting 1
ACCT 352 (3) Intermediate Financial Accounting 2
ACCT 361 (3) Intermediate Management Accounting 1
ACCT 362 (3) Intermediate Management Accounting 2
ACCT 385 (3) Principles of Taxation
ACCT 454 (3) Financial Reporting

Complementary Courses (12 credits)
3 - 6 credits from the following:
ACCT 435 (3) Advanced Financial Accounting
ACCT 463 (3) Advanced Management Accounting
6 - 9 credits from the following:
ACCT 356 (3) International Accounting
ACCT 434 (3) Topics in Accounting
ACCT 471 (3) Non-Profit Accounting
ACCT 475 (3) Principles of Auditing
ACCT 476 (3) Internal Auditing
ACCT 477 (3) External Auditing
ACCT 486 (3) Business Taxation 2

8.8.2 Major in Economics for Management Students
Advisers: Professors L. Brooks, P. Dickinson (2nd term), M. Frankman, C. Green, J. Handa (Director), R.T. Naylor, T. Velk, and A. Vicas; Department of Economics, Faculty of Arts

Please consult the Economics department Website at www.mcgill.ca/economics.

This Major is comprised of 36 credits of Economics courses (6 credits of which are counted as Core credits).

Required Courses (12 credits)
ECON 230D1* (3) Microeconomic Theory
ECON 230D2* (3) Microeconomic Theory

MGSC 633 (3) Applied Decision Analysis
MGSC 634 (3) Econometric Methods in Management
MGSC 671 (3) Statistics for Business Decisions
MGSC 675 (3) Applied Time Series Analysis Managerial Forecasting
MGSC 676 (3) Applied Multivariate Data Analysis

No more than six credits may be taken outside the Department of Mathematics and Statistics. Further credits (if needed) may be freely chosen from the Required and Complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material.

All courses counted towards the Minor must be passed with a grade of C or better. No more than six credits of overlap are permitted between the Minor and the primary program.
ECON 330D1** (3) Macroeconomic Theory
ECON 330D2** (3) Macroeconomic Theory
* 3 of the 6 credits for Microeconomic Theory are counted in the Core, where it replaces MGCR 293.
** 3 of the 6 credits for Macroeconomic Theory are counted in the Core, where it replaces ECON 295.

Complementary Courses (24 credits)
24 credits from other 200-, 300- and 400-level courses in Economics (Subject Code ECON), excluding courses with numbers below 210. At least 6 of these 24 credits should be taken from courses with 400-level numbers. No more than 6 of the 24 credits may be taken at the 200 level.

ECON 227D1/ECON 227D2 and ECON 257D1/ECON 257D2 or other economic statistics courses taken elsewhere to meet statistics requirements in lieu of MGCR 271 will not count as part of the 24 credits.

8.8.4 Major in Information Systems
Adviser: Professor R. Donovan
This 30-credit major prepares students for the multitude of IT-related career opportunities available in industry. It employs a blend of theoretical concepts, hands-on tools, and actual case studies to train students to identify business problems and opportunities, analyze business processes, and develop and implement information systems to support them. The IS Major covers a variety of topics including strategic planning and investment in information technologies, analysis, design, and deployment of information systems, understanding the opportunities and challenges of Web-based businesses, and managing resistance to IT-initiated changes in organizations.
Graduates of this program may expect to find employment as business or systems analysts, consultants, IS quality assurance specialists, and project managers in diverse industries, including banking, insurance, manufacturing, retailing and consulting.

Required Courses (21 credits)
INSY 331 (3) Managing Information Technology
INSY 333 (3) Systems Analysis and Modelling
INSY 341 (3) Developing Business Applications
INSY 431 (3) System Design and Implementation
INSY 432 (3) Information Technology in Business
INSY 437 (3) Managing Data and Databases
INSY 450 (3) Information Systems Project Management

Complementary Courses (9 credits)
9 credits chosen from the following:
INSY 332 (3) Accounting Information Systems
INSY 342 (3) Advanced Application Development
INSY 434 (3) Advanced Topics
INSY 438 (3) Interface Design and Prototyping
INSY 440 (3) Information Technology Challenges in Electronic Business
INSY 444 (3) Managing Knowledge with Information Technology
INSY 454 (3) Technological Foundation for E-Commerce
BUSA 499* (3) Case Analysis and Presentation
* Students wishing to take BUSA 499 as a complementary course must seek prior approval from the adviser.

8.8.5 Major in Labour-Management Relations
Adviser: Professor R. Hebdon
This 30-credit Major provides students with a general understanding of the factors affecting employer-employee relations, including labour unions and laws that regulate the employment relationship. It is integral to the practice of human resource management, particularly in a unionized environment.
In addition to giving students a foundation in various aspects of labour relations and labour markets, this program provides understanding of federal and provincial labour legislation, training in collective bargaining, the administration of trade union contracts, handling of grievances and preparation for participation in arbitration proceedings, a view of human resources, problems and planning on the macro level.

Required Courses (30 credits)
INDR 294 (3) Introduction to Labour-Management Relations
INDR 449 (3) Occupational Health and Safety
INDR 459 (3) International Labour Relations
INDR 492 (3) Public Policy in Industrial Relations
INDR 494 (3) Labour Law
INDR 495 (3) Labour Relations: Public Sector
INDR 496 (3) Collective Bargaining
INDR 497 (3) Contract Administration
ECON 306D1 (3) Labour Economics and Institutions
ECON 306D2 (3) Labour Economics and Institutions

8.8.6 Major in Marketing
Adviser: Professors M.S. Jo, E. Sarigollu and D. Vakratsas
This 30-credit Marketing Major is designed to provide students with a strong background in marketing in order to prepare them for the wide variety of marketing careers available. The Major is most appropriate for those students seeking a career in brand management, small business marketing, selling and sales management and business-to-business marketing.

(Program revision awaiting University approval.)

Required Courses (15 credits)
MRKT 354 (3) Marketing Management 2
MRKT 357 (3) Marketing Planning 1
MRKT 451 (3) Marketing Research
8.8.8 Major in Psychology for Management Students

Adviser: Professor A. Jaeger

This Major is comprised of 30 credits — 24 credits in Psychology and 6 credits to be taken in Management.

The Desautels Faculty of Management, in collaboration with the Psychology Department, Faculty of Science, offers programs of study in organizational and consumer psychology leading to the B.Com. degree. These programs concentrate on providing an education in the fundamentals of experimental and social psychology. In view of rapid changes in practical methods and professional techniques employed by managers and professional consultants, broad training in such fundamentals is seen as excellent preparation for graduate school in psychology and management as well as for a successful managerial career.

Required Courses (12 credits)

- PSYC 213 (3) Cognition
- PSYC 215 (3) Social Psychology
- PSYC 301 (3) Learning
- PSYC 333 (3) Personality and Social Psychology

Complementary Courses (18 credits)

12 credits chosen from:

- PSYC 211 (3) Introductory Behavioural Neuroscience
- PSYC 212 (3) Perception
- PSYC 310 (3) Human Intelligence
- PSYC 331 (3) Inter-Group Relations
- PSYC 332 (3) Introduction to Personality
- PSYC 335 (3) Formal Models: Psychological Processes
- PSYC 336 (3) Measurement of Psychological Processes
- PSYC 340 (3) Psychology of Language
- PSYC 341 (3) The Psychology of Bilingualism
- PSYC 351 (3) Research Methods in Social Psychology
- PSYC 352 (3) Cognitive Psychology Laboratory
- PSYC 403 (3) Modern Psychology in Historical Perspective
- PSYC 406 (3) Psychological Tests
- PSYC 408 (3) Principles of Cognitive Behaviour Therapy
- PSYC 429 (3) Health Psychology
- PSYC 451 (3) Human Factors Research and Techniques
- PSYC 471 (3) Human Motivation
- PSYC 473 (3) Social Cognition and the Self
- PSYC 474 (3) Interpersonal Relationships
- PSYC 510 (3) Statistical Analysis of Tests
- PSYC 534 (3) Community Psychology
- PSYC 535 (3) Advanced Topics in Social Psychology

Additional 6 credits taken in one of the following two options:

Organizational Psychology Option

two of:

- ORGB 321 (3) Leadership
- ORGB 325 (3) Negotiations and Conflict Resolutions
- ORGB 380 (3) Cross Cultural Management
- ORGB 409 (3) Organizational Research Methods
- ORGB 420 (3) Managing Organizational Teams
- ORGB 421 (3) Managing Organizational Change
- ORGB 434 (3) Advanced Topics in Organizational Behaviour
- ORGB 435 (3) Women as Global Leaders and Managers
- INDR 294 (3) Introduction to Labour-Management Relations

Consumer Psychology Option

two of:

- MRKT 451 (3) Marketing Research
- MRKT 452 (3) Consumer Behaviour
- MRKT 557 (3) Marketing Productivity
8.9 Honours

B.Com. Program Honours Adviser: Ron Critchley
An Honours program is available in Accounting and in Economics, as well as Joint Honours programs in Economics and Accounting, and in Economics and Finance.

The difference between the Honours and Major programs is not one of quantity but rather of quality, the Honours program involving study in greater depth. Students must register with the Economics Department, Faculty of Arts, for the Honours in Economics programs. This will usually be done at the beginning of their U1 year but special arrangements may be made for students wishing to enter the program at the beginning of U2.

Graduation with an Honours standing requires a minimum CGPA of 3.00 and an average of 3.00 in the specified courses of the program.

8.9.1 Honours in Accounting

This program was retired at the end of the 2004-05 academic year. Students enrolled in this program at that time should refer to the 2004-2005 calendar and should consult with a Departmental adviser.

8.9.2 Honours in Economics for Management Students

Advisers in Economics: Professors G. Grantham, F. Grimard (Director), J. Kurien, R. Rowley, M. Sinitsyn, D. Sutthiphisal and N. Turdaliev, Department of Economics, Faculty of Arts

Please consult the Economics department Website at www.mcgill.ca/economics.

This program is comprised of 42 credits of Honours Economics courses (12 credits of which are counted as Core credits).

To remain in the Honours program, students must obtain a grade of at least B in ECON 250D1/ECON 250D2.

Graduation with an Honours standing requires a minimum CGPA of 3.00 and an average of 3.00 in the specified courses of the program.

**Required Courses (24 credits)**

- ECON 250D1^1 (3) Introduction to Economic Theory: Honours
- ECON 250D2^1 (3) Introduction to Economic Theory: Honours
- ECON 257D1^2 (3) Economic Statistics - Honours
- ECON 257D2^2 (3) Economic Statistics - Honours
- ECON 352D1^3 (3) Macroeconomics - Honours
- ECON 352D2^3 (3) Macroeconomics - Honours
- ECON 450D1 (3) Advanced Economic Theory - Honours
- ECON 450D2 (3) Advanced Economic Theory - Honours

**Notes:**

1. 3 of the 6 credits for Introduction to Economic Theory are counted in the Core, where it replaces ECON 295.
2. 3 of the 6 credits for Economics Statistics are counted in the Core, where it replaces MGCR 293.
3. 3 of the 6 credits for Macroeconomics are counted in the Core, where it replaces ECON 295.

**Complementary Courses (18 credits)**

- ECON 460 (3) History of Thought 1 - Honours
- ECON 461 (3) History of Thought 2 - Honours
- ECON 467D1 (3) Econometrics - Honours
- ECON 467D2 (3) Econometrics - Honours

Plus 12 credits of other Economics courses approved by an Honours adviser.

8.9.3 Joint Honours in Economics and Accounting

Advisers in Economics: Professors G. Grantham, F. Grimard (Director), J. Kurien, R. Rowley, M. Sinitsyn, D. Sutthiphisal and N. Turdaliev, Department of Economics, Faculty of Arts

Please consult the Economics department Website at www.mcgill.ca/economics.

This Joint Honours program is comprised of 36 credits of Honours Economics courses (12 credits of which are counted as Core credits) and 12 credits of courses from the Honours in Accounting program.

To earn an Honours designation, a CGPA of 3.00 is required in the 36 credits in Economics (including a 3.00 CGPA in the specified courses) and a grade of B- or better with a CGPA of 3.00 in all Accounting courses.

**Economics Required Courses (24 credits)**

- ECON 250D1^1 (3) Introduction to Economic Theory: Honours
- ECON 250D2^1 (3) Introduction to Economic Theory: Honours
- ECON 257D1^2 (3) Economic Statistics - Honours
- ECON 257D2^2 (3) Economic Statistics - Honours
- ECON 352D1^3 (3) Macroeconomics - Honours
- ECON 352D2^3 (3) Macroeconomics - Honours
- ECON 450D1 (3) Advanced Economic Theory - Honours
- ECON 450D2 (3) Advanced Economic Theory - Honours

**Notes:**

1. 3 of the 6 credits for Introduction to Economic Theory are counted in the Core, where it replaces MGCR 293.
2. 3 of the 6 credits for Economics Statistics - Honours are counted in the Core, where it replaces MGCR 271.
3. 3 of the 6 credits for Macroeconomics are counted in the Core, where it replaces ECON 295.

**Economics Complementary Courses (12 credits)**

- ECON 460 (3) History of Thought 1 - Honours
- ECON 461 (3) History of Thought 2 - Honours
- ECON 467D1 (3) Econometrics - Honours
- ECON 467D2 (3) Econometrics - Honours

Plus 6 credits of other Economics courses approved by an Honours adviser.

**Accounting Required Courses (9 credits)**

- ACCT 351 (3) Intermediate Financial Accounting 1
- ACCT 352 (3) Intermediate Financial Accounting 2
- ACCT 361 (3) Intermediate Management Accounting 1

**Accounting Complementary Course (3 credits)**

- ACCT 362 (3) Intermediate Management Accounting 2 or ACCT 385 (3) Principles of Taxation

8.9.4 Joint Honours in Economics and Finance

Advisers in Economics: Professors G. Grantham, F. Grimard (Director), J. Kurien, R. Rowley, M. Sinitsyn, D. Sutthiphisal and N. Turdaliev, Department of Economics, Faculty of Arts

Adviser: Professor V. Errunza

Please consult the Economics department Website at www.mcgill.ca/economics.

This Joint Honours program is comprised of 30 credits of Honours Economics courses (12 credits of which are counted as Core credits) and 18 credits in Finance.

This program is designed to take advantage of both McGill's Finance and Economics course offerings to produce a student who is well trained in these two complementary areas. It is particularly attractive to those planning careers in finance, economics or financial economics posts in both industry and government. The program is a demanding one and its potential rewards are correspondingly high.
To earn the Honours designation, a CGPA of 3.00 is required in the Economics credits and a grade of B- or better with a CGPA of 3.00 in all Finance courses.

**Economics Required Courses** (24 credits)
- ECON 250D1 (3) Introduction to Economic Theory: Honours
- ECON 250D2 (3) Introduction to Economic Theory: Honours
- ECON 257D1 (3) Economic Statistics - Honours
- ECON 257D2 (3) Economic Statistics - Honours
- ECON 352D1 (3) Macroeconomics - Honours
- ECON 352D2 (3) Macroeconomics - Honours
- ECON 450D1 (3) Advanced Economic Theory - Honours
- ECON 450D2 (3) Advanced Economic Theory - Honours

**Economics Complementary Courses** (6 credits)
- ECON 460 (3) History of Thought 1 - Honours
- ECON 461 (3) History of Thought 2 - Honours
- ECON 467D1 (3) Econometrics - Honours
- ECON 467D2 (3) Econometrics - Honours

**Finance Required Courses** (12 credits)
- FINE 342 (3) Finance 2
- FINE 441 (3) Investments and Portfolio Management
- FINE 443 (3) Applied Corporate Finance
- FINE 547 (3) Advanced Finance Seminar

**Finance Complementary Courses** (6 credits)
two of:
- FINE 434 (3) Topics in Finance
- FINE 448 (3) Derivatives and Risk Management
- FINE 449 (3) Market Risk Models
- FINE 451 (3) Fixed Income Analysis
- FINE 480 (3) Global Investments
- FINE 482 (3) International Finance 1
- FINE 492 (3) International Finance 2
- FINE 541D1 (1.5) Applied Investments
- FINE 541D2 (1.5) Applied Investments

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**8.10 Faculty Program in International Management**

B.Com. Faculty Program Adviser: Giulia Campofredano

Students who choose this course of study take the standard 36 credits of Core courses but, instead of choosing a Major, Honours or Concentration, they focus on gaining knowledge of a specific geographical region of the world by taking a minimum of 27 credits of courses in an interdisciplinary area of study in the Faculty of Arts. The program also includes a minimum of 9 credits of 300 or higher level courses on integrative or international topics in management. All students admitted into the full-time B.Com. program are eligible for this course of study.

In order to fulfill the requirements of this option in the three or four years typically taken to complete a B.Com. degree, students should select their region of specialization by the Spring of their U1 year. An adviser from the Faculty will be appointed to each of the interdisciplinary regional areas of study to help students plan their programs of study.

**Regional Interdisciplinary Areas of Specialization**

Three areas of study are offered to all students: Latin America and the Caribbean, East Asia, and Western Europe (Germany, Italy, France, or Spain). Two additional areas of study (Canada and the United States) are offered for foreign students who come to McGill from other countries.

Students must complete 9 to 12 credits of language study appropriate to their regional area of study, unless they can demonstrate proficiency, in which case they must substitute courses taught in the language of their chosen region.

In addition to language study, a minimum of 15 to 18 credits of courses focused on the geographical region of choice must be taken. These courses are from a wide range of Faculty of Arts departments: Anthropology, Economics, Geography, History, Political Science, Religious Studies, etc.

**A Term Abroad**

All students in the program will be expected to spend one term in the region they have chosen to study. During this term they would be required to either:

- a) take approved courses which can be used towards their language credits, their regional area studies, or the advanced management courses on integrative or international topics; or
- b) work in a job where they must use a language from their chosen region. If they are able to arrange a verifiable, paid work experience, they will be eligible to receive 3 course credits to be used toward their advanced management courses if they make arrangements in advance to take an Independent Study course and write a paper related to their experiences.

**Integrative or International Topics in Management**

Students must take at least 9 credits of courses on international or integrative business topics. At least one of the courses must include an assignment which requires students to capitalize on their broad interdisciplinary knowledge and expertise gained from their study of a particular culture, as well as management.

**Integrative/International Topics in Management Component**

9 credits chosen from the following:
- BUSA 391 (3) International Business Law
- BUSA 394* (3) Asia/Pacific Management
- BUSA 395 (3) European Economy and Business
- BUSA 434 (3) Topics in Management
- BUSA 462 (3) Management of New Enterprises
- BUSA 464 (3) Management of Small Enterprises
- BUSA 481 (3) North America: Global Markets
- BUSA 493 (3) Global Economic Competitiveness
- FINE 478 (3) International Financial Management
- FINE 482 (3) International Finance 1
- MGPO 383 (3) International Business Policy
- MGPO 440 (3) Strategies for Sustainability
- MGPO 469 (3) Managing Globalization
- MRKT 483 (3) International Marketing Management
- ORGB 380 (3) Cross Cultural Management

or 3 credits of Independent Study – if, during the term abroad, students are able to arrange a verifiable, paid work experience, make arrangements in advance to take an Independent Study course; and write a paper related to the experience.

* This course is required for students taking the East Asian Studies option.

**8.10.1 Latin American and Caribbean Studies**

**LANGUAGE COMPONENT** (12 credits)

12 credits of Spanish language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in Spanish from the Hispanic Studies department list below.

**Spanish Language Courses List**
- HISP 210D1 (3) Spanish Language: Beginners
- HISP 210D2 (3) Spanish Language: Beginners
- or HISP 218 (6) Spanish Language Intensive - Elementary
- HISP 220D1 (3) Spanish Language: Intermediate
- HISP 220D2 (3) Spanish Language: Intermediate
- or HISP 219 (6) Spanish Language Intensive - Intermediate
The East Asian Studies option combines the study of either Chinese or Japanese with related courses in culture and history as follows:

**AREA FOCUS COMPONENT (15 credits)**

**Required Courses (6 credits)**
- HIST 208 (3) Introduction to East Asian History
- HIST 308 (3) Formation of Chinese Tradition
- HIST 318 (3) History of Japan 1
- HIST 328 (3) China in Revolution 1: 1840-1921
- HIST 337 (3) Japanese Intellectual History 1
- HIST 338 (3) China in Revolution 2: 1921-1997
- HIST 339 (3) History of Women in China
- HIST 348 (3) China: Science-Medicine-Technology
- HIST 352 (3) Japanese Intellectual History 2
- HIST 358 (3) Medieval to Early Modern China
- HIST 359 (3) History of Japan 2
- HIST 439 (3) History of Women in China
- HIST 441 (3) Topics: Culture and Ritual in China
- HIST 442 (3) Asian Diaspora: Chinese Overseas
- HIST 443 (3) China in the Modern World
- HIST 445 (3) Late Imperial China
- HIST 497D1 (3) Topics in Chinese History
- HIST 497D2 (3) Topics in Chinese History
- HIST 579 (3) The Arts of Healing in China
- HIST 581 (3) The Art of War in China
- POLI 323 (3) Developing Areas/China and Japan
- POLI 349 (3) Foreign Policy: Asia
- RELG 253 (3) Religions of East Asia
- RELG 352 (3) Japanese Religions
- RELG 354 (3) Chinese Religions
- RELG 442 (3) Pure Land Buddhism
- RELG 451 (3) Zen: Maxims and Methods

**Complementary Courses (18 credits)**
- 6 credits from:
  - EAST 211 (3) Introduction: East Asian Culture: China
  - EAST 212 (3) Introduction: East Asian Culture: Japan
  - EAST 213 (3) Introduction: East Asian Culture: Korea
  - HIST 208 (3) Introduction to East Asian History
  - HIST 218 (3) Modern East Asian History

- 6 credits, at least, from the following:
  - EAST 351 (3) Women in Chinese Literature
  - EAST 353 (3) Approaches to Chinese Cinema
  - EAST 362 (3) Japanese Cinema
  - EAST 363 (3) Aesthetics and Politics of Vision Premodern Japan
  - EAST 364 (3) Mass Culture and Postwar Japan
  - EAST 382 (3) Modern Japanese Society: People and Institutions
  - EAST 384 (3) Comparative Socioeconomic History Japan and Korea
  - EAST 452 (3) Song and Lyric in Traditional China
  - EAST 453 (3) Topics: Chinese Literature
  - EAST 456 (3) Chinese Drama and Popular Culture
  - EAST 461 (3) Inventing Modern Japanese Novel
  - EAST 462 (3) Japan in Asia
  - EAST 464 (3) Image, Text, Performance
  - EAST 466 (3) Feminism and Japan
  - EAST 484 (3) Communities and Change in Japan
  - EAST 515 (3) Seminar: Beyond Orientalism
  - EAST 529 (3) Contemporary China: Analysis of Change
  - EAST 551 (3) Technologies of Self in Early China
  - EAST 563 (3) Images, Ideograms, Aesthetics
  - EAST 564 (3) Structures of Modernity: Japan
  - EAST 580 (3) Japan: Sociopolitical Framework
  - EAST 584 (3) Industry in Japan
  - EAST 590 (3) Multiple Narratives of "Orient"

Note: All students taking the East Asian Studies option must take BUSA 394 Asia/Pacific Management as part of the Integrative/International Topics in Management Component.

The remaining credits, if any, to be chosen from the following:
- ANTH 326 (3) Peoples of Central and South America
- ECON 410 (3) Economic Development: Selected World Area
- HIST 464D1/HIST 464D2 (3) Topics: Latin American History
- LACS 497 (3) Research Seminar on Latin America and the Caribbean
- POLI 319 (3) Politics of Latin America
- POLI 472 (3) Developing Areas/Social Movements
- SOCI 366 (3) Social Change in the Caribbean

**8.10.2 East Asian Studies**

Note: All students taking the East Asian Studies option must take BUSA 394 Asia/Pacific Management as part of the Integrative/International Topics in Management Component.

The East Asian Studies option combines the study of either Chinese or Japanese with related courses in culture and history as follows:

**LANGUAGE COMPONENT (9 credits)**
- 9 credits of First Level Korean, Chinese or Japanese language or, with the approval of the Area Adviser, of courses taught in one of those languages by the East Asian Studies department.

**East Asian Languages Courses List**
- EAST 220D1 (4.5) First Level Korean
- EAST 220D2 (4.5) First Level Korean
- or EAST 230D1 (4.5) First Level Chinese
- or EAST 230D2 (4.5) First Level Chinese
- or EAST 240D1 (4.5) First Level Japanese
- and EAST 240D2 (4.5) First Level Japanese

Students with a prior knowledge of an Asian language may substitute a second-level language course (EAST 320D1/EAST 320D2, EAST 330D1/EAST 330D2, EAST 340D1/EAST 340D2) for 9 credits, or a third- or fourth-level course for 6 credits, along with an additional 3-credit course from the Complementary course list below.
8.10.3 Western European Studies

The Western European Studies Focus combines the study of a European language with related courses in culture, history, and economics. Students choose one of the four geographical areas listed below in which to concentrate their studies.

8.10.3.1 France

LANGUAGE COMPONENT (12 credits)
12 credits of French language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in French by the French Language and Literature Department.

French Language Courses List
FREN 201 (3) Composition 1
FREN 203 (3) Composition 2
FRSL 101 (6) Beginners' French
FRSL 207 (6) Elementary French
FRSL 211 (6) Oral and Written French 1
FRSL 215 (6) Oral and Written French 1 - Intensive
FRSL 302 (3) Listening Comprehension and Oral Expression 1
FRSL 303 (3) Listening Comprehension and Oral Expression 2
FRSL 305 (3) Intermediate French: Writing
FRSL 321 (6) Oral and Written French 2

AREA FOCUS COMPONENT (15 credits)
Complementary Courses (15 credits)
6 credits selected from:
FREN 336 (3) La langue française
FREN 221 (3) Civilisation française 1
FREN 324 (3) Civilisation française 5: La France d’aujourd’hui
FREN 310 (3) Histoire du cinéma français
or FREN 311 (3) Histoire du cinéma français 2
9 credits selected from:
FREN 250 (3) Littérature française avant 1800
FREN 251 (3) Littérature française depuis 1800
FREN 336 (3) La langue française
FREN 454 (3) Le théâtre du 20e siècle
FREN 483 (3) Le roman depuis Sartre
FREN 484 (3) La littérature du 19e siècle 3
HIST 225 (3) History of France to 1789
HIST 346 (3) France, 1914 to the Present
and/or any of the French Literature and French Civilization

8.10.3.2 Germany

LANGUAGE COMPONENT (12 credits)
12 credits of German language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in German by the German Studies department.

German Language Courses List
GERM 202D1 (3) German Language, Beginners
GERM 202D2 (3) German Language, Beginners
GERM 200 (6) German Language, Intensive Beginners’
GERM 300 (6) German Language Intensive Intermediate
GERM 307D1 (3) German Language - Intermediate
GERM 307D2 (3) German Language - Intermediate

GERM 345 (3) Business German 1
GERM 346 (3) Business German 2

AREA FOCUS COMPONENT (15 credits)
(Program revisions awaiting University Approval)
Required Courses (6 credits)
GERM 400 (3) Interdisciplinary Seminar: Contemporary German Studies
HIST 235 (3) German History since 1648

Complementary Courses (9 credits)
9 credits selected from:
HIST 214 (3) Introduction to European History
HIST 215 (3) Modern European History
HIST 234 (3) German History to 1648
and/or from all courses offered by the German Studies department or from the courses listed in "Complementary Courses Open to All Students in the Western European Studies Focus", section 8.10.3.5.

8.10.3.3 Italy

LANGUAGE COMPONENT (12 credits)
12 credits of Italian language courses at the level deemed appropriate for the student or, with the approval of the Area Adviser, of courses taught in Italian by the Italian Studies department.

Italian Language Courses List
ITAL 205D1 (3) Italian for Beginners
ITAL 205D2 (3) Italian for Beginners
ITAL 206 (6) Beginners’ Italian Intensive
ITAL 210D1 (3) Elementary Italian
ITAL 210D2 (3) Elementary Italian
ITAL 215D1 (3) Intermediate Italian
ITAL 215D2 (3) Intermediate Italian
ITAL 216 (6) Intermediate Italian Intensive

AREA FOCUS COMPONENT (15 credits)
Complementary Courses (15 credits)
15 credits from the following list:
ANTH 337 (3) Mediterranean Society and Culture
ARTH 223 (3) Introduction to Italian Renaissance Art
ARTH 320 (3) Seventeenth Century Art of Court and Church
ARTH 324 (3) Sixteenth-Century Art in Italy
ARTH 325 (3) Visual Culture Renaissance Venice
HIST 345 (3) History of Italian Renaissance
HIST 365 (3) 17th - 18th C. Western Europe
ITAL 355 (3) Dante and the Middle Ages
ITAL 361 (3) Italian Prose after 1945
ITAL 363 (3) Gender, Literature and Society
ITAL 365 (3) The Italian Renaissance
ITAL 375 (3) Cinema and Society in Contemporary Italy
ITAL 385 (3) The Italian Futurist Movement
ITAL 395 (3) Interdisciplinary Seminar on Italian Culture
ITAL 412 (3) Pirandello and European Theatre
ITAL 416 (3) The Twentieth Century
ITAL 464 (3) Machiavelli
ITAL 477 (3) Italian Cinema and Video
MUAR 387 (3) The Opera
POLI 414 (3) Society and Politics in Italy
and/or from all the courses given in Italian by the Department of Italian Studies or from the courses listed in "Complementary Courses Open to All Students in the Western European Studies Focus", section 8.10.3.5. Courses should be chosen in consultation with an adviser.

8.10.3.4 Spain

LANGUAGE COMPONENT (12 credits)
12 credits of Spanish language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in Spanish by the Hispanic Studies department.
Spanish Language Courses List
HISP 210D1 (3) Spanish Language: Beginners
HISP 210D2 (3) Spanish Language: Beginners
or HISP 218 (6) Spanish Language Intensive - Elementary
HISP 220D1 (3) Spanish Language: Intermediate
HISP 220D2 (3) Spanish Language: Intermediate
or HISP 219 (6) Spanish Language Intensive - Intermediate

AREA FOCUS COMPONENT (15 credits)
Complementary Courses (15 credits)
6 credits from:
HISP 225 (3) Hispanic Civilization 1
HISP 226 (3) Hispanic Civilization 2
HIST 217 (3) A Survey of Spanish History
9 credits selected from the following courses, most of which are taught in Spanish or from the courses listed in “Complementary Courses Open to All Students in the Western European Studies Focus”, section 8.10.3.5.

ANTh 337 (3) Mediterranean Society and Culture (in English)
HISP 241 (3) Survey of Spanish Literature 1
HISP 242 (3) Survey of Spanish Literature 2
HISP 301 (3) Hispanic Literature -English Translation 1 (in English)
HISP 321 (3) Spanish Literature - 18th Century
HISP 324 (3) 20th Century Drama
HISP 325 (3) Spanish Novel of the 19th Century
HISP 326 (3) Spanish Romanticism
HISP 327 (3) Literature of Ideas: Spain
HISP 349 (3) Generation of 1898: Essay
HISP 350 (3) Generation - 1898: Creative Genres
HISP 421 (3) Golden Age Prose
HISP 423 (3) Modern Lyric Poetry
HISP 424 (3) Spanish Novel since Civil War
HISP 425 (3) The World of Pérez Galdós
HISP 451D1 (3) Cervantes
HISP 451D2 (3) Cervantes
HISP 457 (3) Medieval Literature
HISP 458 (3) Golden Age Drama
HISP 460 (3) Golden Age Poetry

8.10.3.5 Complementary Courses Open to All Students in the Western European Studies Focus
Economics
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
ECON 344 (3) The International Economy 1830-1914
ECON 345 (3) The International Economy since 1914
ECON 423D1 (3) International Trade and Finance
ECON 423D2 (3) International Trade and Finance
History
HIST 214 (3) Introduction to European History
HIST 215 (3) Modern European History
HIST 305 (3) War and Society 1
HIST 306 (3) East Central Europe since 1944
HIST 312 (3) East Central Europe: 1453-1740
HIST 313 (3) East Central Europe: 1740-1914
HIST 315 (3) Western Europe from the French Revolution to ca. 1850
HIST 317 (3) War and Society 2
HIST 325 (3) Renaissance-Reformation Europe
HIST 335 (3) Science from Greeks to Newton
HIST 354 (3) Women in Western Europe Since 1750
HIST 365 (3) 17th - 18th C. Western Europe
HIST 372 (3) The Low Countries: 14th - 17th Century
HIST 388 (3) The Second World War
Political Science
POLI 212 (3) Government and Politics - Developed World
POLI 318 (3) Comparative Local Government

POLI 328 (3) Modern Politics in Western Europe
POLI 344 (3) Foreign Policy: Europe
POLI 356 (3) Public Policy: Western Europe
POLI 357 (3) Politics: Contemporary Europe

8.10.4 Canadian Studies
Required Courses (15 credits)
CANS 200 (3) Introduction to the Study of Canada
CANS 300 (3) Topics in Canadian Studies 1
ECON 303D1 (3) Canadian Economic Policy
ECON 303D2 (3) Canadian Economic Policy
SOCI 223 (3) Canadian Society

Complementary Courses (12 credits)
POLI 221 (3) Government of Canada
or POLI 222 (3) Political Process and Behaviour in Canada
plus 9 credits chosen from 300- or 400- level courses on Canada from the McGill Institute for the Study of Canada or other departments.

8.10.5 American Studies
Complementary Courses (27 credits)
at least 12 credits selected from the following:
ECON 308 (3) Governmental Policy Towards Business
ECON 311 (3) United States Economic Development
ENGL 225 (3) American Literature 1
ENGL 226 (3) American Literature 2
HIST 211 (3) American History to 1865
HIST 221 (3) United States since 1865
POLI 323D1 (3) Government and Politics: United States
POLI 325D2 (3) Government and Politics: United States

the remaining credits to be selected from the North American Studies program listings, or other departments. Courses must be at the 300- or 400-level and specifically related to American culture.

8.11 Academic Staff

Adler, Nancy J.; B.A., M.B.A., Ph.D.(Calif.-LA); Professor, Organizational Behaviour
Armstrong, Donald E.; B.A., B.Com.(Alta), Ph.D.(McG.); Emeritus Professor
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Zhou, Lei; B.A.(Tsinghu Univ.-Beijing), Ph.D.(Md); Assistant Professor, Accounting
9 Schulich School of Music

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9.1 The Faculty

9.1.1 Location

Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Canada
Telephone: (514) 398-4535
Fax: (514) 398-8061
Website: www.mcgill.ca/music

9.1.2 The Faculty Then and Now

McGill’s Schulich School of Music (www.mcgill.ca/music) is the largest university-based school for professional musical training and music research in Canada. Founded as the Conservatorium of Music in 1904 and incorporated as a Faculty in 1920, the school moved to its current location in the impressive and historic Strathcona Music Building (formerly the main section of Royal Victoria College) in 1972. During its 2004-05 centennial season, the Faculty added a new eight-storey building that will evolve into a world-leading facility for sound recording and music technology research. McGill Music is renowned for its orchestral, choral, opera, jazz, chamber, contemporary and early music programs and for its award-winning creative and research work in composition, music theory, musicology, music education, sound recording and music technology.

Pollack Concert Hall (capacity: 600), Redpath Hall (400, with the University Organ), Clara Lichtenstein Recital Hall (80) are among the busiest and best concert venues in Montreal. The new building adds a 200-seat hall, an opera-rehearsal room, a scoring stage/acoustic research lab, and control rooms. Three floors of the new building are dedicated to the Marvin Duchow Music Library (www.library.mcgill.ca), with its collection of well over 100,000 scores, recordings, books, and periodicals; in addition, the Performance Library has performing parts for over 6000 titles. Both old and new buildings (as well as satellite locations) house labs for numerous specialized functions: digital composition and electronic music, music education research, multi-channel sound recording, music perception and cognition, sound processing and control, computational modeling, etc. Classrooms, teaching studios, practice rooms (80+), and a student-lounge and cafeteria round out the picture.

The Faculty is also home to the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), an interdisciplinary, inter-university, international consortium that brings together researchers in music, sound recording, music technology, psychology, neuroscience, engineering, and medicine (www.music.mcgill.ca/cirmmt).

The current student enrolment is over 600 at the undergraduate level and over 200 at the graduate level. The teaching staff includes 55 full-time and over 140 part-time members. Students and staff play a major role in Montreal’s vibrant cultural scene, presenting over 650 concert events annually, as well as master classes, lectures, and symposia, all enhanced by very active student societies, a gig office, and excellent support staff.
9.2 Faculty Administrative Officers

9.2.1 Dean’s Office
Don McLean; Mus.Bac., M.A., Ph.D.(Tor.) Dean
Mary-Beth Campbell; B.Mus., M.Mus.(McG.) Dean’s Secretary
Joanne Niles; B.A., M.A.(C’dia) Assistant to the Dean and Area Personnel Manager
Valerie McConnell Administrative Coordinator
Daria Lavigne Receptionist
Donna Williams; B.A.(W.Ont.) Development Officer
Paul Vandenberg; B.Mus.(McG.) Development and Alumni Relations Associate
Quynh-Ly Pham; B.Sc.(McG.) Budget Officer

9.2.2 Associate Dean’s Office
Bruce Minorgan; B.Mus.(Br.Col.), M.A.(Tor.) Associate Dean (Administration)
Dana Pietrzak Secretary to the Associate Dean
Tracy Roach; B.Mus.(McG.) Program Review Secretary
Charles Wan; B.CompSc.(C’dia) Banner (FIS) Liaison
Alain Terriault LAN Manager

9.2.3 Graduate Studies
Hank Knox; B.Mus., M.Mus.(McG.) Director, Graduate Studies
Hélène Drouin Secretary for Graduate Studies

9.2.4 Academic Affairs
Douglas McNabney; B.Mus.(Tor.), M.M.(W.Ont.), D. Mus.(Montr.) Chair, Department of Performance
Linda Mannix; B.A.(C’dia) Department Secretary
Jennifer Stephenson; B.A.(McG.) Department Secretary (Scheduler)
David Brackett; B.A.(Calif.Santa Cruz), M.M.(New England Cons.), D.M.A.(C’nell) Chair, Department of Theory
Johanne Froncioni Department Secretary

9.2.5 Student Affairs
Patrick O’Neil; B.A.(McG.) Admissions Officer
Veronica Slobodian Admissions Officer
Mary Di Stefano Admissions Secretary
Maria Virgilio Admissions Secretary
Reisa Lipszyc; B.Mus.(McG.) Recruitment and Liaison
Olga Makarios; Cert. in Mgmt.(McG.) Recruitment Secretary
Marie Moscato Senior Student Adviser
Egidia De Michele Senior Student Affairs Coordinator
Dana Pietrzak Student Affairs Secretary

9.2.6 Building Management
Peter Wightman; L.Mus., B.Mus., M.Mus.(McG.) Building Director
TBA Assistant Building Director
Kerry Wagner; C.T.T. Piano Technician
Nick Zervos A/V Technician

9.2.7 Administrative Units
CONCERTS AND PUBLICITY
Box Office (weekdays: 12:00 to 18:00): (514) 398-4547
Concert Information: (514) 398-4547 or 398-5145
Bookings: (514) 398-8993
Louise Ostiguy; B.Mus.(Montr.), C.G.E.(H.E.C.) Director
Pia D’Amico Secretary
Diana Toni Dutz; B.Mus.(W.Ont.), Grad.Dip.(C’dia) Marketing and Publicity Coordinator
Marie Pothier; B.Mus.(Montr.) Publicity Secretary
Katherine Simons; B.Mus.(W. Laur.) Production Coordinator
Serge Filiatrault Stage Manager (Pollack Hall)
Jordan Gasparik; B.Mus.(McG.) Assistant Stage Manager (Pollack Hall)
Neil Middleton; B.Mus.(Sask), M.Mus. (McG.) Assistant Stage Manager (Redpath Hall)
Christopher Smythe; B.Mus., M.Mus.(McG.) Stage Manager (Redpath Hall)
Jacqueline Gauthier Box Office and Front-of-House Coordinator
François Robitaille Piano Technician

MARVIN DUCHOW MUSIC LIBRARY
Telephone: (514) 398-4695
Cynthia Leive; B.Mus.(Eastman), M.L.S.(SUNY, Geneseo), M.F.A.(Car.) Librarian
Brian McMillian; B.Mus., M.Mus.(McG.), M.I.St.(Tor.) Reference Librarian
John Black; B.A.(McG.) Audio Room Supervisor
Melanie Preuss Library Assistant, Audio Room and Circulation
Andrew Senior; B.A., MPhil.(York) Specialized (Audio/Visual) Cataloguing Editor
Gail Youster Library Assistant, Circulation and Serials
David Curtis; B.Sc.(McG.) Library Assistant, Circulation and Reserves

PERFORMANCE LIBRARY
Telephone: (514) 398-4553
Katie Lai; B.F.A.(Wisc.),M.Mus., M.L.I.S.(McG.) Librarian

OPERA MCGILL
Telephone: (514) 398-4535, ext. 0489
Dixie Ross-Neill; B. Mus.(N. Carolina), M.Mus.(Texas) Program Director
Julian Wachner; B.Mus., Mus.Doc.(Boston) Principal Conductor
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DIGITAL COMPOSITION STUDIO
Telephone: (514) 398-4552
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Ieronim Catanescu Technician

MUSIC TECHNOLOGY RESEARCH LABORATORIES
COMPUTATIONAL ACOUSTIC MODELING LABORATORY
Telephone: (514) 398-4535, ext. 0504
9.3 General Information

9.3.1 Degrees and Diplomas Offered

DEGREE OF BACHELOR OF MUSIC (B.Mus.)

The degree of Bachelor of Music may be obtained in any one of the following fields:
- Composition (Major, page 272, and Honours, page 273)
- Faculty Program, page 276
section 9.6.3.16 “Licentiate in Music (L.Mus.) (Voice)”; and section 9.6.3.17 “Licentiate in Music (L.Mus.) Jazz Performance”.

ARTIST DIPLOMA

The Artist Diploma is available only to advanced instrumentalists and singers who demonstrate technical and musical maturity. Admission into the program requires completion of a Bachelor of Music degree in Performance, a Licentiate in Music, or the equivalent.

DEGREE OF MASTER OF ARTS (M.A.)

The Master of Arts degree (M.A.) is available as a thesis option in Music Education, Music Technology, Musicology, and Theory and as a non-thesis option in Music Education, Musicology, and Theory.

DEGREE OF MASTER OF MUSIC (M.Mus.)

The Master of Music degree (M.Mus.) is available in Composition, Performance, and Sound Recording. Within the Performance option are offered specializations in: piano, guitar, orchestral instruments, organ, conducting, chamber music, orchestral training, piano accompaniment, vocal, opera, opera coaching, vocal pedagogy, early music, church music — organ, and jazz.

DEGREE OF DOCTOR OF MUSIC (D.Mus.)

The Doctor of Music degree (D.Mus.) is available in Composition and Performance Studies.

DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.)

The Doctor of Philosophy degree (Ph.D.) is available in Music Education, Musicology, Music Technology, Sound Recording, and Theory.

For details of the Master’s and Doctoral programs, please consult the Graduate and Postdoctoral Studies Calendar.

9.3.2 Orchestral Training

Orchestral Training at McGill includes all students in the B.Mus., L.Mus., Artist Diploma, and M.Mus. degrees and diplomas whose major is one of the orchestral instruments. Many of its graduates are now members of professional orchestras throughout North America, Europe, and the rest of the world. Led by full-time conductors in residence and supported by a number of full-time staff as well as many members of the top professional orchestras in and around Montreal, Orchestral Training at McGill provides for regular private practical lessons as well as performance in one or more large instrumental ensembles including a full symphonic orchestra (approximately 100 players), a contemporary music ensemble, a percussion ensemble and a variety of small chamber music groups. It also includes regular coached orchestral sectional and orchestral repertoire classes.

9.3.3 Scholarships and Financial Aid

General information on scholarships, including McGill Entrance Scholarships, and a detailed listing of all awards is contained in the Undergraduate Scholarships and Awards Calendar, available on the Web (www.mcgill.ca) or from the Admissions, Recruitment and Registrar’s Office.

A limited number of Music Entrance Scholarships (valued at $2,000 each) are awarded to incoming Performance students on the basis of auditions held only in February. All instruments, including voice, are eligible. In addition, outstanding string players applying to the Schulich School of Music are encouraged to audition (February audition period only) for the Lloyd Carr-Harris String Scholarships (valued at $10,000 each). Application for admission must be submitted by January 15.

While taking into account the stipulations of the individual awards, Schulich School of Music scholarships, awards and prizes are given on the basis of a student’s record for the academic session ending in April and are tenable during the next academic year beginning in September. Students must have successfully completed at least 27 credits (excluding courses completed under the satisfactory/unsatisfactory option) in the academic year preceding the award and must register for full-time studies during the subsequent year, unless fewer credits are needed to complete the program. Students whose records contain outstanding incomplete or deferrals will not be considered. No application is required.

9.3.4 Summer Studies

Summer Studies offers courses starting in May, June, and July. Students may take a maximum of 18 credits for the whole summer session. Those wishing to take more than 5 credits in any one month must obtain the permission of the Senior Student Advisor. Information concerning course offerings and application forms may be obtained from the McGill Summer Studies Office Website, www.mcgill.ca/summer, or by calling (514) 398-5212.

9.3.5 Music Credit Options for Students in Other Faculties

The Schulich School of Music offers three groups of courses that may be taken for credit by students in other faculties.

The first group consists of music literature and theory courses especially designed for students from other faculties who may not have taken formal studies in music but who wish to take elective courses in the cultural, historical and theoretical aspects of music.

The second group is the sequence of courses in music theory and history which are part of the Schulich School of Music undergraduate curriculum. These courses may be taken by those having the necessary prerequisite studies in music.

The third group of courses consists of selected music ensembles open, by audition, to students in other faculties.

For further details on these courses, please see section 4.12.40 “Music (MUAR)” under the Faculty of Arts. Other music courses may be taken by qualified students from other faculties providing they obtain permission from the relevant department in the Schulich School of Music and from the Associate Dean of their own faculty.

9.3.6 Conservatory of Music

The McGill Conservatory of Music offers instruction in piano, guitar, harp, most orchestral instruments and voice, as well as Theory and Ear Training from the elementary level up to and including Collegial levels.

In addition, the Conservatory offers Suzuki method instrumental instruction, a Music for Children course based on Orff/Kodaly principles, orchestras, children’s and youth choirs, chamber music ensembles, a variety of jazz combos, and a summer day camp. Practical examinations to the Collegial II level and Theory and Ear Training examinations from the Secondary III to Secondary V levels are offered to both internal and external students. Theory and Ear Training examinations at the Elementary and Collegial I and II levels are available to internal students only.

The Conservatory also welcomes adult students (at any level) and encourages their participation not only in practical instruction but also in the orchestras, instrumental ensemble groups and Theory and Ear Training courses.

Further information is available from the McGill Conservatory of Music and on their Website at www.mcgill.ca/conservatory.

9.4 Admission

9.4.1 Application Procedure

All inquiries regarding admission should be directed to the Admissions Office, Schulich School of Music, McGill University, 555 Sherbrooke Street West, Montreal, QC H3A 1E3.

Full information, including a Web-based application form, is available at www.mcgill.ca/music/prospective/undergraduate/applying.
In order to ensure proper consideration, Web applications for September must be submitted by January 15. For admission in January (Canadians and Permanent Residents only) – to those programs which accept students into the Winter term – the application deadline is November 1. Applications received after these deadlines will be considered if places are still available.

Application information should include detailed descriptions of the applicant's musical background, training and statement of intent including photocopies of diplomas, certificates and/or transcripts. An official up-to-date transcript must also be sent directly by the school attended. All applicants must arrange to have a Music Evaluation form submitted on their behalf. All supporting documents for undergraduate applications must be mailed to: McGill University, ARR Documentation Centre, 688 Sherbrooke Street West, Montreal, Quebec, H3A 3R1.

Applicants are advised that satisfying the entrance requirements does not guarantee admission where instrumental places are limited.

9.4.2 Music Entrance Requirements

The minimum music entrance requirements are the equivalent of McGill Conservatory Collegial I Instrument or Voice (Performance applicants: Collegial II) and Secondary V Theory and Ear Training.

Approximate Equivalents to Entrance Requirements in Practical Subjects (McGill Conservatory Collegial I – Instrument/Voice)

<table>
<thead>
<tr>
<th>Quebec CEGEPS</th>
<th>CEGEP II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto Conservatory</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Western Board</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Mount Allison</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Associated Board of the Royal Schools of Music</td>
<td>Grade 7</td>
</tr>
</tbody>
</table>

The above listing is intended only as a general guide. Admissibility to any program is determined by audition. Students wishing to major in Performance should be approximately two years more advanced, and be able to demonstrate potential as performers at their audition.

All applicants in piano, female voice, and in all jazz instruments will be required to submit a tape-recording (CD, video, etc.) for pre-selection by January 15. Following a review of these recordings, selected applicants will be invited to attend a live audition. No live audition will be scheduled in piano, female voice, or in any jazz instrument until a tape-recording has been received and reviewed. All applicants must perform an audition of approximately 15 minutes’ duration. The student should choose material that will represent different musical periods and reveal musicianship and technical proficiency to best advantage. Applicants for the Artist Diploma program must prepare an audition of recital material lasting approximately 60 minutes. For entrance audition requirements please refer to www.mcgill.ca/music/prospective/undergraduate-requirements.

The entrance audition dates for September 2006 admission are February 18 to 26, 2006. At the time of audition, all applicants will be required to sit a rudiments/musicianship test. The entrance audition dates for September 2007 admission are February 17 to 25, 2007.

Recordings (compact disc and/or video) are acceptable when distance prevents an applicant from attending an audition in person.

Applicants for Composition are asked to submit two or three samples of their written work.

Music Education applicants are asked to outline reasons for wishing to enter the Music Education field in their statement of intent and have a letter of reference sent from someone attesting to his or her suitability for teaching.

9.4.3 Academic Entrance Requirements

Bachelor of Music

The applicant's entrance audition and the academic record are considered when making an admission decision. As a limit is placed upon the number of students admitted to study a particular instrument, fulfillment of the minimum entrance requirements does not guarantee acceptance. TOEFL may be required of non-Canadian students whose mother tongue is not English. It is the applicant's responsibility to make the necessary arrangements with the examining board to write the test in the country of residence.

CEGEP Applicants

Students are expected to obtain the Quebec Diploma of Collegial Studies (Diplôme d'études collégiales) in the Music Concentration or equivalent. Applicants with a DCS/DEC in a field other than Music must have the equivalent Music prerequisites. The minimum overall average required is 70%. CEGEP graduates are admitted to a three-year program.

Canadian High School (excluding Quebec) Applicants

Applicants are expected to obtain a high school graduation diploma which leads to university admission in the student's home province. Ontario high school students are normally expected to have obtained a minimum of 6 OACs; at least four of the six must have been taken at the 4U level. There are no specific non-music prerequisite courses required and the minimum overall average should be 70%. Canadian high school graduates are admitted to a four-year program.

U.S. High School Applicants

Applicants are expected to obtain a high school graduation diploma which meets the requirements for university/college admission in the U.S. The minimum overall average required is B+. There are no specific non-music prerequisite courses, or SAT and Achievement Test results required. Some credit will be granted for Advanced Placement Examinations in appropriate subjects. U.S. high school graduates are admitted to a four-year program.

International Applicants

In general, applicants must be eligible for admission to university in their country of origin and have above-average grades. Students who have completed an International Baccalaureate, a French Baccalaureate, or a minimum of three GCE “A” (Advanced) Level examinations are considered for admission into a three-year program. Normally, applicants with five GCE “O” (Ordinary) Level results, plus one year of schooling beyond the Ordinary Level, are admitted to a four-year program. Applicants with qualifications from other systems will be considered for either a three-year or a four-year program.

Transfer Students

Transfer students are considered on the basis of both their university or college work and previous studies. Normally, students are expected to complete a full year of university studies prior to applying for admission and to be in good standing as defined by the university previously attended. The minimum overall average required is a CGPA of 3.00. Transfer credits for non-music courses in which a grade of C or better has been received are granted following an evaluation of the student's transcript. Transfer credits, with certain restrictions, are granted for music complementary or elective courses following an evaluation of the student's transcript (a higher grade may often be required). Transfer students must complete a minimum of 60 credits at McGill in order to obtain a degree.

Matric Students

Applicants who are at least 21 years of age at or before registration, who have not met the high school or CEGEP academic requirements, and who are able to demonstrate exceptional talent in their discipline may be considered for admission. Such applicants may be resident anywhere. All available academic/educational documents must be submitted. An interview may be required.
**Special Students**

Special Students do not need to fulfill any of the academic requirements outlined previously but are required to have the necessary music prerequisites for the courses concerned. Registration is subject to the availability of space in the course(s) concerned. Special Students are normally not entitled to lessons in an instrument or in voice. Registration is permitted for one year only, after which time the student must apply for admission to either the B.Mus. or the L.Mus. program.

**Visiting Students**

Individuals wishing to take courses at McGill for credit at another university may be admitted as Visiting Students provided they have the prerequisites for the course(s) concerned and have official permission from their home university.

### 9.4.4 Diploma Programs

**L.Mus. (All Applicants)**

For admission to the Licentiate program, the applicant must have completed secondary school. The applicant’s music qualifications must be equivalent to McGill Conservatory Collegial II Instrument or Voice and Secondary V Theory/Ear Training. An entrance audition is required.

**Artist Diploma (All Applicants)**

For admission to the Artist Diploma program, the applicant must have a Bachelor of Music degree in Performance, the Licentiate in Music of the McGill Schulich School of Music, or the equivalent and must pass a performance audition.

### 9.4.5 Music Placement Examinations

All applicants must sit diagnostic placement examinations in Theory, Musicanship (Ear Training), Music History, Keyboard Proficiency and, for jazz majors, Jazz Materials, in order to determine their course levels. General placement/advanced standing examinations will be given during the week prior to the beginning of classes in September.

Students accepted into either the Licentiate Diploma (L.Mus.) or the Artist Diploma, who have completed the degree of Bachelor of Music at a Canadian or American university (or the equivalent elsewhere) within the preceding three (3) years will not be required to sit the Music Placement Examinations and will be exempted from required Theory, Musicanship, and Music History, Literature or Performance Practice courses. Should such students wish to avail themselves of the diagnostic service that the Music Placement Examinations provide, they may sit them—without, however, being bound by the recommendation generated from their results. Nevertheless, should great difficulties arise in a specific class because of lack of adequate preparation, the Department Chair, upon the advice of the instructor, reserves the right to counsel the student to undertake studies at a lower level.

### 9.4.6 Keyboard Proficiency Test (MUSP 170)

Students entering any of the B.Mus. or L.Mus. programs should be prepared to demonstrate, in a Keyboard Proficiency Test, keyboard skills sufficient to enable them to use the piano as a tool in their studies at McGill.

Those who are unable to do so must register continuously for Keyboard Proficiency MUSP 170 until they successfully complete the course. Majors in Jazz Performance must enrol in MUJZ 170. Students in Jazz Performance who have completed MUJZ 170 and MUJZ 171, and who transfer to a Department of Theory program, will be required to complete MUSP 172. Students who have been admitted to a degree or diploma program with keyboard as their principal instrument are exempt from the MUSP 170 Test (but not from MUSP 171 and MUSP 172).

The requirements of the Keyboard Proficiency Test are as follows:

1. Sightreading (simple two-part piece using treble, bass and alto clefs).
2. Technique (scales, triads and arpeggios). Two octaves, hands together.
3. Prepared piece (contrapuntal texture in two or three parts, or simple homophonic textures, level equivalent to McGill Conservatory Secondary III).
4. Keyboard rudiments (recognition/playing of intervals, chords, scalar patterns, etc.).

Students will not be allowed to proceed with higher-level Musicianship or Theory studies until these requirements are met. Exact test dates are determined by the Department of Theory.

### 9.4.7 Readmission

Students in satisfactory standing, who have not been registered in the Schulich School of Music for one or two terms, may return to the program in which they were previously registered upon permission of the Faculty. Those who have been out for longer than two terms may be readmitted upon permission of the Faculty, subject to the student’s previous record and current Faculty limitations on enrolment, but will be required to re-audition.

Students wishing to return in the Winter or Summer term must submit a request in writing to the Student Affairs Office, giving a summary of their activities during their absence, and complete a Readmission Application Form. The deadline for the January session is November 15; for the May session, April 1.

Students wishing to return in the Fall term must submit an electronic readmission application, available on Minerva, by March 1.

**Fees**

The University reserves the right to make changes without notice in the published scale of fees.

### 9.4.8 Tuition Fees

General information on Tuition and Other Fees will be found in the General University Information section at the front of this book.

**Individual practical instruction** on a main instrument or voice as indicated in the various degree and diploma programs, see section 9.3.1 ‘Degrees and Diplomas Offered’, is included at the per-credit rate only while the student is full-time, and for a maximum number of years according to the following table:

<table>
<thead>
<tr>
<th>Category of Student</th>
<th>B.Mus. (Perf. or Jazz Perf.)</th>
<th>B.Mus. (non-perf.*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School graduates [Gr.12] (Canadian, except Quebec; United States; Overseas)</td>
<td>4 years</td>
<td>3 years</td>
</tr>
<tr>
<td>CEGEP graduates [Holders of D.E.C. or D.C.S. in Music or a non-Music specialization]</td>
<td>3 years</td>
<td>2 years</td>
</tr>
<tr>
<td>Transfer students [from other colleges, universities or McGill faculties] or degree holders</td>
<td>3 years</td>
<td>2 years</td>
</tr>
<tr>
<td>Mature Students [without above academic qualifications but who are 21 years old as of Sept.1]</td>
<td>3 years</td>
<td>2 years</td>
</tr>
</tbody>
</table>

*Composition, Music Education, Music History, Music Technology, Theory, Faculty Program*

L.Mus. students are entitled to practical instruction at the per-credit rate for a maximum of 3 years, 1 hour per week; Artist Diploma students, 2 years, 1½ hours per week.
The maximum of 3 years of practical instruction for L.Mus. students includes instruction received while in a B.Mus. program either during or prior to registration in the L.Mus. program. The maximum of 2 years of practical instruction for Artist Diploma students includes instruction received while in an M.Mus. program either during or prior to registration in the A.Dip. program.

Note: Part-time students in the B.Mus. and L.Mus. programs and those who have exhausted the above-listed maxima will be charged $785 per term ($1,570 per year) for practical instruction in addition to the per-credit fees. (Artist Diploma students: $1,175 per term or $2,350 per year.)

Special or part-time Visiting students who are permitted to enrol for practical instruction will also be charged an extra $785 per term, in addition to the per-credit fees, as will all other students taking instruction in a second practical subject.

Voice Coaching (MUN 300, MUN 301) is available at the per-credit rate for a maximum of two terms for full-time voice students only. In all other cases, the extra fee for this course is $550 per term.

Special students in the Opera Studio will be charged an additional $680 per term ($1,360 per year). Degree or diploma candidates registered in Opera Studio, as well as Special students taking practical instruction at $785 per term, will be charged the per-credit fee for Opera Studio.

9.5 Academic Information

Students are required to be punctual at all classes and lessons. Grades in theoretical subjects are calculated on the basis of class work and/or examinations. Students are warned that by missing examinations or class work they risk failure in the subject concerned.

9.5.1 Ensemble Policy and Regulations

A. Preamble

The ensemble program comprises areas of activity designed to provide an enriched and cohesive curriculum in practical musicianship for every student. Much of this training is accomplished in the context of a large instrumental or choral ensemble, or specialized ensembles, over the three-year period that students normally spend on undergraduate studies. Students are advised to check their program carefully in order to verify their basic (large) and small ensemble requirements.

Basic (large) Ensemble: All students registered as full-time or part-time students in the Department of Performance must audition for, and participate in, a basic (large) ensemble. This means that a student from the Province of Quebec must have a minimum of 12 credits for basic ensemble in order to graduate. A student from outside the province must have a minimum of 16 credits in order to graduate. In those cases where a student in the orchestral training program is registered for additional sessions, he/she must also register for basic ensemble for each additional session. (For exemptions, see section K.)

A student in the orchestral training program who is not assigned a basic ensemble following the auditions in either September or January because there is not a space available may substitute either

1. an additional small ensemble in lieu of the basic ensemble with the approval of the Chair of the Performance Department, or
2. a choral ensemble following an audition, with the permission of the Chair of the Choral Area and the Chair of the Performance Department.

Small Ensemble: With the exception of students registered in the regular Voice program, all students registered as full-time or part-time students in the Department of Performance must audition for, and participate in, a small ensemble. A student must have a minimum of 6 credits for small ensemble in order to graduate. With the exception of Keyboard, Guitar and Jazz students, this is an ongoing requirement.

Performance majors as well as sufficiently advanced players and singers from other programs are encouraged to participate in one or more small ensembles which meet their particular interest.

This policy and its regulations apply to all students performing in all ensembles, large or small, required, complementary, or elective. They apply also to all students who have been assigned to an ensemble for any reason, including conducting students, composers and arrangers-in-residence, and others.

Important: This policy also applies to all students enrolled in vocal and instrumental techniques classes (MUCT 235, MUCT 335, MUIT 201, MUIT 202, MUIT 203, MUIT 204, MUIT 301, MUIT 302) and in choral and instrumental conducting classes (MUCT 315, MUCT 415, MUIT 315, MUIT 415) who are required to participate in Music Education ensemble labs. STUDENTS IN THESE LABS MUST FILL OUT REQUEST FORMS FOR ALL ABSENCES, INCLUDING ALL FIELD TRIPS IN WHICH THEY MAY PARTICIPATE. These forms should be returned to the Chair of the Music Education Area, not to the Ensemble Committee; students should consult the Chair of the Music Education Area for further details.

Note: In all cases where the term “Director” of an ensemble is used, it is understood to mean the conductor, director, stage director or coach of the ensemble.

B. Basic Ensemble Training and Assigned Small Ensembles

Basic Ensemble Training requirements vary by program and according to the student's practical concentration. For ensemble purposes, the orchestral instruments include flute, oboe, clarinet, bassoon, saxophone, French horn, trumpet, trombone, tuba, percussion, harp, violin, viola, cello and double bass. Students studying these instruments will receive their Basic Ensemble Training in the large instrumental ensembles. Students whose principal instrument is other than one of these (except voice majors) will normally receive their Basic Ensemble Training in the choral ensembles. Voice majors may choose from a group of vocal and choral ensembles appropriate to the level of their development.

In all programs which specify an assigned small ensemble, the following are considered assigned small ensembles:

MUEN 480 Early Music Ensemble
MUEN 485 Mixed Ensembles
MUEN 489 Woodwind Ensembles
MUEN 491 Brass Ensembles
MUEN 498 Percussion Ensembles
MUEN 499 String Ensembles

C. Additional Ensembles

Additional ensembles chosen by students to reflect their particular interests may, with Departmental approval, be applied as Music Elective credit. Students electing an ensemble will normally be required to audition and will be placed accordingly.

D. Assignment and Auditions

All students registered as full-time or part-time students in the Department of Performance must audition for a basic ensemble in September and, where applicable, in January (e.g., woodwind and brass players in the orchestral training program). A student who cannot audition for a basic ensemble at the times indicated in the calendar must give written notice to the Performance department of their non-availability at least five days before the date of the first audition. The student must have a valid reason (i.e., illness, death in the family, career commitment, etc.). If a student misses an audition for reasons unacceptable to the Performance department, that student will not be allowed to audition for that semester and the requirement will have to be fulfilled later in order that the student can graduate. If the reason given is valid, the student will audition for whatever positions remain unassigned upon his/her arrival at the Faculty.

Assignments are posted on the Department of Performance notice board. Reassignments or subsequent auditions may be
made from time to time during a term and will also be posted. Jazz Majors in the rhythm section sightreading ensemble must audition every semester. Students are reminded that auditions for major ensembles are mandatory. Students who do not take the auditions cannot be assigned to any major ensembles, and they would have to make up the credit at a later time.

In the case of the Jazz Ensembles, an open challenge system is used as follows:

1. At any time during a term, a student may challenge for a position in a Jazz Ensemble.
2. The challenger must speak to the band directors involved, specifying the chair being challenged.
3. The challenger will have a private audition with not less than two directors who will offer a non-binding recommendation to the student as to whether or not to proceed with the challenge.
4. Should the challenger wish to proceed, the student being challenged will be notified by the Coordinator of the Jazz Ensembles.
5. The challenge will take the form of an audition of both the regular member of the ensemble and the challenger in a full band rehearsal, following which the directors will make a decision.

E. Commitment

Ensembles are courses. Each student who has registered for an ensemble, or who has been assigned to or who is auditing an ensemble, has made a commitment to the ensemble and is required to attend all rehearsals, concerts, performances, field trips, recordings and other activities which constitute the course requirements of that ensemble. Except for reasons of ill health or in the case of an excused absence granted by the Ensemble Committee (see Section G, below), any absence may result in a failing grade for the student.

F. Failing Grade

A failing grade in any of the mandatory ensembles (Basic Ensemble, assigned small ensemble, complementary or elective ensemble) obliges the student to make up the credit at a later date. A subsequent failure in the same course may result in the student being required to withdraw from the Faculty.

G. Request to be Excused from a Rehearsal

ANY STUDENT WHO CANNOT ATTEND A REHEARSAL OR COACHING SESSION FOR ANY ENSEMBLE IS REQUIRED TO FILL OUT A REQUEST TO BE EXCUSED FROM ENSEMBLE FORM. THIS FORM IS AVAILABLE FROM THE DEPARTMENT OF PERFORMANCE OFFICE (E222).

Students are required to submit a completed copy of this form to the Department of Performance office (E222) at least eight (8) days prior to the rehearsal or coaching session which will be missed, stating the reason for the request. Students who have missed a rehearsal or coaching session due to illness must submit one of these forms within three (3) days of returning to school. In such cases a doctor’s certificate or statement from the Student Health Service must be attached to the form.

Ensemble Committee meets weekly during the term to consider the requests, and approve or refuse each individual case. Students are welcome to appear at this meeting to explain particular circumstances affecting their request. Students should check the Performance notice board after the day the form is submitted to the Ensemble Committee, to be very important for a student's occasion affect their request. Students should check if their request has been approved.

Students may be excused from a rehearsal or coaching session of an ensemble for the following reasons:
1. Sickness, or emergency medical or dental work.

IMPORTANT NOTE: ANY STUDENT WHO IS EXPERIENCING PAIN WHILE PLAYING OR SINGING SHOULD INFORM THEIR PRACTICAL TEACHER AND THE DIRECTOR OF THEIR ENSEMBLE(S), AND SHOULD SEEK APPROPRIATE MEDICAL ATTENTION. Students should not be reluctant to admit to injury; it is entirely acceptable for students to be excused from ensemble rehearsal(s) for health reasons.

The Faculty does not want students to perform with pain or with injury.
2. An audition for a permanent professional engagement
3. A master class
4. A major competition
5. A professional engagement deemed, in the opinion of the Ensemble Committee, to be very important for a student's developing career
6. Family emergency or an especially important family occasion
7. A conflict between an irregularly scheduled ensemble rehearsal or coaching session and a previous important commitment made by the student (proof required)
8. A field trip for another ensemble or class
9. An authorized McGill function
10. A religious holiday

For Nos. 2, 3, 4 and 5, the request must be accompanied by authorization from the student’s practical teacher and the appropriate area Chair. This permission is given for no more than three (3) rehearsals or coaching sessions.

Note: NO PERMISSION IS GIVEN TO BE EXCUSED FROM A DRESS REHEARSAL OR FROM A CONCERT EXCEPT FOR NO. 1 AND NO. 2 ABOVE. IN THE CASE OF OPERA MCGILL, NO ONE CAN BE EXCUSED FROM REHEARSALS DURING THE THREE (3) WEEKS PRECEDING THE OPENING NIGHT PERFORMANCE.

Students are not excused from ensemble rehearsals or coaching sessions for either of the following reasons:
1. Gigs
2. Non-emergency medical or dental appointments. Students should request appointment times that do not conflict with rehearsals or coaching sessions.

H. Preparation

If the Director of an ensemble is not satisfied with the quality of preparation that a student has been making for the ensemble, the Director shall first warn the student. This warning shall be communicated by the Director to the Ensemble Committee, which shall inform the student in writing. If, in the Director's opinion, this lack of preparation continues, the student will be required to perform the music for a committee consisting of the Director of the ensemble, the Chair of the area (Orchestral Training, Choral, Opera, Voice, etc.) and the Department Chair. If this committee decides that there has been a lack of sufficient preparation, the student will be required to appear before the Ensemble Committee to show cause why he or she should not be required to withdraw.

For any particular performance, if – after a written warning to the student(s) at least two (2) weeks prior to the performance, with a copy to the Ensemble Committee – the Director, in consultation with his/her coaches, feels that the performance of a student or group of students will not meet a certain minimum standard established by the Director, the Director may cancel the performance of the student(s).

I. Discipline

The Director of an ensemble may recommend that a student withdraw from an ensemble for disciplinary reasons. A student asked to do so will be required to appear before the Ensemble Committee to show cause why he or she should not be required to withdraw.

Students who are required to withdraw from an ensemble for reasons of lack of preparation or discipline will be given a grade of F which will be reflected in their Grade Point Average (GPA).

J. Withdrawal

Withdrawal for any reason obliges the student to make up the credit(s) at a later date.

K. Exemption from a Required Ensemble

In order to be given permission not to participate in a required ensemble for a term or part thereof, a student must:
i. be a participant in a major national or international competition,
or (in the case of voice students) be given a significant role with
a recognized performing arts ensemble, and (in the case of all
students) have completed the minimum number of required
terms of the ensemble, and have the permission of:
1. his or her practical teacher
2. the area Chair
3. the Director of the ensemble
4. Chair of the Orchestral Training, Choral, Opera or
   Voice Area (where appropriate)
5. Ensemble Committee
or
ii. have completed all program requirements except the final exam
   on his or her instrument
or
iii. have completed all musical requirements of his or her program,
having only Arts and Science electives remaining
or
iv. have a significant medical reason.

NOTE:
1. Permission not to participate in a required or complementary
   ensemble for a term or part thereof is not an exemption and
does not satisfy any credit requirements for a degree.
2. Students who are given permission not to participate in Orches-
tra (MUEN 497 or MUEN 697) for a term or part thereof may be
ineligible to hold an Orchestral Instruments Scholarship for that
term and may be ineligible for consideration for an Orchestral
Instruments Scholarship for the following year based on that
term.

L. Substitution of an Ensemble
1. In order to be given permission to substitute another large en-
semble for a required or complementary large ensemble for a
term, a student must:
i. have completed the minimum number of terms in the
   required or complementary large ensemble
   and
ii. have the permission as in K.i. (1-5) above, with the added
   condition that the Director of the required or complemen-
tary large ensemble may refuse consent for the simple
   reason that the student is needed in that ensemble.
2. Keyboard and Guitar Performance majors in all programs may
   substitute up to two (2) terms of Studio Accompanying
   (MUEN 484) for two (2) terms of Choral Ensemble.
3. Performance majors are not permitted to substitute Basic
   Ensemble credits for required or complementary assigned small
   ensemble credits.

M. Rotation
Whenever possible and musically satisfactory, and in order to
ensure equal opportunity and experience for students in the large
instrumental ensembles, the seating of students in these ensem-
bles may be rotated periodically throughout the term or year.
The Director of the ensemble will determine whether or not rotation
is possible and musically satisfactory.

N. Missed Classes due to Field Trips
Situations will arise where students are required to miss classes –
both in the Schulich School of Music as well as in other faculties –
because of field trips. Teaching staff in the Schulich School of
Music are encouraged to assist students who approach them for
information about course content and assignments that have been
missed. Nonetheless, the onus remains on the student who goes
on a field trip to complete class work.

O. Transfer Credits
The previous ensemble participation of students coming to McGill
from other universities will be recognized if their ensemble experi-
ence was similar to that required of McGill students. In general,
transfer credit is made on a term-for-term basis (not by credits) and
usually does not exceed two (2) terms. Students are normally not
permitted to reduce the Basic Ensemble Training requirements of
their McGill program to less than the number of terms required for
them to complete the rest of their program. In such cases, transfer
credit may be given as Music Elective credit.

P. Extra Basic Ensemble Training Credits
Basic Ensemble Training credits accumulated above the minimum
may be applied as Music Elective credits.

Q. Performance Library
Students are responsible for the music which has been loaned to
them for their use, and for its return in good condition to the Per-
formance Library. Students will be required to pay for the replace-
ment of any music which has been lost, stolen or damaged.

9.5.2 Accompanying
All Music students registered for practical instruction (including
elective study) are eligible for subsidized accompaniment up to a
specified maximum number of hours. Students wishing to use this
program should request further details from the Department of
Performance office.

9.5.3 Academic Category
All Music students are registered in one of the following categories:
Major: B.Mus. candidates may choose one or more of several
majors as described under section 9.6 "Programs of Study".
Honours: A more intensive program than a major, B.Mus.
students may choose one or more honours programs as described
under section 9.6 "Programs of Study". Generally, an honors
degree in the appropriate field is prerequisite to graduate study.
Faculty Program: A general B.Mus. program (section 9.6.2.8
"Faculty Program").
L.Mus., Artist Dip.: Diploma programs are designed for
advanced instrumentalists and singers who wish to concentrate on
their practical subject.
Special: Those who are not proceeding towards a degree or
diploma.
Visiting: Those taking courses at McGill for credit towards a
degree at another university.

9.5.4 Auditing
In general, auditing is not permitted in Schulich School of Music
courses. With the permission of the Departmental Chair con-
cerned, students may audit a course which is not a required course
in their program. It should be noted that auditors are not registered
for such courses, that the instructor is not expected to correct any
assignments or papers done by an auditor, and that an auditor
may neither write an examination in that subject nor receive any
credit for such course. Auditing is not permitted for Special or
Visiting students.

9.5.5 Music Electives
Unless otherwise specified, any music course numbered at the
200 level or higher which is not a required course in the student's
program can becounted as a Music Elective in the B.Mus. or Artist
Diploma programs. Two credits per term of practical instruction
may be applied as Music Electives only if the lessons are taken
after completion of the final examination required in the student's
program. Practical instruction in a second instrument may be
taken for elective credit at the 100 level under certain conditions.
Consult the Department of Performance for details. Basic Ensem-
ble credits accumulated above the minimum may be applied as
Music Elective credits.
Regulations Concerning Course Withdrawal.

Note: practical instruction will be given up to the end of the Course equivalent to the total fees charged for the course. Full refunds for courses that span the Fall and Winter terms do not affect academic standing, but should evaluate their course load and reduce it as necessary. Students in satisfactory standing may continue in their program.

9.5.6 Non-Music Electives

In all B.Mus. programs, students are required to complete a minimum of 18 elective credits from courses offered by other faculties. Students admitted from high schools outside Quebec, not holding a DCS, must complete an additional 6 credits of non-music electives for a total of 24. Students holding a DCS in a non-Music program are exempt from 6 credits of their requirement. Students should note that certain programs have requirements in addition to the above.

The Schulich School of Music allows up to 12 credits in English as a Second Language as a non-music elective in the B.Mus. program. These credits may be taken in the Faculty of Arts at the Intermediate or Advanced level OR they may be taken at the Centre for Continuing Education at level 4 or above.

9.5.7 Course Changes

Students are permitted to change courses and/or sections of a course during the first two-week period of classes in each term. This is referred to as the official Course Change Period. Course and section changes are made by the student, using Minerva to access his/her record directly. Worksheets for this purpose are available at the Student Affairs Office in the Strathcona Music Building.

Late course change requests, if approved, will be processed only upon payment of a fee of $25. No charge will be made for late changes imposed by the Faculty. If students’ registrations must be corrected after the Course Change Period to bring their records into conformity with the courses they are actually taking, the students will be charged the late fee.

9.5.8 Withdrawal from Course(s)

Students are permitted to withdraw from courses other than practical instruction or ensembles after the end of the Course Change Period. In such cases the student's mark in the course will be W. Course withdrawals are also processed on Minerva, within permissible dates.

The final deadlines for withdrawing from Music courses are:

For a one-term course: The end of the seventh week of classes.
For a two-term course: The end of the Course Change period in the second term.

THE DEADLINE FOR WITHDRAWING FROM PRACTICAL LESSONS AND ENSEMBLES IS THE END OF THE SECOND WEEK OF CLASSES IN ANY TERM.

Music students who, in special circumstances such as illness or injury, are given permission to withdraw from practical instruction after the end of the Course Change Period will be charged $65 per week (for 1-hour lessons; $97.50 for 1½ hours) up to a maximum equivalent to the total fees charged for the course. Full refunds for practical instruction will be given up to the end of the Course Change Period.

Note: Students who do not complete a course for which they remain registered will receive a grade of F or J.

For information on the REFUND POLICY, please see section 3.3.8 “Regulations Concerning Course Withdrawal”.

9.5.9 Incompletes

At the discretion of the instructor, a mark of K (Incomplete) may be given to a student who, due to extenuating circumstances, has not finished the coursework on time. The deadline for completion and submission of the required work shall be set by the instructor but may not be later than four months after the K was given. A special form for incompletes, available from the Student Affairs Office, must be signed by the student and the instructor by the last day of lectures. If the “Incomplete” is not removed by this time, the mark will be changed to KF (Incomplete Failed), unless an extension has been granted (KE). Completion of the course will cause the K to be replaced on official transcripts by the mark earned. A mark of K not cleared by mid-May makes the student ineligible for scholarships.

In exceptional cases, when research or an assignment cannot be completed for reasons beyond the student’s control, students may be given permission by their Departmental Chair or the Student Progress Committee to leave a course permanently incomplete (without penalty). The symbol K will be replaced by KK, in which case the student’s Grade Point Average will be calculated without including this course.

9.5.10 Deferrals

Deferred examinations are permitted in case of illness or other exceptional circumstances. A written request for the deferral of an examination (with the exception of practical examinations) must be submitted to the Senior Student Adviser; a practical music examination, to the Performance Department Chair.

A deferred examination will be entered as L, which will be replaced on official transcripts by the actual mark when the examination is written. A mark of L not cleared by mid-May makes the student ineligible for scholarships.

9.5.11 Supplementals

Supplemental examinations may be given at the discretion of the instructor. A student who receives a mark below 30% in a course is not permitted to take a supplemental examination but must repeat the course.

9.5.12 Rereading of Examinations

A student wishing to have an examination paper reread should apply in writing to the Departmental Chair. There is a non-refundable fee of $35. The mark given in the rereading, whether higher or lower, will replace the mark originally given. Any request to have a term paper or other coursework reassessed must be made directly to the instructor concerned.

9.5.13 Academic Standing

Academic standing is based primarily on students' cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing, which is assessed after the end of each term, determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the Fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and Fall-term grades for courses that span the Fall and Winter terms do not affect academic standing for the Fall term, even though they will ultimately affect students’ Fall TGPA. Therefore, academic standings for the Fall term are designated as “interim” and should be interpreted as advisory; moreover, interim standings will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.
• New students are admitted to satisfactory standing.
• Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the Winter term.
• Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.

• Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the Summer term.

• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.

• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean will be placed in probationary standing if their CGPA is less than 2.00, but if they satisfy relevant conditions specified in their letter of readmission.

Readmitted Unsatisfactory Standing
Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean will have their standing changed to readmitted unsatisfactory standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see the Senior Student Adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing
Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult the Senior Student Adviser, before the withdrawal deadlines, about their course selection for the Winter term.

Students in unsatisfactory standing who have failed to meet the minimum standards set by the Faculty may not continue in their program and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Dean no later than July 15 for re-admission to the Fall term and November 15 for the Winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Senior Student Adviser for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

• Students will be placed in unsatisfactory standing (Winter or Summer term) or interim unsatisfactory standing (Fall term) if their CGPA falls or remains below 1.50.

• For the Fall and Winter terms, students who were previously in probationary, readmitted unsatisfactory, or interim unsatisfactory standing will be placed in unsatisfactory standing if their TGPA falls below 2.50 and their CGPA is below 2.00.

• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of re-admission will be placed in unsatisfactory standing.

Incomplete Standings
Standing awaits deferred exam. Must clear K’s, L’s or Supplemetals. Standing Incomplete.

Students with incomplete standings in the Winter or Summer term may register for the Fall term, but their standing must be resolved by the end of the course change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Dean as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of Course Change Period should immediately consult with the Student Affairs Office.

9.14 Graduation Requirements
1. Completion of all courses and proficiency requirements specified in the candidate’s program. Students registered in two programs must fulfill all requirements for both programs. A grade of C or better must be achieved in all Required courses, all Complementary courses specified by course number, and in those courses which are prerequisites or corequisites. A grade of D (non-continuation pass) is acceptable only in terminal Elective courses or Complementary courses that are not specified by course number.

2. Minimum cumulative grade point average of 2.00.

3. Completion of a minimum of credits in residence at McGill University (B.Mus: 60 credits, L.Mus: 48 credits, Artist Dip: 32 credits).

9.15 Graduation with Distinction
Students in B.Mus. programs whose academic performance is appropriate may be awarded their degrees with Distinction or High Distinction on the basis of their CGPA under the following conditions:

• The top 15% of the graduating class of each Department (Performance and Theory) will graduate with High Distinction.

• The next 10% of the graduating class of each Department (Performance and Theory) will graduate with Distinction.

Departments may recommend to the Faculty that students be awarded Outstanding Achievement in recognition of superior performance on an instrument or in an academic discipline. The designation Dean’s Honour List may be awarded to a graduating student who, on the basis of his/her CGPA, is among the top 10% of the B.Mus. graduating class.

9.6 Programs of Study

9.6.1 Four-Year Program (Prerequisite Courses)

Students who hold a high school graduation diploma (minimum years of schooling: 12) from other provinces, the United States or overseas may apply for admission to any of the Major or Honours programs leading to the Bachelor of Music Degree, and may be admitted to a program of approximately 120 credits, normally requiring four years to complete. These programs will include the following prerequisite courses in addition to the requirements listed in:

• section 9.6.2 “Department of Theory: Composition; Music History; Music Technology; Theory; Faculty Program”

• section 9.6.3 “Department of Performance”

• section 9.6.4 “Designated Major Program”

• or section 9.6.5 “B.Mus./B.Ed. Bachelor of Music and Bachelor of Education Concurrent Program”

All students take: CREDITS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUHL 184 History Survey - Medieval, Renaissance, Baroque</td>
<td>3</td>
</tr>
<tr>
<td>MUHL 185 History Survey - Classical, Romantic, 20th-C.</td>
<td>3</td>
</tr>
<tr>
<td>MUSP 129 Musicianship</td>
<td>2</td>
</tr>
<tr>
<td>MUSP 131 Musicianship</td>
<td>2</td>
</tr>
</tbody>
</table>
MUTH 110 Melody and Counterpoint 3
MUTH 111 Elementary Harmony and Analysis 3
Basic Ensemble Training 4
Arts/Science Elective 6
Credits taken by all students 26

Additional courses for Non-Jazz/Non-Performance Majors:
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
Practical Study 4 7
Total for students other than Jazz or Performance Majors 33

Majors

Additional courses for Performance Majors:
MUPG 100 Life as a Professional Musician 1
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
Practical Study 8 12
Total for Performance Majors 38

Additional courses for Jazz Majors:
MUEN 470 Jazz Combo 2
MUJZ 160 Jazz Materials 1 3
MUJZ 161 Jazz Materials 2 3
MUJZ 170 Jazz Keyboard Proficiency 1 1
MUJZ 171 Jazz Keyboard Proficiency 2 1
MUPG 100 Life as a Professional Musician 1
Practical Study 8 19
Total for Jazz Majors 45

Applicants who can demonstrate through auditions and placement tests that they have mastered the material in any of the above courses will be exempt from them and may proceed to more advanced courses.

Incoming jazz students may substitute, with Performance department approval, large ensemble participation from another college or university for the extra credits required of non-Quebec applicants.

9.6.2 Department of Theory:
Composition; Music History; Music Technology; Theory; Faculty Program

The Department embraces the disciplines of Composition, Music Education, Music History, Music Technology, and Theory at both the undergraduate and graduate levels, and Sound Recording at the graduate level. The philosophy of the Department is to encourage integration of the disciplines as much as possible within the learning process in each program of study: the development of basic musicianship, the absorption of the grammar and syntax of musical discourse, and the study of the world of ideas are understood as interconnected.

Honours programs provide a high degree of specialization and are a foundation for graduate-level study leading to academic careers in each discipline. Majors programs offer the student some focus with the flexibility to pursue other areas of interest. The Faculty Program is intended to offer an option for individual and creative plans of study. All of the Department’s programs give a solid grounding in analytic, synthetic, and writing skills that are useful preparation not only for the musical profession but also for professions as diverse as law, journalism, management, and librarianship.

The Music Education program combines an orientation towards a professional career in primary and secondary schools with sensitivity to broader intellectual frameworks against which teachers should understand their roles. This program is offered concurrently with the B.Ed. Music.

Music Technology encourages interaction between musical creation, technology and research. The pedagogical goal of the Music Technology program is to provide students with an environment for professional-level music training with an intense focus on programming of advanced music technologies. This training prepares students to meet the technological demands of contemporary composition and performance practice, and offers students a wide range of employment possibilities in the music technology and media industries.

The Department also offers a Minor in Music History to performance majors who seek to place their work in a larger context, and a Minor in Music Technology to Music and to B.A. and B.Sc. students.

For each program, all courses listed are REQUIRED Courses unless otherwise indicated.

9.6.2.1 B.Mus. with a Major in Composition

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)".

REQUIRED COURSES (50 Credits)  

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>MUCO 240D1 Tonal Composition</td>
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</tr>
<tr>
<td>MUCO 240D2 Tonal Composition</td>
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</tr>
<tr>
<td>MUCO 245D1 Composition</td>
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<td>MUCO 245D2 Composition</td>
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<td>MUCO 340D1 Composition</td>
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<td>MUCO 340D2 Composition</td>
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<td>MUCO 341 Digital Studio Composition 1</td>
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<td>MUCO 440D1 Composition</td>
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<td>MUCO 541 Advanced Digital Studio Composition 1</td>
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<tr>
<td>MUCO 260 Instruments of the Orchestra</td>
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<tr>
<td>MUCO 261 Elementary Orchestration</td>
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</tr>
<tr>
<td>MUTH 310 Mid and Late 19th-Century Theory and Analysis</td>
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</tr>
<tr>
<td>MUCO 427D1 20th-Century Analysis</td>
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<td>MUCO 427D2 20th-Century Analysis</td>
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MUSICIANSHIP  

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<tr>
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<tbody>
<tr>
<td>MUSP 229 Musicianship 3</td>
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<td>MUSP 231 Musicianship 4</td>
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COMPLEMENTARY COURSES (12 Credits)  

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<tr>
<td>Two of:</td>
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<td>MUCO 542 Advanced Digital Studio Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 301 Modal Counterpoint 1</td>
<td>3</td>
</tr>
<tr>
<td>MUCO 302 Modal Counterpoint 2</td>
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<tr>
<td>MUCO 303 Tonal Counterpoint 1</td>
<td>3</td>
</tr>
<tr>
<td>MUCO 304 Tonal Counterpoint 2</td>
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MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE  

<table>
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<tr>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>(courses with an MUH or MUPP prefix, may include MUH 362 or MUH 393 but not both)</td>
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REQUIRED PERFORMANCE  

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<tr>
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<tr>
<td>MUIN 220 Practical Instruction</td>
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COMPLEMENTARY PERFORMANCE  

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<td>8 credits from:</td>
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<tr>
<td>MUEN 473 Collegium Musicum</td>
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<td>MUEN 490 McGill Winds</td>
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<tr>
<td>MUEN 493 Choral Ensembles</td>
<td>2</td>
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</tbody>
</table>
### 9.6.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (53 Credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MUEN 494</td>
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<tr>
<td>MUEN 497</td>
<td>Orchestral Ensembles</td>
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<tr>
<td><strong>NON-MUSIC ELECTIVES</strong></td>
<td><strong>18</strong></td>
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</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>96</strong></td>
<td></td>
</tr>
</tbody>
</table>

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

### 9.6.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (52 Credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUEN 490</td>
<td>McGill Winds</td>
<td>2</td>
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<tr>
<td>MUEN 493</td>
<td>Choral Ensembles</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 494</td>
<td>Contemporary Music Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 497</td>
<td>Orchestral Ensembles</td>
<td>2</td>
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<tr>
<td><strong>NON-MUSIC ELECTIVES</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>103</strong></td>
<td></td>
</tr>
</tbody>
</table>

Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all COMPOSITION courses.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

**MUEN 490 McGill Winds**

**MUEN 493 Choral Ensembles**

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

### 9.6.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (53 Credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUEN 494</td>
<td>Contemporary Music Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 497</td>
<td>Orchestral Ensembles</td>
<td>2</td>
</tr>
<tr>
<td><strong>NON-MUSIC ELECTIVES</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td><strong>96</strong></td>
<td></td>
</tr>
</tbody>
</table>

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

### 9.6.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (52 Credits)**

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<td><strong>TOTAL CREDITS</strong></td>
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<td></td>
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</tbody>
</table>

Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all COMPOSITION courses.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

**MUEN 490 McGill Winds**

**MUEN 493 Choral Ensembles**

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

### 9.6.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (53 Credits)**

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* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

### 9.6.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (52 Credits)**

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Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all COMPOSITION courses.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

**MUEN 490 McGill Winds**

**MUEN 493 Choral Ensembles**

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

### 9.6.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

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### 9.6.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

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Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all COMPOSITION courses.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

**MUEN 490 McGill Winds**

**MUEN 493 Choral Ensembles**

**MUEN 494 Contemporary Music Ensemble**

**MUEN 497 Orchestral Ensembles**

**NON-MUSIC ELECTIVES** 18

**TOTAL CREDITS** 103

### 9.6.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (53 Credits)**

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### 9.6.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

**REQUIRED COURSES (52 Credits)**

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<td></td>
</tr>
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</table>

Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all COMPOSITION courses.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.
## Special Requirements:

1. Cumulative Grade Point Average: minimum 3.00.

* Some knowledge of calculus is required in COMP 251. Students with no background in calculus, or whose calculus needs refreshing or updating, are advised to take an introductory calculus course first.

** A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

*** Students who wish to complete the prerequisites for the graduate program in Sound Recording must take MUFO 260, MUSR 232, MUSR 300D1/D2, and MUSR 339, and should notify the Sound Recording Area Chair of their intent to do so.

### 9.6.2.4 B.Mus. with a Major in Music History

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)."

#### REQUIRED HISTORY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUHL 570 Research Methods in Music</td>
<td>3</td>
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</tbody>
</table>

#### COMPLEMENTARY HISTORY

7 complementary courses from Groups I and II, with a minimum of two from each group.

<table>
<thead>
<tr>
<th>Group</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>MUHL 220 Women in Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 377 Baroque Opera</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 379 Solo Song 1100-1700</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 380 Medieval Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 381 Renaissance Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 382 Baroque Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 385 Keyboard Literature before 1750</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 591D1 Paleography</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>MUHL 591D2 Paleography</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>MUPP 381 Topics: Performance Practice before 1800</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>MUHL 330 Music and Film</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 342 History of Electroacoustic Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 362 Popular Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 366 The Era of the Fortepiano</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 372 Solo Song outside Germany and Austria</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 383 Classical Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 384 Romantic Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 385 Early Twentieth-Century Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 386 Chamber Music Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 387 Opera from Mozart to Puccini</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 388 Twentieth-Century Opera</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 389 Orchestral Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 390 The German Lied</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 391 Canadian Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 392 Music since 1945</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 393 History of Jazz</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUHL 396 Era of the Modern Piano</td>
<td>3</td>
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<tr>
<td></td>
<td>MUHL 397 Choral Literature after 1750</td>
<td>3</td>
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<tr>
<td></td>
<td>MUHL 398 Wind Ensemble Literature after 1750</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUPP 385 Topics: Performance Practice after 1800</td>
<td>3</td>
</tr>
</tbody>
</table>

#### REQUIRED COURSES (20 credits)

- **THEORY**
  - MUHL 210 Tonal Theory and Analysis | 3 |
  - MUHL 211 Tonal Theory and Analysis | 3 |
  - MUHL 310 Mid and Late 19th-Century Theory and Analysis | 3 |
  - MUHL 311 20th-Century Theory and Analysis | 3 |

- **MUSICIANSHIP**
  - MUSP 229 Musicianship | 3 |
  - MUSP 231 Musicianship | 3 |
  - MUSP 329 Musicianship | 3 |
  - MUSP 331 Musicianship | 3 |

#### REQUIRED PERFORMANCE

- MUHL 220 Practical Instruction | 2 |
- MUHL 221 Practical Instruction | 2 |
- MUHL 222 Concentration Examination | 0 |
- MUHL 320 Practical Instruction | 2 |
- MUHL 321 Practical Instruction | 2 |
- MUHL 322 Concentration Examination | 0 |

#### COMPLEMENTARY PERFORMANCE

8 credits from**:
- MUEN 473 Collegium Musicum | 2 |
- MUEN 490 McGill Winds | 2 |
- MUEN 493 Choral Ensembles | 2 |
- MUEN 494 Contemporary Music Ensemble | 2 |
- MUEN 497 Orchestral Ensembles | 2 |

#### REQUIRED HISTORY

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<tr>
<td>MUHL 591D1 Paleography</td>
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#### COMPLEMENTARY HISTORY

9 complementary courses from Groups I and II, with a minimum of three from each group.

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MUHL 386  Chamber Music Literature 3
MUHL 387  Opera from Mozart to Puccini 3
MUHL 388  Twentieth-Century Opera 3
MUHL 389  Orchestral Literature 3
MUHL 390  The German Lied 3
MUHL 391  Canadian Music 3
MUHL 392  Music since 1945 3
MUHL 393  History of Jazz 3
MUHL 396  Era of the Modern Piano 3
MUHL 397  Choral Literature after 1750 3
MUHL 398  Wind Ensemble Literature after 1750 3
MUPP 385  Topics: Performance Practice after 1800 3

REQUIRED COURSES (14 credits)
THEORY 6
MUTH 210  Tonal Theory and Analysis 1 3
MUTH 211  Tonal Theory and Analysis 2 3
MUSICIANSHIP 8
MUSP 229  Musicianship 3 2
MUSP 231  Musicianship 4 2
MUSP 329  Musicianship 5 2
MUSP 331  Musicianship 6 2

COMPLEMENTARY COURSES (26 or 27 credits)
THEORY 14 or 15
One of the following options:
Option A
MUTH 327D1 19th-Century Analysis 2
MUTH 327D2 19th-Century Analysis 2
MUTH 427D1 20th-Century Analysis 2
MUTH 427D2 20th-Century Analysis 2
Two of:
MUTH 301  Modal Counterpoint 1 3
MUTH 302  Modal Counterpoint 2 3
MUTH 303  Tonal Counterpoint 1 3
MUTH 304  Tonal Counterpoint 2 3

Option B
MUTH 327D1 19th-Century Analysis 2
MUTH 327D2 19th-Century Analysis 2
MUTH 426  Analysis of Early Music 3
MUTH 427D1 20th-Century Analysis 2
MUTH 427D2 20th-Century Analysis 2
One of:
MUTH 301  Modal Counterpoint 1 3
MUTH 302  Modal Counterpoint 2 3
MUTH 303  Tonal Counterpoint 1 3
MUTH 304  Tonal Counterpoint 2 3

Option C
MUTH 310  Mid and Late 19th-Century Theory and Analysis 3
MUTH 311  20th-Century Theory and Analysis 3
MUTH 426  Analysis of Early Music 3
MUTH 301  Modal Counterpoint 1 3
and
MUTH 302  Modal Counterpoint 2 3
or
MUTH 303  Tonal Counterpoint 1 3
and
MUTH 304  Tonal Counterpoint 2 3

NON-MUSIC 12
Must include German (6 cr.), European History (6 cr.) with Departmental approval.

REQUIRED PERFORMANCE 8
MUIN 220  Practical Instruction 3 2
MUIN 221  Practical Instruction 4 2
MUIN 222  Concentration 1 Examination 0
MUIN 320  Practical Instruction 5 2
MUIN 321  Practical Instruction 6 2
MUIN 322  Concentration 2 Examination 0

COMPLEMENTARY PERFORMANCE 8
8 credits from*:
MUEN 473  Collegium Musicum 2
MUEN 490  McGill Winds 2
MUEN 493  Choral Ensembles 2
MUEN 494  Contemporary Music Ensemble 2
MUEN 497  Orchestral Ensembles 2

NON-MUSIC ELECTIVES 6

TOTAL CREDITS 95 or 96
Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all MUSIC HISTORY courses.

* A minimum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

9.6.2.6  B.Mus. with a Major in Theory
For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

REQUIRED COURSES (25 credits)
CREDITS 17
THEORY
MUTH 210  Tonal Theory and Analysis 1 3
MUTH 211  Tonal Theory and Analysis 2 3
MUTH 327D1 19th-Century Analysis 2
MUTH 327D2 19th-Century Analysis 2
MUTH 426  Analysis of Early Music 3
MUTH 427D1 20th-Century Analysis 2
MUTH 427D2 20th-Century Analysis 2
MUTH 426  Analysis of Early Music 3
MUTH 522D1 Advanced Counterpoint 3
MUTH 522D2 Advanced Counterpoint 3
MUTH 523D1 Advanced Harmony 3
MUTH 523D2 Advanced Harmony 3
MUTH 528  Schenkerian Techniques 3
MUTH 529  Proseminar in Music Theory 1 3
MUTH 538  Mathematical Models/Musical Analysis 3
MUCO 230D1 The Art of Composition 2
MUCO 230D2 The Art of Composition 2

MUSICIANSHIP 8
MUSP 229  Musicianship 3 2
MUSP 231  Musicianship 4 2
MUSP 329  Musicianship 5 2
MUSP 331  Musicianship 6 2

COMPLEMENTARY COURSES (21 credits)
THEORY 15
Two of:
MUTH 301  Modal Counterpoint 1 3
MUTH 302  Modal Counterpoint 2 3
MUTH 303  Tonal Counterpoint 1 3
MUTH 304  Tonal Counterpoint 2 3
A minimum of 9 complementary credits from the following* (may include 6 credits of counterpart courses not taken in the category above).

MUTH 426  Analysis of Early Music 3
MUTH 522D1 Advanced Counterpoint 3
MUTH 522D2 Advanced Counterpoint 3
MUTH 523D1 Advanced Harmony 3
MUTH 523D2 Advanced Harmony 3
MUTH 528  Schenkerian Techniques 3
MUTH 529  Proseminar in Music Theory 1 3
MUTH 538  Mathematical Models/Musical Analysis 3
MUCO 230D1 The Art of Composition 2
MUCO 230D2 The Art of Composition 2

McGill University, Undergraduate Programs 2006-2007
MUSIC HISTORY, LITERATURE OR PERFORMANCE 6
PRACTICE (courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both)

REQUIRED PERFORMANCE 8
MUIN 220 Practical Instruction 3 2
MUIN 221 Practical Instruction 4 2
MUIN 222 Concentration 1 Examination 0
MUIN 320 Practical Instruction 5 2
MUIN 321 Practical Instruction 6 2
MUIN 322 Concentration 2 Examination 0

COMPLEMENTARY PERFORMANCE 8
8 credits from**:
MUEN 473 Collegium Musicum 2
MUEN 490 McGill Winds 2
MUEN 493 Choral Ensembles 2
MUEN 494 Contemporary Music Ensemble 2
MUEN 497 Orchestral Ensembles 2

NON-MUSIC ELECTIVES 18
FREE ELECTIVES 12
TOTAL CREDITS 92

* Credits exceeding 9 may be counted toward the Free Elective requirements.
** A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

9.6.2.7 B.Mus. with Honours in Theory
For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

REQUIRED COURSES (34 credits) CREDITS
THEORY 26
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 327D1 19th-Century Analysis 2
MUTH 327D2 19th-Century Analysis 2
MUTH 427D1 20th-Century Analysis 2
MUTH 427D2 20th-Century Analysis 2
MUTH 528 Schenkerian Techniques 3
MUTH 529 Proseminar in Music Theory 1 3
MUTH 538 Mathematical Models/Musical Analysis 3
MUHL 570 Research Methods in Music 3

MUSCIANSHIP 8
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

COMPLEMENTARY COURSES (18 credits)
THEORY 12
3 credits from:
PHYS 224 Physics and Psychophysics of Music 3
MUTH 426 Analysis of Early Music 3
MUST 205 Psychology of Music 3
9 credits from:
MUTH 301 Modal Counterpoint 1 3
MUTH 302 Modal Counterpoint 2 3
MUTH 303 Tonal Counterpoint 1 3
MUTH 304 Tonal Counterpoint 2 3

MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE 6
3 credits of a MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both
and 3 credits from:
MUHL 380 Medieval Music 3
MUHL 381 Renaissance Music 3
MUHL 382 Baroque Music 3
MUHL 383 Classical Music 3
MUHL 384 Romantic Music 3
MUHL 385 Early Twentieth-Century Music 3
MUHL 392 Music since 1945 3

REQUIRED PERFORMANCE 8
MUIN 220 Practical Instruction 3 2
MUIN 221 Practical Instruction 4 2
MUIN 222 Concentration 1 Examination 0
MUIN 320 Practical Instruction 5 2
MUIN 321 Practical Instruction 6 2
MUIN 322 Concentration 2 Examination 0

COMPLEMENTARY PERFORMANCE 8
8 credits from**:
MUEN 473 Collegium Musicum 2
MUEN 490 McGill Winds 2
MUEN 493 Choral Ensembles 2
MUEN 494 Contemporary Music Ensemble 2
MUEN 497 Orchestral Ensembles 2

MUSIC ELECTIVES 12
NON-MUSIC ELECTIVES 18
TOTAL CREDITS 98

Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. Minimum grade of B in all MUSIC THEORY courses.
3. A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

BACHELOR OF MUSIC DEGREE (B.Mus.)
For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

REQUIRED COURSES (20 credits) CREDITS
THEORY 12
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3

MUSCIANSHIP 8
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE 6
(courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both)

REQUIRED PERFORMANCE 8
MUIN 220 Practical Instruction 3 2
MUIN 221 Practical Instruction 4 2
MUIN 222 Concentration 1 Examination 0
MUIN 320 Practical Instruction 5 2
MUIN 321 Practical Instruction 6 2
MUIN 322 Concentration 2 Examination 0


9.6.2.9 Special Prerequisite Courses for M.Mus. in Sound Recording

Students wishing to follow this package of prerequisite courses while registered in the Faculty Program or in any other B.Mus. program must notify the Sound Recording Area Chair of their intent to do so.

### CREDITS

**Schulich School of Music**
- MUHO 260 Instruments of the Orchestra 2
- MUMT 202 Fundamentals of New Media 3
- MUSR 232 Introduction to Electronics 3
- MUSR 300D1 Introduction to Music Recording 3
- MUSR 300D2 Introduction to Music Recording 3
- MUMT 301 Music and the Internet 3
- MUSR 339 Introduction to Electroacoustics 3
- One of (complementary): 3
- MUMT 302 New Media Production 1 3
- MUMT 306 Music and Audio Computing 1 3

**Faculty of Science**
- PHYS 224 Physics and Psychophysics of Music 3
- PHYS 225 Musical Acoustics 3

**TOTAL CREDITS** 32

*Note:* In order to be considered for admission to the Master of Music in Sound Recording, students must attain a minimum grade of B in all of the above courses and must have a B.Mus. degree with a minimum CGPA of 3.00.

### 9.6.2.10 Minor in Music History for Performers

Available to all students in Performance (Major or Honours) programs. This option will take the place of music electives, as well as history, literature and performance practice complementary courses, in Performance programs.

**CREDITS** 18

**HISTORY**
- MUHO 570 Research Methods in Music 3
- plus 5 Music History complementary courses chosen freely from Groups I and II.

**Group I**
- MUHO 220 Women in Music 3
- MUHO 377 Baroque Opera 3
- MUHO 379 Solo Song 1100-1700 3
- MUHO 380 Medieval Music 3
- MUHO 381 Renaissance Music 3
- MUHO 382 Baroque Music 3
- MUHO 395 Keyboard Literature before 1750 3
- MUHO 591D1 Paleography 1.5
- MUHO 591D2 Paleography 1.5
- MUPP 381 Topics: Performance Practice before 1800 3

### 9.6.2.11 Minor in Music Technology

Available to Music students who wish to graduate with a knowledge of newer technologies and the impact they are having on the field of music.

Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Academic Affairs Office of the Schulich School of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2006, and must be completed and returned to that office by May 15, 2006. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2006.

**CREDITS**

- PHYS 224 Physics and Psychophysics of Music 3
- PHYS 225 Musical Acoustics 3
- MUHO 342 History of Electroacoustic Music 3
- MUMT 202 Fundamentals of New Media 3
- MUMT 203 Introduction to Digital Audio 3
- MUMT 301 Music and the Internet 3
- MUMT 302 New Media Production 1 3
- MUMT 303 New Media Production 2 3

**TOTAL CREDITS** 24

### 9.6.3 Department of Performance

The Department offers undergraduate and graduate degree programs leading to the B.Mus. and M.Mus., and diploma programs leading to the L.Mus. and Artist Diploma in all areas of musical performance. Programs include regular practical instruction available on all instruments and a highly developed ensemble program. The programs offer a number of major options including Orchestral Training, Solo, Jazz, Early Music, and Church Music. The Orchestral Training program is the largest performance program – many of its graduates are now members of professional orchestras throughout North America and Europe. McGill ensembles perform many concerts each year, including a number in centres across North America. (Within the past several years, McGill ensembles have performed at Carnegie Hall, Le Grand Théâtre (Quebec), the National Arts Centre, the International Buxtehude-Scheidt Festival, Lincoln Center, Roy Thomson Hall, Salie Wilfrid Pelletier, the International Association of Jazz Educators Convention in New Orleans, in Washington and Boston, Paris, London and Cork [Ireland], and at the Holetown Festival in Barbados.) In addition, they have recorded for McGill Records. These recordings have received considerable critical acclaim and a number of awards.

---

*McGill University, Undergraduate Programs 2006-2007*
including a Noah Greenberg Award, three Grand Prix du Disques, and a Juno Award.

Performance Specialization is available in: Violin, Viola, Cello, Double Bass, Viola da Gamba, Guitar, Harp, Recorder, Flute, Oboe, Clarinet, Saxophone, Bassoon, French Horn, Trumpet, Trombone, Tuba, Percussion, Piano, Organ, Harpsichord, Voice, Baroque Instruments (Violin, Viola, Cello, Flute, Oboe, Bassoon). Performance Programs are also available in Church Music, Early Music, and Jazz.

For each program, all courses listed are REQUIRED Courses unless otherwise indicated.

Note: The course MUPG 100 Life as a Professional Musician is a requirement for all Performance students to be completed within the first year of study.

9.6.3.1 B.Mus. with a Major in Performance (Piano)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

**REQUIRED PERFORMANCE**

<table>
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**COMPLEMENTARY PERFORMANCE (14 credits)**

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**REQUIRED COURSES (20 credits)**

**THEORY**

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<td>MUTH 310</td>
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<td>MUTH 311</td>
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**MUSICIANSHIP**

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**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**

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<thead>
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**MUSIC ELECTIVES**

10 credits from:

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<td>MUEN 491</td>
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<td>MUEN 499</td>
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**NON-MUSIC ELECTIVES**

18 credits from:

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</tr>
<tr>
<td>MUPG 272D2</td>
<td>2</td>
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</table>

**TOTAL CREDITS**

96 credits

Special Requirements:

1. Continuation in the program requires a minimum grade of B- in practical instruction/exams and ensembles.

9.6.3.2 B.Mus. with a Major in Performance (Organ, Harpsichord, Guitar, Baroque Instruments)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

**REQUIRED PERFORMANCE**

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<td>MUIN 333</td>
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**COMPLEMENTARY PERFORMANCE (18 credits)**

Large Ensemble - during every term of enrollment as a full-time or part-time student

12 credits from:

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<td>MUEN 493</td>
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Assigned small ensemble - during every term of enrollment as a full-time or part-time student

6 credits from:

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<th>Credits</th>
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<tbody>
<tr>
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<td>MUEN 485</td>
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<td>MUEN 489</td>
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<td>MUEN 491</td>
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<td>MUEN 499</td>
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**REQUIRED COURSES (20 credits)**

**THEORY**

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<td>MUTH 210</td>
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<td>MUTH 211</td>
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<td>MUTH 310</td>
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**MUSICIANSHIP**

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**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**

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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUPG 272D1</td>
<td>2</td>
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<td>MUPG 272D2</td>
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<tr>
<td>MUPG 372D1</td>
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<td>MUPG 372D2</td>
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**MUSIC ELECTIVES**

10 credits from:

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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUPG 272D1</td>
<td>2</td>
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<tr>
<td>MUPG 272D2</td>
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**NON-MUSIC ELECTIVES**

18 credits from:

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<tbody>
<tr>
<td>MUPG 272D1</td>
<td>2</td>
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<tr>
<td>MUPG 272D2</td>
<td>2</td>
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</tbody>
</table>

**TOTAL CREDITS**

96 credits

Special Requirements:

1. Continuation in the program requires a minimum grade of B- in practical instruction/exams and ensembles.

9.6.3.3 B.Mus. with a Major in Keyboard Studies (Piano, with senior-level studies in a Second Keyboard Instrument)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.
MUSIC – PERFORMANCE

PERFORMANCE

- MUEN 493 Choral Ensembles (during each of the first four terms) 8
- MUIN 230 Performance Practical Instruction 3 4
- MUIN 231 Performance Practical Instruction 4 4
- MUIN 330 Performance Practical Instruction 5 4
- MUIN 331 Performance Practical Instruction 6 4
- MUIN 433 Piano Techniques 3 0
- MUPG 541 Senior Piano Seminar 1 2
- MUPG 542 Senior Piano Seminar 2 2
- Keyboard, Second Study (Organ, Harpsichord, Jazz Piano, Keyboard Technology) 8

COMPLEMENTARY PERFORMANCE

6 credits of ensembles, with Departmental Approval.

THEORY

- MUTH 210 Tonal Theory and Analysis 1 3
- MUTH 211 Tonal Theory and Analysis 2 3
- MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
- MUTH 311 20th-Century Theory and Analysis 3

MUSICIANSHIP

- MUSP 229 Musicianship 3 2
- MUSP 231 Musicianship 4 2
- MUSP 329 Musicianship 5 2
- MUSP 331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE

(courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both)

MUSIC ELECTIVES

10 - 12
Jazz Second Study students must include as part of their elective requirements MUJZ 160/MUJZ 161 Jazz Materials 1, 2, and MUJZ 223/MUJZ 224 Jazz Improvisation I, 2. Organ/Harpsichord Majors (First Study) are required to include MUPG 272D1 and MUPG 272D2 Continuo.

NON-MUSIC ELECTIVES

18

TOTAL CREDITS

96 - 98

9.6.3.4  B.Mus. with a Major in Keyboard Studies (Organ, Harpsichord, with senior-level studies in a Second Keyboard Instrument, Jazz Piano)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS

REQUIRED PERFORMANCE

MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 330 Performance Practical Instruction 5 4
MUIN 331 Performance Practical Instruction 6 4
MUIN 332 Performance 2 Examination 0
MUIN 430 Performance Practical Instruction 7 4
MUIN 431 Performance Practical Instruction 8 4
MUIN 432 Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE

12
Large Ensemble: during every term of enrolment as a full-time or part-time students.
12 credits from:
- MUEN 472 Cappella Antica 2
- MUEN 479 Song Interpretation 1
- MUEN 480 Early Music Ensemble 1
- MUEN 487 Cappella McGill 1
- MUEN 493 Choral Ensembles 2
- MUEN 496 Opera Studio 4

REQUIRED COURSES (28 credits)

DICTION

- MUPG 210 Italian Diction 2
- MUPG 211 French Diction 2
- MUPG 212 English Diction 2
- MUPG 213 German Diction 2

THEORY

- MUTH 210 Tonal Theory and Analysis 1 3
- MUTH 211 Tonal Theory and Analysis 2 3
- MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
- MUTH 311 20th-Century Theory and Analysis 3

MUSICIANSHIP

- MUSP 229 Musicianship 3 2
- MUSP 231 Musicianship 4 2
- MUSP 329 Musicianship 5 2
- MUSP 331 Musicianship 6 2

COMPLEMENTARY HISTORY/LITERATURE

6
Two of:
- MUHL 372 Solo Song outside Germany and Austria 3
- MUHL 377 Baroque Opera 3
- MUHL 387 Opera from Mozart to Puccini 3
- MUHL 388 Twentieth-Century Opera 3
- MUHL 390 The German Lied 3

MUSIC ELECTIVES

8

NON-MUSIC ELECTIVES

18

TOTAL CREDITS

96
Special Requirements:
1. Continuation in the program requires a minimum grade of B- in practical instruction/exams, ensembles, and voice coaching.

2. Prior to, or concurrent with registration in the corresponding Diction courses, the Voice Major must furnish evidence of having completed ESLN 400 or ESLN 401, ITAL 205D1/ITAL 205D2, GERM 202, and FRSL 207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the non-music elective requirements above, or by extra University courses.

9.6.3.6 B.Mus. with a Major in Performance (Orchestral Instruments)

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

CREDITS

REQUIRED PERFORMANCE 24

MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 330 Performance Practical Instruction 5 4
MUIN 331 Performance Practical Instruction 6 4
MUIN 332 Performance 2 Examination 0
MUIN 430 Performance Practical Instruction 7 4
MUIN 431 Performance Practical Instruction 8 4
MUIN 432 Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE (18 credits)

Large Ensemble - during every term of enrolment as a full-time or part-time students.
12 credits from:
MUEN 473 Collegium Musicum 2
MUEN 490 McGill Winds 2
MUEN 493 Choral Ensembles 2
MUEN 494 Contemporary Music Ensemble 2
MUEN 497 Orchestral Ensembles 2

Assigned small ensemble - during every term of enrolment as a full-time or part-time student
6 credits from:
MUEN 480 Early Music Ensemble 1
MUEN 485 Mixed Ensembles 1
MUEN 489 Woodwind Ensembles 1
MUEN 491 Brass Ensembles 1
MUEN 498 Percussion Ensembles 1
MUEN 499 String Ensembles 1

REQUIRED COURSES (20 Credits)

THEORY 12

MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3

MUSCIANSHIP 8

MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE

6

OR PERFORMANCE PRACTICE

(courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both)

MUSIC ELECTIVES 10

NON-MUSIC ELECTIVES 18

TOTAL CREDITS 96

Ensemble Requirements:
1. Students majoring in violin, viola, or cello must commence their assigned ensembles with four terms of string quartets.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

Special Requirements:
1. Continuation in the program requires a minimum grade of B- in practical instruction/exams and ensembles.

9.6.3.7 B.Mus. with Honours in Performance (Voice)

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)".

CREDITS

REQUIRED PERFORMANCE 30

MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 300 Vocal Repertoire Coaching 1 2
MUIN 301 Vocal Repertoire Coaching 2 2
MUIN 305 Vocal Musical Practices 2
MUIN 340 Honours Practical Instruction 5 4
MUIN 341 Honours Practical Instruction 6 4
MUIN 342 Honours Performance 2 Examination 0
MUIN 440 Honours Practical Instruction 7 4
MUIN 441 Honours Practical Instruction 8 4
MUIN 442 Honours Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE 12

Large Ensemble - during every term of enrolment as a full-time or part-time students
12 credits from:
MUEN 472 Cappella Antica 2
MUEN 479 Song Interpretation 1
MUEN 480 Early Music Ensemble 1
MUEN 487 Cappella McGill 1
MUEN 493 Choral Ensembles 2
MUEN 494 Contemporary Music Ensemble 2
MUEN 496 Opera Studio 4

REQUIRED COURSES (30 Credits)

DICTION 8

MUPG 210 Italian Diction 2
MUPG 211 French Diction 2
MUPG 212 English Diction 2
MUPG 213 German Diction 2

THEORY 14

MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 327D1 19th-Century Analysis 2
MUTH 327D2 19th-Century Analysis 2
MUTH 427D1 20th-Century Analysis 2
MUTH 427D2 20th-Century Analysis 2

MUSICIANSHIP 8

MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE 9

Three of:
MUHL 372 Solo Song outside Germany and Austria 3
MUHL 377 Baroque Opera 3
MUHL 387 Opera from Mozart to Puccini 3
MUHL 388 Twentieth-Century Opera 3
MUHL 390 The German Lied 3

NON-MUSIC ELECTIVES* 18

TOTAL CREDITS 99

Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.

3. *Prior to, or concurrent with registration in the corresponding Diction courses, the Honours Voice student must furnish evidence of having completed ESLN 400 or ESLN 401, ITAL 205D1/ITAL 205D2, GERM 202, and FRSL 207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the non-music elective requirements above, or by extra University courses.

9.6.3.8 B.Mus. with Honours in Performance (Piano)
For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

### CREDITS

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUIN 230</td>
<td>Performance Practical Instruction 3</td>
<td>4</td>
</tr>
<tr>
<td>MUIN 231</td>
<td>Performance Practical Instruction 4</td>
<td>4</td>
</tr>
<tr>
<td>MUIN 333</td>
<td>Piano Techniques 2</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 340</td>
<td>Honours Practical Instruction 5</td>
<td>4</td>
</tr>
<tr>
<td>MUIN 342</td>
<td>Honours Performance 2 Examination</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 369</td>
<td>Piano Concerto</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 433</td>
<td>Piano Techniques 3</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 440</td>
<td>Honours Practical Instruction 7</td>
<td>4</td>
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<td>MUIN 441</td>
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<td>MUIN 442</td>
<td>Honours Performance 3 Examination</td>
<td>0</td>
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<tr>
<td>MUPG 541</td>
<td>Senior Piano Seminar 1</td>
<td>2</td>
</tr>
<tr>
<td>MUPG 542</td>
<td>Senior Piano Seminar 2</td>
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**COMPLEMENTARY PERFORMANCE**

<table>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUEN 493</td>
<td>Choral Ensembles (2 cr.) x 4 semesters (during each of the first four terms)</td>
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<tr>
<td>MUEN 494</td>
<td>Contemporary Music Ensemble</td>
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6 credits from:

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<tr>
<td>MUEN 481</td>
<td>Piano Ensemble</td>
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<tr>
<td>MUEN 483</td>
<td>Piano Accompanying</td>
<td>1</td>
</tr>
<tr>
<td>MUEN 484</td>
<td>Studio Accompanying</td>
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</tr>
<tr>
<td>MUEN 485</td>
<td>Mixed Ensembles</td>
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**REQUIRED COURSES (28 CREDITS)**

**THEORY**

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<thead>
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<th>Title</th>
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<tbody>
<tr>
<td>MUTH 210</td>
<td>Tonal Theory and Analysis 1</td>
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<tr>
<td>MUTH 211</td>
<td>Tonal Theory and Analysis 2</td>
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<tr>
<td>MUTH 327D1</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH 327D2</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH 427D1</td>
<td>20th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH 427D2</td>
<td>20th-Century Analysis</td>
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**MUSICIANSHIP**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUSP 229</td>
<td>Musicianship 3</td>
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<td>MUSP 231</td>
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<tr>
<td>MUSP 329</td>
<td>Musicianship 5</td>
<td>2</td>
</tr>
<tr>
<td>MUSP 331</td>
<td>Musicianship 6</td>
<td>2</td>
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**MUSIC HISTORY AND LITERATURE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUHL 366</td>
<td>The Era of the Fortepiano</td>
<td>3</td>
</tr>
<tr>
<td>MUHL 396</td>
<td>Era of the Modern Piano</td>
<td>3</td>
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**PERFORMANCE PRACTICE ELECTIVE**

<table>
<thead>
<tr>
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<th>Credits</th>
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<tr>
<td></td>
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**MUSIC ELECTIVES**

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<tr>
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**NON-MUSIC ELECTIVES**

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<th>Title</th>
<th>Credits</th>
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<td></td>
<td>18</td>
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**TOTAL CREDITS**

<table>
<thead>
<tr>
<th>Total</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
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Special Requirements:

1. Cumulative Grade Point Average of 3.00 or better.
2. Continuation in the program requires a minimum grade of A- in practical instruction/exams and ensembles.

9.6.3.9 B.Mus. with Honours in Performance (All Instruments except Piano and Voice)
For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

### CREDITS

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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<td>Performance Practical Instruction 3</td>
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<tr>
<td>MUIN 231</td>
<td>Performance Practical Instruction 4</td>
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</tr>
<tr>
<td>MUIN 340</td>
<td>Honours Practical Instruction 5</td>
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<tr>
<td>MUIN 341</td>
<td>Honours Practical Instruction 6</td>
<td>4</td>
</tr>
<tr>
<td>MUIN 342</td>
<td>Honours Performance 2 Examination</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 440</td>
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<tr>
<td>MUIN 442</td>
<td>Honours Performance 3 Examination</td>
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<tr>
<td>MUPG 541</td>
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<tr>
<td>MUPG 542</td>
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**COMPLEMENTARY PERFORMANCE**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MUEN 494</td>
<td>Contemporary Music Ensemble*</td>
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Large Ensemble - during every term of enrolment as a full-time or part-time student.

12 credits from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUEN 473</td>
<td>Collegium Musicum</td>
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<tr>
<td>MUEN 490</td>
<td>McGill Winds</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 493</td>
<td>Choral Ensembles</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 494</td>
<td>Contemporary Music Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>MUEN 497</td>
<td>Orchestral Ensembles</td>
<td>2</td>
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</table>

Assigned small ensemble - during every term of enrolment as a full-time or part-time student

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MUEN 480</td>
<td>Early Music Ensemble</td>
<td>1</td>
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<tr>
<td>MUEN 485</td>
<td>Mixed Ensembles</td>
<td>1</td>
</tr>
<tr>
<td>MUEN 489</td>
<td>Woodwind Ensembles</td>
<td>1</td>
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<tr>
<td>MUEN 491</td>
<td>Brass Ensembles</td>
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<tr>
<td>MUEN 498</td>
<td>Percussion Ensembles</td>
<td>1</td>
</tr>
<tr>
<td>MUEN 499</td>
<td>String Ensembles</td>
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**REQUIRED COURSES (22 Credits)**

**THEORY**

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<tr>
<td>MUTH 210</td>
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<tr>
<td>MUTH 211</td>
<td>Tonal Theory and Analysis 2</td>
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<tr>
<td>MUTH 327D1</td>
<td>19th-Century Analysis</td>
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<tr>
<td>MUTH 327D2</td>
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<td>MUTH 427D1</td>
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<td>2</td>
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<tr>
<td>MUTH 427D2</td>
<td>20th-Century Analysis</td>
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**MUSICIANSHIP**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUSP 229</td>
<td>Musicianship 3</td>
<td>2</td>
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<tr>
<td>MUSP 231</td>
<td>Musicianship 4</td>
<td>2</td>
</tr>
<tr>
<td>MUSP 329</td>
<td>Musicianship 5</td>
<td>2</td>
</tr>
<tr>
<td>MUSP 331</td>
<td>Musicianship 6</td>
<td>2</td>
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**MUSIC HISTORY OR LITERATURE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUHL 395</td>
<td>Keyboard Literature before 1750</td>
<td>3</td>
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<tr>
<td>MUHL 389</td>
<td>Orchestral Literature</td>
<td>3</td>
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**PERFORMANCE PRACTICE ELECTIVE**

<table>
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<tr>
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**MUSIC ELECTIVES**

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Harpsichord and Organ majors must include the following:

**HARPSICHORD**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>MUPG 272D1</td>
<td>Continuo</td>
<td>2</td>
</tr>
<tr>
<td>MUPG 272D2</td>
<td>Continuo</td>
<td>2</td>
</tr>
<tr>
<td>MUPG 372D1</td>
<td>Continuo</td>
<td>1</td>
</tr>
<tr>
<td>MUPG 372D2</td>
<td>Continuo</td>
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**ORGAN**

<table>
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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MUPG 272D1</td>
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<td>2</td>
</tr>
<tr>
<td>MUPG 272D2</td>
<td>Continuo</td>
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**PERFORMANCE PRACTICE ELECTIVE**

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**NON-MUSIC ELECTIVES**

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<tr>
<td></td>
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</table>
Ensemble Requirements:
1. Students majoring in violin, viola, or cello must commence their assigned ensembles with four terms of string quartets.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Continuation in the program requires a minimum grade of A- in practical instruction/exams and ensembles.

* Students majoring in Harpsichord and Baroque Instruments will take MUPP 381 (Topics: Performance Practice before 1800) instead of Contemporary Music Ensemble.

9.6.3.10  B.Mus. with a Major in Performance (Church Music)

CREDITS

PERFORMANCE
Practical: Organ Major (4 credits each term) 24
Performance 3 Examination 12
Basic Ensemble Training: Choral Ensemble during each of the first six terms 12
MUPG 272D1 Continuo 2
MUPG 272D2 Continuo 2
THEORY
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3
MUSICIANSHIP
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2
HISTORY
MUHL 399 Church Music 3
MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE COMPLEMENTARY (courses with a MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both) 3
MUSIC EDUCATION
MUCT 235 Vocal Techniques 3
MUCT 315 Choral Conducting 1 3
MUCT 415 Choral Conducting 2 3
MUSIC ELECTIVES (with Departmental Approval) 6
ARTS AND SCIENCE ELECTIVES 18

TOTAL CREDITS 99

Special Requirements:
1. Continuation in the program requires a minimum grade of B- in practical instruction/exams and ensembles.

Students majoring in Church Music are not required to perform their examinations from memory.

9.6.3.11  B.Mus. with a Major in Early Music Performance (Baroque Violin, Viola, Cello, Viola da Gamba, Flute, Recorder, Oboe, Voice, Organ, Harpsichord and Early Brass Instruments)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS

REQUIRED PERFORMANCE
MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 330 Performance Practical Instruction 5 4
MUIN 331 Performance Practical Instruction 6 4
MUIN 332 Performance 2 Examination 0
MUIN 430 Performance Practical Instruction 7 4
MUIN 431 Performance Practical Instruction 8 4
MUIN 432 Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE (18 credits)
Large Ensemble - during every term of enrolment as a full-time or part-time students. 12 credits from:

MUEN 472 Cappella Antica 2
MUEN 473 Collegium Musicum 2
MUEN 493 Choral Ensembles 2

Voice Majors: Students must complete two terms of Choral Ensemble and may choose Cappella Antica or Collegium Musicum to make up the total of 12 credits.

Instrumentalists: students must register in Collegium Musicum.
Keyboard players: students must normally register in Choral Ensemble but with the permission of the Area Chair may play continuo in Collegium Musicum to satisfy their Basic Ensemble requirement.

Assigned small ensemble - during every term of enrolment as a full-time or part-time student 6 credits of:

MUEN 472 Cappella Antica 2
MUEN 473 Collegium Musicum 2
MUEN 493 Choral Ensembles 2

With the permission of the instructor and the Area Chair, students may participate in a second Basic Ensemble to fulfill the Early Music Ensemble requirement. Any extra credits earned may be applied as music electives.

REQUIRED COURSES (20 Credits)

THEORY
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3

MUSICIANSHIP
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

HISTORY
MUHL 399 Church Music 3

MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE COMPLEMENTARY (with at least one course from each group. any extra credits earned may be applied as music electives.

MUHL 380 Medieval Music 3
MUHL 381 Renaissance Music 3
MUHL 382 Baroque Music 3
MUHL 383 Classical Music 3

MUHL 395 Keyboard Literature before 1750 3
MUHL 570 Research Methods in Music 3

MUHL 380 Medieval Music 3
MUHL 381 Renaissance Music 3
MUHL 382 Baroque Music 3
MUHL 383 Classical Music 3

MUHL 395 Keyboard Literature before 1750 3
MUHL 570 Research Methods in Music 3
MUHL 591D1 Paleography 1.5
and MUHL 591D2 Paleography 1.5

MUSIC ELECTIVES 6 or 8
(except for Harpsichord, Organ or Voice students)
Harpsichord/Organ majors must include the following:
MUPG 272D1 Continuo 2
MUPG 272D2 Continuo 2
MUPG 372D1 Continuo 1
MUPG 372D2 Continuo 1

Voice majors must include the following:
MUPG 210 Italian Diction 2
MUPG 211 French Diction 2
MUPG 212 English Diction 2
MUPG 213 German Diction 2

NON-MUSIC ELECTIVES* 18

TOTAL CREDITS 95 or 97

Special Requirements:
1. Continuation in the program requires a minimum grade of B- in practical instruction/exams and ensembles.
2. Prior to, or concurrent with registration in the corresponding Diction courses, the Voice Major must furnish evidence of having completed ESLN 400 or ESLN 401, ITAL 205D1/ITAL 205D2, GERM 202, and FRSL 207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the non-music elective requirements above, or by extra University courses.

9.6.3.12 B.Mus. with Honours in Early Music Performance (Baroque Violin, Viola, Cello, Viola da Gamba, Flute, Recorder, Oboe, Voice, Organ, Harpsichord and Early Brass Instruments)

For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS 24

REQUIRED PERFORMANCE
MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 340 Honours Practical Instruction 5 4
MUIN 341 Honours Practical Instruction 6 4
MUIN 342 Honours Performance 2 Examination 0
MUIN 440 Honours Practical Instruction 7 4
MUIN 441 Honours Practical Instruction 8 4
MUIN 442 Honours Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE (18 credits)
Large Ensemble - during every term of enrolment as a full-time or part-time student. 12 credits from:
MUEN 472 Cappella Antica 2
MUEN 473 Collegium Musicum 2
MUEN 493 Choral Ensembles 2

Voice Majors: Students must complete two terms of Choral Ensemble and may choose Cappella Antica or Collegium Musicum to make up the total of 12 credits. Instrumentalists: students must register in Collegium Musicum.
Keyboard players: students must normally register in Choral Ensemble but with the permission of the Area Chair may play Continuo in Collegium Musicum to satisfy their Basic Ensemble requirement.
Assigned small ensemble - during every term of enrolment as a full-time or part-time student 6 credits of
MUEN 480 Early Music Ensemble (1cr. x 6 semesters) 1

Early Music Ensemble
With the permission of the instructor and the Area Chair, students may participate in a second Basic Ensemble to fulfill the Early Music Ensemble requirement. Any extra credits earned may be applied as music electives.

REQUIRED COURSES (23 Courses)

THEORY 15
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3
MUTH 426 Analysis of Early Music 3

MUSICIANSHIP 8
MUSP 229 Musicianhip 3 2
MUSP 231 Musicianhip 4 2
MUSP 329 Musicianhip 5 2
MUSP 331 Musicianhip 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE 12
MUHL 570 Research Methods in Music 3
MUPP 381 Topics: Performance Practice before 1800 3
plus 6 complementary credits from the following with at least one course from each group.
(a)MUHL 380 Medieval Music 3
MUHL 381 Renaissance Music 3
MUHL 382 Baroque Music 3
MUHL 383 Classical Music 3
(b)MUHL 377 Baroque Opera 3
MUHL 379 Solo Song 1100-1700 3
MUHL 395 Keyboard Literature before 1750 3
MUHL 591D1 Paleography 1.5
and MUHL 591D2 Paleography 1.5

MUSIC ELECTIVES 6 or 8
(except for Harpsichord, Organ or Voice students)
Harpsichord/Organ students must include the following
MUPG 272D1 Continuo 2
MUPG 272D2 Continuo 2
MUPG 372D1 Continuo 1
MUPG 372D2 Continuo 1

Voice students must include the following:
MUPG 210 Italian Diction 2
MUPG 211 French Diction 2
MUPG 212 English Diction 2
MUPG 213 German Diction 2

NON-MUSIC ELECTIVES* 18

TOTAL CREDITS 101 or 103

Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.
3. Minimum grade of B in MUHL 570 and in all History, Literature or Performance Practice courses.
4. Prior to, or concurrent with registration in the corresponding Diction courses, the Voice Major must furnish evidence of having completed ESLN 400 or ESLN 401, ITAL 205D1/ITAL 205D2, GERM 202, and FRSL 207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the non-music elective requirements above, or by extra University courses.
9.6.3.13  B.Mus. with a Major in Jazz Performance
(Saxophone, Trumpet, Trombone, Drums, Piano, Guitar, Bass, Voice)

For prerequisite requirements for this program, see section 9.6.1
"Four-Year Program (Prerequisite Courses)".

Special Requirements:
1. Students majoring in Jazz Performance must achieve a mini-
mum grade of B- in all Jazz courses and Practical Instruc-
tion/Exams, including Jazz Combo and Ensembles, excluding
MUJZ 1xx courses.
2. Prior to graduation, all woodwind Jazz Performance Majors
(saxophone, clarinet, flute) will be required to pass a non-credit
Doubling Proficiency test (two of: MUIN 180, MUIN 181, and/or
MUIN 182) on their two non-major instruments.
Note: MUJT 356 may be substituted by graduate pedagogy course
(MUJZ 601).

9.6.3.14  Licentiate in Music (L.Mus.) (Piano)

Special Requirements:
1. Continuation in the program requires a minimum grade of A-
in practical instruction/exams and ensembles.
2. Candidates must take the L.Mus. Performance 1 Examination
at the end of their first year of study and the L.Mus. Perform-
ance 2 and 3 Examinations in each of the next two years if they
hope to complete the program in the normal length of time.

CREDITS
REQUIRED PERFORMANCE 24
MUIN 230 Performance Practical Instruction 3 4
MUIN 231 Performance Practical Instruction 4 4
MUIN 232 Performance 1 Examination 0
MUIN 330 Performance Practical Instruction 5 4
MUIN 331 Performance Practical Instruction 6 4
MUIN 332 Performance 2 Examination 0
MUIN 430 Performance Practical Instruction 7 4
MUIN 431 Performance Practical Instruction 8 4
MUIN 432 Performance 3 Examination 0

COMPLEMENTARY PERFORMANCE (16 credits)
Large ensemble - four credits from:
MUEN 463 Jazz Vocal Workshop 2
MUEN 490 McGill Winds 2
MUEN 492 Chamber Jazz Ensemble 2
MUEN 493 Choral Ensembles 2
MUEN 494 Contemporary Music Ensemble 2
MUEN 497 Orchestral Ensembles 2
MUEN 470 Jazz Combo (1cr x 4 semesters) 4
MUEN 495 Jazz Ensembles (2cr x 4 semesters) 8
Or Vocal Jazz students - 8 credits of:
MUEN 463 Jazz Vocal Workshop (2cr x 4
semesters) 8

REQUIRED COURSES (39 credits)
JAZZ IMPROVIZATION 12
MUJZ 223 Jazz Improvisation/Musicianship 1 3
MUJZ 224 Jazz Improvisation/Musicianship 2 3
MUJZ 423 Jazz Improvisation/Musicianship 3 3
MUJZ 424 Jazz Improvisation/Musicianship 4 3

PEDAGOGY 3
MUJZ 356 Jazz Pedagogy 3

THEORY 18
MUTH 312 19th-Century Theory and Analysis/Jazz
Majors 3
MUTH 313 20th-Century Theory and Analysis/Jazz
Majors 3
MUJZ 261D1 Jazz Arranging 3
MUJZ 261D2 Jazz Arranging 3
MUJZ 340D1 Jazz Composition 3
MUJZ 340D2 Jazz Composition 3

HISTORY 6
MUHL 393 History of Jazz 3
MUJZ 493 Jazz Performance Practice 3

COMPLEMENTARY MUSIC 4
One of the following pairs:
MUJZ 440D1 Advanced Jazz Composition 2
MUJZ 440D2 Advanced Jazz Composition 2
or MUJZ 461D1 Advanced Jazz Arranging 2
MUJZ 461D2 Advanced Jazz Arranging 2

NON-MUSIC ELECTIVES 18
TOTAL CREDITS 101

9.6.3.15  Licentiate in Music (L.Mus.) (All Instruments
except Piano, Voice and Jazz)

CREDITS
REQUIRED PERFORMANCE 48
MUIN 250  L.Mus. Practical Instruction 1 8
MUIN 251  L.Mus. Practical Instruction 2 8
MUIN 252  L.Mus. Performance 1 Examination 0
MUIN 350  L.Mus. Practical Instruction 3 8
MUIN 351  L.Mus. Practical Instruction 4 8
MUIN 352  L.Mus. Performance 2 Examination 0
MUIN 369 Piano Concerto 0
MUIN 433 Piano Techniques 3 0
MUIN 450  L.Mus. Practical Instruction 5 8
MUIN 451  L.Mus. Practical Instruction 6 8
MUIN 452  L.Mus. Performance 3 Examination 0
MUPG 541 Senior Piano Seminar 1 2
MUPG 542 Senior Piano Seminar 2 2

COMPLEMENTARY PERFORMANCE (14 credits)
MUEN 493 Choral Ensembles (2 cr.) x 4 semesters
during the first four terms 8
6 credits from:
MUEN 481 Piano Ensemble 1
MUEN 483 Piano Accompanying 1
MUEN 484 Studio Accompanying 1
MUEN 485 Mixed Ensembles 1

REQUIRED COURSES (29 credits)
THEORY 12
MUTH 110 Melody and Counterpoint 3
MUTH 111 Elementary Harmony and Analysis 3
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUSICIANSHIP 11
MUSP 129 Musicianship 1 2
MUSP 131 Musicianship 2 2
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
MUSP 229 Musicanship 3 2
MUSP 231 Musicanship 4 2

HISTORY 6
MUHL 184 History Survey - Medieval, Renaissance,
Baroque 3
MUHL 185 History Survey - Classical, Romantic,
20th-C. 3

TOTAL CREDITS 95

Special Requirements:
1. Continuation in the program requires a minimum grade of A-
in practical instruction/exams and ensembles.
2. Candidates must take the L.Mus. Performance 1 Examination
at the end of their first year of study and the L.Mus. Perform-
ance 2 and 3 Examinations in each of the next two years if they
hope to complete the program in the normal length of time.
MUSIC – LICENTIATE

McGill University, Undergraduate Programs 2006-2007

ENSEMBLE REQUIREMENTS:
1. Students majoring in violin, viola, or cello must commence their assigned ensembles with four terms of string quartets.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

SPECIAL REQUIREMENTS:
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams and ensembles.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

REQUIRED COURSES (29 Credits)

THOERY
MUTH 110 Melody and Counterpoint 3
MUTH 111 Elementary Harmony and Analysis 3
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3

MUSICIANSHIP
MUSP 129 Musicianship 1 2
MUSP 131 Musicianship 2 2
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2

HISTORY
MUHL 184 History Survey - Medieval, Renaissance, Baroque 3
MUHL 185 History Survey - Classical, Romantic, 20th-C. 3

TOTAL CREDITS 95

COMPLEMENTARY PERFORMANCE (18 credits)
Large Ensemble Training: during every term of enrolment as a full-time or part-time student; 12 credits from:
- MUEN 473 Collegium Musicum
- MUEN 490 McGill Winds
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 497 Orchestral Ensembles

Assigned Small Ensemble - during every term of enrolment as a full-time or part-time student; 6 credits from:
- MUEN 480 Early Music Ensemble
- MUEN 485 Mixed Ensembles
- MUEN 489 Woodwind Ensembles
- MUEN 491 Brass Ensembles
- MUEN 498 Percussion Ensembles
- MUEN 499 String Ensembles

REQUIRED COURSES (37 CREDITS)

DICTION
MUPG 210 Italian Diction 2
MUPG 211 French Diction 2
MUPG 212 English Diction 2
MUPG 213 German Diction 2

THEORY
MUTH 110 Melody and Counterpoint 3
MUTH 111 Elementary Harmony and Analysis 3
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3

MUSICIANSHIP
MUSP 129 Musicianship 1 2
MUSP 131 Musicianship 2 2
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2

HISTORY
MUHL 184 History Survey - Medieval, Renaissance, Baroque 3
MUHL 185 History Survey - Classical, Romantic, 20th-C. 3

TOTAL CREDITS 101

COMPLEMENTARY PERFORMANCE 12
Basic Ensemble Training: during every term of enrolment as a full-time or part-time student; 12 credits from:
- MUEN 473 Collegium Musicum
- MUEN 479 Song Interpretation
- MUEN 480 Early Music Ensemble
- MUEN 487 Cappella McGill
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 496 Opera Studio

SPECIAL REQUIREMENTS:
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

REQUIRED PERFORMANCE
MUIN 351 L.Mus. Practical Instruction 4 8
MUIN 352 L.Mus. Performance 2 Examination 0
MUIN 450 L.Mus. Practical Instruction 5 8
MUIN 451 L.Mus. Practical Instruction 6 8
MUIN 452 L.Mus. Performance 3 Examination 0

CREDITS 52

SPECIAL REQUIREMENTS:
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

REQUIRED PERFORMANCE
MUIN 350 Vocal Repertoire Coaching 1 2
MUIN 351 L.Mus. Practical Instruction 4 8
MUIN 352 L.Mus. Performance 2 Examination 0
MUIN 450 L.Mus. Practical Instruction 5 8
MUIN 451 L.Mus. Practical Instruction 6 8

COMPLEMENTARY PERFORMANCE 12
Basic Ensemble Training: during every term of enrolment as a full-time or part-time student; 12 credits from:
- MUEN 473 Collegium Musicum
- MUEN 479 Song Interpretation
- MUEN 480 Early Music Ensemble
- MUEN 487 Cappella McGill
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 496 Opera Studio

REQUIRED COURSES (37 CREDITS)

DICTION
MUPG 210 Italian Diction 2
MUPG 211 French Diction 2
MUPG 212 English Diction 2
MUPG 213 German Diction 2

THEORY
MUTH 110 Melody and Counterpoint 3
MUTH 111 Elementary Harmony and Analysis 3
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3

MUSICIANSHIP
MUSP 129 Musicianship 1 2
MUSP 131 Musicianship 2 2
MUSP 170 Keyboard Proficiency 1
MUSP 171 Keyboard Lab 1 1
MUSP 172 Keyboard Lab 2 1
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2

HISTORY
MUHL 184 History Survey - Medieval, Renaissance, Baroque 3
MUHL 185 History Survey - Classical, Romantic, 20th-C. 3

TOTAL CREDITS 101

SPECIAL REQUIREMENTS:
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.
9.6.3.17 Licentiate in Music (L.Mus.) Jazz Performance

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUIN 250</td>
<td>L.Mus. Practical Instruction 1</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 251</td>
<td>L.Mus. Practical Instruction 2</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 252</td>
<td>L.Mus. Performance 1 Examination</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 350</td>
<td>L.Mus. Practical Instruction 3</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 351</td>
<td>L.Mus. Practical Instruction 4</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 352</td>
<td>L.Mus. Performance 2 Examination</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 450</td>
<td>L.Mus. Practical Instruction 5</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 451</td>
<td>L.Mus. Practical Instruction 6</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 452</td>
<td>L.Mus. Performance 3 Examination</td>
<td>0</td>
</tr>
</tbody>
</table>

**COMPLEMENTARY PERFORMANCE (18 credits)**

Large Ensemble – during every term of enrolment as a full-time student or part-time student

Instrumentalists – 12 credits from:

- MUEN 492 Chamber Jazz Ensemble: 2
- MUEN 495 Jazz Ensembles: 2

OR

Vocal Jazz Students – 12 credits of:

- MUEN 463 Vocal Jazz Workshop (2 cr. X 6 semesters)
- MUEN 470 Jazz Combo (1 cr. X 6 semesters)

**REQUIRED COURSES (30 Credits)**

**THEORY**

- MUJZ 261D1 Jazz Arranging: 3
- MUJZ 261D2 Jazz Arranging: 3
- MUJZ 340D1 Jazz Composition: 3
- MUJZ 340D2 Jazz Composition: 3

**IMPROVISATION/MUSICIANSHIP**

- MUJZ 223 Jazz Improvisation/Musicianship 1: 3
- MUJZ 225 Jazz Improvisation/Musicianship 2: 3
- MUJZ 423 Jazz Improvisation/Musicianship 3: 3
- MUJZ 424 Jazz Improvisation/Musicianship 4: 3

**HISTORY**

- MUHL 393 History of Jazz: 3
- MUHL 493 Jazz Performance Practice: 3

**COMPLEMENTARY COURSES (4 credits from the following):**

- MUJZ 440D1 Advanced Jazz Composition: 2
- MUJZ 440D2 Advanced Jazz Composition: 2
- MUJZ 461D1 Advanced Jazz Arranging: 2
- MUJZ 461D2 Advanced Jazz Arranging: 2

**TOTAL CREDITS**: 100

Special Requirements:
1. Continuation in the program requires that a grade of A- be maintained in practical instruction/exams and ensembles.
2. Candidates must take the L.Mus. Jas Performance 1 Examination at the end of their first year of study and the L.Mus. Jazz Performance 2 and 3 Examinations in each of the next two years if they hope to complete the program in the normal length of time.

9.6.3.18 Artist Diploma (Voice)

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUIN 460</td>
<td>Artist Diploma Practical Instruction 1</td>
<td>8</td>
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<tr>
<td>MUIN 461</td>
<td>Artist Diploma Practical Instruction 2</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 462</td>
<td>Artist Diploma Recital 1</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 469</td>
<td>Artist Diploma Concerto 1</td>
<td>1</td>
</tr>
</tbody>
</table>

- MUIN 560 Artist Diploma Practical Instruction 3: 8
- MUIN 561 Artist Diploma Practical Instruction 4: 8
- MUIN 562 Artist Diploma Recital 2: 0
- MUIN 569 Artist Diploma Concerto 2: 1
- MUIN 600 Vocal Repertoire Coaching 1: 2
- MUIN 601 Vocal Repertoire Coaching 2: 2
- MUPG 690 Vocal Styles and Conventions: 3

**COMPLEMENTARY PERFORMANCE**

Large Ensemble Training - during every term of enrolment as a full-time or part-time student; minimum of 8 credits from:

- MUEN 472 Cappella Antica
- MUEN 479 Song Interpretation
- MUEN 480 Early Music Ensemble
- MUEN 487 Cappella McGill
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 496 Opera Studio
- MUEN 696 Opera Theatre

**REQUIRED COURSES (10 Credits)**

**THEORY**

- MUTH 310 Mid and Late 19th-Century Theory and Analysis: 3
- MUTH 311 20th-Century Theory and Analysis: 3

**MUSICIANSHIP**

- MUSP 329 Musicanship 5: 2
- MUSP 331 Musicanship 6: 2

**COMPLEMENTARY MUSIC HISTORY OR PERFORMANCE PRACTICE**

(courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both)

**TOTAL CREDITS**: 65

Special Requirements:
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams, ensembles, and voice coaching.
2. Candidates who have not taken the courses in Italian, French, English and German Diction as specified in the L.Mus. program must add them to the above requirements.
3. A leading operatic or oratorio role may substitute for one recital.

Note: Courses taken as credit towards a B.Mus. or L.Mus. may not be applied to the Artist Diploma requirements except for the required courses in Theory and Musicianship.

9.6.3.19 Artist Diploma (All Instruments)

**CREDITS**

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MUIN 460</td>
<td>Artist Diploma Practical Instruction 1</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 461</td>
<td>Artist Diploma Practical Instruction 2</td>
<td>8</td>
</tr>
<tr>
<td>MUIN 462</td>
<td>Artist Diploma Recital 1</td>
<td>0</td>
</tr>
<tr>
<td>MUIN 469</td>
<td>Artist Diploma Concerto 1</td>
<td>1</td>
</tr>
</tbody>
</table>

- MUIN 460 Artist Diploma Practical Instruction 3: 8
- MUIN 461 Artist Diploma Practical Instruction 4: 8
- MUIN 462 Artist Diploma Recital 2: 0
- MUIN 469 Artist Diploma Concerto 2: 1
- MUIN 600 Vocal Repertoire Coaching 1: 2
- MUIN 601 Vocal Repertoire Coaching 2: 2
- MUPG 690 Vocal Styles and Conventions: 3

**COMPLEMENTARY PERFORMANCE**

Large Ensemble Training - during every term of enrolment as a full-time or part-time student.

8 credits from:

- MUEN 473 Collegium Musicum
- MUEN 490 McGill Winds
- MUEN 493 Choral Ensembles
- MUEN 494 Contemporary Music Ensemble
- MUEN 497 Orchestral Ensembles

Assigned small ensemble - during every term of enrolment as a full-time or part-time student.

4 credits from:
**Music – Artist Diploma**

**McGill University, Undergraduate Programs 2006-2007**

**Ensemble Requirement:**
1. Violin Majors will be required to complete two terms of ensemble playing on viola.

**Special Requirements:**
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams and ensembles.
2. Guitarists and organists may present a third recital which may be counted as a substitute for 4 credits of ensemble. For concerto requirements, refer to section 9.7.2.4 “Postgraduate Study”.

**Note:** Courses taken as credit towards a B.Mus. or L.Mus. may not be applied to the Artist Diploma requirements except for the required courses in Theory and Musicianship.

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**MUEN 480** Early Music Ensemble  
**MUEN 485** Mixed Ensembles  
**MUEN 489** Woodwind Ensembles  
**MUEN 491** Brass Ensembles  
**MUEN 498** Percussion Ensembles  
**MUEN 499** String Ensembles  

**NON ORCHESTRAL INSTRUMENTS:**  
Complementary ensembles, to be approved by the Department (minimum of two 1-credit ensembles per term for 4 terms).

**REQUIRED COURSES (10 Credits)**

<table>
<thead>
<tr>
<th>Theory</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUTH 310 Mid and Late 19th-Century Theory and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUTH 311 20th-Century Theory and Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

**MUSCIANSHIP**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
<tr>
<td>MUSP 329 Musicianship 5</td>
</tr>
<tr>
<td>MUSP 331 Musicianship 6</td>
</tr>
</tbody>
</table>

**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
<tr>
<td>Courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both</td>
</tr>
</tbody>
</table>

**NON-ORCHESTRAL INSTRUMENTS: MUSIC ELECTIVES**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
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</tbody>
</table>

**TOTAL CREDITS**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
</tr>
</tbody>
</table>

**Ensemble Requirement:**
1. Violin Majors will be required to complete two terms of ensemble playing on viola.

**Special Requirements:**
1. Continuation in the program requires a minimum grade of A- in practical instruction/exams and ensembles.
2. Guitarists and organists may present a third recital which may be counted as a substitute for 4 credits of ensemble. For concerto requirements, refer to section 9.7.2.4 “Postgraduate Study”.

**Note:** Courses taken as credit towards a B.Mus. or L.Mus. may not be applied to the Artist Diploma requirements except for the required courses in Theory and Musicianship.

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**9.6.3.20 Special Prerequisite Courses for M.Mus. in Performance**

**Piano Accompaniment**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
</tr>
<tr>
<td>(Major: Piano)</td>
</tr>
<tr>
<td>One of:</td>
</tr>
<tr>
<td>MUHL 372 Solo Song outside Germany and Austria</td>
</tr>
<tr>
<td>MUHL 390 The German Lied</td>
</tr>
<tr>
<td>Two of:</td>
</tr>
<tr>
<td>MUPG 210 Italian Diction (or equivalent)</td>
</tr>
<tr>
<td>MUPG 211 French Diction (or equivalent)</td>
</tr>
<tr>
<td>MUPG 212 English Diction (or equivalent)</td>
</tr>
<tr>
<td>MUPG 213 German Diction (or equivalent)</td>
</tr>
</tbody>
</table>

**Orchestral Conducting**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
</tr>
<tr>
<td>MUCO 260 Instruments of the Orchestra</td>
</tr>
<tr>
<td>MUCO 261 Elementary Orchestration</td>
</tr>
<tr>
<td>MUCO 460D1 Advanced Orchestration</td>
</tr>
<tr>
<td>MUCO 460D2 Advanced Orchestration</td>
</tr>
<tr>
<td>MUHL 389 Orchestral Literature</td>
</tr>
<tr>
<td>MUIT 201 String Techniques</td>
</tr>
<tr>
<td>MUIT 202 Woodwind Techniques</td>
</tr>
<tr>
<td>MUIT 203 Brass Techniques</td>
</tr>
<tr>
<td>MUIT 204 Percussion Techniques</td>
</tr>
<tr>
<td>MUPG 315D1 Introduction to Orchestral Conducting (or equivalent)</td>
</tr>
<tr>
<td>MUPG 315D2 Introduction to Orchestral Conducting (or equivalent)</td>
</tr>
<tr>
<td>MUCT 415 Advanced Instrumental Conducting (or equivalent)</td>
</tr>
</tbody>
</table>

**Choral Conducting**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
</tr>
<tr>
<td>GERM 202D1 German Language, Beginners</td>
</tr>
<tr>
<td>GERM 202D2 German Language, Beginners</td>
</tr>
<tr>
<td>MUCO 260 Instruments of the Orchestra</td>
</tr>
<tr>
<td>MUCO 261 Elementary Orchestration</td>
</tr>
<tr>
<td>MUHL 397 Choral Literature after 1750</td>
</tr>
<tr>
<td>MUIT 415 Choral Conducting 2 (or equivalent)</td>
</tr>
<tr>
<td>MUIN 120 Practical Instruction</td>
</tr>
<tr>
<td>MUIN 121 Practical Instruction</td>
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**Wind Band Conducting**

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>19</td>
</tr>
<tr>
<td>MUCO 260 Instruments of the Orchestra</td>
</tr>
<tr>
<td>MUCO 261 Elementary Orchestration</td>
</tr>
<tr>
<td>MUHL 398 Wind Ensemble Literature after 1750</td>
</tr>
<tr>
<td>MUIT 202 Woodwind Techniques</td>
</tr>
<tr>
<td>MUIT 203 Brass Techniques</td>
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<tr>
<td>MUIT 204 Percussion Techniques</td>
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</tbody>
</table>

**Jazz Performance**

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>14</td>
</tr>
<tr>
<td>MUHL 393 History of Jazz</td>
</tr>
<tr>
<td>MUJZ 440D1 Advanced Jazz Composition</td>
</tr>
<tr>
<td>MUJZ 440D2 Advanced Jazz Composition</td>
</tr>
<tr>
<td>MUJZ 461D1 Advanced Jazz Arranging</td>
</tr>
<tr>
<td>MUJZ 461D2 Advanced Jazz Arranging</td>
</tr>
<tr>
<td>MUJZ 493 Jazz Performance Practice</td>
</tr>
</tbody>
</table>

**9.6.4 Designated Major Program**

**B.Mus. with a Designated Major**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
</tr>
<tr>
<td>(The courses comprising the Major field must be approved by the departments concerned prior to registration in the program.)</td>
</tr>
<tr>
<td>For prerequisite requirements for this program, see section 9.6.1 “Four-Year Program (Prerequisite Courses)”</td>
</tr>
</tbody>
</table>

**DESIGNATED MAJOR AREA**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
</tr>
<tr>
<td>MUTH 210 Tonal Theory and Analysis</td>
</tr>
<tr>
<td>MUTH 211 Tonal Theory and Analysis 2</td>
</tr>
<tr>
<td>MUTH 310 Mid and Late 19th-Century Theory and Analysis</td>
</tr>
<tr>
<td>MUTH 311 20th-Century Theory and Analysis</td>
</tr>
</tbody>
</table>

**MUSCIANSHIP**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
</tr>
<tr>
<td>MUSP 229 Musicianship 3</td>
</tr>
<tr>
<td>MUSP 231 Musicianship 4</td>
</tr>
<tr>
<td>MUSP 329 Musicianship 5</td>
</tr>
<tr>
<td>MUSP 331 Musicianship 6</td>
</tr>
</tbody>
</table>

**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
<tr>
<td>Courses with an MUHL or MUPP prefix, may include MUHL 362 or MUHL 393 but not both</td>
</tr>
</tbody>
</table>

**REQUIRED PERFORMANCE**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
</tr>
<tr>
<td>MUIN 220 Practical Instruction 3</td>
</tr>
<tr>
<td>MUIN 221 Practical Instruction 4</td>
</tr>
<tr>
<td>MUIN 222 Concentration 1 Examination</td>
</tr>
<tr>
<td>MUIN 320 Practical Instruction 5</td>
</tr>
<tr>
<td>MUIN 321 Practical Instruction 6</td>
</tr>
<tr>
<td>MUIN 322 Concentration 2 Examination</td>
</tr>
</tbody>
</table>

**COMPLEMENTARY PERFORMANCE**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
</tr>
<tr>
<td>8 credits from**:</td>
</tr>
<tr>
<td>MUEN 473 Collegium Musicum</td>
</tr>
<tr>
<td>MUEN 490 McGill Winds</td>
</tr>
<tr>
<td>MUEN 493 Choral Ensembles</td>
</tr>
<tr>
<td>MUEN 494 Contemporary Music Ensemble</td>
</tr>
<tr>
<td>MUEN 497 Orchestral Ensembles</td>
</tr>
</tbody>
</table>
NON-MUSIC ELECTIVES 18
TOTAL CREDITS 92

Special Requirements:
* The courses comprising the major field are selected in consultation with a faculty adviser. The complete program for a student must be approved by the relevant department, the Executive Committee and by Faculty Council. The required and complementary courses represent the minimum requirement in the areas of Theory, Musicianship, History, Practical and Ensemble. More advanced-level courses may be substituted in these areas if desired. When appropriate, certain of the required or complementary courses may comprise part of the Designated Major Area, in which case additional courses must be taken to make up the required 92 credits.
** Maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

9.6.5 B.Mus./B.Ed. Bachelor of Music and Bachelor of Education Concurrent Program

The Bachelor of Education in Music is an integrated four-year 120/121-credit program of initial teacher training that leads to certification as a teacher in the Province of Quebec. When offered concurrently with the Bachelor of Music (Major in Music Education), the program offers students the opportunity to obtain a Bachelor of Education degree and a Bachelor of Music degree after the completion of 143/144 credits, normally five years (173/174 credits or six years for out-of-province students). The concurrent program combines academic studies in music, professional studies and field experience. The two degrees are awarded during the same convocation period.

To be admitted to the Concurrent Program, students must satisfy the regular admission requirements of the Faculty of Education and the Schulich School of Music. Normally, students will be admitted to both components of the Concurrent Program simultaneously. Applicants who already hold a Bachelor of Music degree should apply to the Faculty of Education. Students who have completed 30 or more credits in a Bachelor of Music program, exclusive of the Freshman Year for out-of-province students, may apply for admission to the Concurrent Program.

All applications for the Concurrent Program are to be made to the Admissions Office of the Schulich School of Music.

Music Education in the Schulich School of Music focuses on the development of the prospective music educator as a musician. This is achieved not only through core music history, theory, musicianship, and performance courses but also through different instrumental, vocal and conducting techniques courses. Laboratory experiences provide an opportunity to develop facility with basic music rehearsing/teaching techniques, with emphasis on the ability to diagnose and correct technical and musical problems.

The components of the 143/144-credit Bachelor of Education in Music/ Bachelor of Music (Music Education) are as follows:
53/54 professional credits,
76 music academic credits (including 9 music elective credits),
12 elective credits.

Students who wish to complete only the Bachelor of Education in Music have the option of doing so after the successful completion of the first two years of the Concurrent Program and completion of MUIN 321 Concentration 2 Exam or equivalent. Students who decide to complete only a Bachelor of Music may transfer at any time into the Bachelor of Music, Faculty Program. Students in the Concurrent B.Mus./B.Ed. who receive an F or J in any Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program; however, they may apply to transfer to the B.Mus. Faculty Program.

CONCURRENT BACHELOR OF MUSIC (MUSIC EDUCATION) AND BACHELOR OF EDUCATION IN MUSIC PROGRAM (143/144 credits)

For prerequisite requirements for this program, see section 9.6.1 "Four-Year Program (Prerequisite Courses)."

ACADEMIC COMPONENTS

CREDITS 78

THEORY COURSES 14
MUTH 210 Tonal Theory and Analysis 1 3
MUTH 211 Tonal Theory and Analysis 2 3
MUTH 310 Mid and Late 19th-Century Theory and Analysis 3
MUTH 311 20th-Century Theory and Analysis 3
MUTH 461 Choral and Keyboard Arranging 1 2

MUSCIANSHIP COURSES 8
MUSP 229 Musicianship 3 2
MUSP 231 Musicianship 4 2
MUSP 329 Musicianship 5 2
MUSP 331 Musicianship 6 2

PERFORMANCE COURSES 16
Practical Concentration 8
Basic Ensemble Training 8

COMPLEMENTARY MUSIC HISTORY COURSES 6
3 credits chosen from Music History (MUHL) offerings at the 300 level 3
3 credits of Music History/Literature chosen from:
MUHL 389 Orchestral Literature 3
MUHL 397 Choral Literature after 1750 3
MUHL 398 Wind Ensemble Literature after 1750 3

MUSIC EDUCATION COURSES 25
MUCT 235 Vocal Techniques 3
MUGT 215 Basic Conducting Techniques 1
MUGT 356 Music for Children 1: Philosophy and Techniques 3
MUGT 357 Music for Children 2: Philosophy and Techniques 3
MUGT 401 Issues in Music Education 3
MUIT 202 Woodwind Techniques 3
MUIT 203 Brass Techniques 3
MUIT 204 Percussion Techniques 3
MUIT 356 Jazz Instruction: Philosophy and Techniques 3

COMPLEMENTARY MUSIC EDUCATION COURSES 9
MUIT 201 String Techniques 3
or MUIT 250 Guitar Techniques 3
MUCT 315 Choral Conducting 1 3
or MUIT 315 Instrumental Conducting 3
EDEA 362 Movement, Music and Communication 3
or any course with a prefix of MUIT or MUGT

ELECTIVE 12

PROFESSIONAL COMPONENTS 53-54

PROFESSIONAL SEMINARS 4

Required Courses
EDEA 206 1st Year Professional Seminar 1
EDEA 407 Final Year Professional Seminar Music 3

FIELD EXPERIENCE 20

Required Courses
EDFE 205 First Year Field Experience (Music) 2
EDFE 207 Second Field Experience Music 4
EDFE 305 Third Year Field Experience (Music) 7
EDFE 407 Fourth Year Field Experience Music 7

FOUNDATION COURSES 12

Required Courses
EDEC 215 English Language Requirement 0
**9.7 Practical Subjects**

### 9.7.1 Practical Assignments and Lessons

#### 9.7.1.1 Registration/Withdrawal

Registration for practical instruction and examinations is not available on Minerva. Students are reminded to submit a Lesson Assignment Card to the Department of Performance by specified deadlines. Practical Instruction will then be added onto students’ records.

The deadline for withdrawing from practical lessons is the end of the second week of classes in any term.

#### 9.7.1.2 Assignment of Teachers

The assignment of students to teachers for private lessons is the responsibility of the Chair of the Department of Performance. Student requests for specific teachers will be taken into consideration where possible. In general, students will be assigned on a first priority basis to study with full-time members of the teaching staff. It is understood that returning students will study with the same teacher unless prior arrangements have been made with the Chair of the Department in consultation with the teachers concerned. However, those students who do not return the Lesson Assignment Card (including Voice Coaching) by the specified deadline cannot be guaranteed the teacher of their choice, and they will be assessed a late fee of $25. Teacher assignments will be made soon after the period of enrolment and posted on the notice boards during the first week of classes. Following this assignment, it is the students’ responsibility to contact their teachers and arrange lesson times.

Individual lessons missed as a consequence of the instructor’s absence will be made up at the mutual convenience of the instructor and student. Lessons missed as the result of the student’s absence will be made up only if notice of cancellation has been given 48 hours in advance, or if a doctor’s certificate is produced and prior notice of the cancellation is given.

**Note:** Students who are taking practical lessons in fulfillment of the requirements for any degree are required to study with teachers on the staff of the Schulich School of Music.

#### 9.7.1.3 Credit Weights for Practical Study

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits per Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Mus. Elective or Concentration</td>
<td>2 credits</td>
</tr>
<tr>
<td>B.Mus. Major or Honours</td>
<td>4 credits</td>
</tr>
<tr>
<td>L.Mus.</td>
<td>8 credits</td>
</tr>
<tr>
<td>Artist Diploma</td>
<td>8 credits</td>
</tr>
</tbody>
</table>

### 9.7.2 Examinations and Goals in Practical Subjects

Different levels of achievement are required of students depending upon the program of study for which they are registered. These levels are defined in part by the difficulty of material and length of program required at the various examinations, and in part by the examiners’ assessment of how well the student plays this material.

In general there are five categories of practical study: Concentration Study, Major and Honours Study, Licentiate Study, Postgraduate Study, and Elective Study.

#### 9.7.2.1 Concentration Study

A student in the Faculty Program or specializing in Composition, Music Education, Music History, Music Technology, or Theory is obliged to present two examinations in order to fulfill the practical requirement of these programs. These are: the Concentration 1 Examination MUIN 222 and the Concentration 2 Examination MUIN 322.

The sequence would normally be:

- MUIN 120 Practical Instruction 1
- MUIN 121 Practical Instruction 2
- MUIN 220 Practical Instruction 3
- MUIN 221 Practical Instruction 4
- MUIN 222 Concentration 1 Examination
- MUIN 320 Practical Instruction 5
- MUIN 321 Practical Instruction 6
- MUIN 322 Concentration 2 Examination

#### Concentration 1 Examination (MUIN 222)

**Purpose:** To assess the student’s progress in the practical area and make recommendations for further study. The panel may recommend to the Department in which the student is registered that: a) the student be asked to withdraw from the program; or b) the student, having made sufficient progress, may proceed to the Concentration 2 Exam.

**Panel:** A minimum of two staff members (not including the teacher), one of whom must be from the area. The panel is appointed by the Chair of the Department of Performance. At the discretion of the Departmental Chair, the teacher may be included on panels of three or more examiners.

**Distribution of Marks:** For students registered in practical lessons through the Schulich School of Music, the teacher submits a term mark which is included as 50% of the final mark. In instances where the student’s teacher is on the panel, the teacher’s global evaluation will nevertheless be equal to 50% of the final mark. This grade will also be entered in the student’s current or most recent term of practical instruction. When a student is not registered for lessons through the Schulich School of Music, the final mark will be the average of the marks submitted by the examination panel and will also be entered in the most recent term of practical instruction.

#### Concentration 2 Examination (MUIN 322)

**Purpose:** To determine that the student is sufficiently accomplished to qualify for the degree of Bachelor of Music.

**Panel:** A minimum of two staff members (not including the teacher), one of whom must be from the area. The panel is appointed by the Chair of the Department of Performance. At the discretion of the Departmental Chair, the teacher may be included on panels of three or more examiners.

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**MUSIC – PRACTICAL SUBJECTS**

- **EDEC 247** Policy Issues in Quebec Education 3
- **EDEM 405** Policy Issues in Quebec Education 3
- **EDPE 300** Educational Psychology 3
- **EDPI 309** Exceptional Students 3
- **Complementary Courses**
  - **EDEC 260** Philosophical Foundations 3
  - or **EDEC 261** Philosophy of Catholic Education 3

**PEDAGOGY COURSES**
- **EDEA 442** Elementary Music Curriculum and Instruction 3
- **EDEA 472** Secondary Music Curriculum and Instruction 3

**PEDAGOGICAL SUPPORT COURSES**
- 11-12
  - one of:
    - **EDEC 248** Multicultural Education 3
    - **EDEC 233** First Nations and Inuit Education 2
    - **EDEC 352** Classroom Practices 2
    - **EDES 350** Classroom Practices (Secondary) 3
  - one of:
    - **EDEC 262** Media, Technology and Education 3
    - **EDPT 200** Applications Software 2
    - **EDPT 204** Educational Media 1
    - **EDPT 341** Instructional Programming 1
    - **MUST 301** Technology and Media for Music Education 3
  - one of:
    - **EDPE 304** Measurement and Evaluation 3
    - **EDEE 355** Classroom-based Evaluation 3

**TOTAL CREDITS**
- 143-144
Distribution of Marks: For students registered in practical lessons through the Schulich School of Music, the teacher submits a term mark which is included as 33% of the final mark. In instances where the student’s teacher is on the panel, the teacher’s global evaluation will nevertheless be equal to 33% of the final mark. This grade will also be entered in the student’s current or most recent term of practical instruction. When a student is not registered for lessons through the Schulich School of Music, the final mark will be the average of the marks submitted by the examining panel and will also be entered in the most recent term of practical instruction.

9.7.2.2 Major and Honours Study
A student majoring in Performance (B.Mus. or L.Mus.) must show talent for this field before being admitted to the program. The practical requirement for these programs comprises examinations and recitals as specified in the programs.

Any U1 Performance Major (except Jazz Performance) may indicate an intention to pursue an Honours program but admission becomes final only after the results of the Major Performance 1 Exam are available. Admission to the Honours program requires a grade of A- or better in the Performance 1 Exam (or most recent exam), a GPA of 3.00 or better, the approval of the student’s teacher and the examining panel. Following the Major Performance 1 Exam, Honours students must present the Honours Performance 2 Exam and the Honours Performance 3 Exam.

B.MUS. MAJOR IN PERFORMANCE, MAJOR IN EARLY MUSIC PERFORMANCE, AND MAJOR IN JAZZ PERFORMANCE

The sequence would normally be:
- MUIN 130 Performance Practical Instruction 1
- MUIN 131 Performance Practical Instruction 2
- MUIN 230 Performance Practical Instruction 3
- MUIN 231 Performance Practical Instruction 4
- MUIN 232 Performance 1 Examination
- MUIN 330 Performance Practical Instruction 5
- MUIN 331 Piano Techniques 2
- MUIN 332 Piano Techniques 3
- MUIN 333 Piano Techniques 2
- MUIN 334 Piano Techniques 3
- MUIN 335 Piano Techniques 4
- MUIN 340 Honours Practical Instruction 5
- MUIN 341 Honours Practical Instruction 6
- MUIN 342 Honours Performance 2 Examination
- MUIN 343 Piano Techniques 3
- MUIN 344 Honours Practical Instruction 7
- MUIN 345 Piano Techniques 3
- MUIN 346 Piano Techniques 3
- MUIN 347 Piano Techniques 3
- MUIN 369 Concerto (mandatory test for pianists)

Performance 1 Examination (MUIN 232)

Purpose: To assess the student’s progress in the practical area and determine whether or not the student may continue in the program. The panel may recommend to the Department that the student be: a) asked to withdraw from the program; b) permitted to continue to the Performance 2 Exam; c) admitted to the Performance Honours program.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: The teacher submits a term mark which is included as 50% of the final mark. In instances where the student’s teacher is on the panel, the teacher’s global evaluation will nevertheless be equal to 50% of the final mark. This grade will also be entered in the student’s current or most recent term of practical instruction.

Performance 2 Examination (MUIN 332)

Purpose: To assess the student’s ability to perform a program of sufficient length and suitable repertoire as specified in the requirements for each instrument.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average. This grade will also be entered in the student’s current or most recent term of practical instruction.

Performance 3 Examination (MUIN 432)

Purpose: All recitals are to be performed in public before a jury, and are intended to demonstrate technical mastery of their instrument/voice as well as an understanding of different musical styles appropriate to their level of study.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average.

B.MUS. HONOURS IN PERFORMANCE AND IN EARLY MUSIC PERFORMANCE

The sequence would normally be:
- MUIN 130 Performance Practical Instruction 1
- MUIN 131 Performance Practical Instruction 2
- MUIN 230 Performance Practical Instruction 3
- MUIN 231 Performance Practical Instruction 4
- MUIN 232 Performance 1 Examination
- MUIN 330 Performance Practical Instruction 5
- MUIN 331 Piano Techniques 2
- MUIN 332 Piano Techniques 3
- MUIN 333 Piano Techniques 2
- MUIN 334 Piano Techniques 3
- MUIN 335 Piano Techniques 4
- MUIN 340 Honours Practical Instruction 5
- MUIN 341 Honours Practical Instruction 6
- MUIN 342 Honours Performance 2 Examination
- MUIN 343 Piano Techniques 3
- MUIN 344 Honours Practical Instruction 7
- MUIN 345 Piano Techniques 3
- MUIN 346 Piano Techniques 3
- MUIN 369 Concerto (mandatory test for pianists)

Performance 1 Examination (MUIN 232)

Purpose: To assess the student’s progress in the practical area and determine whether or not the student may continue in the program. The panel may recommend to the Department that the student be: a) asked to withdraw from the program; b) permitted to continue to the Performance 2 Exam; c) admitted to the Performance Honours program.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: The teacher submits a term mark which is included as 50% of the final mark. In instances where the student’s teacher is on the panel, the teacher’s global evaluation will nevertheless be equal to 50% of the final mark. This grade will also be entered in the student’s current or most recent term of practical instruction.

Honours Performance 2 Examination (MUIN 342)

Purpose: The recital is a public presentation, before a jury, intended to demonstrate competence in public solo performance. Non-keyboard performers and singers must use appropriate accompaniment.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average. This grade will also be entered in the student’s current or most recent term of practical instruction.

Honours Performance 3 Examination (MUIN 442)

Purpose: All recitals are to be performed in public before a jury, and are intended to demonstrate technical mastery of their instrument/voice as well as an understanding of different musical styles appropriate to their level of study.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average.

This
grade will also be entered in the student’s current or most recent term of practical instruction.

9.7.2.3 Licentiate Study
A student must show talent for this field before being admitted to the program. Grades of A- in all practical requirements are mandatory for continuation in the program.

L.MUS. PERFORMANCE

L.Mus. Performance 1 Examination (MUIN 252)
**Purpose:** To assess the student’s progress in the practical area and determine whether or not the student may continue in the program. The panel may recommend to the Department that the student be: a) asked to withdraw from the program; or b) permitted to continue to the L.Mus. Performance 2 Exam.

**Panel:** A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

**Distribution of Marks:** The teacher submits a term mark which is included as 50% of the final mark. In instances where the student’s teacher is on the panel, the teacher’s global evaluation will nevertheless be equal to 50% of the final mark. This grade will also be entered in the student’s current or most recent term of practical instruction.

L.Mus. Performance 2 Examination (MUIN 352)
**Purpose:** The recital is a public presentation, before a jury, intended to demonstrate competence in public solo performance. Non-keyboard performers and singers must use appropriate accompaniment.

**Panel:** A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

**Distribution of Marks:** Each member of the panel submits a mark for the examination, with the final mark being the average. This grade will also be entered in the student’s current or most recent term of practical instruction.

L.Mus. Performance 3 Examination (MUIN 452)
**Purpose:** All recitals are to be performed in public before a jury and are intended to demonstrate technical mastery of their instrument/voice as well as an understanding of different musical styles appropriate to their level of study.

**Panel:** A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

**Distribution of Marks:** Each member of the panel submits a mark for the examination, with the final mark being the average. This grade will also be entered in the student’s current or most recent term of practical instruction.

9.7.2.4 Postgraduate Study
Artist Diploma candidates must present a number of public recitals and fulfill various special performance requirements (concertos, chamber music, orchestral passages, etc.). Grades of A- in all practical requirements are mandatory for continuation in the program.

M.Mus. candidates should consult the Graduate and Postdoctoral Studies Calendar for requirements of their program.

ARTIST DIPLOMA
The sequence would normally be: MUIN 460 Artist Diploma Practical Instruction 1 MUIN 461 Artist Diploma Practical Instruction 2 MUIN 462 Artist Diploma Recital 1 MUIN 560 Artist Diploma Practical Instruction 3 MUIN 561 Artist Diploma Practical Instruction 4 MUIN 562 Artist Diploma Recital 2 MUIN 563 Artist Diploma Recital 3
In addition, the Artist Diploma program in orchestral instruments, piano and voice requires the candidate to present two concertos: MUIN 469 Artist Diploma Concerto 1 MUIN 569 Artist Diploma Concerto 2

Applications for Artist Diploma Concerto hearings must be submitted to the Department of Performance Office five (5) weeks prior to the proposed date. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.

Artist Diploma Recital 1 (MUIN 462)
**Purpose:** Recital programs are intended to demonstrate that the student is qualified to engage in professional performance activities, and has attained the high level of performing ability required for the Artist Diploma.

**Panel:** The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned (in Voice recitals, one voice teacher plus one staff member from another area).

**Distribution of Marks:** Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass. This grade will also be entered in the student’s current or most recent term of practical instruction.

Artist Diploma Recital 2 (MUIN 562)
**Purpose:** Recital programs are intended to demonstrate that the student is qualified to engage in professional performance activities, and has attained the high level of performing ability required for the Artist Diploma.

**Panel:** The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned (in Voice recitals, one voice teacher plus one staff member from another area).

**Distribution of Marks:** Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass. This grade will also be entered in the student’s current or most recent term of practical instruction.

Artist Diploma Recital 3 (MUIN 563)
**Purpose:** Recital programs are intended to demonstrate that the student is qualified to engage in professional performance activities, and has attained the high level of performing ability required for the Artist Diploma.

**Panel:** The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned.

**Distribution of Marks:** Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass.

Artist Diploma Concerto 1 (MUIN 469)
**Purpose:** The Artist Diploma program in orchestral instruments, piano and voice requires the candidate to present concertos which are normally examined only by a jury. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.
Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Examiners judge the concerto independently and submit their evaluation without consulting the other examiners. All the examiners must judge the concerto to be satisfactory for the candidate to pass.

Artist Diploma Concerto 2 (MUIN 569)

Purpose: The Artist Diploma program in orchestral instruments, piano and voice requires the candidate to present concertos which are normally examined only by a jury. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.

Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

Distribution of Marks: Examiners judge the concerto independently and submit their evaluation without consulting the other examiners. All the examiners must judge the concerto to be satisfactory for the candidate to pass.

9.7.2.5 Elective Study

Students may elect to pursue further practical study in addition to their curricular requirements. The student is not expected to follow a specific program. Additional fees apply.

9.7.3 Practical Examinations

Details of specific examination requirements for each area (Brass, Early Music, Guitar, Harp, Jazz, Organ, Percussion, Piano, Strings, Voice, Woodwinds) may be obtained from the Department of Performance Office.

9.7.3.1 Application for Examination

Examinations and recitals must be presented in one of the examination periods. When a student and his/her teacher agree to present a required practical examination, the student must make an application by the deadline specified below. Permission to withdraw from, or postpone, a practical examination will normally be granted only in the case of illness. A medical certificate must be submitted to the Departmental Secretary within seven days after the withdrawal request has been received. Withdrawal from a practical examination on other than medical grounds must be authorized by the Departmental Chair.

Application for the above examinations must be made on the appropriate form available at the Performance Academic Affairs Office. Applicants must obtain their teachers’ approval on this form and submit it according to the following schedule.

<table>
<thead>
<tr>
<th>Examination Period</th>
<th>Application Deadline*</th>
<th>Deadline for Cancellations</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 11-15 2006**</td>
<td>June 1***</td>
<td>August 15</td>
</tr>
<tr>
<td>December 7-22, 2006</td>
<td>October 15</td>
<td>October 31</td>
</tr>
<tr>
<td>April 13-30, 2007</td>
<td>February 1</td>
<td>March 1</td>
</tr>
</tbody>
</table>

*All students must apply by this deadline. Applications may be withdrawn without penalty any time up to the deadline for cancellations given above.

**The September examination period is available only for Summer graduands. No supplemental or deferred examinations will be given at this time.

***It is recommended that students planning to take an examination in September submit the program for approval before the end of May otherwise the program may not be seen by the Area Committee until September.

Applications received after these deadlines will only be accepted with special permission for the Performance Departmental Chair and on payment of a $25 late application fee.

9.7.3.2 Examination Marking

Normally, the final mark for any practical examination is the average of all the marks submitted by the individual examiners. In addition, however, at least half of the examiners on the panel must pass the student in order to continue to the next level of examination. (NB: the passing grade in the Honours, L.Mus. and Artist Diploma programs is A-; in the Major Performance programs, it is B-. In instances where the average mark is a passing grade but a majority of the panel has failed the student, the final mark will be the letter grade immediately below the required passing grade.

9.8 Academic Staff

DEPARTMENT OF THEORY

Chair — Brackett, David; B.A.(Calif.-Santa Cruz), M.M.(New England Cons.), D.M.A.(C'nell); Associate Professor

COMPOSITION AREA

Bouliane, Denys; B.Mus., M.Mus.(Laval), Graduate, Hochschule für Musik(Hamburg); Associate Professor; Composition, Orchestration, Contemporary Music Ensemble

Cherney, Brian; Mus.Bac., Mus.M., Ph.D.(Tor.); Professor; Composition, Theory and Analysis, History and Literature

Ferguson, Sean; B.Mus.(Alta.), M.Mus., D.Mus.(McG.); Assistant Professor; Composition; Director, Digital Composition Studio

Harman, Chris; Assistant Professor; Composition Lesage, Jean; Concours, Diplome d'études supérieures

(Musique de Montréal); Assistant Professor; Composition

Rea, John; B.Mus.(Wayne State), M.Mus.(Tor.), M.F.A., Ph.D. (Prin.); Professor; Composition Area Chair; Composition Theory and Analysis

MUSIC EDUCATION AREA

Cossette, Isabelle; Premier Pri(Conservatoire de Qué.); M.Mus.(McG.), D.Mus.(Mon.); Assistant Professor; Special Category

Ryan, Charlene; B.Mus.(Nfld.)W.Ont.), M.Mus.(Mich.), Ph.D.(McG.); Assistant Professor; Music Education Area Chair; Music Education

Wapnick, Joel; B.A.(NYU), M.A.(SUNY), M.F.A.(Sarah L.); Ed.D.(Syrac.); Associate Professor; Director, Music Education Research Lab; General Music Techniques

MUSIC THEORY AREA

Caplin, William; B.M.(S.Calif.), M.A., Ph.D.(Chic.); Professor; Theory and Analysis

McLean, Don; Mus.Bac., M.A., Ph.D.(Tor.); Associate Professor; Dean, Schulich School of Music; Theory and Analysis

Neidhöfer, Christoph; Graduate, Hochschule für Musik(Basel), Ph.D.(Harv.); Assistant Professor; Music Theory Area Chair; Theory and Analysis, Composition

Sabourin, Carmen; B.Mus., M.Mus.(McG.), Ph.D.(Yale); Associate Professor; Theory

Schubert, Peter; B.A., M.A., Ph.D.(Col.); Associate Professor; Theory and Analysis

Stefel, Van; B.A., M.M.(Yale), Ph.D.(Princ.); Faculty Lecturer; Theory

Wild, Jonathan; B.Mus., M.A.(McG); Assistant Professor; Music Theory, Composition

MUSIC TECHNOLOGY AREA

Depalle, Philippe; B.Sc.(Paris XI & ENS Cachan), D.E.A.(Le Mans & ENS Cachan), Ph.D.(Le Mans & IRCAM); Associate Professor; Music Technology (William Dawson Scholar)

Fujinaga, Ichiro; B.Mus., B.Sc.(Alt.), M.A., Ph.D.(McG.); Assistant Professor; Music Technology

McAdams, Stephen; B.Sc.(McG.), Ph.D.(Stan.), D.Sc.(Paris); Professor; Director, CIRMMT; Canada Research Chair; Music Technology
ASSOCIATE MEMBERS
Jeremy Cooperstock, Dept. of Electrical and Computer Engineering
Vincent Hayward, Dept. of Electrical and Computer Engineering
Daniel Levitin, Dept. of Psychology
Robert Zatorre, Montreal Neurological Institute

DEPARTMENT OF PERFORMANCE
Chair — McNabney, Douglas; B.Mus.(Tor.), M.M.(W.Ont.), D. Mus. (Montr.); Associate Professor

BRASS AREA
French Horn
Derome, Denys; L.Mus.(McG.); Montreal Symphony; Instructor
Gaudreauau, Jean; L.L.(Montr.); Graduate, Conservatoire de Musique de Québec; Montreal Symphony; Assistant Professor
Zirbel, John; B.Mus.(Wisc.); Principal Horn, Montreal Symphony; Associate Professor

Trumpet
Chatel, Jean-Louis; Instructor

Tuba/Euphonium
Cazes, Alain; Premier Prix(Conservatoire de Montréal); Assistant Professor

CHORAL AREA
Ingrai, Robert; Assistant Professor

EARLY MUSIC AREA
Bergeron, Sylvain; B.Mus.(Laval); Instructor; Lute
Grew, John; L.T.C.L.(Lond.), B.Mus.(Mt. All.); M.Mus.(Mich.), D.D.(United Theological Coll.), LL.D.(Mt.All.); University Organist; Professor; Organ Area Chair; Organ, Harpsichord
Guimond, Claire; B.Mus.(McG.); Instructor; Baroque Flute
Guyon, Nancy; Instructor; Baroque Trumpet, French Horn

MUSIC – ACADEMIC STAFF

Pennycook, Bruce; B.Mus., M.Mus.(Tor.); DMA (Stan.); Adjunct Professor; Music Technology
Scavone, Gary; B.A., B.S.(Syrac.); M.S., Ph.D.(Stan.); Assistant Professor; Music Technology
Umezaki, Kojiro; M.A.(Dart.), B.Sc.(Lafayette); Instructor; Music Technology
Wanderley, Marcelo; B.Eng.(UFPR), M.Eng.(UFSC), Ph.D.(Paris VI & IRCAM); Assistant Professor; Music Technology Area Chair; Music Technology, Gestural Control of Sound Synthesis

MUSICSHIP AREA
Davidson, Thomas; B. Mus.(Qu.), M.Mus.(McG.), Cert. of Advanced Study(R.C.M., Lond.), A.R.C.M., L.T.C.L.; Faculty Lecturer; Music Area Chair; Musicianship, Piano, Keyboard Proficiency Coordinator
Lipszyc, Reisa; B.Mus.(McG.); Instructor; Basic Materials
Sherman, Norma; B.A.(C’dia); B.Mus., M.A.(McG.); Faculty Lecturer; Musicianship

MUSICOLOGY AREA
Barg, Lisa; B.A.(Antioch), M.A., Ph.D.(SUNY); Assistant Professor; History and Literature
Huebner, Steven; B.A., B.Mus., L.Mus.(McG.), M.F.A., Ph.D.(Princ.); Professor; History Area Chair; History and Literature (James McGill Professor)
Kok, Roe-Min; B.Mus.(Texas), M.A.(Duke), Ph.D.(Harv.);
Assistant Professor; History and Literature
lanza, alcides; Graduate, Instituto Torcuato Di Tella(Buenos Aires); Professor; Director Emeritus (Electronic) Digital Composition Studio
Lawton, Richard; B.Mus.(McG.), M.Mus.(Ind.); Associate Professor; History and Literature
Minorgan, Bruce; B.Mus.(Br.Col.), M.A.(Tor.); Associate Professor; Associate Dean; History and Literature, Music Technology
Rice, Kelly; B.Mus., M.A.(McG.); Instructor; History and Literature
Stuble, Eleanor; B.Mus.(Tor.), M.Mus.(Bran.), Ph.D.(Ill.);
Associate Professor; Music Education
Whitesell, Lloyd; B.A.(Minn. ), M.A., Ph.D.(SUNY, Stony Brook); Assistant Professor; History and Literature

SOUND RECORDING AREA
Bech, Soren; M.Sc., Ph.D.(Technical Univ. of Denmark); Adjunct Professor; Sound Recording; Senior Technology Specialist, Bang & Olufsen
Cook, Peter; B.Mus., M.Mus.(McG.); C.B.C.; Instructor; Sound Recording
De Francesco, Marthe; Diplom-Tonmeister(Detmold); Associate Professor; Sound Recording
Epstein, Steven; Senior Executive Producer, Sony Classical; Instructor; Sound Recording
Martens, William; B.A.(Miami), Ph.D.(N’western); Associate Professor; Sound Recording
Massenburg, George; President and Owner, GML Inc.; Instructor; Sound Recording
Quesnel, René; B.Mus., M.Mus., Ph.D.(Mcg.); Assistant Professor; Sound Recording
Wosczyny, Wieslaw; M.A., Ph.D.(F. Chopin Academy of Music, Warsaw); Professor; Director, Recording Studio; Sound Recording Area Chair; Sound Recording (James McGill Professor)
Rémillard, Chantal; B.Mus.(Montr.); Instructor; Baroque Violin

JAZZ AREA

Jazz Bass
Boisvert, Guy; Instructor
Hurley, Brian; Instructor
Lessard, Daniel; Instructor
Pépin, Pierre; Instructor
Walkington, Alexander; B.Mus., M.Mus.(McG.); Instructor

Jazz Drums
Laing, David; B.A.(McG.); Instructor
Lambert, Michel; Instructor
McCann, Chris; Instructor
White, André; B.A.(C'dia), M.Mus.(McG.); Assistant Professor

Jazz Flute
Gossage, Dave; Instructor

Jazz Guitar
Amirault, Greg; B.Mus.(McG.); Instructor
Clayton, Greg; Instructor
Gauthier, Michael; Instructor
Gearey, Jon; Instructor

Jazz Piano
Beaudet, Jean; Instructor
Downes, Wray; A.T.C.L., L.T.C.L., F.T.C.L.(Lond.); Instructor

Jazz Saxophone
Bolduc, Rémi; Instructor

Jazz Trumpet
Abdul Al-Khabyyr, Muhammad; Instructor

Jazz Trombone

Jazz Voice
Lee, Raneé; Instructor
Thériault, Madeleine; Instructor

PERCUSSION AREA

Gray, D'Arcy Philip; B.Mus., M.Mus.(McG.); Instructor

PIANO AREA

Gavrilova, Julia; M.Mus., D.Mus.(McG.); Instructor
Hashimoto, Kyoko; B.A.(Tokyo); Associate Professor
Laimon, Sara; B.Mus.(Br.Col.), M.Mus.(Yale), D.M.A.(SUNY, Stony Brook); Associate Professor
Walkington, Alexander; B.Mus., M.Mus.(McG.); Assistant Professor

STRING AREA

Violin
Jonathan Crow; B.Mus. (McG.); Assistant Professor

Viola
Gripp, Neal; B.Mus.(W.Ont.), M.Mus., D.M.A.(McG.); Instructor

Guitar
Antonio, Garry; B.Mus., M.Mus.(McG.), D.Mus.(Montr.), D.I.A.(C'dia); Instructor; Guitar Area Chair

Harp
Swartz, Jennifer; Dip.(Curtis); Principal Harp, Montreal Symphony; Assistant Professor

VOICE AREA

Algieri, Stefano; Assistant Professor
Evans, Lucille; Dip. (Vincent d'Indy); Associate Professor
Kinslow, Valerie; B.A. (McG.); Assistant Professor; Early Music, Voice Area Chair
Kolomyjec, Joanne; B.Mus. (Tor.); Assistant Professor
Meraw, Michael; B.Mus., M.Mus. (McG.); Assistant Professor
Purdy, Winston; B.Mus. (McG.), M.M. (Eastman); Assistant Professor
Sevadjian, Thérèse; B.Mus., M.Mus. (Montr.); Associate Professor
Simons, Jan; Associate Professor

VOCAL COACHING
Evans, Robert; B.Mus. (New England Cons.), Ph.D. (Ohio St.); Instructor
McLean, Pierre; Vocal Repetiteur
Nigrim, Dana; Vocal Repetiteur
Pelletier, Louise; B.Ed., M.Mus. (UQAM), M.Mus. (Montr.); Vocal Repetiteur
Roy, Dominique; B.Mus., M.Mus. (McG); Vocal Repetiteur

WOODWIND AREA
Flute
Christie, Carolyn; B.Mus. (McG.); Montreal Symphony; Assistant Professor
Howes, Heather; B.Mus., M.Mus. (McG.); Instructor
Hutchins, Timothy; Dip. L.G. S.M. (Guildhall), B.A. Hons. Mus. (Dal.); Principal Flute, Montreal Symphony; Associate Professor
Kestenberg, Abe; Associate Professor; Woodwind Area Chair
Shuter, Cindy; B.Mus. (Tor.); Instructor

Oboe
Baskin, Theodore; B.Mus. (Curtis), M.Mus. (Auck.); Principal Oboe, Montreal Symphony; Associate Professor
Forget, Normand; Instructor
Zirbel, Alexa; Graduate, Hochschule für Musik (Freiburg); Montreal Symphony; Instructor

Clarinet
Aldrich, Simon; B.Mus., L.Mus. (McG.); Instructor
Crowley, Robert; B.M. (Eastman), M.M. (Clev. Inst. of Music); Principal Clarinet, Montreal Symphony; Assistant Professor
Desgagné, Alain; Instructor
Dumouchel, Michael; B.Mus. (Eastman); Montreal Symphony; Instructor
Freedman, Lori; Instructor
Freeman, Peter; L.Mus., B.Mus., M. Mus. (McG.); Instructor
Kestenberg, Abe; Associate Professor; Woodwind Area Chair

Bassoon
Harel, Mathieu; Montreal Symphony; Instructor
Lévesque, Stéphane; Premier Prix (Conservatoire de Montréal), M.Mus. (Yale); Principal Bassoon, Montreal Symphony; Assistant Professor
Mangrum, Martin; Montreal Symphony; Instructor

Saxophone
Freeman, Peter; L.Mus., B.Mus., M. Mus. (McG.); Instructor
Kestenberg, Abe; Associate Professor; Woodwind Area Chair
10 Faculty of Religious Studies

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10.1 The Faculty

10.1.1 Location
William and Henry Birks Building
3520 University Street
Montreal, QC H3A 2A7
Canada
Telephone: (514) 398-4121
Website: www.mcgill.ca/religiousstudies

10.1.2 Administrative Officers
Dean
Luvana Di Francesco Administrative Assistant
Bruna Salhany Administrative Affairs/Dean's Assistant

10.1.3 History
The Faculty and the Colleges
During the 19th century several Theological Colleges in Montreal became affiliated with McGill. In 1912 they formed a Joint Board for the academic study of Theology, leaving each denominational College to provide its own professional training for Christian ministry. This relationship between the Colleges and the University led naturally to the creation in 1948 of a Faculty of Divinity, which assumed the academic functions of the Joint Board, now designated the Montreal School of Theology. This University Faculty now offers the Bachelor of Theology (B.Th.) degree and several graduate degree programs.

10.1.4 Facilities
The Faculty of Religious Studies is located in the handsome (William and Henry) Birks Building, erected in 1931, formerly known as Divinity Hall, at 3520 University Street. Besides the usual classrooms, offices and common rooms, this building accommodates the University Chapel and the Birks Reading Room.

10.1.5 Birks Lectures
An annual series was established in 1950 through the generosity of the late William M. Birks. The lectures are given by distinguished visitors, usually in late September or early October. The first lecturer was the Right Reverend Leslie Hunter. More recent lecturers have included Huston Smith, Northrop Frye, Wilfred Cantwell Smith, Gregory Baum, Robert McAfee Brown, Krister Stendahl, Charles Adams, Jon Levenson, David Little, Azim Nanji and Paul Griffiths.

10.1.6 Numata Visiting Professor in Buddhist Studies
In recognition of the strong Buddhist Studies program in the Faculty of Religious Studies, the Numata Foundation has given a 20-year grant to the Faculty to bring a visiting scholar in Buddhist Studies to McGill each year.

The Visiting Professor teaches two courses, one at the undergraduate level and one at the graduate level, gives a public lecture and is available to students for conferences and consultation. The first Numata Professor, in 1999-2000, was Dr. Mahinda Deegalle (Ph.D., Chicago), a Theravada Buddhist Sri Lankan monk. Subsequent visiting professors include Dr. John Petitt, Professor Robert Morrison, Dr. Thupen Jinpa, Dr. Kate Crosby, Ven. Yifa and Dr. Robert Kritzer.

10.2 Degrees Offered by the Faculty
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Master of Divinity (M.Div.), page 298
Bachelor of Theology (B.Th.), page 298

10.3 Bachelor of Arts (B.A.) in Religious Studies
Honours Concentration, Major Concentration and Minor Concentration in Religious Studies are offered in cooperation with the Faculty of Arts. Religious Studies B.A. Honours, Major, and Minor students may take any of the courses described below except where otherwise indicated.

Admission is to the Faculty of Arts and all admission requirements and procedures, academic rules and regulations of that Faculty apply to students in these programs.

For general information on B.A. Honours, Major Concentrations and Minor Concentrations, consult the advisers. Check the Faculty’s Website for a list of advisers. For specific course information, consult the instructor. Detailed descriptions of the Religious Studies programs for Arts students are found in the Arts section of the calendar in section 4.12.47 “Religious Studies (RELG)”.

Students who are interested in the Bachelor of Theology (B.Th.) or Master of Divinity (M.Div.) programs should refer to the appropriate listing.
10.4 Master of Divinity (M.Div.)

Students who have completed a first degree prior to the B.Th. with a minimum CGPA of 2.7 are eligible to apply to the B.Th. degree towards the Master of Divinity (M.Div.) degree conferred by the Theological Colleges. This degree requires, in addition to the B.Th. degree, successful involvement in integrative seminars during the two B.Th. years and a year of professional pastoral study beyond the B.Th. This is called the “In-Ministry Year” (IMY) and is offered by the three affiliated Theological Colleges under the auspices of the Joint Board of Theological Colleges.

Students from the affiliated colleges may be eligible for bursary assistance if they are properly registered candidates for the ministry. Information about church requirements and the professional year should be sought from the principals of the appropriate colleges.

One biblical language, usually Greek, is required by some of the colleges. Ministerial candidates should consult with the College advisers regarding biblical language requirements.

Prospective candidates for ordination with a B.A. Honours or Major in Religious Studies and a CGPA of 3.3 (B+) may apply for the S.T.M. degree, followed upon completion by the professional year (IMY).

Applicants for the M.Div. program must apply to the McGill B.Th. program as well as to one of the Theological Colleges. College application forms should be requested from one of the following:

- The Montreal School of Theology (formerly the Joint Board of Theological Colleges)
- École théologique de Montréal (affiliés à l’Université McGill)
- 3473 University Street, Montreal, Quebec H3A 2A8
- Montreal Diocesan Theological College
- 3473 University Street, Montreal, Quebec H3A 2A8
- The Presbyterian College
- 3495 University Street, Montreal, Quebec H3A 2A8
- The United Theological College/Les séminaire Uni
- 3521 University Street, Montreal, Quebec H3A 2A8

Prospective students should contact the Chair of the B.Th. Committee to discuss their qualifications, expectations and objectives. Appointments can be made by telephoning (514) 398-3995 or by visiting the B.Th. Program Coordinator, Room 113, Birks Building.

10.5 Bachelor of Theology (B.Th.)

The Bachelor of Theology (B.Th.) program is designed primarily for those who intend to qualify for the ordained ministry in a Christian denomination, although some students pursue the degree out of an interest in the academic study of theology for its own sake. Those studying for the ordained ministry pursue the B.Th. as part of the Master of Divinity (M.Div.) degrees (see above) offered by the three Theological Colleges affiliated with McGill: Montreal Diocesan Theological College (Anglican Church of Canada), the Presbyterian College (Presbyterian Church in Canada), and United Theological College (United Church of Canada).

The main goals of the program are:

1) to offer the academic disciplines of theology within a university setting and
2) to contribute to preparation for ministry in the contemporary world by giving special attention to:
   a) the Canadian and North American contexts;
   b) the Quebec context;
   c) religious pluralism.

10.5.1 ATS Accreditation

The B.Th. program offered by McGill and the M.Div. program offered by the Theological Colleges are together fully accredited by the Association of Theological Schools in the U.S. and Canada (ATS).

10.5.2 Admission Requirements

The B.Th. program has three main options:

a) For the 60-credit or second Bachelor degree option, the applicant is expected to have already completed a B.A. or other Bachelor's degree with a minimum CGPA of 2.7 (B-). No credits can be transferred into the 60-credit option.

b) For the 90-credit or first degree option, the applicant is expected to have completed the Diploma of Collegial Studies (DCS) of a Quebec CEGEP with a minimum average of 75%. This option is open only to applicants from the province of Quebec. A maximum of 30 university credits can be considered for transfer into the 90-credit option. A McGill student may apply for transfer into the 90-credit program.

c) The 120-credit option is open to applicants from outside Quebec only if they intend to pursue the B.Th. as part of the M.Div. degree program. A maximum of 60 university credits can be considered for transfer into the 120-credit option. This option is also available to any applicant who qualifies for mature student status (see below).

10.5.2.1 Mature Student Admissions Policy

Residents of Canada who will be 27 years of age or older by September 1 of the year that they seek admission (i.e., to the Fall Term) or January 1 (for admission to the Winter Term), and who lack the academic background normally required for entry into the B.Th. program, may apply for entrance as mature students into the 120-credit program of studies. If accepted, such students are enrolled in a qualifying year of designated Religious Studies and Arts courses (assigned by the Chair of the B.Th. Committee) before being considered for the 90-credit B.Th. program. A minimum CGPA of 2.5 (no grade less than 60%) is required for advancement into the 90-credit B.Th. program. Those who achieve a GPA of at least 3.0 (with no grade less than 65%) during their first full term of the qualifying year may, upon approval of the B.Th. Committee, be advanced to the 90-credit B.Th. retroactively.

10.5.3 Competence in English

Please note that for non-Canadian applicants whose mother tongue is not English, documented proof of competency in oral and written English by an appropriate examination is required. Test of English as a Foreign Language (TOEFL) with a minimum score of 575 for the paper-based version is required. Permanent residents of Canada may be required to submit a TOEFL score as well. All official documents must be sent to the Faculty of Religious Studies address given below.

10.5.4 Applying to the B.Th. Program

All applications must be made on-line at the McGill University Website for prospective students: www.mcgill.ca/applying. The on-line application process should take about 20 minutes and a credit card is required for payment of the application fee. Once completed, the on-line application form may be printed for your own records.

Note: Owing to McGill University’s implementation of a comprehensive on-line application system, paper applications to the B.Th. Program can no longer be accepted. All applicants must apply on-line.

10.5.4.1 Required Documents

- Two letters of reference, at least one of which should be from an instructor in an academic institution previously attended.
- Official transcript(s) of all previous post-secondary academic work.
- A complete set of these required documents must be sent to the Faculty of Religious Studies (see address below).
If you are applying for admission to one of the Theological Colleges, another complete set of these required documents must also be sent to the College concerned. Please note that your file will not be considered by the Admissions Committee until all the required documents have been received.

10.5.4.2 Mailing Address
Bachelor of Theology Program
Faculty of Religious Studies
McGill University
3520 University Street
Montreal, QC H3A 2A7
Canada

10.5.5 Application Deadlines
Applicants to the B.Th. Program may be accepted into either the Fall or the Winter term. The on-line application deadline is June 15 (May 1 for International students) for September admissions and November 1 for January admissions. Please note that all required documents listed above must be received by the Faculty of Religious Studies prior to these deadlines in order for the applicant to be considered by the Admissions Committee.

10.5.6 Tuition Fees and Funding
Information concerning current tuition fees may be found at the following Website: www.mcgill.ca/student-accounts. Applicants for admission to one of the affiliated Colleges should contact the institution concerned for information regarding College-related fees.

10.5.7 Appeals Procedures
An unsuccessful applicant or a Faculty of Religious Studies Council member acting on behalf of the applicant who believes that not all factors having a bearing on the application have been fully considered has the right to request that the B.Th. Admissions and Awards Committee review the application.

If the findings of the review procedure uphold the initial decision of the B.Th. Admissions and Awards Committee, the applicant has the right to appeal in writing to the Dean. The Dean shall put the appeal before the B.Th. Appeals Committee, which shall consist of three full-time members of the Faculty of Religious Studies Council who are not at the same time members of the B.Th. Admissions and Awards Committee.

The decision of the B.Th. Appeals Committee may be appealed to the Vice-Principal (Academic).

10.5.8 Registration Procedures
Students register on-line at www.mcgill.ca/minerva-students. Minerva for students provides Web access to registration, class schedules, course descriptions, and address changes.

- Returning students must register via Minerva between March 15 and the first day of classes. After this period a late registration fee will be applied.
- New students accepted from CEGEP should register via Minerva between June 15 and Sept. 5, 2006. All other new students should register via Minerva between August 2 and September 5, 2006. After September 5 a late registration fee will be applied.
- All B.Th. students should consult their adviser before registration.

10.5.9 Withdrawal Procedures
Withdrawal from and adding courses prior to the deadline listed in the Calendar (see above) must be done via Minerva. The permission of the adviser is required for all such changes in the initial registration. In case of withdrawal from the University prior to the published course withdrawal deadline, the student must withdraw from all courses via Minerva. In addition, students must contact the Chair of the B.Th. Committee and complete the necessary withdrawal form.

10.5.10 Graduation Requirements
a) The B.Th. is either a 120-credit program (for those admitted from outside Quebec and without a prior Bachelor’s degree), a 90-credit program (for those who were admitted on the basis of a Quebec D.C.S. or equivalent), or a 60-credit program (for those who were admitted on the basis of a recognized Bachelor’s degree).

b) Qualification for the degree shall include satisfactory standing (a grade of C or better) in all required courses and the complementary courses specified in year three, and the accumulation of sufficient acceptable credits to make a total of either 60 or 90 credits. It should be noted that students who take the B.Th. program as part of the M.Div. program need to maintain a minimum CGPA of 2.5 to be eligible for the M.Div. degree.

c) Normally, the program credits must be earned within five years from the date of entrance.

10.5.11 Course Selection
Candidates for the ministry from the three Theological Colleges associated with the Faculty must select their courses in consultation with their College advisers. The course selection form needs to be signed by the Chair of the B.Th. Committee.

Those seeking the degree and not sponsored by one of the three Colleges associated with the Faculty will need to clear their course selections with the chair of the B.Th. Committee.

In all cases this consultation should take place before registration.

10.5.12 Academic Standing and Course Loads
Satisfactory Standing
Students enter the University in satisfactory standing and remain in this standing unless their GPA (grade point average) or CGPA (cumulative grade point average) for any year drops below 2.00. The normal course load in any academic session is five courses per term (15 credits per term). A student with a high GPA (at least 3.00) may take more than the normal five courses per term.

Probationary Standing
A student is placed in probationary standing if the GPA/CGPA falls between 1.50 and 1.99. Probationary students may take a maximum of 12 credits per term, and must raise their CGPA to 2.00 within one academic session. Those who fail to do so will be placed in unsatisfactory standing.

A student in probationary standing may return to satisfactory standing at the end of the next academic session by obtaining either a GPA of at least 2.50 or both a GPA and a CGPA of 2.00 or greater unless the student was admitted on probationary standing. A student admitted on probationary standing must obtain a GPA of 2.50.

Students in probationary standing who obtain a GPA between 1.50 and 1.99 remain in probationary standing if they also have a CGPA of 2.00 or greater.

A student in probationary standing who fails to achieve the levels of performance specified above will be placed in unsatisfactory standing.

Unsatisfactory Standing
A GPA of less than 1.50 places a student in unsatisfactory standing.

A student in unsatisfactory standing will have to withdraw, or seek readmission as a probationary student with special permission from the B.Th. Committee and the Dean. A student who is readmitted on probationary standing may have additional restrictions or conditions to meet over and above those required of students referred to above under “Probationary Standing.”
A student in unsatisfactory standing for the second time must withdraw permanently.

Incomplete Standing
A student whose record in any year shows a mark of K, K*, L, L*, or & will have no GPA or CGPA calculated for that year, and the record will show “Standing Incomplete”. After completing the appropriate course requirements the GPA and CGPA will be calculated and the student's standing determined as described above.

Students whose standing is still "incomplete" at the time of registration for the next academic year must obtain a Letter of Permission to Register from the Chair of the B.Th. Committee.

10.5.13 Academic Achievement
Several designations are used to acknowledge the superior academic achievement of in-course and graduating students. These designations are awarded at the discretion of the Faculty:

- **Distinction**: to designate graduating students, not in Honours, who have completed a minimum of 60 credits at McGill and achieved a CGPA of 3.30 - 3.49.
- **Great Distinction**: to designate graduating students, not in Honours, who have completed a minimum of 60 credits at McGill and achieved a CGPA of 3.50 or better.
- **Honours**: to designate graduating students who have completed a minimum of 60 credits at McGill and have fulfilled the Honours course requirements with a CGPA of 3.20, or 3.50 for First Class Honours.
- **Dean's Honour List**: to designate graduating students with a CGPA of 3.50 or better. This designation applies in addition to those described in b) and c) above, except that it may not normally be awarded to more than 10% of the graduating class.
- **Dean's Honour List**: to designate in-course students who have completed a minimum of 27 credits during regular session (14 credits for those registered for one term) and have attained a GPA placing them in the top 5%-10% of their class.

10.5.14 Evaluation
Competence in a course may be determined by examinations and/or essays, or by other means chosen by the instructor and approved by the Dean.

10.5.15 Bachelor of Theology Program Requirements
The course extends over three academic years of full-time studies for those admitted with a Diploma of Collegial Studies and two academic years for those admitted with a Bachelor's degree. The normal load consists of five 3-credit courses (15 credits) each term.

Students entering the B.Th. as a first degree program take 90 credits, beginning with the following courses:

**Year 1 - Required Courses** (9 credits)
- RELG 204 (3) Judaism, Christianity and Islam
- RELG 210 (3) Jesus of Nazareth
- RELG 334 (3) The Christian Faith

**Year 1 - Elective Courses** (21 credits)
To be determined in consultation with the B.Th. program adviser.

Students entering the B.Th. as a second degree program take 60 credits, beginning with Year 2 courses:

**Year 2 - Required Courses** (24 credits)
- RELG 302 (3) Old Testament Studies 1
- RELG 303 (3) Literature of Ancient Israel 2
- RELG 311 (3) New Testament Studies 1
- RELG 312 (3) New Testament Studies 2
- RELG 322 (3) The Church in History 1
- RELG 323 (3) The Church in History 2
- RELG 333 (3) Principles of Christian Theology 1

10.5.16 B.Th. Honours
Students who have achieved a CGPA of 3.30 at the end of B.Th. 2 year may apply to the B.Th. Committee for permission to enter the Honours program. They will be required to complete RELG 494 and 495 in the B.Th. 3 year with a grade of B or better, to complete the degree with Honours.

10.6 Academic Staff

*Emeritus Professors*
Gregory B. Baum; B.A.(McM.), M.A.(Ohio St.), D.Th.(Fribourg)
Joseph C. McLelland; B.A.(McM.), M.A.(Tor.), B.D.(Knox, Tor.),

Post-Retirement
Robert C. Culley; B.D.(Knox, Tor.), M.A., Ph.D.(Tor.)
Frederik Wisse; Ing.(Utrecht), B.A., B.D.(Calvin, Mich.),
Ph.D. (Claremont)

Professors
Joseph C. McLelland; B.A.(McM.), M.A.(Tor.), B.D.(Knox, Tor.),

Post-Retirement
Robert C. Culley; B.D.(Knox, Tor.), M.A., Ph.D.(Tor.)
Frederik Wisse; Ing.(Utrecht), B.A., B.D.(Calvin, Mich.),
Ph.D. (Claremont)

Professors
Maurice Boutin; B.A., B.A., B.A(Montr.), D.Th.(Munich)
(J.W. Mcconnell Professor of Philosophy of Religion)
Arvind Sharma; B.A.(Allahabad), M.A.(Syrac), M.T.S.,
Ph.D.(Harv.) (Henry Birks Professor of Comparative Religion)
Katherine K. Young; B.A.(Vermont), M.A.,Ph.D.(McG.)
(James McGill Professor of Hinduism/Comparative Religion)

Associate Professors
Ellen B. Atkin; A.B.(Harv.), Div.(University of the South),
Ph.D.(Harv.) (Associate Professor of Early Christian History and
Literature)
Douglas B. Farrow; B.R.E.(Providence), M.Div.(Grace),
M.Th.(Regent), Ph.D.(Lond.)
Ian H. Henderson; B.A.(Manit.), B.D.(St. And.), M.A.(McM.)
D.Phil.(Oxf.)
G. Victor Hori; B.A.(York), M.A.,Ph.D.(Slan.)
W.J. Torrance Kirby; B.A.(KCONS), M.A., D.Phil.(Oxf.)
Patricia G. Kirkpatrick; B.A.(Dal.), M.T.(Lond.), D.Phil.(Oxf.)
G.S. Oegema; B.A., Th.D.(Vrije: Amsterdam), M.A., Ph.D.
(Freie: Berlin), Dr. Theol. Habil(Tübingen)

Assistant Professors
Lara Brailstein; B.A., M.A.(McG.) (Assistant Professor of
Buddhism)
Gaëlle Fiasse; B.A., M.A., Ph.D.(Louvain) (Assistant Professor of
Ethics and Religious Ethics) (Joint appointment with
Department of Philosophy)
Devesh Soneji; B.A.(Manit.), Ph.D.(McG.) (Assistant Professor of
Hinduism)

Faculty Lecturer
Jim Kanaris; B.A.(C’dia), M.A., Ph.D.(McG.)

Course Lecturers
Norman Cornett; A.B.(Calif.), M.A., Ph.D.(McG.)
Melissa Curley; B.A., M.A.(McG.)
Michel DiStefano; B.A.(Providence), M.A.(Trinity International)
Sanjay Kumar; B.A.(Maharshi Dayanand), M.A.(Meerut),
M.Phil.(Delhi)
Cory Labrecque; B.Sc., M.A.(McG.)
Nathan Loewen; B.Th. (Can. Mennonite), B.A.,M.S.T.,
S.T.M.(St. Andrew's Col., Sask.)
Lucille Marr; B.A., M.A., Ph.D.(Wat.)
John Milton; B.A.(C’dia), M.Div.(Trinity International)
Michelle Rebidoux; B.A.(York), M.A., Ph.D.(McG.)
Vanessa Sasson; B.A., M.A., Ph.D.(McG.)
Manjit Singh; B.A., M.A.(Delhi)
John M. Simons; B.A.,M.Div.,(Trin. Coll., Tor.),
Ph.D.(G’town) (PT)
Glenn Smith, B.A.,M.Div., D.Min.(Northern Baptist
Seminary, Ill.), D.Hon.(Union des universités privées d'Haiti)
Michael Storch; B.A.(Alta.), Ph.D. Candidate(McG.)
John Vissers; B.A.(Tor.), M.Div.(Knox, Tor.), Ph.D.(Princ.),
Th.D.(Knox, Tor.) (PT)
Richard Walker; B.A., M.A.(Calif.), Ph.D. Candidate(McG.)

Numata Visiting Professor
Robert Kritzer; B.A., Calif., Berk.), M.A.(Calif., Berk.),
Ph.D.(Calif., Berk.)

Associate Members
A. Uner Turgay; B.A.(Robert Coll., Istanbul), M.A., Ph.D.
(Madison-Wisc.)
Leigh Turner; B.A.,M.Div.,(Manit.), M.A., Ph.D.(S. Calif.)

Adjunct Professor
T. Jinpa Langri; Dr. Div, B.A.(King's Coll., Lond.), Ph.D.(Camb.)
# Faculty of Science, including School of Computer Science

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11.1 The Faculty

11.1.1 Location

Dawson Hall
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Canada

Telephone: (514) 398-4210
Faculty Website: www.mcgill.ca/science
Student Affairs Office Website: www.mcgill.ca/artscisao

The Student Affairs Office and the Office of the Associate Dean of the Faculty of Science are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both the Faculty of Science and the Faculty of Arts.

11.1.2 Faculty Administrative Officers

Martin Grant; B.Sc.(PEI), M.Sc., Ph.D.(Tor.)  Dean
Laurie Hendren; B.Sc., M.Sc. (Qu.), Ph.D.(C’nell),  Associate Dean (Academic)
Henry Leighton; B.Sc., M.Sc.(McG.), Ph.D.(Alta)  Associate Dean (Student Affairs)
David H. Burns; B.Sc.(Puget Sound), Ph.D.(Wash.)  Associate Dean (Research)
Josie D’Amico  Assistant to the Dean
Sharon Bezeau; B.A.(Tor.), M.A.(C’dia)  Recorder
Donald Sedgewick; B.Sc., M.Sc.(McG)  Senior Adviser

11.1.3 Programs and Teaching in Science

The Faculty of Science is committed to providing outstanding teaching and research facilities. The Faculty draws on its involvement in cutting-edge research to ensure teaching excellence at the undergraduate level. Professors who are spearheading projects that are changing people’s understanding of the world teach regularly at the undergraduate level. Also, research-based independent study courses offer students the opportunity to contribute to their professors’ work, rather than just learn about it.

In an effort to supplement classroom learning with real life experience, the Faculty of Science has increased opportunities for undergraduate students to participate in fieldwork. Certain B.Sc. programs can include an internship component. This is on top of the many undergraduate students the Faculty hires for Work-Study projects and other research programs. McGill Science students have an opportunity to get involved in the structuring of their own education. A Science Undergraduate Society initiative launched Operation Open Access, a project that gives Science students universal access to e-mail, the Internet, and the latest in science software through computer ‘infopoints’ located in areas of the campus frequented by Science students.

The Faculty of Science offers programs leading to the degree of Bachelor of Science (B.Sc.). Admission is selective; fulfillment of the minimum requirements does not guarantee acceptance. Admission criteria are described in "2006-07 Undergraduate Admissions Guide (Appendix A)". There are also two Diploma programs offered in Science. The "Diploma in Environment", in section 13.11, is under the McGill School of Environment, is a 30-credit program available to holders of a B.Sc. or B.A. or equivalent. The Diploma in Meteorology, is a one-year program available to holders of a degree in Mathematics, Engineering, Physics and other appropriate disciplines who wish to qualify for a professional career in Meteorology. See section 11.12.3 "Atmospheric and Oceanic Sciences (ATOC)". All credits for these diplomas must be completed at McGill.

The concurrent B.Sc./B.Ed. program is designed to provide students with the opportunity to obtain both a B.Sc. and a B.Ed. after a minimum of 135 credits of study. For more information, see section 11.12.31 "Science for Teachers" and "Concurrent Bachelor of Science (Major or Major Concentration with a Minor for Teachers) and Bachelor of Education Secondary Program", in section 6.5.1.3, Faculty of Education.

In addition to the Major Program in Software Engineering offered in the Faculty of Science, there is also a Bachelor of Software Engineering program offered jointly with the Faculty of Engineering (refer to the “Department of Electrical and Computer Engineering”, in section 7.5.4).

Finally, the Faculties of Arts and Science jointly offer the Bachelor of Arts and Science (B.A. & Sc.), which is described in section 5 "Bachelor of Arts and Science".

11.1.4 Student Affairs Office

The Student Affairs Office provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and programs, degree requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.

Students should consult with advisers in the Student Affairs Office (advisor.artsci@mcgill.ca) as well as departmental advisers. If necessary, special requests can be made, in writing, to the Associate Dean (Student Affairs).

The Committee on Student Standing (CSS) will consider appeals of the Associate Dean’s (Student Affairs) decisions. For information about CSS, see the Associate Dean’s secretary.

11.2 Faculty Admission Requirements

For information about admission requirements for the B.Sc., please refer to "2006-07 Undergraduate Admissions Guide (Appendix A)". For information about inter-faculty transfers, please refer to the General University Information and Regulations, "Inter-Faculty Transfer", in section 3.3.12, as well as the relevant information posted on the Student Affairs Office Website at www.mcgill.ca/artscisao/departmental/transfer, and in the Student Affairs Office.

11.3 Faculty Degree Requirements

Each student in the Faculty of Science must be aware of the Faculty Regulations as stated in this Calendar. While departmental and faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration, for compliance with, and completion of, program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student's responsibility to seek guidance from the Student Affairs Office if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

To be eligible for a B.Sc. degree, students must fulfill all Faculty and program requirements as indicated below:

- "Minimum Credit Requirement"; see section 11.3.1
- "Residency", see section 11.3.2
- "Cumulative Grade Point Average (CGPA)", see section 11.3.3
- "Time and Credit Limit for the Completion of the Degree", see section 11.3.4
- "Program Requirements", see section 11.3.5
- "Course Requirements", see section 11.3.6
11.3.1 Minimum Credit Requirement

Each student's minimum credit requirement for the degree is determined at the time of acceptance and is specified in the letter of admission. Students are normally admitted to a four-year degree requiring the completion of 120 credits.

11.3.1.1 Advanced Standing

Advanced standing of up to 30 credits may be granted to students who obtain satisfactory results in International Baccalaureate, French Baccalaureate, Advanced Levels, Advanced Placement tests, or the Diploma of Collegial Studies (DCS). Quebec students with a DCS in Science are granted 30 credits advanced standing and will have normally completed the equivalent of, and are therefore exempt from, the basic science courses in biology, chemistry, mathematics and statistics, and physics. Students with satisfactory results in International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests may be exempt from some or all of the basic science courses.

AP Examination results with a score of 4 or 5 must be declared by the student at the time of initial registration at the university. For more information about advanced standing, please consult: www.mcgill.ca/student-records/transfercredits/information.

11.3.1.2 Equivalencies for Non-Basic Science Courses

Note that equivalences for some non-basic science courses, specifically organic chemistry courses CHEM 212 and CHEM 222 and for PSYC 204, are granted on a per-CEGEP basis. For more information about equivalences for non-basic Science courses, please consult: www.mcgill.ca/student-records/transfercredits/information.

If the CEGEP and/or course is not listed on this Website, students should refer to the Student Affairs Website and follow the instructions for advanced standing for students admitted to McGill from CEGEP: www.mcgill.ca/artsci/ao/freshman/new/standing.

11.3.1.3 Readmission after Interruption of Studies for a Period of Five Consecutive Years or More

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new CGPA will be calculated. The Associate Dean (Student Affairs), in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

Students who are readmitted after a period of absence are subject to the program and degree requirements in effect at the time of readmission. The Associate Dean (Student Affairs), in consultation with the department, may approve exemption from any new requirements.

11.3.2 Residency

To obtain a B.Sc. degree, students must satisfy the following residency requirements: a minimum of 60 credits of courses used to satisfy the B.Sc. degree requirements must be taken and passed at McGill, exclusive of any courses completed as part of the basic science requirements defined below. At least two-thirds of all department program requirements (Honours, Major, Faculty Program, or Minor) must normally be completed at McGill. However, students in Honours, Major, and Faculty Programs who pursue an approved Study Away or Exchange Program may, with departmental approval, be exempted from the two-thirds rule. In addition, some departments may require that their students complete specific components of their program at McGill.

The residency requirement for diplomas is 30 credits completed at McGill.

11.3.3 Cumulative Grade Point Average (CGPA)

Each candidate for the degree must achieve a minimum cumulative grade point average (CGPA) of 2.00.

11.3.4 Time and Credit Limit for the Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their degree in no more than eight terms after their initial registration for the degree. Students who wish or need to exceed these limits must receive permission from the Associate Dean (Student Affairs) to continue their studies. Students who wish to exceed the minimum credit requirement for their degree must also seek permission of the Associate Dean (Student Affairs) to continue their studies. Permission for exceeding the time and/or credit limits will normally be granted only for valid academic reasons, such as a change of program (approval of the department is required) and part-time status.

Students in the Freshman Program become subject to these regulations one year after their initial registration.

11.3.5 Program Requirements

11.3.5.1 Freshman Program and Basic Science Requirements

Students who need 97-120 credits (four years) to complete their degree requirements must register in the Science Freshman Program, which is designed to provide the basic science foundation for a student's subsequent three-year Faculty, Major, or Honours program. The basic science requirements are as follows: two terms each of calculus, general chemistry, and general physics, and one term of biology. For a more detailed description of the Science Freshman Program, students should consult the Arts and Science Freshman Student information available on the Student Affairs Website, www.mcgill.ca/artsci/fo/freshman and "Academic Programs", in section 11.12.

Students who have completed the Diploma of Collegial Studies, Advanced Placement exams, Advanced Levels, the International Baccalaureate, or McGill placement examinations may receive exemption and/or credit for all or part of the basic science courses in biology, chemistry, mathematics and statistics, and physics. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits. Students should consult "Advanced Standing", in section 11.3.1.1 for more information.

11.3.5.2 Faculty, Major, and Honours Programs

Science students who need 96 or fewer credits to complete their degree requirements are required to select their courses in each term with a view to timely completion of their degree and program requirements. Students must register in one of the following types of departmental programs leading to the degree of Bachelor of Science:

A Faculty program is an approved coherent selection of courses giving students a useful concentration in a recognized area. Students in a Faculty program may choose a pattern of study that can range from one yielding a broad education to one specializing in particular areas.

Major programs are more specialized than Faculty programs and are usually centred on a specific discipline or department. For prospective teachers, the Faculty also offers Major programs that can constitute the Science component of the Concurrent B.Sc./B.Ed. Program. For more information about this joint degree, refer to section 11.3.5.5 "Concurrent B.Sc./B.Ed. Program".

Honours programs typically involve an even higher degree of specialization, often include supervised research, and require students to maintain a high academic standard. Although Honours programs are specially designed to prepare students for graduate studies, graduates of the other degree programs are also normally admissible to most graduate schools. Students who intend to pur-
sue graduate studies in their discipline should consult a departmental adviser regarding the appropriate selection of courses in their field.

11.3.5.3 Minor and Minor Concentration Programs

In addition to the above degree programs, students in the Faculty of Science may select a Minor or approved Minor Concentration program. These are coherent sequences of courses in a given discipline or interdisciplinary area that may be taken in addition to the courses required for the degree program.

Science Minors consist of up to 24 credits.

Arts Minor Concentrations consist of 18 credits. A minimum of 18 new credits must be completed in the Minor or Minor Concentration.

For a list of "Minor Programs", see section 11.11.6; for Minor Concentrations that are approved for Science students, see section 11.11.10 "Faculty of Arts Major and Minor Concentration Programs Available to Science Students".

11.3.5.4 Other Second Programs

In addition to a Faculty, Major, or Honours program, students may pursue a second Faculty, Major, or Honours program, or an Arts Major Concentration program. A minimum of 36 new credits must be completed in the second program.

11.3.5.5 Concurrent B.Sc./B.Ed. Program

The Concurrent B.Sc./B.Ed. Program described in section 11.12.31 "Science for Teachers" is designed to provide students with the opportunity to obtain both a B.Sc. and a B.Ed after a minimum of 135 credits of study.

Science students who might want to enter the program should visit the B.Sc./B.Ed. Website at www.mcgill.ca/artsci/departmental/selection/scistudents/concurrent or contact Prof. Dik Harris, e-mail: dik.harris@mcgill.ca.

11.3.5.6 Internship Program for Engineering and Science (IYES)

Certain B.Sc. programs offered by the Department of Atmospheric and Oceanic Sciences, the Department of Mathematics and Statistics, the Department of Physics, and the School of Computer Science can include an internship component; see section 11.11.9 "Internship Programs – Internship Year for Engineering and Science (IYES)". Students from other departments are also eligible to apply for an internship year, but this will not be part of their degree designation. For more details, students should refer to the Faculty of Engineering, "IYES: Internship Year for Engineering and Science", in section 7.2.8.

11.3.5.7 McGill School of Environment

The Faculty of Science is one of the three faculties in partnership with the McGill School of Environment; see section 13 "McGill School of Environment".

11.3.6 Course Requirements

All required and complementary courses used to fulfill program requirements, including the basic science requirements, must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do additional work for a supplemental grade, if these options are available, or repeat the course. Course substitution will be allowed only in special cases; students should consult their academic adviser.

Normally, students are permitted to repeat a failed course only once. (Failure is considered to be a grade of less than C or the administrative failures of J and KF.) If a required course is failed a second time, a student must appeal to the Associate Dean (Student Affairs) for permission to take the course a third time. If permission is denied by the Associate Dean and/or by the Committee on Student Standing, on appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs offered are given in each unit's section together with the locations of departmental advisory offices, program directors, and telephone numbers should further information be required.

11.3.6.1 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, at another university, at CEGEP, or advanced placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate. It is the student's responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

Sometimes the same course is offered by two different departments. Such courses are called "double-prefix" courses. When such courses are offered simultaneously, students should take the course offered by the department in which they are obtaining their degree. For example, in the case of double-prefix courses CHEM XYZ and PHYS XYZ, Chemistry students would take CHEM XYZ and the Physics students would take PHYS XYZ. If a double-prefix course were offered by different departments in alternate years, students could take whichever course best fits their schedule.

Credit for computer and statistics courses offered by faculties other than Science requires the permission of the Associate Dean of Science (Student Affairs) and will be granted only under exceptional circumstances.

Credit for statistics courses will be given with the following stipulations:

1. Credit will be given for ONLY ONE of the following introductory statistics courses: AEMA 310, BIOL 373, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, EPSC 215, GEOG 202, MATH 203, MGCR 271, PSYC 204, SOCI 350.

2. Credit will be given for ONLY ONE of the following intermediate statistics courses: AEMA 411, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, GEOG 351, MATH 204, MGCR 272, PSYC 305, SOCI 461.

3. Students who have already received credit for MATH 324 or MATH 357 will NOT receive credit for any of the following: AEMA 310, AEMA 411, BIOL 373, ECON 227D1/ECON 227D2, ECON 257D1/ECON 257D2, EPSC 215, GEOG 202, GEOG 351, MATH 203, MATH 204, MGCR 271, MGCR 272, PSYC 204, PSYC 305, SOCI 350.

4. For 500-level statistics courses not listed above, students must consult a program adviser to ensure that no significant overlap exists. Where such overlap exists with a course for which the student has already received credit, credit for the 500-level course will not be allowed.

5. Credit for statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science (Student Affairs), except for students in the B.Sc. Major in Environment, who may take required statistics courses in the Faculty of Agricultural and Environmental Sciences necessary to satisfy their program requirements.

6. PSYC 204 may not be taken if a grade of 75% or better was received in an equivalent course completed at CEGEP.

11.3.6.2 Courses Outside the Faculties of Arts and Science

Students in the Faculty of Science should consult the statement of regulations for taking courses outside the Faculties of Arts and Science. The regulations are posted in the Student Affairs Office and on the Student Affairs Website, www.mcgill.ca/artsci/departmental/selection/scistudents/outsidepolicy. A list of
approved/not approved courses in other faculties is posted with the regulations; students may take courses on the approved list and may not, under any circumstances, take courses on the not-approved list. Requests for permission to take courses that are not on either list should be addressed to the Associate Dean (Student Affairs).

The regulations are as follows:

• Courses in other faculties that are considered as taught by Science (e.g., BIOT, EXMD, and PHAR) are so designated in the Science section of the Calendar.
• Courses in Music are considered as outside the Faculties of Arts and of Science, except MUAR courses, which are considered as Arts courses.
• Courses in other faculties can be taken as elective courses or as part of a program as specified in the Calendar.
• Students may take only 6 credits per year, up to 18 credits in all, of courses outside the Faculties of Arts and of Science.
• Students must have the necessary prerequisites and permission of the instructor for such courses.
• Credit for courses in Education and Continuing Education requires the permission of the Associate Dean of Science (Student Affairs).
• Credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science (Student Affairs) and will be granted only under exceptional circumstances.
• Students who use Minerva to register for a course that exceeds the specified limitations or that is not approved will have the course flagged for no credit after the course change period.
• Credit will not be given for any “how to” courses offered by other faculties that are intended to provide students with only practical or professional training in specific applied areas. Examples include courses that teach the use of certain computer packages (databases, spreadsheets, etc.) or computer languages (SQL, COBOL, FORTRAN, etc.), machine shop or electronic shop courses, technical drawing courses, and professional practice courses.
• For students registered in the McGill School of Environment before September 2003: Students in the MSE may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and of Science beyond the requirements of their MSE programs.
• For students who registered in the McGill School of Environment on or after September 2003: Students in the MSE may exceed the 18-credit limit for courses outside the Faculties of Arts and of Science, provided that all such courses are necessary to complete their program of study.
• Students in the Major in Software Engineering may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and Science beyond the requirements of their major.
• Students taking the Minor in Management may take 21 credits of courses outside the Faculties of Arts and of Science.
• The 18-credit limit applies to students taking the Minor in Nutrition; equivalent courses in Science should be taken instead of courses in the Faculty of Agricultural and Environmental Sciences.

11.3.6.3 Correspondence, Distance Education or Web-based Courses

Science students may obtain transfer credit for correspondence, distance education or Web-based courses if they receive prior approval from the appropriate McGill department for the course content and prior approval from the Associate Dean of Science (Student Affairs) for the method of delivery and evaluation.

11.3.6.4 Courses Taken under the Satisfactory/ Unsatisfactory Option

Students may take one elective course per term that is to be graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of credits taken at McGill to fulfill their degree requirements. The decision to have an elective course graded as Satisfactory/Unsatisfactory must be made by students before the end of the Drop/Add period. This option is not available to Special, Visiting, Exchange or IUT students. For more information, students should consult “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option”, in section 3.3.6.

11.3.6.5 Courses in English as a Second Language (ESL)

ESL courses are open to Science students under the regulations specified by the English and French Language Centre.

11.3.6.6 Auditing of Courses

No auditing of courses is permitted at McGill.

11.3.6.7 Course Credit Weight

The credit assigned to a particular course should reflect the amount of effort it demands of the student. Normally, one credit will represent three hours total work per week for one term—including a combination of lecture hours, other contact hours, such as laboratory periods, tutorials, and problem periods, as well as personal study time.

11.4 Advising

Fall-term academic advising for newly admitted students takes place during the week prior to the beginning of classes. Students who are newly admitted to the Winter term should consult the Calendar of Dates for exact advising dates.

Students who need 96 or fewer credits to complete their degree requirements must consult an academic adviser in their proposed department of study to obtain advice and approval of their course selection. Quebec students with a Diploma of Collegial Studies in Science have normally taken the equivalent of, and are therefore exempt from, the 100-level basic science courses in Biology, Chemistry, Mathematics and Statistics, and Physics. Such students may also be exempt from some 200-level courses. Students with satisfactory results in International Baccalaureate, French Baccalauréat, Advanced Levels, and Advanced Placement tests may also be exempt from some or all of the basic sciences courses. To facilitate program planning, they must present their transcripts and letters of admission. For a detailed description of advising and registration procedures, students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as to the information posted on the Student Affairs Website, www.mcgill.ca/artsci/departmental/advising.

Students who need 97-120 credits to complete their degree requirements will normally be registered in a Freshman Program until they complete their first year. They must consult an adviser in the Student Affairs Office to obtain advice and approval of their course selection. For a detailed description of advising and registration procedures, Freshman students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as to the information on the Student Affairs Website, www.mcgill.ca/artsci/departmental/advising.

Academic advising is also available by e-mail. The address is adviser.artsci@mcgill.ca.
11.5 Registration

All students register by Minerva, McGill’s Web-based registration system. For detailed information about registration, students should refer to “Registration”, in section 3.3: Welcome to McGill; the Student Affairs Website, www.mcgill.ca/arts cisao/registration; and the Minerva Website, www.mcgill.ca/minerva.

Students who fall into unsatisfactory standing at the end of the academic year will have their registration cancelled. They may not re-register in the Faculty. However, students who can provide proof of exceptional extenuating circumstances that affected their academic performance may appeal to the Associate Dean of Science (Student Affairs) for readmission. For more information, students should consult the Student Affairs Office, or read the information on the Student Affairs Website, www.mcgill.ca/arts cisao/departmental/registration; or the Minerva Website, www.mcgill.ca/minerva.

Students who have an outstanding fee balance from a previous term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but subsequently take Summer courses without paying the fees, will have their registration cancelled. Registration on Minerva will be denied until these debts are paid in full. Students must pay all debts before the end of the registration period to be permitted to re-register. Students with financial problems should consult the Student Aid Office, Brown Student Services Building.

Students who decide not to return to McGill after initiating registration must withdraw from all of their courses on Minerva or inform the Student Affairs Office in writing. The deadline for withdrawal from the University is the same deadline as for a course withdrawal; see the Calendar of Dates. After the deadline, students may, under exceptional circumstances, be granted permission to withdraw from the University. Such students should contact the Student Affairs Office for further information.

11.5.1 Program Registration

For detailed information about registering for programs, students should refer to Welcome to McGill; the Arts and Science Registration information on the Student Affairs Website, www.mcgill.ca/arts cisao/departmental/registration; or the Minerva Website, www.mcgill.ca/minerva.

See section 11.1.1 “Lists of Programs Offered” for a list of programs that can be taken by Science students.

11.5.2 Course Registration

All courses have limited enrolment.

Subject to the course restrictions listed in this section and unless otherwise indicated, students in the Faculty of Science may register for and take credit any course in the sections of the Calendar applicable to the Faculties of Arts and of Science.

Since the registration system is unable to verify whether or not Faculty regulations are respected, it is technically possible to register for courses that are closed to Science students. When students’ records are manually verified, however, any “closed” courses will be flagged after the end of course change period as “not for credit towards the B.Sc.” As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and the Class Schedule to determine whether permission is required of the instructor, the department, or the Faculty for any course they wish to take.

Students who believe they have valid reasons to take a course that is normally closed to Science students must obtain permission from the Associate Dean of Science (Student Affairs) before registering for the course. Only the Associate Dean or, on appeal, the Committee on Student Standing, can make exceptions to the Faculty rules.

11.5.2.1 Registration for First-Year Seminars

Registration for First-Year Seminars is limited to students in their first year of study at McGill, i.e., newly admitted students in U0 or U1. These courses are designed to provide a closer interaction with professors and better working relations with peers than is available in large introductory courses. These seminars endeavor to teach the latest scholarly developments and expose participants to advanced research methods. Registration is on a first-come, first-served basis. The maximum number of students in any seminar is 25, although some are limited to even fewer than that. Students may take only one First-Year Seminar. Students who register for more than one will be obliged to withdraw from all but one of them. Please consult the departmental listings for course descriptions and availability.

CHEM 199 FYS: Why Chemistry?
PSYT 199 FYS: Mental Illness and the Brain

The First-Year Seminars offered by the Faculty of Arts are also open to Science students. For a complete listing, please consult Arts “First-Year Seminars”, in section 4.12.1.

11.5.2.2 Registration in Multi-Term Courses

Students who select a multi-term course are making a commitment to that course for its entirety. Students MUST register in the same section in all terms of a multi-term course. Credit will be jeopardized if students deliberately register in different sections of a multi-term course. In exceptional cases, when circumstances are beyond the student’s control, the Student Affairs Office may grant permission to change sections mid-way through a multi-term course. Students must make their request in writing to the Associate Dean (Student Affairs) citing their reason for the request. The request must also have the written support of the instructors of the sections involved and of the coordinator of the course (if applicable).

11.5.3 Registration for Graduation

Students in their final year must indicate their expected date of graduation on Minerva and must verify this date on unofficial transcripts. When final-year students change their expected date of graduation, they must notify the Student Affairs Office immediately. Failure to do so may postpone graduation.

Students who complete their degree requirements elsewhere at any time after their last registered term at McGill must apply to the Associate Dean (Student Affairs) to graduate. Application to graduate must be made sufficiently in advance of the expected graduation date to allow the Faculty to verify the student’s record. For further information, students should contact the Student Affairs Office.

11.6 Grading and Credit

During the first week of lectures, each instructor will provide students with a written course outline. This information should include, where appropriate:

• whether there will be a final examination in the course;
• how term work will affect the final mark in the course;
• how term work will be distributed through the term;
• whether there will be a supplemental examination in the course, and, if so, whether term work will be included in the supplemental grade (courses with formal final examinations must have supplements);
• whether students with marks of D, F, J or U will have the option of submitting additional work, and, if so, how the supplemental mark will be calculated with the extra work.

11.6.1 Incomplete Grades

An instructor who believes that there is justification for a student to delay submitting term work may extend the deadline until after the
end of the course. In this case, the instructor will submit a grade of K (incomplete), indicating the date by which the work is to be completed. The maximum extensions for the submission of grades to the Student Affairs Office are as follows:

- students graduating in June: Fall, Winter and multi-term courses April 30
- non-graduating students: Fall April 30
- Winter and multi-term courses July 30

Students' deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time. It is important to note that instructors may impose earlier deadlines than those listed above.

If marks to clear Ks have not been submitted to the Student Affairs Office by April 30 for Fall courses, or July 30 for Winter courses and courses spanning Fall/Winter, the K is automatically changed to a KP and counts as an F in the GPA.

Students with a grade of K who have serious extenuating circumstances may request an extension of the K deadline (KE) from the Associate Dean (Student Affairs). Please refer to "Grading and Grade Point Averages (GPA)", in section 3.6.3 for more information about grading and credit.

### 11.7 Examinations

Students should refer to "Examinations", in section 3.7, for information about final examinations and deferred examinations. Note that for the Faculty of Science, "University Regulations Concerning Final Examinations", in section 3.7.2.1 applies to courses up to and including the 500 level.

The exam schedules are posted on the McGill Website, www.mcgill.ca, normally one month after the start of classes for the Tentative Exam Schedule, and two months after the start of classes for the Final Examination Schedule. Students should also refer to the Student Affairs Website for more information: www.mcgill.ca/artsgrs/departmental/examination/supplemental.

### 11.8 Supplemental Assessments

#### 11.8.1 Supplemental Examinations

Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

- students must be in satisfactory or probationary standing;
- students must have received a final grade of D, F, J or U in the course;
- students must avail themselves of this privilege at the time of the next supplemental examination period;
- special permission is required if a student wishes to write supplemental examinations totalling more than 8 credits;
- only one supplemental examination is allowed in a course;
- the supplemental result may or may not include the same proportion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the course change period;
- the format of the supplemental examination (e.g., multiple-choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental;
- the supplemental result will not erase the grade originally obtained, which is used in calculating the GPA; both the original mark and the supplemental result will be calculated in the CGPA;
- in courses in which both a supplemental examination and additional work are available, the student may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
- additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;
- supplemental examinations in courses outside the Faculty of Science are subject to the deadlines, rules and regulations of the relevant faculty;
- no supplemental examinations are available for students who fail to achieve satisfactory grades in deferred examinations.

For courses in the Faculties of Arts and of Science, the supplemental examination period for Fall courses is during the months of April and May; for Winter courses, and courses spanning Fall/Winter, the supplemental examination period is during the last week of August.

Supplemental examination applications are available at the Student Affairs Office, and on their Website at www.mcgill.ca/artsgrs/departmental/examination/supplemental. The deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter. A non-refundable fee for each supplemental paper is payable at the time of application. Students who register for a supplemental examination and subsequently find themselves unprepared for it should not write it; except for the loss of the registration fee, there is no penalty for not writing a supplemental examination. Students should consult the Student Affairs Office for further information.

#### 11.8.2 Additional Work

Instructors of courses that include graded written term work may choose to provide the option of additional work to eligible students. The following conditions apply:

- if there is an option for additional work, it must be announced in the course outline at the beginning of the course;
- additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;
- students must be in satisfactory or probationary standing;
- students must have received a final grade of D, J, F, or U in the course;
- the weight of the additional work will be equal to the weight given the work revised or replaced when the original mark was submitted;
- the mark resulting from the revised or additional work will be recorded as a supplemental mark;
- the supplemental result will not erase the grade originally obtained, which is used in calculating the GPA; both the original mark and the supplemental mark will count in calculating the CGPA;
- in courses in which both a supplemental examination and additional work are available, the student may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
- additional work in courses outside the Faculty of Science is subject to the deadlines, rules, and regulations of the relevant faculty.

Additional work applications are available in the Student Affairs Office. The deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter. A non-refundable fee is payable for each course at the time of application. Students should consult the Student Affairs Office for further information.
11.8.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark, to discuss this submission with the examiner, and to obtain an impartial and competent review of any mark.

The Faculty of Science recognizes two types of impartial reviews: reassessments of coursework (i.e., of term papers, midterms, assignments, quizzes, etc.) and rereads of final examinations. In both cases, rather than re-correct the work and grade it as they would have done themselves, reviewers assess the appropriateness of the original grade based, for example, on the application of the grading key to the student's work. If a grade is deemed unfair, it is changed, whether the new grade is higher or lower than the original — i.e., the reviewer's grade takes precedence over the original grade.

A. Reassessment of Coursework

Reassessments of coursework are administered and conducted solely by the units involved according to procedures specified by the units and made available to staff and students. Requests for such reassessments must be made within 10 working days after the graded material has been made available for students to view it. Reassessments should normally be completed within 20 working days of the request.

B. Rereads of Final Examinations

Rereads of final examinations are administered by the Student Affairs Office, but conducted by the units involved. Students must apply in writing to the Student Affairs Office by March 31 for courses in the Fall term and by September 30 for courses in the Winter or Summer terms (these deadlines are strictly enforced and no requests for rereads will be accepted past them). Students are assessed a fee of $35 for such rereads. It is strongly recommended, but not required, that students consult the instructor of the course before requesting a reread of a final examination.

Reassessments and rereads in courses not in the Faculty of Science are subject to the deadlines, rules, and regulations of the relevant faculty.

11.9 Academic Standing

Academic standing is based primarily on students' cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the Fall term, in May for the Winter term, and in September for the Summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the Fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and Fall-term grades for courses that span the Fall and Winter terms do not affect academic standing for the Fall term, even though they will ultimately affect students' Fall TGPA. Therefore, academic standings for the Fall term that are designated as "interim" should be interpreted as advisory. Note that interim standings will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.

- New students are admitted to satisfactory standing.
- Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing

Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the Winter term.

- Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
- Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the Summer term.
- Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
- Students who were previously in unsatisfactory readmitted standing will be placed in probationary standing (for the Fall or Winter term) if their CGPA is less than 2.00, and if they satisfy relevant conditions specified in their letter of readmission.

Unsatisfactory Readmitted Standing

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean (Student Affairs) or the Committee on Student Standing will have their standing changed to unsatisfactory readmitted standing. Their course load is specified in their letter of readmission, as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the Winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Student Affairs) no later than July 15 for readmission to the Fall term and November 15 for the Winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean (Student Affairs) or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.
Students in the Concurrent B.Sc./B.Ed. Program who receive an F or J in any Education Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program. However, they may apply to transfer to a conventional B.Sc. program as outlined in section 11.12.31 “Science for Teachers”.

Incomplete Standings
Standing awaits deferred examination. Must clear Ks, Ls or Supplemental.
Standing Incomplete.
Students with incomplete standings in the Winter or Summer term may register for the Fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to unsatisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.
Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean (Student Affairs) as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).
Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.
At the end of the Winter term, students with a mark of K or L will be placed in the appropriate standing in June, if the outstanding mark in the course will not affect their result. Otherwise the standing decision will only be made once their incomplete marks have been cleared. For more information about incomplete grades, please refer to section 11.6.1 "Incomplete Grades".

11.10 Awards and Honorary Designations

11.10.1 Honours and First-Class Honours
Departments may recommend to the Faculty that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:
• students must complete all requirements imposed by the department;
• for Honours, the CGPA at graduation must be at least 3.00;
• for First-Class Honours, the CGPA at graduation must be at least 3.50;
• some departments may impose additional requirements, which must be met before students are recommended for Honours or First-Class Honours. These will be found in the departmental descriptions of Honours programs.
Students in an Honours program whose CGPA is below 3.00 or who did not satisfy certain program requirements must consult their adviser to determine if they are eligible to graduate in a program other than Honours.

11.10.2 Distinction or Great Distinction
Students in Faculty or Major programs may be awarded their degrees with Distinction or Great Distinction under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the B.Sc. degree to be eligible;
• for Distinction, the CGPA at graduation must be 3.30 to 3.49;
• for Great Distinction, the CGPA at graduation must be 3.50 or greater;
• these designations may be withdrawn in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Science.

11.10.3 Dean’s Honour List
The designation Dean’s Honour List may be awarded to graduating students under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the B.Sc. degree to be considered;
• students must be in the top 10% of the Faculty’s graduating class of students; this calculation is based on the CGPA;
• this honorary designation may be withdrawn in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Science.
The designation Dean's Honour List may be awarded at the end of each academic year to continuing students under the following conditions:
• students must have completed at least 27 graded credits during the academic year to be considered;
• students must be among the top 10% of the Faculty. This calculation is based on the sessional GPA (a combined GPA for Fall and Winter terms).

11.10.4 Medals and Prizes
Various medals, scholarships and prizes are open to continuing and graduating students. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available in the Admissions, Recruitment and Registrar’s Office or on the Web: www.mcgill.ca. No application is required except in the case of the Moyse Travelling Scholarships.

11.11 Lists of Programs Offered

11.11.1 Faculty Programs
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Biology and Mathematics – see Biology, page 322
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Chemistry and Biological Sciences – see Chemistry, page 329
Chemistry and Mathematics – see Chemistry, page 329
Mathematics and Computer Science – see Mathematics and Statistics, page 343
Mathematics, Statistics and Computer Science – see Mathematics and Statistics, page 343
Mathematics, Chemistry and Physics – see Mathematics and Statistics, page 344
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11.11.2 Major Programs

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Atmospheric Science, page 317
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Chemistry, page 328
Chemistry (Bio-organic option), page 329
Chemistry (Environmental Chemistry option), page 329
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Computer Science, page 332
Earth and Planetary Sciences, page 335
Earth System Science (subject to the approval of the Ministère de l'Éducation, du Loisir, et du Sport), page 337
Environment (Atmospheric Environment and Air Quality domain) – see McGill School of Environment, page 410
Environment (Biodiversity and Conservation domain) – see McGill School of Environment, page 401
Environment (Earth Sciences and Economics domain) – see McGill School of Environment, page 410
Environment (Ecological Determinants of Health domain - Cellular) – see McGill School of Environment, page 402
Environment (Ecological Determinants of Health domain - Population) – see McGill School of Environment, page 403
Environment (Environmetrics domain) – see McGill School of Environment, page 404
Environment (Food Production and Environment domain) – see McGill School of Environment, page 405
Environment (Land Surface Processes and Environmental Change domain) – see McGill School of Environment, page 406
Environment (Water Environments and Ecosystems domain - Biological) – see McGill School of Environment, page 408
Environment (Water Environments and Ecosystems domain - Physical) – see McGill School of Environment, page 409
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Neuroscience (subject to the approval of the Ministère de l'Éducation, du Loisir et du Sport), page 349
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11.11.3 Joint Major Programs

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Mathematics and Computer Science – see Mathematics and Statistics, page 345
Physics and Computer Science – see Physics, page 354
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11.11.4 Honours Programs

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Chemistry, page 328
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Chemistry (Environmental Chemistry option), page 328
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Immunology (Interdepartmental) – application required, see Faculty of Science entry for Immunology, page 340
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11.11.5 Joint Honours Programs

Mathematics and Computer Science – see Mathematics and Statistics, page 346
Mathematics and Physics – see Physics, page 355
Physics and Chemistry – see Physics, page 355

11.11.6 Minor Programs

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Cognitive Science, page 330
Computational Molecular Biology – see Computer Science, page 332
Computer Science, page 332
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Management – see Faculty of Science entry for Management, page 341
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Pharmacology, page 351
Physics, page 353
Psychology, page 360
Statistics – see Mathematics and Statistics, page 343
Technological Entrepreneurship for Science Students – application required, see Faculty of Science entry, page 364

Notes:
1. The Minor in Computer Science is not available to students in the following programs: Honours in Computer Science; Honours in Mathematics and Computer Science; Faculty Program in Mathematics and Computer Science.
2. The Minor in Chemical Engineering is only available to students in Chemistry.
3. The Minor in Electrical Engineering is only available to students in the Major program in Physics.
11.11.7 Concurrent B.Sc/B.Ed. Program (Science for Teachers)

Major in Mathematics for Teachers – see Science for Teachers, page 364
Major Concentration in Biology with a Minor in Chemistry for Teachers – see Science for Teachers, page 363
Major Concentration in Biology with a Minor in Physics for Teachers – see Science for Teachers, page 363
Major Concentration in Chemistry with a Minor in Biology for Teachers – see Science for Teachers, page 364
Major Concentration in Chemistry with a Minor in Physics for Teachers – see Science for Teachers, page 364
Major Concentration in Physics with a Minor in Biology for Teachers – see Science for Teachers, page 364
Major Concentration in Physics with a Minor in Chemistry for Teachers – see Science for Teachers, page 364

11.11.8 Bachelor of Arts and Science

Please see the "Bachelor of Arts and Science", in section 5 of the Calendar, for details.

11.11.9 Internship Programs – Internship Year for Engineering and Science (IYES)

The following programs are also available with an internship component. For more information, please see "IYES: Internship Year for Engineering and Science", in section 7.2.8.

Atmospheric and Oceanic Sciences
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Computer Science
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Mathematics and Statistics
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Physics
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Joint Major Program in Atmospheric Science and Physics, page 317
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11.11.10 Faculty of Arts Major and Minor Concentration Programs Available to Science Students

For more information, please see the relevant departmental entries in the Faculty of Arts section.

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English – Drama and Theatre, page 101
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German Language and Literature, page 110
German Language and Culture, page 111
German Studies, Contemporary, page 111
History, page 115
International Development Studies, page 118
International Relations – see Political Science, page 143
Italian Language and Literature, page 120
Italian Civilization, page 121
Jewish Studies, page 122
Joint Honours Program in Physics and Mathematics, page 355
Joint Honours Program in Physics and Chemistry, page 355
Joint Honours Program in Physics with a Minor in Chemistry, page 355
Joint Honours Program in Physics with a Minor in Biology, page 355
Joint Honours Program in Physics with a Minor in Engineering, page 355
Minor Concentrations
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Anthropology, page 81
Art History, page 83
Canadian Studies, page 84
Canadian Ethnic Studies, page 84
Canadian Studies, page 85
Catholic Studies, page 88
Classics, page 89
Comparative Politics – see Political Science, page 142
Comparative Studies, page 142
East Asian Language and Literature, page 92
East Asian Cultural Studies, page 92
East Asian Studies, Advanced, page 93
Economics, page 97
English – Cultural Studies, page 100
English – Literature, page 100
English – Drama and Theatre, page 100
Geographical Information Systems – see Geography, page 107
Geography, page 107
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International Relations – see Political Science, page 143
Italian Language and Literature, page 120
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Language and Literatures, page 129
Law and Languages, page 129
Law and Languages, page 129
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Middle East Studies, page 131
Music, page 132
North American Studies, page 134
Philosophy, page 136
Philosophy and Western Religions, page 138
Political Science, page 144
Québec Studies, page 148
Russian, page 156
Scriptures and Interpretation – see Religious Studies, page 152
Sociology, page 164
Women's Studies, page 165
World Religions – see Religious Studies, page 151
11.12 Academic Programs

11.12.1 Science Freshman Program

Students who need 97-120 credits to complete their degree requirements will normally be registered in the Science Freshman Program until they complete their first year. They must consult an adviser in the Student Affairs Office to obtain advice and approval of their course selection. Full details are available on the Student Affairs Office Website at www.mcgill.ca/artscisao. Academic advising is also available by e-mail. The address is newstudentadvising.artsci@mcgill.ca.

B.Sc. Freshman Program requirements

All B.Sc. freshman students are required to complete the following basic science courses in their freshman year.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 111</td>
<td>Principles: Organismal Biology</td>
</tr>
<tr>
<td>or BIOL 112</td>
<td>Cell and Molecular Biology</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>General Chemistry 1</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>General Chemistry 2</td>
</tr>
<tr>
<td>MATH 139</td>
<td>Calculus</td>
</tr>
<tr>
<td>or MATH 140</td>
<td>Calculus 1</td>
</tr>
<tr>
<td>or MATH 150</td>
<td>Calculus A</td>
</tr>
<tr>
<td>MATH 141</td>
<td>Calculus 2</td>
</tr>
<tr>
<td>or MATH 151</td>
<td>Calculus B</td>
</tr>
<tr>
<td>PHYS 101</td>
<td>Introductory Physics - Mechanics</td>
</tr>
<tr>
<td>or PHYS 131</td>
<td>Mechanics and Waves</td>
</tr>
<tr>
<td>PHYS 102</td>
<td>Introductory Physics - Electromagnetism</td>
</tr>
<tr>
<td>or PHYS 142</td>
<td>Electromagnetism and Optics</td>
</tr>
</tbody>
</table>

Electives: Students wishing to take elective courses may choose them from introductory courses offered by departments in the Facilities of Science or Arts. Certain courses offered by other faculties may also be taken, but some restrictions apply. Consult the Student Affairs Office Website at www.mcgill.ca/artscisao/departmental/selection/scistudents/outsidepolicy for more information about taking courses from other faculties. The maximum number of courses per term is five.

Notes:

1. All basic science courses are worth four (4) credits except for BIOL 111 and BIOL 112, and MATH 140, which are weighted three (3) credits.
2. The faculty requirement is one biology course.
3. Most medical and dental schools require both biology courses.

Students entering the Freshman Program, who have decided on their orientation in Science, should be aware of the department specific information below when selecting their courses. Please note that students who are uncertain about their future program are advised to register in BIOL 112 and follow the physical science stream of physics courses. They will then be able to enter any departmental program, all of which are designed to be completed in the final three years of the degree.

BIOLOGICAL SCIENCES

Anatomy
Biochemistry
Biology
Honours Immunology
Microbiology & Immunology
Physiology

Although only one biology course is required for the freshman science program, students should check the Calendar for the requirements of their chosen program. Students who intend to enter a Biology program should take both BIOL 111 and BIOL 112. Students who intend to take a program in another biological science department are advised to take BIOL 112.

PHYSICAL SCIENCES

Atmospheric & Oceanic Sciences
Chemistry
Earth & Planetary Sciences
Mathematics
Physics

Students who intend to enter a program in the physical sciences should take PHYS 131 and PHYS 142, as well as MATH 133 Vectors, Matrices and Geometry.

COMPUTER SCIENCE

In addition to the two calculus courses, students should take MATH 133 Vectors, Matrices and Geometry. Students should also take COMP 202 in their freshman year.

ENVIRONMENTAL SCIENCES

Students interested in this science stream should follow the biological sciences or the physical sciences program, depending on their interest.

GEOGRAPHY

Students who intend to enter a program in Geography should take GEOG 203 Environmental Systems, or GEOG 205 Global Change: Past, Present and Future, as well as MATH 133 Vectors, Matrices and Geometry.

PSYCHOLOGY

Students who intend to enter a program in Psychology should take PSYC 100 Introduction to Psychology, PSYC 211 Introductory Behavioural Neuroscience, and/or PSYC 213 Cognition. Unless students are sure that Psychology will be their program choice, it is recommended that freshman science students not take PSYC 204 Introduction to Psychological Statistics because it may preclude credit for statistics courses required by other science programs. The choice of a statistics course is better left to the second year.

Students should not take SOCI 216 Social Psychology.

11.12.2 Anatomy and Cell Biology (ANAT)

Strathcona Anatomy and Dentistry Building
3640 University Street, Room 1/48
Montreal, QC H3A 2B2
Telephone: (514) 398-6335
Website: www.medicine.mcgill.ca/anatomy

Chair — John J.M. Bergeron

Emeritus Professors
Yves Clermont; B.Sc.(Montr.), Ph.D.(McG.), F.R.C.S.
Dennis G. Osmond; B.Sc., M.B., Ch.B., D.Sc.(Brist.), M.R.C.S., L.R.C.P., F.R.S.C., F.R.C.S.
H. Warshawsky; B.Sc. (Sir G. Wms.), M.Sc., Ph.D.(McG.)

Professors
Alain Beaudet; M.Sc., Ph.D., M.D.(Montr.) (joint appoint. with Neurology & Neurosurgery)
Gary C. Bennett; B.A., B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)
John J.M. Bergeron; B.Sc.(McG.), Ph.D., D.Phil.(Oxf.)
James R. Brawer; B.S.(Tufts), Ph.D.(Harv.)
Miguel Burnier; M.D., M.Sc., Ph.D.(Brazil) (joint appoint. with Ophthalmology)(No. 157)
Louis Hemo; B.A.(Loyola), M.Sc., Ph.D.(McG.)
Charles P. Leblond; M.D.(Paris), Ph.D.(Montr.), D.Sc.(Acad.), F.R.S., F.R.S.C.
Sandra C. Miller; B.Sc.(Sir G. Wm.), M.Sc., Ph.D.(McG.)
Carlos R. Morales; D.V.M.(U.N., Argentina), Ph.D.(McG.)
Barry I. Posner; M.D.(Manit.), F.R.C.P.(C) (joint appoint. with Medicine)
Alfredo Ribeiro-da-Silva; M.D., Ph.D.(Oporto) (joint appoint. with Pharmacology and Therapeutics)

Associate Professors
Chantal Autier; B.Sc.(C'dia), Ph.D.(McG.)
Philip Barker; B.Sc.(S.Fraser), Ph.D.(Alta.) (joint appoint. with Neurology & Neurosurgery)
Orest W. Blaschuk; B.Sc.(Winn.), M.Sc.(Manit.), Ph.D.(Tor.) (joint appoint. with Surgery)
Eugene Daniels; M.Sc., Ph.D.(Manit.)
Samuel David; Ph.D.(Manit.) (joint appoint. with Neurology & Neurosurgery)
Eline Davis; B.Sc., M.Sc.(W.Ont.), Ph.D.(McG.)
Timothy Kennedy; B.Sc.(McM.), M.Phil., Ph.D.(Col.) (joint appoint. with Neurology & Neurosurgery)
Michael F. Lalli; B.Sc., M.A.(Bowling Green), Ph.D.(McG.)
Nathalie Lamarche; B.Sc., Ph.D.(Montr.)
Martin Latterich; B.Sc., Ph.D.(Durham)
Marc D. McKee; B.Sc., M.Sc., Ph.D.(McG.) (joint appoint. with Dentistry)
Peter McPherson; B.Sc.(Manit.), Ph.D.(Iowa) (William Dawson Scholar) (joint appoint. with Neurology & Neurosurgery)
Dieter Reinhardt; M.S.(Kaiserslautern), Ph.D.(Munich)
Wayne Sossin; S.B.(MIT), Ph.D.(Stan.) (joint appoint. with Neurology & Neurosurgery)
Stephan Stifani; Ph.D.(Rome), Ph.D.(Alta.) (joint appoint. with Neurology & Neurosurgery)
Hojatollah Vafi; B.Sc., M.Sc., Ph.D.(Munich) (joint appoint. with Earth and Planetary Sciences)
Dominique Walker; B.Sc., Ph.D.(Geneva) (joint appoint. with Psychiatry)

Assistant Professors
Fiona Bedford; B.Sc.(Birm.), Ph.D.(Lond.)
Eric Chevet; M.Sc., Ph.D.(Paris) (joint appoint. with Surgery)
Michael T. Greenwood; B.Sc., M.Sc.(C'dia), Ph.D.(McG) (joint appoint. with Medicine)
Craig Mandato; B.Sc., Ph.D.(Wat.)
John F. Presley; B.A., Ph.D.(Texas)
Gary E. Wild; B.Sc., Ph.D., M.D., C.M.(McG.) (joint appoint. with Medicine)

Associate Members
Albert Berghuis (Biochemistry)
Colin Chalk (Neurology & Neurosurgery)
Jean-François Cloutier (Neurology & Neurosurgery)
Claudio Cuello (Pharmacology & Therapeutics)
Giovanni DiBattista (Medicine)
Allyson Fournier (Neurology & Neurosurgery)
Janet Henderson (Medicine)
Paul F. Lasko (Biology)
Andrea Leblanc (Neurology & Neurosurgery)
Peter Metrakos (Department of Surgery)
Edward S. Rutherford (Neurology & Neurosurgery)
Philippe Seguela (Neurology & Neurosurgery)
David Y. Thomas (Biochemistry)
Jackie Vogel (Biology)

Adjunct Professors
Miroslaw Cygler; M.Sc., Ph.D.(Lodz, Poland)
Michel Cayouette; Ph.D.(Laval)
Daniel Cyr; B.Sc., M.Sc.(C'dia), Ph.D.(Manit.)
Michel Desjardins; M.Sc., Ph.D.(Montr.)
Jacques Drouin; B.Sc., D.Sc.(Laval)
Marko Horb; Ph.D.(SUNY)
Sadayuki Inoue; M.Sc., Ph.D.(Hok. U.)
Artur Kania; Ph.D.(Baylor)
Bartha Knoppers; Ph.D.(France)
André Nantel; B.Sc., M.Sc.(Laval), Ph.D.(Chapel Hill)
Maureen O'Conner-McCourt; Ph.D.(Alta.)
Joachim Osterman; Ph.D.(U. Munchen, Germany)
Alexei Pshehzhtetsky; Ph.D. (Russia)
Joseph Schrag; M.Sc., Ph.D.(Ill.)
Jackson G. Snipes; Ph.D., M.D.(Vanderbilt)
Pierre Thibault; Ph.D.(Montr.)

The Department of Anatomy and Cell Biology offers courses that deal with cell biology, histology, embryology, neuroanatomy, and gross anatomy. The Honours Program is designed as the first phase in the training of career cell and molecular biologists. The Major and Faculty programs offer decreasing levels of specialization in Anatomy and Cell Biology but with a broader base in other biological sciences. These programs also form a sound background for graduate studies in Anatomy and Cell Biology, or for further professional training in schools of medicine, dentistry and other health sciences. A B.Sc. in Anatomy and Cell Biology provides an excellent preparation for technical and administrative positions in laboratories of universities, research institutions, hospitals and pharmaceutical and biotechnological industries.

The Department is equipped to perform cell fractionation, protein purification, recombinant DNA technology, micro-injection of molecules into single cells, cytochemical, immunocytochemical and fluorescent analysis and electron microscopy, proteomics and genomics. The Department has a well-equipped centre for electron microscopy as well as a centre for confocal and immunofluorescence.

Inquiries about programs should be directed to the Department of Anatomy and Cell Biology.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Biomedical Sciences", in section 5.12.4 for details.

FACULTY PROGRAM IN ANATOMY AND CELL BIOLOGY

(57 credits)

Required Courses (36 credits)
ANAT 212 (3) Molecular Mechanisms of Cell Function
ANAT 214 (3) Systemic Human Anatomy
ANAT 261 (4) Introduction to Dynamic Histology
  (must be taken in U1)
ANAT 262 (3) Introductory Molecular and Cell Biology
BIOL 200 (3) Molecular Biology
BIOL 202 (3) Basic Genetics
CHEM 212* (4) Introductory Organic Chemistry 1
CHEM 222* (4) Introductory Organic Chemistry 2
PHGY 209 (3) Mammalian Physiology 1
PHGY 210 (3) Mammalian Physiology 2
MATH 203* (3) Principles of Statistics 1
  or PSYC 204 (3) Introduction to Psychological Statistics
  or BIOL 373 (3) Biometry

* If the equivalents to these courses were passed in CEGEP (as defined at http://mcgill.ca/student-records/transfercredits/information/) they are not required for the Anatomy and Cell Biology programs, and may not be re-taken at McGill. Students must take the equivalent number of credits in Elective Courses to satisfy the total credit requirement for their degree.
Complementary Courses (21 credits)
12 credits selected from:
- ANAT 321 (3) Circuitry of the Human Brain
- ANAT 322 (3) Neuroendocrinology
- ANAT 365 (3) Cellular Trafficking
- ANAT 381 (3) Basis of Embryology
- ANAT 458 (3) Membranes and Cellular Signaling
- NEUR 310 (3) Cellular Neurobiology
9 credits selected from biologically oriented courses (BOC) in the following list:
- BIOL 300, BIOL 301, BIOL 303, BIOL 306, BIOL 313, BIOL 314, BIOL 357, BIOL 370, BIOL 389, BIOL 468, BIOL 475, BIOL 516, BIOL 518, BIOL 520, BIOL 522, BIOL 524, BIOL 530, BIOL 531, BIOL 532, BIOL 544, BIOL 551, BIOL 572, BIOL 588.
- ANAT 322, ANAT 365, ANAT 381, ANAT 432*, ANAT 458/BIOC 458, ANAT 541.
- BIOC 311, BIOC 312, BIOC 450, BIOC 454, BIOC 455, BIOC 503, BIOC 505.
- EXMD 401, EXMD 502, EXMD 503, EXMD 504, EXMD 506, EXMD 507, EXMD 508, EXMD 509, EXMD 510, EXMD 512D1/EXMD 512D2.
- MIMM 314, MIMM 323, MIMM 324, MIMM 386D1/MIMM 386D2, MIMM 387, MIMM 413, MIMM 414, MIMM 465, MIMM 466, MIMM 509.
- NUTR 307
- PATH 300.
- PHAR 300, PHAR 301, PHAR 303, PHAR 562, PHAR 563.
- PHGY 311, PHGY 312, PHGY 313, PHGY 314, PHGY 451, PHGY 502, PHGY 508, PHGY 513, PHGY 515, PHGY 516, PHGY 517, PHGY 518, PHGY 552, PHGY 556.
- PSYT 500.

*Not open to students in the Faculty Program or Major Program in Anatomy and Cell Biology.

MAJOR IN ANATOMY AND CELL BIOLOGY
(67 credits)

Required Courses (43 credits)
all Faculty Program required courses, plus:
- BIOL 301 (4) Cell and Molecular Laboratory
- MIMM 314 (3) Immunology

Complementary Courses (24 credits)
12 credits selected from:
- ANAT 321 (3) Circuitry of the Human Brain
- ANAT 322 (3) Neuroendocrinology
- ANAT 365 (3) Cellular Trafficking
- ANAT 381 (3) Basis of Embryology
- ANAT 458 (3) Membranes and Cellular Signaling
- NEUR 310 (3) Cellular Neurobiology
- 9 credits selected from biologically oriented courses (BOC) in the Faculty Program required courses, plus:
  - MIMM 314 (3) Immunology
  - MIMM 323 (3) Cell and Molecular Biology of Aging
  - MIMM 324 (3) Cell and Molecular Biology of Aging
  - MIMM 386D1 (3) Immunology
  - MIMM 386D2 (3) Immunology
  - MIMM 387 (3) Immunology
  - MIMM 413 (3) Immunology
  - MIMM 414 (3) Immunology
  - MIMM 465 (3) Immunology
  - MIMM 466 (3) Immunology
  - MIMM 509 (3) Immunology

Honours in Anatomy and Cell Biology
(73 credits)
Students should register at the Major level in U1 and, if accepted, may enter the Honours Program at the beginning of U2. To enter the program, the student must obtain a CGPA of at least 3.00 at the end of U1. For promotion to the U3 year of the Honours program, or for entry into the program at this level, the student must have a CGPA of at least 3.20 at the end of their U2 year. It is expected that at the beginning of the third year the students who wish to continue in the Honours Program will be those who feel that they are seriously interested in a career in Cell Biology. The Honours Degree will be recommended after successful completion of the Program with a CGPA of at least 3.20.

Required Courses (52 credits)
all Major Program required courses, plus:
- ANAT 432 (9) Honours Research Project
analyzing the motion and composition of the air, its thermodynamic behavior, and its interaction with radiation and with the solid or liquid surface beneath it.

From one viewpoint, the atmosphere may be studied as a large volume of gas by the methods of fluid mechanics: winds, circulation patterns, turbulence, and energy and momentum exchanges are the ideas employed in this approach. Alternatively, the atmosphere may be studied from the point of view of its detailed physics: how water condenses in the air, how cloud droplets make rain, how sunlight warms the ground and the ground warms the air above it by radiation and convection, and how the atmosphere and ocean interact to shape the weather and climate. A comprehensive understanding requires both viewpoints, and these are reflected in the curriculum.

The Department of Atmospheric and Oceanic Sciences offers four main programs in Atmospheric Science: Honours, Major, Minor, and a Joint Major in Atmospheric Science and Physics. The Honours program is meant for students with high standing. It is based on courses similar to those in the Major program, but provides the opportunity to take advanced optional courses. The Major program, although somewhat less intensive, satisfies the requirements for a professional career as a meteorologist, and like the Honours program equips the student to undertake postgraduate study in meteorology, atmospheric science, and related sciences (physical oceanography) at any of the leading universities. The Department also offers a special one-year Diploma program to B.Sc. or B.Eng. graduates.

A degree in Atmospheric Science can lead to a professional career in government service or private industry. The Meteorological Service of Canada has traditionally been the main employer of graduating students, but certain provincial governments and environmental consulting and engineering firms also employ graduates trained in atmospheric science. Positions in teaching and research are available to graduates with M.Sc. and Ph.D. degrees. Students interested in any of the undergraduate programs should consult the Undergraduate Adviser, Room 946, Burnside Hall.

**Internship Year for Engineering and Science (IYES)**

IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see "IYES: Internship Year for Engineering and Science", in section 7.2.8.

The following programs are also available with an internship component:

- **Major in Atmospheric Science**
- **Honours in Atmospheric Science**

A Science Major Concentration in Earth, Atmosphere and Ocean Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Earth, Atmospheric and Ocean Sciences", in section 5.12.7 for details.

**MINOR IN ATMOSPHERIC SCIENCE** (18 credits)

The Minor may be taken in conjunction with any program in the Faculty of Science.

**Required Courses** (15 credits)

ATOC 214 (3) Introduction: Physics of the Atmosphere
ATOC 215 (3) Oceans, Weather and Climate
ATOC 219 (3) Introduction to Atmospheric Chemistry
or CHEM 219 (3) Introduction to Atmospheric Chemistry
ATOC 309 (3) Weather Radars and Satellites
ATOC 315 (3) Water in the Atmosphere

**Complementary Course** (3 credits)

ATOC 412 (3) Atmospheric Dynamics
or ATOC 540 (3) Synoptic Meteorology 1

**MAJOR IN ATMOSPHERIC SCIENCE** (61 credits)

**Required Courses** (46 credits)

ATOC 214 (3) Introduction: Physics of the Atmosphere
ATOC 215 (3) Oceans, Weather and Climate
ATOC 309 (3) Weather Radars and Satellites

ATOC 315 (3) Water in the Atmosphere
ATOC 412 (3) Atmospheric Dynamics
ATOC 540 (3) Synoptic Meteorology 1
ATOC 541 (3) Synoptic Meteorology 2
ATOC 546 (3) Current Weather Discussion
COMP 208 (3) Computers in Engineering
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations
PHYS 230 (3) Dynamics of Simple Systems
PHYS 232 (3) Heat and Waves
PHYS 257 (3) Experimental Methods 1

**Complementary Courses** (15 credits)

- 3-6 credits to satisfy a statistics requirement, usually:
  - MATH 323 (3) Probability
  - MATH 324 (3) Statistics

- 3 credits selected from:
  - PHYS 333 (3) Thermal and Statistical Physics
  - PHYS 340 (3) Electricity and Magnetism

- 6-9 credits ordinarily selected from:
  - ATOC 419 (3) Advances in Chemistry of Atmosphere
  - or CHEM 419 (3) Advances in Chemistry of Atmosphere
  - ATOC 515 (3) Turbulence in Atmosphere and Oceans
  - GEOG 322 (3) Environmental Hydrology
  - GEOG 372 (3) Running Water Environments
  - MATH 317 (3) Numerical Analysis
  - MATH 319 (3) Partial Differential Equations
  - MATH 423 (3) Regression and Analysis of Variance
  - PHYS 241 (3) Signal Processing
  - PHYS 331 (3) Topics in Classical Mechanics
  - PHYS 332 (3) Physics of Fluids
  - or MATH 555 (4) Fluid Dynamics
  - PHYS 340 (3) Electricity and Magnetism
  - PHYS 342 (3) Electromagnetic Waves

**JOINT MAJOR IN ATMOSPHERIC SCIENCE AND PHYSICS** (67 credits)

This Major provides a solid basis for postgraduate study in meteorology, atmospheric physics, or related fields, and the necessary preparation for embarking on a professional career as a meteorologist directly after the B.Sc.

The program is jointly administered by the Department of Physics and the Department of Atmospheric and Oceanic Sciences. Students should consult undergraduate advisers in both departments.

**Required Courses** (64 credits)

ATOC 214 (3) Introduction: Physics of the Atmosphere
ATOC 215 (3) Oceans, Weather and Climate
ATOC 309 (3) Weather Radars and Satellites
ATOC 315 (3) Water in the Atmosphere
ATOC 412 (3) Atmospheric Dynamics
ATOC 540 (3) Synoptic Meteorology 1
ATOC 541 (3) Synoptic Meteorology 2
ATOC 546 (3) Current Weather Discussion
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations
PHYS 230 (3) Dynamics of Simple Systems
PHYS 232 (3) Heat and Waves
PHYS 257 (3) Experimental Methods 1
PHYS 258 (3) Experimental Methods 2
PHYS 331 (3) Topics in Classical Mechanics
PHYS 333 (3) Thermal and Statistical Physics
PHYS 339 (3) Measurements Laboratory in General Physics
Faculty of Science

Required Courses (52 credits)

ATOC 214 (3) Climate Dynamics 2
ATOC 215 (3) Waves and Stability
ATOC 513 (3) Climate Dynamics 1
ATOC 512 (3) Atmospheric & Oceanic Dynamics
ATOC 530 (3) Climate Dynamics 2
ATOC 540 (3) Synoptic Meteorology 1
ATOC 541 (3) Synoptic Meteorology 2

Complementary Courses (3 credits)

PHYS 434 (3) Optics
PHYS 439 (3) Laboratory in Modern Physics

Honours in Atmospheric Science (70 credits)

Students can be admitted to the Honours program after completion of the U1 year of the Major in Atmospheric Science program with a minimum GPA of 3.30. Students having completed a U1 year in a different program with high standing may be admitted to the Honours program on the recommendation of the Department.

A minimum GPA of 3.30 in the Honours Program courses (taken as a whole) is required to remain in the program. A CGPA of 3.30 on the total program is also required to graduate with honours.

Required Courses (52 credits)

ATOC 214 (3) Introduction: Physics of the Atmosphere
ATOC 215 (3) Oceans, Weather and Climate
ATOC 309 (3) Weather Radars and Satellites
ATOC 315 (3) Water in the Atmosphere
ATOC 480 (3) Honours Research Project
ATOC 512 (3) Atmospheric and Oceanic Dynamics
ATOC 530 (3) Climate Dynamics 1
ATOC 540 (3) Synoptic Meteorology 1
ATOC 546 (1) Current Weather Discussion
COMP 208 (3) Computers in Engineering
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations
MATH 319 (3) Partial Differential Equations
PHYS 230 (3) Dynamics of Simple Systems
PHYS 232 (3) Heat and Waves
PHYS 257 (3) Experimental Methods 1

Complementary Courses (18 credits)

3-6 credits to satisfy a statistics requirement, usually:
MATH 203 (3) Principles of Statistics 1
or MATH 324 (3) Statistics
and MATH 324 (3) Statistics
3 credits selected from:
PHYS 333 (3) Thermal and Statistical Physics
PHYS 340 (3) Electricity and Magnetism

6 credits ordinarily selected from:
PHYS 419 (3) Advances in Chemistry of Atmosphere
or CHEM 419
ATOC 515 (3) Turbulence in Atmosphere and Oceans
MATH 317 (3) Numerical Analysis
PHYS 241 (3) Signal Processing
PHYS 331 (3) Topics in Classical Mechanics
PHYS 332 (3) Physics of Fluids
or MATH 555 (4) Fluid Dynamics
PHYS 340 (3) Electricity and Magnetism
PHYS 342 (3) Electromagnetic Waves
GEOG 372 (3) Running Water Environments
MATH 423 (3) Regression and Analysis of Variance
6 credits selected from:
ATOC 513 (3) Waves and Stability
ATOC 531 (3) Climate Dynamics 2
ATOC 541 (3) Synoptic Meteorology 2

Diploma in Meteorology (30 credits)

The Department offers an intensive, one-year program in theoretical and applied meteorology to B.Sc. or B.Eng. graduates of suitable standing in physics, applied mathematics or other appropriate disciplines, leading to a Diploma in Meteorology. The program is designed for students with little or no previous background in meteorology who wish to direct their experience to atmospheric or environmental applications, or who need to fulfill academic prerequisites in meteorology to qualify for employment. For further information, consult the Administrative Officer, Burnside Hall, Room 946.

An exemption of up to 6 credits may be allowed for courses already taken. Students granted such exemptions are required to add complementary courses from an approved list to maintain a total credit count of 30 completed at McGill.

Required Courses (18 credits)

ATOC 512 (3) Atmospheric & Oceanic Dynamics
ATOC 513 (3) Waves and Stability
ATOC 530 (3) Climate Dynamics 1
ATOC 531 (3) Climate Dynamics 2
ATOC 540 (3) Synoptic Meteorology 1
ATOC 541 (3) Synoptic Meteorology 2

Complementary Courses (12 credits)

6 credits ordinarily selected from:
ATOC 515 (3) Turbulence in Atmosphere and Oceans
GEOG 522 (3) Advanced Environmental Hydrology
MATH 317 (3) Numerical Analysis
MATH 319 (3) Partial Differential Equations
PHYS 331 (3) Topics in Classical Mechanics
PHYS 340 (3) Electricity and Magnetism
PHYS 342 (3) Electromagnetic Waves
PHYS 332 (3) Physics of Fluids
or MATH 555 (4) Fluid Dynamics

Earth System Science Interdepartmental Major

This program is offered by the Departments of Atmospheric & Oceanic Sciences, Earth & Planetary Sciences and Geography. Students in the Department of Atmospheric & Oceanic Sciences interested in this program should contact Professor Peter Yau (peter.yau@mcgill.ca). For more information, see section 11.12.11 “Earth System Science Interdepartmental Major (ESYS)”.

11.12.4 Biochemistry (BIOC)

McIntyre Medical Sciences Building, Room 802
3655 Promenade Sir William Osler
Montreal, QC H3G 1Y6
Telephone: (514) 398-1898
Fax: (514) 398-7384
E-mail: rachelle.leger@mcgill.ca
Website: www.mcgill.ca/biochemistry

Chair — David Y. Thomas
Emeritus Professors
Angus F. Graham; M.Sc.,(Tor.), Ph.D., D.Sc.(Edin.), F.R.S.C.
Rose M. Johnstone; B.Sc., Ph.D.(McG.), F.R.S.C.
Edward A. Meighen; B.Sc.(Alta), Ph.D.(Berk.)
Samuel Solomon; M.Sc., Ph.D.(McG.), F.R.S.C.
Theodore L. Sourkes; M.Sc.(McG.), Ph.D.(C’nell), F.R.S.C.
Clifford P. Stanners; B.Sc.(McM.), M.A., Ph.D.(Tor.)

Professors
Nico Beauchemin; B.Sc., M.Sc., Ph.D.(Montr.) (joint appoint. with Oncology)
Rhoda Blostein; B.Sc., M.Sc., Ph.D.(McG.), F.R.S.Q. (joint appoint. with Medicine)
Philip E. Branton; B.Sc., M.Sc., Ph.D.(Tor.) (Gilman Cheney Professor of Biochemistry)
Peter E. Braun; B.Sc., M.Sc.(Br. Col.), Ph.D.(Berk.).
Kalle Gehring; B.Sc.(Mich.), Ph.D.(Duke).
Vincent Gigueré; B.Sc., Ph.D.(Laval) (joint appoint. with Oncology).
Philippe Gros; B.Sc., M.Sc.(Montr.), Ph.D.(McG.) (James McGill Professor).
Annette A. Herscovics; B.Sc., Ph.D.(McG.), F.R.S.C. (joint appoint. with Oncology).
Robert E. MacKenzie; M.N.S., B.Sc.(Agr.) (McG.), Ph.D.(C’nell.).
William Muller; B.Sc., Ph.D.(McG.).
Walter E. Mushynski; B.Sc., Ph.D.(McG.).
Alain Nepveu; B.Sc., M.Sc.(Montr.), Ph.D.(Sher.) (joint appoint. with Oncology).
Morag Park; B.Sc., Ph.D.(Glasgow) (William Dawson Scholar) (joint appoint. with Oncology).
Jorry Pelletier; B.Sc., Ph.D.(McG.).
Gordon C. Shore; B.Sc.(Guelph), Ph.D.(McG.).
Joseph Shuster; B.Sc.(McG.), Ph.D.(Calif.), M.D.(Alta.) (joint appoint. with Medicine).
John R. Silvius; B.Sc., Ph.D.(Alta.).
David Y. Thomas; B.Sc.(Brist.), M.Sc., Ph.D.(Univ. Coll., Lond.), F.R.S.C.
Michel L. Tremblay; B.Sc., M.Sc.(Sher.), Ph.D.(McM.).
Maria Zannis-Hadjopoulos; B.Sc., M.Sc., Ph.D.(McG.) (joint appoint. with Oncology).
Associate Professors
Albert Berghuis; B.Sc., M.Sc.(Rijks Univ.Groningen, the Netherlands), Ph.D.(Br. Col.).
Amim Pause; B.Sc., M.Sc.(U. Konstanz, Germ.), Ph.D.(McG.).
Assistant Professors
Maxime Bouchard; B.Sc., Ph.D.(Laval).
Imed Gallouzi; Maîtrise, DEA, Ph.D.(Montpellier,France).
Bhushan Nagar; B.Sc., Ph.D.(Tor.).
Jason Young; B.Sc.(Tor.), Ph.D.(McM.).
Associate Members
Karine Auclair (Chemistry); John J. Bergeron (Anatomy & Cell Biology);
Mark S. Featherstone (Oncology); William C. Galley (Chemistry); Jacques Genest (Medicine);
Michael Hallett (Computer Science); Martin Latterich (Anatomy & Cell Biology);
Peter J. Roughley (Shriners Hospital); Maya Saleh (Medicine);
Erwin Schurt (Exp. Medicine, RVH); Charles Snavely (Pediatrics, MCH);
Peter Siegel (Medicine); Bernard Turcotte (Exp. Medicine, RVH);
Simon Wing (Medicine); Xiang-Jiao Yang (Molecular Oncology, RVH).
Adjunct Professors
Prabhat Arya (NRC, Ottawa); Katherine Cianflone (Laval);
Mirek Cyliger (B.R.I.); Jacques Drouin (Clin. Res. Inst.);
Karen Meervvich (Mimetogen Pharmaceuticals); Donald Nicholson (Merck); Maureen D. O’Connor-McCourt (B.R.I.);
Enrico Purisima (B.R.I.); Martine Raymond (Clin. Res. Inst.);
Sophie Roy (Merck).
Biochemistry is the application of chemical, genetic, and biophysical approaches to the study of biological processes at the cellular and molecular level. Biochemists are interested in the dynamic events that occur in cells, for example, in mechanisms of brain function; cellular differentiation; energy utilization by animals and microorganisms, and in the molecular basis of inheritance and disease. The biochemist seeks to determine how specific molecules such as proteins, nucleic acids, lipids, vitamins and hormones function in various cellular processes. Biochemists place particular emphasis on the regulation of reactions in living cells. The knowledge and methods developed by biochemists are applied in all fields of medicine, in agriculture and in many chemical and health-related industries. Biochemistry is unique in providing basic theoretical training as well as basic practical laboratory training and research in both enzymology and genetic engineering, the two basic components in the rapidly expanding field of Biotechnology.

Three programs are offered by the Department of Biochemistry. The Honours and Major programs provide a sound background for students who wish to have a professional career in biochemistry and can lead to postgraduate studies and research careers in hospitals, university or industrial laboratories. The Faculty program is less specialized, offering students opportunities to select courses in other fields of interest.

During the first year, each program provides basic training in organic, physical and analytical chemistry as well as in biology and physiology. The Honours and Major programs become more specialized in biochemistry during the following two years with additional work in chemistry and biology.

Students interested in pursuing an ad hoc Joint Major or Joint Honours degree between Biochemistry and a second discipline may consult with our Chief Adviser.

The increasing involvement of complex technology in modern society requires personnel trained in both chemistry and biology. With the advent of biotechnology, the combination of chemistry, molecular biology, enzymology and genetic engineering found in the biochemistry program provides the essential background and training in this area as well. The biochemist is in an advantageous position to fulfill this role and assume a wide variety of positions in industry and the health field. These range from research and development in the chemical and pharmaceutical industries to testing as well as research in government and hospital laboratories to management. Many graduates take higher degrees in research and attain academic positions in universities and colleges.

PRE-PROGRAM REQUIREMENTS
Entrance requirements for the Faculty, Major and Honours programs are: 6 credits in elementary biology, 6 credits in general chemistry, 3 credits in organic chemistry, 6 credits in calculus, 8-9 credits in physics. Please note that although CHEM 212 is not part of the programs, it is required as a prerequisite for CHEM 222 and either CHEM 212 or CELEG 20X are required as a corequisite for BIOL 200.

ADVISER
New students interested in Biochemistry should call (514) 398-1988 for information regarding academic advising.

Returning Students must schedule an advising appointment directly with the academic adviser assigned to them in their first year in Biochemistry.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Biomedical Sciences", in section 5.12.4 for details.

FACULTY PROGRAM IN BIOCHEMISTRY (55 credits)

U1 Required Courses (16 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 212</td>
<td>(3) Molecular Mechanisms of Cell Function</td>
</tr>
<tr>
<td>BIOL 200</td>
<td>(3) Molecular Biology</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>(3) Basic Genetics</td>
</tr>
<tr>
<td>CHEM 204</td>
<td>(3) Physical Chemistry/Biological Sciences 1</td>
</tr>
<tr>
<td>CHEM 222</td>
<td>(4) Introductory Organic Chemistry 2</td>
</tr>
</tbody>
</table>

U1 Complementary Courses (9 credits)

6 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 205</td>
<td>(3) Biology of Organisms</td>
</tr>
<tr>
<td>MIMM 211</td>
<td>(3) Introductory Microbiology</td>
</tr>
<tr>
<td>PHGY 209</td>
<td>(3) Mammalian Physiology 1</td>
</tr>
<tr>
<td>PHGY 210</td>
<td>(3) Mammalian Physiology 2</td>
</tr>
<tr>
<td>3 credits selected from:</td>
<td></td>
</tr>
<tr>
<td>BIOL 373</td>
<td>(3) Biometry</td>
</tr>
<tr>
<td>COMP 202</td>
<td>(3) Introduction to Computing 1</td>
</tr>
<tr>
<td>MATH 203</td>
<td>(3) Principles of Statistics 1</td>
</tr>
<tr>
<td>MATH 222</td>
<td>(3) Calculus 3</td>
</tr>
<tr>
<td>PSYC 204</td>
<td>(3) Introduction to Psychological Statistics</td>
</tr>
</tbody>
</table>

U2 Required Courses (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 300D1</td>
<td>(3) Laboratory in Biochemistry</td>
</tr>
<tr>
<td>BIOC 300D2</td>
<td>(3) Laboratory in Biochemistry</td>
</tr>
<tr>
<td>BIOC 311</td>
<td>(3) Metabolic Biochemistry</td>
</tr>
</tbody>
</table>
Biochemistry of Macromolecules
(3) CHEM 302
Introductory Organic Chemistry 3
(3) 

**U2 Complementary Courses** (3 credits)

3 credits selected from:
- ANAT 262
  Introductory Molecular and Cell Biology
- BIOL 303
  Developmental Biology
- BIOL 313
  Eukaryotic Cell Biology
- CHEM 352
  Structural Organic Chemistry
- CHEM 382
  Organic Chemistry: Natural Products
- MIMM 314
  Immunology

**U3 Complementary Courses** (12 credits)

at least 3 credits selected from:
- BIOC 450
  Protein Structure and Function
- BIOC 454
  Nucleic Acids

the remaining credits selected from the following list or the above:
- ANAT 261
  Introduction to Dynamic Histology
- BIOC 404
  Biophysical Chemistry
- BIOC 455
  Neurochemistry
- BIOC 458
  Membranes and Cellular Signaling
- BIOL 205
  Biology of Organisms
- BIOL 300
  Molecular Biology of the Gene
- BIOL 303
  Developmental Biology
- BIOL 304
  Evolution
- BIOL 314
  Molecular Biology of Oncogenes
- CHEM 214
  Physical Chemistry/Biological Sciences 2
- CHEM 257D1
  Introductory Analytical Chemistry
- CHEM 257D2
  Introductory Analytical Chemistry
- CHEM 352
  Structural Organic Chemistry
- CHEM 382
  Organic Chemistry: Natural Products
- CHEM 572
  Synthetic Organic Chemistry
- MIMM 211
  Introductory Microbiology
- MIMM 314
  Immunology
- PHAR 300
  Drug Action
- PHAR 301
  Drugs and Disease
- PHGY 209
  Mammalian Physiology 1
- PHGY 210
  Mammalian Physiology 2

**MAJOR IN BIOCHEMISTRY** (67 or 70 credits)

Students may transfer into the Major program at any time provided they have met all course requirements.

**U1 Required Courses** (20 credits)

- BIOC 212
  Molecular Mechanisms of Cell Function
- BIOL 200
  Molecular Biology
- BIOL 202
  Basic Genetics
- CHEM 204
  Physical Chemistry/Biological Sciences 1
- CHEM 222
  Introductory Organic Chemistry 2
- CHEM 257D1
  Introductory Analytical Chemistry
- CHEM 257D2
  Introductory Analytical Chemistry

**U1 Complementary Courses** (9 credits)

6 credits, selected from:
- BIOL 205
  Biology of Organisms
- MIMM 211
  Introductory Microbiology
- PHGY 209
  Mammalian Physiology 1
- PHGY 210
  Mammalian Physiology 2

3 credits selected from:
- BIOL 309
  Mathematical Models in Biology
- BIOL 373
  Biometry
- COMP 202
  Introduction to Computing 1
- MATH 203
  Principles of Statistics 1
- MATH 222
  Calculus 3
- PSYC 204
  Introduction to Psychological Statistics

**U2 Required Courses** (23 credits)

all Faculty Program U2 Required Courses, plus:
- ANAT 262
  Introductory Molecular and Cell Biology
- CHEM 214
  Physical Chemistry/Biological Sciences 2

**CHEM 362**
Advanced Organic Chemistry Laboratory
(2)
U3 Required Courses (15 credits)

**PHGY 311 (3)** Intermediate Physiology 1
**PHAR 301 (3)** Drugs and Disease
**PHAR 300 (3)** Drug Action
**MIMM 324 (3)** Fundamental Virology
**MIMM 314 (3)** Immunology
**EXMD 503 (3)** Advanced Endocrinology
**EXMD 502 (3)** Advanced Endocrinology
**CHEM 572 (3)** Synthetic Organic Chemistry
**CHEM 502 (3)** Advanced Bio-organic Chemistry
**CHEM 352 (3)** Structural Organic Chemistry
**BIOL 314 (3)** Molecular Biology of Oncogenes
**BIOL 313 (3)** Eukaryotic Cell Biology
**BIOL 304 (3)** Evolution
**BIOL 303 (3)** Developmental Biology
**BIOL 302 (3)** Evolutionary Biology
**CHEM 352 (3)** Structural Organic Chemistry
**BIOC 503 (3)** Immunology

the remainder, if any, to be selected from the following list:

**BIOC 300 (3)** Molecular Biology of the Gene
**BIOC 303 (3)** Developmental Biology
**BIOC 304 (3)** Evolution
**BIOC 313 (3)** Eukaryotic Cell Biology
**BIOC 314 (3)** Molecular Biology of Oncogenes
**CHEM 352 (3)** Structural Organic Chemistry
**CHEM 551 (3)** Organic Chemistry: Natural Products
**CHEM 552 (3)** Physical Organic Chemistry
**CHEM 572 (3)** Synthetic Organic Chemistry
**EXMD 502 (3)** Advanced Endocrinology
**EXMD 503 (3)** Advanced Endocrinology
**MIMM 314 (3)** Immunology
**MIMM 324 (3)** Fundamental Virology
**PHAR 300 (3)** Drug Action
**PHAR 301 (3)** Drugs and Disease
**PHGY 311 (3)** Intermediate Physiology 1
**PHGY 312 (3)** Intermediate Physiology 2

“INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY” (see section 11.12.15 “Immunology Interdepartmental Honours”); This program is offered by the Departments of Biochemistry, Microbiology and Immunology, and Physiology.

11.12.5 Biology (BIOIL)

Stewart Biological Sciences Building, Room W4-7
1205 Avenue Docteur Penfield
Montreal, QC, H3A 1B1
Telephone: (514) 398-6400
Fax: (514) 398-5069
Website: www.biology.mcgill.ca

Chair — Paul F. Lasko

Emeritus Professors
Robert L. Carroll; B.S.(Mich.), M.A., Ph.D.(Harv.), F.R.S.C.
Clark Fraser; O.C., B.Sc.(Acadia), M.Sc., Ph.D., M.D.(McG.), D.Sc.(Acadia), F.R.C.P.(C), F.R.S.C.(Molson Emeritus Professor of Genetics) (joint appoint. with Human Genetics)
Sarah P. Gibbs; A.B., M.S.(C'nell), Ph.D.(Harv.), F.R.S.C.
Barb MacLachlan; B.Sc. (Sask.), Ph.D.(Manit.) (Molson Emeritus Professor of Botany)
Rolf Sattler; B.Sc.(Tubingen), Ph.D.(Munich), F.R.S.C.

Professors
Graham A.C. Bell; B.A., D.Phil.(Oxf.), F.R.S.C.(James McGill Professor)
Gregory G. Brown; B.Sc.(Notre Dame), Ph.D.(N.Y.)
Howard Bussey; B.Sc., Ph.D.(Brist.), F.R.S.C.
Lauren Chapman; B.Sc.(Alta), Ph.D.(McG.)
Ronald Chase; A.B.(Stan.), Ph.D.(MIT)
Rajinder S. Dhindsa; B.Sc., M.Sc.(Punj.), Ph.D.(Wash.)
Siegfried Hekimi, M.Sc., Ph.D.(Geneva)
Donald L. Kramer; B.Sc.(Boston Coll.), Ph.D.(Br.Col.)
Paul F. Lasko; A.B.(Harv.), Ph.D.(MIT) (Molson Professor of Genetics) (Associate Member in Anatomy & Cell Biology)
Martin Lechowicz; B.A.(Mich. State), M.S., Ph.D.(Wisc.) (on sabbatical June - December)
Louis Lefebvre; B.Sc., M.A., Ph.D.(Montr.) (on sabbatical)
Michel Loreau; M.Sc., Ph.D.(Free Univ., Brussels)
Gerald S. Pollock; M.A., Ph.D.(Princ.)
Catherine Polvin; B.Sc., M.Sc.(Montr.), Ph.D.(Duke)
Rima Rozen; B.Sc., Ph.D.(McG.) (James McGill Professor)
Daniel J. Schoen; B.Sc., M.Sc.(Mich.), Ph.D.(Calif.) (Macleod Professor of Botany)

Associate Professors
Thomas Bureau; B.Sc.(Calif.), Ph.D.(Texas)(William Dawson Scholar)
Joseph A. Dent; B.Sc., Ph.D.(Colo.)
Francois Fagotto; Ph.D.(Neuchâtel)
Gregor Fussman; Diploma(Berlin), Ph.D.(Max-Planck-Institute)
Andrew Gonzalez; B.Sc.(Univ. Nottingham), Ph.D.(Imperial College, Univ. London)
Robert L. Levine; B.Sc.(Brooklyn), M.Sc., Ph.D.(Yale)
Neil M. Price; B.Sc.(New Br.), Ph.D.(Br.Col.)
Richard Roy; B.Sc.(Bishop's), Ph.D.(Laval)

Assistant Professors
Ehab Abouheif; M.Sc.(C'dia), Ph.D.(Duke)
Chieh Chang; B.Sc.(Chung Sun Medical & Dental College), M.Sc.(National Yang-Ming University), Ph.D.(California Institute of Technology)
Irene Gregory-Eaves; B.Sc.(Vic., B.C.), M.Sc., Ph.D.(Qu.)
Frédéric Guichard; B.Sc.(Montr.), Ph.D.(Laval)
Paul Harrison; B.Sc.(National Univ. of Ireland), Ph.D.(University of London)
Andrew Hendry; B.Sc.(Vic., B.C.), M.Sc., Ph.D.(Wash.)
Rudiger Krahe; Diploma(Alexander University), Ph.D.(Humboldt University)
Brian Leung; B.Sc.(Br.Col.), Ph.D.(Car.)
Brian McGill; B.A. (Harv.), Ph.D. (Ariz.)
Laura Nilson; B.A.(Colgate), Ph.D.(Yale) (Canada Research Chair in Genetics)

Frieder Schoeck; Diploma(Erangen), Ph.D.(Max-Planck-Institute)
Jacelyn Vogel; M.Sc.(E.III.), Ph.D.(Kansas)
Tamaara Western; B.Sc.(Dal), Ph.D.(Br.Col.)

Associate Members
Anatomy and Cell Biology: Martin Latterich, Craig Mandato Anthropology: Colin Chapman Centre for Research in Neurosciences: Sal Carbonetto, Pierre Drapeau, Robert Dunn, Yong Rao, Donald Van Meyel MNI: Kenneth Hastings MSc: Colin Chapman Neurology and Neurosurgery: Sal Carbonetto, Robert Dunn, Yong Rao, Donald Van Meyel Chair, Dept. of Human Genetics: David Rosenblatt RVH: Hugh J. Clarke, Daniel Dufort, Teruko Taketo MSc: Colin Chapman Redpath Museum: David Green, Hans Larsson, Anthony Ricciardi Adjunct Professors
NRC Lab: Malcolm S. Whitehead STRI: Eldredge Bemingham, Rachel Collin, Edward Allen Herre, William F. Laurance, David Roubik MSc: Colin Chapman Biology is the study of living things at the molecular, cellular and organismal levels. It deals with fundamental questions such as the origin and evolution of plants and animals, interactions between living organisms and their environment, mechanisms of embryonic development, structure and function of the living cell and its organelles, molecular basis of inheritance, biochemical and genetic basis of human diseases, and the operation of the brain and the nervous system. The study of biology also has vast practical applications. The knowledge, methods and concepts developed through research in the various fields of biology are applied
extensively in agriculture, medicine, biotechnology, genetic engineering, environmental protection and wildlife management.

The Department of Biology offers two Faculty Programs, a Major Program, an Honours Program, a Minor Program and a Minor Concentration in Science for Arts students. The details of these programs are given below.

The prerequisites for Biology programs include, in addition to the minimum requirements for admission to the Faculty of Science, an additional Biology and one course in Organic Chemistry. Students who have a DEC in Science but lack either of these courses must take them as extra requirements. It is advisable to take the additional CEGEP Biology in advance, if possible. The two Biology courses together prepare students for the Biology Program at McGill. Note that an introductory course in Cell and Molecular Biology (BIOL 112) is usually offered in the Summer at McGill.

The programs in Biology offer students an opportunity to specialize in more than one area of biology and provide them with a broad training in biology as compared to the more specialized programs in Biochemistry, Microbiology, Physiology and Anatomy. A B.Sc. degree in Biology, therefore, prepares students for a wide range of employment opportunities, including entry to professional schools in medicine, veterinary science, dentistry, agriculture, nursing, education and library science. It also provides solid background for those interested in careers related to environmental protection, wildlife management, biotechnology and genetic engineering. A B.Sc. degree in Biology can also lead to postgraduate studies and research careers in universities, research institutes, hospitals, and industrial or governmental laboratories.

The Department of Biology has well-equipped teaching and research laboratories and its academic staff members, research associates, postdoctoral fellows and graduate students carry out research in areas of molecular biology, human genetics, ecology, animal behaviour, developmental biology, bioinformatics, neurobiology, marine biology, plant biology, and evolution. Its teaching and research resources are extended by the Redpath Museum; the Montreal Children's, Jewish General, Montreal General, Royal Victoria and Shriners Hospitals; Macdonald Campus; Montreal Neurological Institute; and the Sheldon Biotecnohology Centre. For courses taught in the field, the stations at the Gault Nature Reserve, the Morgan Arboretum, the Bellairs Research Institute in Barbados, the Huntsman Marine Science Centre in New Brunswick, and the Smithsonian Tropical Research Institute in Panama are used. In addition, field stations near Lake Memphremagog and at Schefferville in northern Quebec are available for research projects.

The Department of Biology Undergraduate Programs 2006-2007 booklet ("Blue Book") describes in detail the content of each course and the level at which it is given, the aims and methods used, lectures, references, grading procedures, etc. The "Blue Book" also contains more information on registration, counselling, committee structure and the research interests and facilities which are represented in the Department. It is available on the Web at www.biology.mcgill.ca/undergrad/bluebook.html.

Inquiries about undergraduate programs should be directed to the Undergraduate Affairs Office, in Room W4/8, Stewart Biological Sciences Building, telephone (514) 398-7045.

Two Major Concentrations in Biology as well as two Minor Concentrations in Biology (Organismal and Cell/Molecular Options) are available to students pursuing the B.A. & Sc. degree. These Major Concentrations are described in the Bachelor of Arts and Science section of the Calendar; see "Biology (BIOL)" in section 5.12.3 for details.

Note: Although CHEM 212 is not part of the programs, either CHEM 212 or CEGEP competency 00XV is required as a pre- or co-requisite for BIOL 200.

MINOR IN BIOLOGY (24 credits)
The Minor in Biology may be taken in conjunction with any primary program in the Faculty of Science (other than programs offered by the Department of Biology). Students are advised to consult the Undergraduate Adviser in Biology as early as possible (preferably during their first year), in order to plan their course selection.

Six credits of overlap are allowed between the Minor and the primary program.

**Required Courses** (15 credits)
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- BIOL 205 (3) Ecology of Organisms
- BIOL 215 (3) Introduction to Ecology and Evolution

**Complementary Courses** (9 credits)
9 credits to be chosen from the Biology Department's course offerings, at the 300 level or above.

**FACULTY PROGRAMS**
In view of the constantly changing job market for B.Sc. graduates in biology, the Department has designed Faculty Programs to allow students to prepare for a wide range of employment opportunities. These programs offer students an opportunity to specialize in more than one area of biology, and broaden the scope of their scientific background. These programs can be tailored to provide a relatively broad spectrum of biology courses, or provide a degree of specialization in biology which approaches that of a Major Program. The flexibility and scope of these programs will not only enhance the graduate's prospects for employment, but also entrance into graduate studies. Students in the Faculty Programs are permitted to take a maximum of 9 credits of research courses. Note: Although CHEM 212 is not part of the programs, either CHEM 212 or CEGEP competency 00XV is required as a pre- or co-requisite for BIOL 200.

**FACULTY PROGRAM IN BIOLOGY** (54 or 55 credits)

**Required Courses** (15 credits)
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- BIOL 205 (3) Ecology of Organisms
- BIOL 215 (3) Introduction to Ecology and Evolution

**Complementary Courses** (39 or 40 credits)
21 or 22 credits of Biology courses, including 3 or 4 credits selected from:
- BIOL 206 (3) Methods in Biology of Organisms
- BIOL 301 (4) Cell and Molecular Laboratory
18 credits of Science courses including, at most, 3 credits of general interest Science courses (not listed in Science Major Programs).

Of the Complementary courses at least 6 of the 18 remaining Biology credits and 6 of the 18 Science credits must be above the 200 level, none may be at the 100 level; all are to be approved by the adviser.

**FACULTY PROGRAM IN BIOLOGY AND MATHEMATICS** (57 credits)

**Required Courses** (21 credits)
- COMP 202 (3) Introduction to Computing 1
- MATH 133 (3) Vectors, Matrices and Geometry
- MATH 223 (3) Linear Algebra
- MATH 315 (3) Ordinary Differential Equations
- MATH 323 (3) Probability
- MATH 324 (3) Statistics

**Complementary Courses** (36 credits)
21 credits in Biology including
12 credits selected from:
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- BIOL 205 (3) Ecology of Organisms
- BIOL 206 (3) Methods in Biology of Organisms
- BIOL 215 (3) Introduction to Ecology and Evolution

2006-2007 Undergraduate Programs, McGill University
### BIOLOGY CONCENTRATIONS

**Note:** The concentrations set out below are only guidelines for specialized training. *They do not constitute sets of requirements.*

Students interested in advanced studies in any biological discipline are strongly advised to develop their skills in computing as appropriate. As an aid to students wishing to specialize, the concentrations list key and other suggested courses by discipline.

#### Animal Behaviour Concentration

Understanding the diverse ways in which animals feed, mate, care for their offspring, avoid predators, select their habitats, communicate, and process information constitute the subject matter of behaviour. Several approaches are used to study these questions. Some focus on ecological consequences and determinants, some on physiological, genetic and developmental mechanisms, others on evolutionary origins.

**Key courses:**
- BIOL 304, BIOL 305, BIOL 306, BIOL 307, BIOL 331 or BIOL 334 or another field course with a significant behavioural component, BIOL 373.

**Other suggested courses:**
- BIOL 377, BIOL 469D1/BIO 469D2, BIOL 471D1/BIO 471D2, BIOL 477, BIOL 478

Since animal behaviour builds upon the fields of behaviour, ecology, and evolutionary biology, most courses from these fields will be relevant. Some courses that focus on a particular taxonomic group such as birds (Natural Resource Sciences WILD 420), amphibians and reptiles (BIOL 327) and marine mammals (BIOL 335) include a significant amount of behaviour.

#### Biological Diversity and Systematics

The study of biological diversity deals with the maintenance, emergence, and history of the inexhaustible variety of different kinds of organisms. It is deeply concerned with the particular characteristics of different organisms and therefore emphasizes the detailed study of particular groups and forms the basis of comparative biology. Our knowledge of diversity is organized through the study of systematics, which seeks to understand the history of life and the phylogenetic and genetic relationships of living things. Appreciation and knowledge of diversity and systematics are essential in ecology and evolutionary biology and underlie all work in resource utilization and conservation biology.

**Key course:**
- BIOL 304, BIOL 305, BIOL 373

**Other suggested courses:**
- BIOL 240, BIOL 324, BIOL 327, BIOL 328, BIOL 329, BIOL 331 or BIOL 334, BIOL 335, BIOL 350, BIOL 352, BIOL 377, BIOL 465, BIOL 469D1/BIO 469D2, BIOL 471D1/BIO 471D2, BIOL 477 or BIOL 478, BIOL 505, BIOL 555D1/BIO 555D2, BIOL 569, BIOL 571, BIOL 594

Macdonald Campus:
- PLNT 358; ENTO 440; WILD 212, WILD 307, WILD 313, WILD 350, WILD 420, WILD 424

#### Conservation Biology Concentration

Conservation Biology is the study and protection of biological diversity. It is a scientific discipline closely connecting ecology and evolutionary biology with applications in public processes working within a functional ecological context and deals with issues of how the wide variety of organisms and ecosystems can be maintained and prevented from declining. It considers population and habitat viability and complexity in the face of threats and perturbations. Cognizance of biological diversity, knowledge and expertise in both ecology and evolutionary biology, and appreciation for the political, social and economic contexts of the biodiversity crisis underlie all work in conservation biology.

**Key courses:**
- BIOL 308, BIOL 373, BIOL 465 plus at least one of the following field courses: BIOL 328 or BIOL 329 or BIOL 331 or, BIOL 334 or, BIOL 553.

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**PHGY 209 (3)** Mammalian Physiology 1  
**PHGY 210 (3)** Mammalian Physiology 2  
and 9 credits selected from:  
- **BIOL 303 (3)** Developmental Biology  
- **BIOL 304 (3)** Evolution  
- **BIOL 306 (3)** Neurobiology and Behaviour  
- **BIOL 307 (3)** Behavioural Ecology/Sociobiology  
- **BIOL 308 (3)** Ecological Dynamics  
- **BIOL 324 (3)** Ecological Genetics  
- **BIOL 370 (3)** Human Genetics Applied  
- **BIOL 530 (3)** Gene Activity in Development  
- **BIOL 531 (3)** Neurobiology Learning Memory  

6 credits of any other Biological Sciences courses  
9 credits of Mathematics  
including at least 3 credits selected from:  
- **MATH 309 (3)** Mathematical Models in Biology  
- **MATH 437 (3)** Mathematical Methods in Biology  
- **PHYS 413 (3)** Physical Basis of Physiology  
and at least 3 credits selected from:  
- **MATH 314 (3)** Advanced Calculus  
- **MATH 317 (3)** Numerical Analysis  
- **MATH 319 (3)** Partial Differential Equations  
- **MATH 327 (3)** Matrix Numerical Analysis  
- **MATH 407 (3)** Dynamic Programming  
- **MATH 423 (3)** Regression and Analysis of Variance  
- **MATH 447 (3)** Stochastic Processes  

or other suitable mathematics courses chosen in consultation with the adviser.

Advisers: Drs. M. Mackey and L. Glass (Department of Physiology)

**MAJOR IN BIOLOGY** (55 credits)

The Major requires 55 credits comprising 34 as specified below and 21 additional credits that are to be chosen by students in consultation with their adviser.

Students in the Major Program are permitted to take a maximum of 9 credits of research courses.

**Note:** Although CHEM 212 is not part of the programs, either CHEM 212 or CEGEP competency 00XV is required as a pre- or co-requisite for BIOL 200.

**U1 Required Courses**  
(18 credits)
- **BIOL 200 (3)** Molecular Biology  
- **BIOL 201 (3)** Cell Biology and Metabolism  
- **BIOL 202 (3)** Basic Genetics  
- **BIOL 205 (3)** Biology of Organisms  
- **BIOL 206 (3)** Methods in Biology of Organisms  
- **BIOL 215 (3)** Introduction to Ecology and Evolution  

**U2 or U3 Required Courses**  
(4 credits)
- **BIOL 301 (4)** Cell and Molecular Laboratory  

**U2 or U3 Complementary Courses**  
(12 credits)
- **BIOL 300 (3)** Molecular Biology of the Gene  
- **BIOL 303 (3)** Developmental Biology  
- **BIOL 304 (3)** Evolution  
- **BIOL 306 (3)** Neurobiology and Behaviour  
- **BIOL 308 (3)** Ecological Dynamics  

Other Complementary Courses (21 credits)

To be selected in consultation with the student’s adviser. All courses must be at the 300 level or higher; they are to include any seven Biology courses of which at most three may be substituted, given the adviser’s consent, with science courses offered by other departments. Unless required by the Major Program, prerequisites for these courses must be taken as electives.
Other suggested:
Macdonald Campus: NRSC 437, PLNT 358, WILD 350, WILD 415, WILD 420, WILD 421.

Evolutionary Biology Concentration
Evolutionary Biology is the study of processes that change organisms and their characteristics through time. Evolutionary biologists are concerned with adaptations of organisms and the process of natural selection.
Key courses:
BIOL 304, BIOL 305, BIOL 307, BIOL 324, BIOL 331, BIOL 352, BIOL 373, BIOL 377, BIOL 435, BIOL 468D1/BIOG 469D2, BIOL 471D1/BIOG 471D2, BIOL 477 or BIOL 478, BIOL 555 D1/BIOG 555 D2, BIOL 569, BIOL 570, BIOL 571, BIOL 572, BIOL 594
Other suggested courses in Organismal Biology:
BIOL 240, BIOL 327, BIOL 328, BIOL 335, BIOL 350,
Macdonald Campus: PLNT 358, WILD 420
Genetics and Development: BIOL 300, BIOL 303
Ecology and Behaviour: BIOL 309, BIOL 329, BIOL 331, BIOL 534

Experimental Plant Biology Concentration
Research interests span modern molecular genetics, plant physiology and biochemistry, plant ecology and genetics, plant morphogenesis, and the adaptation and evolution of plant form and function. Research is carried out in the field and in the department's large, excellent controlled-environment facilities. The importance of adaptation to climate and the use of plants for food, chemicals, pharmaceuticals and materials underlie research using biotechnology and quantitative methods to improve cultivated plants and understand natural plant populations.
Key courses:
BIOL 300, BIOL 303, BIOL 305, BIOL 385
Other suggested courses:
BIOL 377, BIOL 465, BIOL 469D1/BIOG 469D2, BIOL 471D1/BIOG 471D2, BIOL 477 or BIOL 478, BIOL 555 D1/BIOG 555 D2

Human Genetics Concentration
The courses recommended for students interested in Human Genetics are designed to offer a broad perspective in this rapidly advancing area of biology. Genetics is covered at all levels of organization (the gene, the chromosome, the cell, the organism and the population), using pertinent examples from all species, but with special emphasis on humans.
Key courses:
BIOL 301, BIOL 370, BIOL 373, BIOL 416, BIOL 520, BIOL 568, BIOL 575
Other suggested courses:
BIOL 311, BIOL 314, 469D1/BIOG 469D2, BIOL 471D1/BIOG 471D2, BIOL 477, BIOL 478; CHEM 203 or CHEM 204 and CHEM 214, MIMM 314

Molecular Genetics and Development Concentration
The discoveries that have fuelled the ongoing biomedical and biotechnological revolution have arisen at the intersection of a number of fields of biological investigation, including molecular biology, genetics, cellular and developmental biology and biochemistry. A substantial and significant quantity of this research has been conducted upon model eukaryotic organisms, such as yeast, nematode, the fruit fly, and the mustard weed, Arabidopsis. In the molecular genetics and development concentration students will obtain a comprehensive understanding of how the "model eukaryotes" have advanced our knowledge of the mechanisms responsible for cellular function and organismal development.

Graduates from this concentration will be well prepared to pursue higher degrees in the fields of biology, biotechnology, biomedical or to assume a wide variety of positions in government, universities, and medical and industrial institutions.
Key courses:
BIOL 300, BIOL 301, BIOL 303, BIOL 373, BIOL 551, BIOL 569; CHEM 203 or CHEM 204 combined with CHEM 214
Other suggested courses:
BIOL 313, BIOL 314, BIOL 416, 469D1/BIOG 469D2, BIOL 471D1/BIOG 471D2, BIOL 477, BIOL 478, BIOL 518, BIOL 520, BIOL 524, BIOL 544

Neurobiology Concentration
Nervous systems are perhaps the most complex entities in the natural world, being composed of up to trillions of interconnected cells that must operate in a coordinated manner to produce behaviour which can range from the mundane (e.g., regulation of heart rate) to the magnificent (e.g., musical composition). The neurobiology discipline is one of the fastest growing areas of modern biology, seeks to understand the evolution, development, and operation of nervous systems. The neurobiology concentration addresses these issues by examination of neural structure, function and development at levels of organization that range from the molecular to the organismal. As a result of exposure to a wide range of experimental and intellectual approaches, students receive a sound, broadly based education in biology.
Key courses:
BIOL 306, BIOL 373, BIOL 389, BIOL 530, BIOL 531, BIOL 532, BIOL 588
Other suggested courses:
ANAT 321, ANAT 322; BIOC 455; BIOL 300, BIOL 303, 469D1/BIOG 469D2, BIOL 471D1/BIOG 471D2, BIOL 477, BIOL 478; NEUR 310; PHAR 562; PHGY 451, PHGY 556; PSYC 311, PSYC 318, PSYC 342, PSYC 410, PSYC 470; PSYT 500

CONCENTRATIONS AVAILABLE WITHIN THE AREA OF ECOLOGY
Ecology is the study of the interactions between organisms and environment that affect distribution, abundance, and other characteristics of the organisms. A strong analytical and quantitative orientation is common to all areas of ecology, and thus students wishing to specialize in these areas are strongly encouraged to develop their background in statistical analysis, computing, and mathematical modelling. Many of the ecology courses feature a strong analytical component, and students will find that background preparation in this area is very useful, if not essential. Ecology depends heavily on field research, and thus BIOL 331 and/or other field courses should be considered as vital to all concentrations in this area.

Aquatic Ecology Concentration
This concentration is designed to introduce the principles of ecology as they pertain to aquatic ecosystems and aquatic biota. Since it is essential to know how knowledge is obtained, as well as what has been learned, one of the courses (limnology) involves field components that stress the techniques used to study aquatic ecology. In addition, the concentration includes a field course in ecology. There is also a variety of courses in aquatic disciplines offered in other departments that complement the aquatic ecology courses offered in Biology.
Key courses:
BIOL 305, BIOL 308, BIOL 331 or another field course, BIOL 373, BIOL 432, BIOL 441, BIOL 442, BIOL 465; COMP 202 or COMP 273
Other suggested courses:
BIOL 307, BIOL 329, BIOL 534; GEOG 305, GEOG 306, GEOG 308, GEOG 322
Macdonald Campus: NRSC 315
General and Applied Ecology Concentration
The concentration in general and applied ecology is designed to introduce the breadth of contemporary ecology, at the levels of the ecosystem, communities and populations, and at the level of the individual organism, with an accent on the application of this science to practical problems in environmental management, and the management of resources and pests. In addition to general courses dealing with general principles, there is a selection of courses dealing with particular groups of organisms. Since it is essential to know how knowledge is obtained, the concentration includes a field course in ecology.

Key courses:
BIOL 305, BIOL 308, BIOL 331 or BIOL 334, BIOL 350, BIOL 373; COMP 202 or COMP 273
Other suggested courses:
BIOL 307, BIOL 324, BIOL 327, BIOL 328, BIOL 329, BIOL 432, BIOL 441, BIOL 442, BIOL 465, BIOL 534, BIOL 540, BIOL 571, BIOL 594; GEQG 302
Macdonald Campus: PLNT 451, PLNT 460

Marine Biology Concentration
This concentration is designed to offer students a broad introduction to marine biology and marine ecology, which will form the basis for graduate studies in the fields, or to employment in aquatic biology and oceanography.

Key courses:
BIOL 305, BIOL 308, BIOL 335, BIOL 373, BIOL 441, BIOL 442
Other suggested courses:
ATOC 220, ATOC 512, ATOC 550, ATOC 561; BIOL 329, BIOL 331, BIOL 334, BIOL 432, BIOL 465, BIOL 534; EPSC 542

For students intending to proceed to graduate work, one independent studies course (469D1/BIOL 469D2, BIOL 471D1/BIOL 471D2, BIOL 477 or BIOL 478) is recommended. Because of the importance of numerical analyses in all fields of ecology, courses in Biometry (e.g. BIOL 373) and Computer Science (COMP 202 or COMP 273) are recommended.

HONOURS IN BIOLOGY (68 or 71 credits)
The Honours Program in Biology is designed expressly as a preparation for graduate studies and research, and provides students with an enriched training in biology and some research experience in a chosen area. Acceptance into the Honours Program at the end of U2 requires a CGPA of 3.50 and approval of a 9- or 12-credit Independent Studies proposal (see listing of BIOL 479 and BIOL 480 for details). For an Honours degree, a minimum CGPA of 3.50 in the U3 year and adherence to the program as outlined below are the additional requirements. The new 3.50 requirement applies only beginning with students entering McGill in the Fall of 2005.

U1 Required Courses (18 credits)
as for the Major program

U2 and U3 Required Courses (7 credits)
BIOL 301 (4) Cell and Molecular Laboratory
BIOL 373 (3) Biometry

U2 and U3 Complementary Courses (30 credits)
12 credits selected from:
BIOL 300 (3) Molecular Biology of the Gene
BIOL 303 (3) Developmental Biology
BIOL 304 (3) Evolution
BIOL 306 (3) Neurobiology and Behaviour
BIOL 308 (3) Ecological Dynamics
18 credits in Biology at the 300 level or higher

U3 Required Courses (4 credits)
BIOL 499D1 (2) Honours Seminar in Biology
BIOL 499D2 (2) Honours Seminar in Biology

U3 Complementary Courses (9 or 12 credits)
either:
BIOL 479D1 (4.5) Biology Honours Project 1
BIOL 479D2 (4.5) IBiology Honours Project 1
or:
BIOL 480D1 (6) Biology Honours Project 2
BIOL 480D2 (6) Biology Honours Project 2

AFRICAN FIELD STUDY SEMESTER
The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1 “African Field Study Semester”.

Also available is a “MINOR IN COMPUTATIONAL MOLECULAR BIOLOGY” for more information, see section 11.12.9 “Computer Science (COMP)”.

11.12.6 Biotechnology (BIOT)
Sheldon Biotechnology Centre
Lyman Duff Building
Telephone: (514) 398-3998
Program Supervisor
Professor Hugh P.J. Bennett; B.A.(York), Ph.D.(Brun.)

Biotechnology, the science of understanding, selecting and promoting useful organisms and specific gene products for commercial and therapeutic purposes, is the success story of this generation. It demands a broad comprehension of biology and engineering as well as detailed knowledge of at least one basic subject such as molecular genetics, protein chemistry, microbiology, or chemical engineering.

The Minor in Biotechnology is offered by the Faculties of Engineering and of Science, and students combine the Minor with the regular departmental Major (or Honours or Faculty) program. The Minor emphasizes an area relevant to biotechnology which is complementary to the main program.

Students should identify their interest in the Biotechnology Minor to their departmental academic adviser and to the Program Supervisor of the Minor and, at the time of registration for the U2 year, should declare their intent to embark on the Minor. Before registering for the Minor, and with the agreement of the academic adviser, students must submit their course list to the Program Supervisor, who will certify that the student’s complete program conforms to the requirements for the Minor. Students should ensure that they will have fulfilled the prerequisite requirements for the courses selected.

The BIOT course listed in the course section of this Calendar is considered as a course taught by the Faculty of Science.

GENERAL REGULATIONS
To obtain the Minor in Biotechnology students must:
a) satisfy the requirements both for the departmental program and for the Minor.
b) complete 24 credits, 18 of which must be exclusively for the Minor program.
c) obtain a grade of C or better in the courses presented for the Minor.
MINOR IN BIOTECHNOLOGY (24 credits)

PROGRAM FOR STUDENTS IN THE FACULTY OF SCIENCE*

Required Courses (15 credits)
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- or BIOC 212 (3) Molecular Mechanisms of Cell Function
- BIOL 202 (3) Basic Genetics
- BIOT 505 (3) Selected Topics in Biotechnology
- MIME 211 (3) Introductory Microbiology

Complementary Courses (9 credits)
selected from courses outside the department of the main program. These may be taken from those listed as required courses for Engineering students. Alternatively, or in addition, courses may be taken from the lists below, in which case at least three courses must be taken from one area of concentration as grouped.

* As 18 credits must be applied exclusively to the Minor, approved substitutions must be made for any of the specified courses which are part of the student's main program.

Chemical Engineering
- CHEE 200 (3) Introduction to Chemical Engineering
- CHEE 204 (3) Chemical Manufacturing Processes
- CHEE 474 (3) Biochemical Engineering

Biomedicine
- ANAT 541 Cell and Molecular Biology of Aging
- EXMD 504 Biology of Cancer
- PATH 300 Human Disease

Chemistry
- CHEM 382 Organic Chemistry: Natural Products
- CHEM 502 Advanced Bio-organic Chemistry
- CHEM 552 Physical Organic Chemistry

Immunology
- ANAT 261 Introduction to Dynamic Histology
- BIOC 503 Immunology
- BIOC 514 Advanced Immunology
- PHGY 513 Cellular Immunology

Management
- ECON 208 Microeconomics Analysis and Applications
- MGR 211 Introduction to Financial Accounting
- MGR 341 Finance 1
- MGR 352 Marketing Management 1
- MGR 472 Operations Management

Microbiology
- MIME 323 Microbial Physiology
- MIME 324 Fundamental Virology
- MIME 413 Parasitology
- MIME 465 Bacterial Pathogenesis
- MIME 466 Viral Pathogenesis

Molecular Biology (Biology)
- BIOL 300 Molecular Biology of the Gene
- BIOL 314 Molecular Biology of Oncogenes
- BIOL 520 Gene Activity in Development
- BIOL 551 Molecular Biology: Cell Cycle
- BIOL 554 Topics in Molecular Biology

Molecular Biology (Biochemistry)
- BIOC 311 Metabolic Biochemistry
- BIOC 312 Biochemistry of Macromolecules
- BIOC 450 Protein Structure and Function
- BIOC 454 Nucleic Acids
- BIOC 455 Neurochemistry

Physiology
- EXMD 401 Physiology and Biochemistry Endocrine Systems
- EXMD 502 Advanced Endocrinology
- EXMD 503 Advanced Endocrinology
- PHAR 562 General Pharmacology 1
- PHAR 563 General Pharmacology 2
- PHGY 517 Artificial Internal Organs

PHARM 563 General Pharmacology 2
PHARM 562 General Pharmacology 1

PhGS 518 Artificial Cells

Programs for students in the Faculty of Science*

Biomedicine
- ANAT 541 Cell and Molecular Biology of Aging
- EXMD 504 Biology of Cancer
- PATH 300 Human Disease

Chemistry
- CHEM 382 Organic Chemistry: Natural Products
- CHEM 502 Advanced Bio-organic Chemistry
- CHEM 552 Physical Organic Chemistry

Immunology
- ANAT 261 Introduction to Dynamic Histology
- BIOC 503 Immunology
- BIOC 514 Advanced Immunology
- PHGY 513 Cellular Immunology

Management
- ECON 208 Microeconomics Analysis and Applications
- MGR 211 Introduction to Financial Accounting
- MGR 341 Finance 1
- MGR 352 Marketing Management 1
- MGR 472 Operations Management

Microbiology
- MIME 323 Microbial Physiology
- MIME 324 Fundamental Virology
- MIME 413 Parasitology
- MIME 465 Bacterial Pathogenesis
- MIME 466 Viral Pathogenesis

Molecular Biology (Biology)
- BIOL 300 Molecular Biology of the Gene
- BIOL 314 Molecular Biology of Oncogenes
- BIOL 520 Gene Activity in Development
- BIOL 551 Molecular Biology: Cell Cycle
- BIOL 554 Topics in Molecular Biology

Molecular Biology (Biochemistry)
- BIOC 311 Metabolic Biochemistry
- BIOC 312 Biochemistry of Macromolecules
- BIOC 450 Protein Structure and Function
- BIOC 454 Nucleic Acids
- BIOC 455 Neurochemistry

Physiology
- EXMD 401 Physiology and Biochemistry Endocrine Systems
- EXMD 502 Advanced Endocrinology
- EXMD 503 Advanced Endocrinology
- PHAR 562 General Pharmacology 1
- PHAR 563 General Pharmacology 2
- PHGY 517 Artificial Internal Organs

Please see the "Biotechnology Minor", in section 7.6.3 for details.

11.12.7 Chemistry (CHEM)

Otto Maass Chemistry Building
801 Sherbrooke Street West
Montreal, QC H3A 2K6
Website: www.mcgill.ca/chemistry

Departmental Office: Room 322. Telephone: (514) 398-6999
Student Advisory Office: Room 304. Telephone: (514) 398-3653
Website: www.mcgill.ca/chemistry/advising

Chair — R. Bruce Lennox

Emeritus Professors
- Byung Chan Eu; B.Sc.(Seoul), Ph.D.(Brown)
- Tak-Hang Chan; B.Sc.(Tor.), M.A., Ph.D.(Princ.), F.C.I.C., F.R.S.C. (Tomlinson Professor of Chemistry)
- John F. Harrod; B.Sc., Ph.D.(Birm.)
- Alan G. Shaver; B.Sc.(Car.), Ph.D.(MIT)
- Bryan C. Sanctuary; B.Sc., Ph.D.(Br. Col.)
- David Ronis; B.Sc.(McG.), Ph.D.(MIT)
- Eric D. Salin; B.Sc.(Calif.), Ph.D.(Oreg.St.)
- Masad J. Damha; B.Sc., Ph.D.(McG.)
- Alan S. Hay; B.Sc., M.Sc.(Alta.), Ph.D.(Ill.), D.Sc.(Alta.), F.R.S., F.N.Y., Acad.Sci.
- William C. Purdy; B.A.(Amherst), Ph.D.(MIT), F.C.I.C.
- Mario Onyszchuk; B.Sc.(McG.), M.Sc.(W.Ont.), Ph.D.(McG.), Ph.D.(Cant.)
- Donald Patterson; M.Sc.(McG.), Doc.(St-Etienne) (Otto Maass Emeritus Professor of Chemistry)
- Arthur S. Perlin; M.Sc., Ph.D.(McG.), F.R.S.C.
- Leon E. St-Pierre; B.Sc.(Alta.), Ph.D.(Notre Dame), F.C.I.C.
- Michael A. Whitehead; B.Sc., Ph.D., D.Sc.(Lond.), F.C.I.C.

Professors
- D. Scott Bohle; B.A.(Reed College), M.Phil., Ph.D.(Auck.), (CRC Tier I Chair)
- Masad J. Damha; B.Sc., Ph.D.(McG.) (James McGill Professor)
- Adi Eisenberg; B.S.(Worcester Polytech.), M.A., Ph.D.(Princ.), F.C.I.C. (Otto Maass Professor of Chemistry)
- Derek G. Gray; B.Sc. (Belf.), M.Sc., Ph.D.(Manit.), F.C.I.C.
- (NSERC Paprican Chair)
- David N. Harpp; A.B.(Middlebury), M.A.(Wesleyan), Ph.D.(N.Carolina), F.C.I.C. (William C. Macdonald Professor of Chemistry)
- R. Bruce Lennox; B.Sc., M.Sc., Ph.D.(Tor.)
- C.J. Li; B.Sc.(Zhengzhou), M.Sc.(C.A.S.), Ph.D.(McG.), Ph.D.(MIT) (CRC Tier I Chair)
- David Ronis; B.Sc.(McG.), Ph.D.(MIT)
- Eric D. Salin; B.Sc.(Calif.), Ph.D.(Oreg.St.)
- Bryan C. Sanctuary; B.Sc., Ph.D.(Br. Col.)
- Alan G. Shaver; B.Sc.(Car.), Ph.D.(MIT)
Theo G.M. van de Ven; Kand. Doc.(Utrecht), Ph.D.(McG.), (NSERC Papirian Chair)

Associate Professors
Mark P. Andrews; B.Sc., M.Sc., Ph.D.(Tor.)
Bruce Arndtson; B.A.(Car. College), Ph.D.(Stan.) (William Dawson Scholar)
Parisa Ariya; B.Sc., Ph.D.(York) (William Dawson Scholar) (joint appoint. with Atmospheric & Oceanic Sciences)
David H. Burns; B.Sc.(Pugel Sound), Ph.D.(Wash.)
William C. Galley; B.Sc.(McG.), Ph.D.(Calif.)
James Gleason; B.Sc.(McG.), Ph.D.(Virg.)
Ashok K. Kakkar; B.Sc.(Punjab), M.Sc.(H.P.U.), Ph.D.(Wat.)
Joan F. Power; B.Sc., Ph.D.(C'dia)
Linda Reven; B.A.(Car. Coll.), Ph.D.(Ill.)
Hanadi Sleiman; B.Sc.(A.U.B.), Ph.D.(Stan.) (William Dawson Scholar)

Assistant Professors
Karine Auclair; B.Sc.(UQAC), Ph.D.(Alta.)
Christopher J. Barrett; B.Sc., M.Sc., Ph.D.(Qu.)
Gonzalo Cosa; B.Sc. (Rio Cuarto), Ph.D.(Ott.)
Patanjali Kambhampati; B.A.(Car. Coll.), Ph.D.(Texas)
Hun-Wen Li ; B.Sc.(Taiwan), Ph.D.(Berk.)
Anthony Mittemerai; B.Sc.(Guelph), Ph.D.(Tor.)
Nicolas Moïtessier; Ph.D.(Nancy)
Dmitri Perepichka; B.S., M.Sc., Ph.D.(Ukraine)
Bradley Siwick; B.A.Sc., M.Sc., Ph.D.(Tor.) (joint appoint. with Physics)
Paul Wiseman; B.Sc.(St.FX), Ph.D.(W.Ont.) (joint appoint. with Physics)

Faculty Lecturers
John Finkenbine; B.S.(Capital), Ph.D.(McG.)
Grzyna Wilczek; M.Sc., Doctorate Chem. Sci.(Warsaw)

Associate Members
James A. Finch (Mining & Metallurgical Engineering)
K. Gehring (Biochemistry)
P. Güttler (Physics)
Orval A. Mamer (University Clinic)
Barry I. Posner (Medicine)

Adjunct Professors
Yvan Guindon; B.Sc., Ph.D.(Montr.), F.C.I.C., F.R.S.C.
Romas Kazlauskas; B.Sc.(Clev.St.), Ph.D.(MIT)
Christian Reber; B.Sc., Ph.D.(Berne)
Ivor Wharf; B.Sc., Ph.D.(Lond.), A.R.C.S., D.I.C.
C.T. Yim; B.Sc.(Fu-Dan), Ph.D.(McG.)
Robert Zamboni; B.Sc., Ph.D.(McG.)

Office for Science and Society
The Office for Science and Society is dedicated to the promotion of critical thinking and the presentation of practical scientific information to the public, educators and students in an accurate and responsible fashion. The Office answers queries from the public as well as from the media, with a view towards establishing scientific accuracy. The Office also offers a variety of educational and interesting presentations on scientific topics and its members contribute to a number of courses under the umbrella of “The World of Chemistry”.

Director
Joseph A. Schwarcz; B.Sc., Ph.D.(McG.)

Members
Ariel Fenster; L. ès S., D.E.A. (Paris), Ph.D.(McG.)
David N. Harpp; A.B.(Middlebury), M.A.(Wesl.)
Ph.D.(N.Carolina), F.C.I.C. (William C. Macdonald Professor of Chemistry)

Chemistry is both a pure science, offering a challenging intellectual pursuit, and an applied science whose technology is of fundamental importance to the economy and society. Modern chemists seek an understanding of the structure and properties of atoms and molecules to predict and interpret the properties and transformations of matter and the energy changes that accompany those transformations. Many of the concepts of physics and mathematical sciences are basic to chemistry, while chemistry is of fundamental importance to many other disciplines such as the biological and medical sciences, geology, metallurgy, etc.

A degree in chemistry leads to a wide variety of professional vocations. The large science-based industries (petroleum refining, plastics, pharmaceuticals, etc.) all employ chemists in research, development and quality control. Many federal and provincial departments and agencies employ chemists in research and testing laboratories. Such positions are expected to increase with the currently growing concern for the environment and for consumer protection. A background in chemistry is also useful as a basis for advanced study in other related fields, such as medicine and the biological sciences. For a business career, a B.Sc. in Chemistry can profitably be combined with a master's degree in Business Administration, or a study of law for work as a patent lawyer or forensic scientist.

Chemistry courses at the university level are traditionally divided into four areas of specialization: 1) organic chemistry, dealing with the compounds of carbon; 2) inorganic chemistry, concerned with the chemistry and compounds of elements other than carbon; 3) analytical chemistry, which deals with the identification of substances and the quantitative measurement of their compositions; and 4) physical chemistry, which treats the physical laws and energetic governing chemical reactions. Naturally, there is a great deal of overlap between these different areas, and the boundaries are becoming increasingly blurred. After a general course at the collegial level, courses in organic, inorganic, analytical and physical chemistry are offered through the university years. Since chemistry is an experimental science, laboratory classes accompany most undergraduate courses. In addition, courses are offered in polymer, theoretical, green, nippy and biological chemistry to upper-year undergraduates.

There are two main programs in the Department of Chemistry, Honours and Major. The Honours program is intended primarily for students wishing to pursue graduate studies in chemistry. While the Major program is somewhat less specialized, it is still recognized as sufficient training for a career in chemistry. It can also lead to graduate studies although an additional qualifying year may be necessary. There are also a number of Faculty programs available. Interested students may inquire about these at the Student Advisory Office, Room 304, Outdo Mass Chemistry Building, or see www.mcgill.ca/chemistry/advising.

PRE-PROGRAM REQUIREMENTS
Students entering from the Freshman program must have included CHEM 120/CHEM 110, BIOL 111 or BIOL 112, MATH 150/151 or MATH 140/141 during U1 is strongly recommended. Completion of Department of Chemistry 202, either COMP 102, or COMP 202, or COMP 208, will be required during U1 for students who have no previous introduction to computer programming. Students are required to contact their adviser on this matter. Completion of Mathematics MATH 222 and MATH 315 during U1 is strongly recommended. Physics PHYS 242 should be completed during U2.

RECOMMENDED COURSES IN CHEMISTRY PROGRAMS
The required courses in Chemistry programs consist of 56 credits in chemistry, physics and mathematics, listed below. The courses marked with an asterisk (*) are omitted from the program of students who have successfully completed them at the CEGEP level, but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Order des Chemists du Québec. Students from outside Quebec or transfer students wishing to pursue graduate studies in chemistry. While the Major program is somewhat less specialized, it is still recognized as sufficient training for a career in chemistry. It can also lead to graduate studies although an additional qualifying year may be necessary. There are also a number of Faculty programs available. Interested students may inquire about these at the Student Advisory Office, Room 304, Outdo Mass Chemistry Building, or see www.mcgill.ca/chemistry/advising.

CHEM 121* (4) Introductory Organic Chemistry 1
CHEM 213 (4) Introductory Physical Chemistry
CHEM 222* (4) Introductory Organic Chemistry 2
CHEM 273 (1) Chemical Kinetics
Faculty of Science

Chemistry Honours, Environmental Chemistry Option (77 credits)

Required Courses (56 credits)

56 credits as listed above

Complementary Courses (18 credits)

6 credits of research:
CHEM 470 (6) Research Project
or CHEM 480 (3) Research Project
and CHEM 490 (3) Research Project

and 12 credits of additional Chemistry courses:

6 credits of which must be at the 300 level or higher,
and 6 credits of which must be at the 400 level or higher

* Students may take up to 12 Research Project credits but only 6
of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

Honours with Materials Option (77 credits)

Required Courses (56 credits)

56 credits, all courses specified above for Honours Chemistry,
excluding CHEM 302 (3) Environmental Organic Chemistry 3

Complementary Courses (18 credits)

6 credits of research:
CHEM 470 (6) Research Project
or CHEM 480 (3) Research Project
and CHEM 490 (3) Research Project

and 6 credits of additional Chemistry courses at the 400 level or higher.

* Students may take up to 12 Research Project credits but only 6
of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

Honours in Chemistry: Environmental Chemistry Option (77 credits)

Required Courses (56 credits)

56 credits, all courses specified above for Honours Chemistry,
plus the following 6 credits:
CHEM 219 (3) Introduction to Atmospheric Chemistry
CHEM 307 (3) Analytical Chemistry of Pollutants

Complementary Courses (15 credits)

6 credits of research:
CHEM 470 (6) Research Project
or CHEM 480 (3) Research Project
and CHEM 490 (3) Research Project

3 credits, one of:
CHEM 419 (3) Advances in Chemistry of Atmosphere
CHEM 462 (3) Green Chemistry
CHEM 567 (3) Commentaries: Data Analysis
CHEM 575 (3) Chemical Kinetics

6 credits, two of:
ATOC 220 (3) Introduction to Oceanic Sciences
CHEM 352 (3) Structural Organic Chemistry
CHEM 597 (3) Analytical Spectroscope
EPSC 542 (3) Chemical Oceanography

* Students may take up to 12 Research Project credits but only 6
of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

Honours with Materials Option (77 credits)

Required Courses (56 credits)

56 credits, all courses specified above for Honours Chemistry,
excluding CHEM 302 (3) Environmental Organic Chemistry 3

Complementary Courses (18 credits)

6 credits of research:
CHEM 470 (6) Research Project
or CHEM 480 (3) Research Project
and CHEM 490 (3) Research Project

and 6 credits of additional Chemistry courses at the 400 level or higher.

* Students may take up to 12 Research Project credits but only 6
of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.


Major in Chemistry (62 credits)

Required Courses (56 credits)

56 credits as listed above

Complementary Courses (6 credits)

6 credits of additional Chemistry courses at the 300 level or higher.

Attainment of the Major degree requires a CGPA of 2.00.
MAJOR WITH BIO-ORGANIC OPTION  (66 credits)
Required Courses  (63 credits)
54 credits, all courses specified above for the Chemistry Major, except PHYS 242
plus the following 9 credits:
Biol 200  (3) Molecular Biology
Biol 201  (3) Cell Biology and Metabolism
Chem 502  (3) Advanced Bio-Organic Chemistry

Complementary Course (3 credits)
one of:
Biol 202  (3) Basic Genetics
Biol 301  (3) Cell and Molecular Laboratory
Mmm 211  (3) Introductory Microbiology
Phys 201  (3) Human Physiology: Control Systems
Phys 202  (3) Human Physiology: Body Functions
Phys 209  (3) Mammalian Physiology 1
Phys 210  (3) Mammalian Physiology 2

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR IN CHEMISTRY: ENVIRONMENTAL CHEMISTRY OPTION (65 credits)
Required Courses (62 credits)
56 credits, all courses specified above for the Chemistry Major, plus the following 6 credits:
Chem 219  (3) Introduction to Atmospheric Chemistry
Chem 307  (3) Analytical Chemistry of Pollutants

Complementary Course (3 credits)
one of:
Chem 419  (3) Advances in Chemistry of Atmosphere
Chem 462  (3) Green Chemistry
Chem 567  (3) Chemometrics: Data Analysis
Chem 575  (3) Chemical Kinetics

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR WITH MATERIALS OPTION (65 credits)
Required Courses (62 credits)
56 credits, all courses specified above for the Chemistry Major, plus the following 6 credits:
Chem 334  (3) Advanced Materials
Chem 456  (3) Introductory Polymer Chemistry

Complementary Course (3 credits)
one of:
Chem 531  (3) Chemistry of Inorganic Materials
Chem 534  (3) Nanoscience and Nanotechnology
Chem 543  (3) Chemistry of Pulp and Paper
Chem 571  (3) Polymer Synthesis
Chem 585  (3) Colloid Chemistry

Attainment of the Major degree requires a CGPA of 2.00.

FACULTY PROGRAMS IN CHEMISTRY
Faculty programs in Chemistry are constructed from the U1 courses and the general courses of U2 and U3 intended for these students. Consult the Department of Chemistry Student Advisory Office for an adviser. A computer science course, either COMP 102 or COMP 202, will be required during U1 for students who have no previous introduction to computer programming.

FACULTY PROGRAM IN CHEMISTRY (52 credits)
Required Courses (31 credits)
Chem 212*  (4) Introductory Organic Chemistry 1
Chem 222*  (4) Introductory Organic Chemistry 2
Chem 277D1  (1.5) Analytical Chemistry
Chem 277D2  (1.5) Analytical Chemistry
Chem 302  (3) Introductory Organic Chemistry 3
Chem 345  (3) Molecular Properties and Structure 1
Chem 367  (3) Instrumental Analysis 1
Chem 377  (3) Instrumental Analysis 2
Math 222**  (3) Calculus 3

Science – Chemistry

Math 315  (3) Ordinary Differential Equations
Phys 242  (2) Electricity and Magnetism
* denotes courses with CEGEP equivalents
** Students who have successfully completed Math 150 and Math 151 are not required to take Math 222.

Complementary Courses (21 credits)
6 credits, one of the following course sets:
Chem 204  (3) Physical Chemistry/Biological Sciences 1
and Chem 214  (3) Physical Chemistry/Biological Sciences 2
or Chem 213  (3) Introductory Physical Chemistry
and Chem 355  (3) Molecular Properties and Structure 2
6 credits, two of the following courses:
Chem 201  (3) Modern Inorganic Chemistry 1
or Chem 281  (3) Inorganic Chemistry 1
Chem 301  (3) Modern Inorganic Chemistry 2
or Chem 381  (3) Inorganic Chemistry 2
9 credits from:
Chem 352  (3) Structural Organic Chemistry
Chem 355  (3) Molecular Properties and Structure 2
Chem 363  (2) Physical Chemistry Laboratory 1
Chem 382  (3) Organic Chemistry: Natural Products
Chem 392  (3) Integrated Inorganic/Organic Laboratory
Chem 393  (2) Physical Chemistry Laboratory 2
or any 400-level courses in Chemistry for which the prerequisites are satisfied.

FACULTY PROGRAM IN CHEMISTRY AND BIOLOGICAL SCIENCES (55 credits)
Required Courses (49 credits)
Biol 200  (3) Molecular Biology
Biol 201  (3) Cell Biology and Metabolism
Biol 205  (3) Biology of Organisms
Biol 301  (4) Cell and Molecular Laboratory
Biol 304  (3) Evolution
Chem 204  (3) Physical Chemistry/Biological Sciences 1
Chem 214  (3) Physical Chemistry/Biological Sciences 2
Chem 222*  (4) Introductory Organic Chemistry 2
Chem 257D1  (2) Introductory Analytical Chemistry
Chem 257D2  (2) Introductory Analytical Chemistry
Chem 302  (3) Introductory Organic Chemistry 3
Chem 352  (3) Structural Organic Chemistry
Chem 362  (2) Advanced Organic Chemistry Laboratory
Chem 382  (3) Organic Chemistry: Natural Products
Phys 209  (3) Mammalian Physiology 1
Phys 210  (3) Mammalian Physiology 2
Phys 242  (2) Electricity and Magnetism
* asterisks denote courses with CEGEP equivalents

Complementary Courses (6 credits)
6 credits approved by the adviser.

FACULTY PROGRAM IN CHEMISTRY AND MATHEMATICS (51 or 52 credits)
Required Courses (46 credits)
Chem 212*  (4) Introductory Organic Chemistry 1
Chem 222*  (4) Introductory Organic Chemistry 2
Chem 277D1  (1.5) Analytical Chemistry
Chem 277D2  (1.5) Analytical Chemistry
Chem 281  (3) Inorganic Chemistry 1
Chem 345  (3) Molecular Properties and Structure 1
Chem 355  (3) Molecular Properties and Structure 2
Math 222**  (3) Calculus 3
Math 223  (3) Linear Algebra
Math 314  (3) Advanced Calculus
Math 315  (3) Ordinary Differential Equations
Math 317  (3) Numerical Analysis
Math 319  (3) Partial Differential Equations
Math 323  (3) Probability
MINOR IN CHEMISTRY

Institute of Canada.

make the important link between molecular sciences and industrial
dents who wish to study the problems of process engineering and
A Chemical Engineering Minor will be of interest to Chemistry stu-

Substitutions for these by more advanced courses may be made
Required Courses

accredited by l'Ordre des chimistes du Québec or the Chemical
the Faculty Programs in Chemistry, and Minor in Chemistry are not
section 11.12.18.

The Major Concentration in Chemistry (part of B.A. & Sc. degree),
the Faculty Programs in Chemistry, and Minor in Chemistry are not
accredited by l’Ordre des chimistes du Québec or the Chemical
Institute of Canada.

MINOR IN CHEMISTRY (18 credits)

Required Courses (18 credits)
CHEM 203 (3) Survey of Physical Chemistry
CHEM 212 (4) Introductory Organic Chemistry 1
CHEM 222* (4) Introductory Organic Chemistry 2
CHEM 257D1 (2) Introductory Analytical Chemistry
CHEM 257D2 (2) Introductory Analytical Chemistry
CHEM 281 (3) Inorganic Chemistry 1

* asterisks denote courses with CEGEP equivalents

Substitutions for these by more advanced courses may be made
at the discretion of the adviser.

MINOR IN CHEMICAL ENGINEERING (24 credits)

A Chemical Engineering Minor will be of interest to Chemistry stu-
dents who wish to study the problems of process engineering and
its related subjects. A student completing this Minor will be able to
make the important link between molecular sciences and industrial
processing. This Minor will not provide Professional Engineering
accreditation.

Required Courses (7 credits)
CHEE 200 (4) Introduction to Chemical Engineering
CHEE 204 (3) Chemical Manufacturing Processes

Complementary Courses (17 credits)
at least one of:
CHEE 220 (3) Chemical Engineering Thermodynamics
CHEE 314 (4) Fluid Mechanics

with the remainder chosen from the following:
CHEE 230 (3) Environmental Aspects of Technology
CHEE 315 (4) Heat and Mass Transfer
CHEE 351 (3) Separation Processes
CHEE 370 (3) Elements of Biotechnology
CHEE 380 (3) Materials Science
CHEE 392 (4) Project Laboratory 1
and CHEE 393 (5) Project Laboratory 2
CHEE 438 (3) Engineering Principles in Pulp and Paper
Processes
CHEE 452 (3) Particulate Systems
CHEE 471 (3) Industrial Water Pollution Control
CHEE 472 (3) Industrial Air Pollution Control
CHEE 481 (3) Polymer Engineering
CHEE 487 (3) Chemical Processing: Electronics Industry
CHEE 494 (3) Research Project and Seminar
or CHEE 495 (4) Research Project and Seminar
MATH 314 (3) Advanced Calculus

11.12.8 Cognitive Science

Program Director — Professor James McGilvray
Website: www.cogsci.mcgill.ca

Cognitive Science is the multidisciplinary study of cognition in
humans and machines. The goal is to understand the principles of
intelligence with the hope that this will lead to better understanding
of the mind and of learning, and to the development of intelligent
devices that constructively extend human abilities.
The Minor in Cognitive Science is intended to supplement and
support Major or Honours programs in Computer Science, Linguis-
tics, Philosophy, or Psychology. Students wishing to enrol in this
Minor must register with the Program Director.

MINOR IN COGNITIVE SCIENCE (27 credits)

Required Course (3 credits)
PSYC 532 (3) Cognitive Science

Complementary Courses (24 credits)
from outside of the student's home department, selected from the
courses listed below.

Computer Science
COMP 424 (3) Topics: Artificial Intelligence 1
COMP 426 (3) Automated Reasoning
COMP 558 (3) Fundamentals of Computer Vision

Educational Psychology
EDPE 555 (3) Applied Cognitive Science

Linguistics
LING 331 (3) Phonology 1
LING 355 (3) Language Acquisition 1
LING 370 (3) Introduction to Semantics
LING 371 (3) Syntax 1
LING 419 (3) Linguistic Theory 1
LING 440 (3) Morphology
LING 531 (3) Phonology 2
LING 555 (3) Language Acquisition 2
LING 571 (3) Syntax 2
LING 590 (3) Language Acquisition and Breakdown

Mathematics
MATH 318 (3) Mathematical Logic
MATH 328 (3) Computability and Mathematical Linguistics

Philosophy
PHIL 210 (3) Introduction to Deductive Logic 1
PHIL 304 (3) Chomsky
PHIL 306 (3) Philosophy of Mind
PHIL 310 (3) Intermediate Logic
PHIL 410 (3) Topics in Advanced Logic 1
PHIL 415 (3) Philosophy of Language
PHIL 419 (3) Epistemology
PHIL 506 (3) Seminar: Philosophy of Mind
PHIL 507 (3) Seminar: Cognitive Science

Psychology
PSYC 211 (3) Intro Behavioural Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 301 (3) Learning
PSYC 308 (3) Behavioural Neuroscience 1
PSYC 311 (3) Human Cognition and the Brain
PSYC 353 (3) Laboratory in Human Perception
PSYC 410 (3) Special Topics in Neuropsychology
PSYC 413 (3) Cognitive Development
PSYC 470 (3) Memory and Brain
11.12.9 Computer Science (COMP)

McConnell Engineering Building, Room 318
3480 University Street
Montreal, QC H3A 2A7
Telephone: (514) 398-7071
Fax: (514) 398-3883

Undergraduate Student Affairs Office
Lorne Trotter Building, Room 2060
3630 University Street
Montreal, QC H3A 2B2
Telephone: (514) 398-7071
Fax: (514) 398-4653
E-mail: ugrad-sec@cs.mcgill.ca
Website: www.cs.mcgill.ca/acadpages/undergrad

Director — Sue Whitesides

Emeritus Professor
Christopher Paige

Professors
David M. Avis; B.Sc.(Wat.), Ph.D.(Stan.) (on leave Jan. - June 2006)
Luc P. Devroye; M.S.(Louvain), Ph.D.(Texas) (James McGill Professor)
Laurie Hendren; B.Sc., M.Sc.(Qu.), Ph.D.(C'nell)
Tim H. Merrett; B.Sc.(Qu.), D.Phil.(Oxf.) (on leave Jan. - June 2006)
Monroe M. Newborn; B.E.E.(R.P.I.), Ph.D.(Ohio St.), F.A.C.M.
Prakash Panangaden; M.Sc.(Indian IT, Kanpur), M.S.(Chic.), Ph.D.(Wisc.)
Bruce Reed; B.Sc., Ph.D.(McG.)(Canada Research Chair)
Denis Thérien; B.Sc.(Montr.), M.Sc., Ph.D.(Wat.) (James McGill Professor)
Godfried T. Toussaint; B.Sc.(Tulsa), Ph.D.(Br.Col.)
Sue Whitesides; M.S.E.E.(Stan.), Ph.D.(Wisc.)

Associate Professors
Xiao-Wen Chang; B.Sc., M.Sc.(Nanjing IT), Ph.D.(McG.) (on leave 2005-2006)
Claude Crépeau; B.Sc., M.Sc.(Montr.), Ph.D.(MIT)
Gregory Dudek; B.Sc.(Qu.), M.Sc., Ph.D.(Tor.) (William Dawson Scholar)
Nathan Friedman; B.A.(W.Ont.), Ph.D.(Tor.)
Kaleem Siddiqi; B.Sc.(Lafayette), M.Sc., Ph.D.(Brown)
(Canada Research Chair)
Carl Tropper; B.Sc.(McG.), Ph.D.(Brooklyn Poly.)

Assistant Professors
Mathieu Blanchette; B.Sc., M.Sc.(Montr.), Ph.D.(Wash.)
Michael Trevor Hallatt; B.Sc.(Qu.), Ph.D.(Vic., BC)
Patrick Hayden; B.Sc.(McG.), Ph.D.(Oxf.) (Canada Research Chair)

Adjunct Professors
Stefan Brands, Renato De Mori, Ioannis Rekleitis

The study of computer science encompasses everything from pure theory to hands-on applications including the analysis of algorithms, programming languages, compilers, databases, operating systems, robotics, computer vision, artificial intelligence and computational biology.

The School currently operates a general purpose computing facility to support teaching, a large undergraduate workstation laboratory and numerous laboratories spanning many areas of research in computer science.

The School of Computer Science (SOCS) currently offers eight undergraduate computing labs and two large open work areas consisting of workstations on the 3rd floor of the Lorne Trotter Building. In the McConnell Engineering Building, SOCS offers one general graduate laboratory and 15 laboratories dedicated to the following research areas: Advanced Networking, Artificial Intelligence, Computational Geometry, Computational Perception, Crypto and Quantum Information, Databases and Secondary Storage, Distributed Information Systems, Mobile Robotics and Vision, Modelling, Simulation and Design, Parallel and Distributed Simulation, Reasoning and Learning, Compilers, and Software Engineering.

The undergraduate teaching facilities consist of a network of over 250 Pentium IV, Pentium III and AMD class workstations equipped with 19" LCDs and running FreeBSD and GNU/Linux operating systems. The facility also includes several computer servers comprised of seven Sun Enterprise servers, three Windows remote application servers, a central file server, backup server, mail server, and web server. Dialup Internet access is provided through the McGill Computing Centre.

All students planning to enter Computer Science programs should make an appointment with an academic adviser through the School's Undergraduate Student Affairs Office.

The School of Computer Science offers:
• A major program and an honours program in Computer Science through the Faculty of Science
• A major program in Software Engineering through the Faculty of Science
• A minor through the Faculty of Science and the Faculty of Engineering
• A joint major and a joint honours program with the Department of Mathematics and Statistics through the Faculty of Science (see section 11.12.18 "Mathematics and Statistics (MATH)"
• A joint major with the Department of Physics through the Faculty of Science (see section 11.12.26 "Physics (PHYS)"
• A major concentration and minor concentration through the Faculty of Arts
• A minor in Computational Molecular Biology
• Special programs involving Computer Science are also available in the Faculties of Management, Engineering and Music. Some graduate courses in Computer Science are available to suitably qualified senior undergraduates. The School also offers graduate research studies leading to M.Sc. and Ph.D. degrees. For further details, consult the Graduate and Postdoctoral Studies Calendar.

Internship Year for Engineering and Science (IYES)
IYES is a pre-graduate work experience opportunity available to eligible students and normally taken between their U2 and U3 years. For more information, see "IYES: Internship Year for Engineering and Science", in section 7.2.8.

The following programs are also available with an internship component:
Major in Computer Science
Honours in Computer Science
Major in Software Engineering
Students intending to pursue a Major in Computer Science or Software Engineering should have a reasonable mathematical background and should have completed MATH 140 (or MATH 150), MATH 141 (or MATH 151) and MATH 133, or their CEGEP equivalents. These three mathematics courses should have been completed with at least an average of B-. A background in computer science is not necessary as students may start their studies with the introductory course COMP 202. However, taking COMP 202 in the Freshman Year, or completing an equivalent course in CEGEP, would be an asset and allows students to take more advanced courses earlier in their program.

More information about the admission process and the programs is available at www.cs.mcgill.ca.

MINOR IN COMPUTER SCIENCE (24 credits)
The Computer Science Minor may be taken in conjunction with any program in the Faculties of Science and Engineering (with the exception of other programs in Computer Science). Students must obtain approval from the adviser of their main program. Approval must be given by the School of Computer Science for the particular selection of courses to be credited towards the Computer Science Minor. This should be done before registering for the final term of studies. All courses must be passed with a grade of C or better. Students may receive credit towards their Computer Science Minor by taking certain approved courses outside the School of Computer Science. These courses must have a high computer science content. A student will not be permitted to receive more than six credits from such courses. These courses must be approved by the School of Computer Science in advance.

If a student’s Major program requires Computer Science courses, up to six credits of Computer Science courses may be used to fulfill both Major and Minor requirements.

Required Courses (12 credits)
COMP 202 (3) Introduction to Computing 1
COMP 203 (3) Introduction to Computing 2
COMP 206 (3) Introduction to Software Systems
COMP 302 (3) Programming Languages and Paradigms

Complementary Courses (12 credits)
selected from:
COMP 251* (3) Data Structures and Algorithms
COMP 273 (3) Introduction to Computer Systems
COMP 303 (4) Programming Techniques
COMP 304 (3) Object-oriented Design
COMP 310 (3) Computer Systems and Organization
COMP 330 (3) Theoretical Aspects: Computer Science
COMP 335 (3) Software Engineering Methods
COMP 350 (3) Numerical Computing
or MATH 317 (3) Numerical Analysis
COMP 360 (3) Algorithm Design Techniques
COMP 409 (3) Concurrent Programming
COMP 417 (3) Intro Robotics and Intelligent Systems
COMP 420 (3) Secondary Storage Algorithms and Data Structures
COMP 421 (3) Database Systems
COMP 423 (3) Data Compression
COMP 424 (3) Topics: Artificial Intelligence 1
COMP 426 (3) Automated Reasoning
COMP 435 (3) Basics of Computer Networks
COMP 462 (3) Computational Biology Methods
COMP 490 (3) Intro to Probabilistic Analysis Algorithms
COMP 505 (3) Advanced Computer Architecture
COMP 506 (3) Advanced Analysis of Algorithms
COMP 507 (3) Computational Geometry
COMP 512 (4) Distributed Systems
COMP 520 (4) Compiler Design
COMP 522 (4) Modelling and Simulation
COMP 523 (3) Language-based Security
COMP 524 (3) Theoretical Foundations of Programming Languages
COMP 526 (3) Probabilistic Reasoning and AI
COMP 529 (4) Software Analysis
COMP 533 (3) Object-Oriented Software Development
COMP 534 (3) Team Software Engineering
COMP 535 (3) Computer Networks 1
COMP 537 (3) Internet Programming
COMP 538 (3) Person-Machine Communication
COMP 540 (3) Matrix Computations
COMP 557 (3) Fundamentals of Computer Graphics
COMP 558 (3) Fundamentals of Computer Vision
COMP 560 (3) Graph Algorithms and Applications
COMP 563 (3) Molecular Evolution Theory
COMP 564 (3) Computational Gene Regulation
COMP 566 (3) Discrete Optimization 1
COMP 567 (3) Discrete Optimization 2
COMP 575 (3) Fundamentals of Distributed Algorithms
COMP 577 (3) Distributed Database Systems
MATH 240 (3) Discrete Structures 1
or from courses outside the School approved by the adviser, to a maximum of 6 credits.

* Note: COMP 251 is a prerequisite for many of the other complementary courses, and MATH 240 is a prerequisite for COMP 251.

MINOR IN COMPUTATIONAL MOLECULAR BIOLOGY (24 credits)
Computational molecular biology is the sub-discipline of bioinformatics that is located at the intersection of computer science and molecular biology. The focus of this area is on techniques for managing and analyzing molecular sequence data. This program will provide undergraduate students in the biological sciences with the skills from computer science to solve computational problems arising in molecular biology and genomics and will provide students with the necessary skills to build software tools from these algorithms.

The Minor in Computational Molecular Biology is not open to students in Computer Science or Joint Computer Science programs.

Required Courses (24 credits)
COMP 202 (3) Introduction to Computing 1
COMP 203 (3) Introduction to Computing 2
COMP 251 (3) Data Structures and Algorithms
COMP 302 (3) Programming Languages and Paradigms

FACULTY PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE under "Mathematics and Statistics (MATH)" in section 11.12.18.

FACULTY PROGRAM IN MATHEMATICS, STATISTICS AND COMPUTER SCIENCE under "Mathematics and Statistics (MATH)" in section 11.12.18.

MAJOR IN COMPUTER SCIENCE (60 credits)
Freshman Program students interested in Computer Science should try to take COMP 202 if possible, but it is not required for entry to the Major. A student entering the Major with insufficient programming background may take COMP 202, which will not count for credit toward the Major but will count for elective credit.

Required Courses (42 credits)
COMP 250 (3) Introduction to Computer Science
COMP 251 (3) Data Structures and Algorithms
COMP 206 (3) Introduction to Software Systems
COMP 273 (3) Introduction to Computer Systems
COMP 302 (3) Programming Languages and Paradigms
COMP 310 (3) Computer Systems and Organization
COMP 330 (3) Theoretical Aspects: Computer Science
COMP 350 (3) Numerical Computing
JOINT MAJOR IN MATHEMATICS AND COMPUTER SCIENCE
under "Mathematics and Statistics (MATH)", in section 11.12.18.

JOINT MAJOR IN PHYSICS AND COMPUTER SCIENCE
JOINT HONOURS IN MATHEMATICS AND COMPUTER SCIENCE (72 credits)
Honours students must maintain a CGPA of 3.00 and must have at least this average upon graduation as well.

Required Courses (45 credits)
- COMP 206 (3) Introduction to Software Systems
- COMP 250 (3) Introduction to Computer Science
- COMP 252 (3) Algorithms and Data Structures
- COMP 273 (3) Introduction to Computer Systems
- COMP 302 (3) Programming Languages and Paradigms
- COMP 310 (3) Computer Systems and Organization
- COMP 330 (3) Theoretical Aspects: Computer Science
- COMP 350 (3) Numerical Computing
- COMP 362 (3) Honours Algorithm Design
- COMP 400 (3) Technical Project and Report
- MATH 222 (3) Calculus 3
- MATH 223 (3) Linear Algebra
- MATH 240 (3) Discrete Structures 1
- MATH 323 (3) Probability
- MATH 340 (3) Discrete Structures 2
- or MATH 350 (3) Graph Theory and Combinatorics

Complementary Courses (27 credits)
- 24 credits of COMP and/or ECSE courses, 12 credits of which must be at the 500 level, from the list of complementary courses for the Major in Computer Science, with the addition of COMP 552 Combinatorial Optimization.
- 3 credits, any 300-level or above Mathematics course (excluding MATH 323, MATH 338, MATH 340, MATH 350)

JOINT HONOURS IN MATHEMATICS AND COMPUTER SCIENCE under "Mathematics and Statistics (MATH)", in section 11.12.18. Students must consult an Honours adviser in both Departments.

MINOR IN COGNITIVE SCIENCE
Students following Major or Honours programs in Computer Science may want to consider the Minor in Cognitive Science.

COMPUTER SCIENCE COURSE RESTRICTION NOTES
The following programs are defined as belonging to the Core Group or the Mathematics Group to simplify the explanation of course restrictions:

Core Group:
- Major in Computer Science
- Honours in Computer Science
- Joint Major in Mathematics and Computer Science
- Joint Major in Physics and Computer Science
- Joint Honours in Mathematics and Computer Science
- Major in Software Engineering
- Bachelor of Software Engineering
- Major Concentration in the Foundations of Computing
- Minor Concentration in Foundations of Computing
- Minor Concentration in Computer Science
- Minor Concentration in Computer Systems
- Minor in Computer Science
- Faculty Program in Mathematics and Computer Science
- Faculty Program in Mathematics, Statistics and Computer Science
- Honours in Music Technology
- Minor in Cognitive Science

Mathematics Group:
- Honours in Mathematics

Honours in Applied Mathematics
Honours in Probability and Statistics

11.12.10 Earth and Planetary Sciences (EPSC)
Frank Dawson Adams Building, Room 238
3450 University Street
Montreal, QC H3A 2A7
Telephone: (514) 398-6767
Fax: (514) 398-4680
E-mail: kiki@eps.mcgill.ca
Website: www.eps.mcgill.ca

Chair — TBA
Emeritus Professors
J. Arkani-Hamed; B.Eng.(Tehran), Ph.D.(MIT)
Wallace H. MacLean; B. Geol.Eng.(Colorado Sch. of Mines), M.Sc.(Appl.), Ph.D.(McG.)
Eric W. Mountjoy; B.A.Sc.(Br. Col.), Ph.D.(Tor.) (William E. Logan Emeritus Professor of Geology)
Colin W. Steam; B.Sc.(McM.), M.S., Ph.D.(Yale), F.R.S.C.

Professors
Don R. Baker; A.Chic.), Ph.D.(Penn.)
Don M. Francis; B.Sc.(MCG.), M.Sc.(Br. Col.), Ph.D.(MIT) (Dawson Professor of Geology)
Andrew J. Hynes; B.Sc.(Tor.), Ph.D.(Cant.) (William E. Logan Professor of Geology)
Olivia G. Jensen; B.Sc., M.Sc., Ph.D.(Br. Col.)
Robert F. Martin; B.Sc.(Ott.), M.S.(Penn. St.), Ph.D.(Stan.)
Alfonso Mucci; B.Sc., M.Sc.(Montr.), Ph.D.(Miami)
A.E. (Willy) Williams-Jones; B.Sc., M.Sc.(Natal), Ph.D.(Qu.)

Associate Professors
Bruce Hart; B.A.(McM.), M.Sc.(UQ à Rimouski), Ph.D.(W.Ont.)
Jeanne Paquette; B.Sc., M.Sc.(McG.), Ph.D.(Stonybrook)
John Stix; A.B.(Dart.), M.Sc., Ph.D.(Tor.)
Hojjatollah Vaili; B.Sc., M.Sc., Ph.D.(Munich) (Director, Electron Microscopy Centre)

Assistant Professors
Mairi Best; B.Sc.(Laur.), Ph.D.(Chic.)
Jeffrey McKenzie; B.Sc. (McG.), M.Sc., Ph.D. (Syrac.)
Boswell Wing; A.B.(Harv.), M.A., Ph.D. (Johns Hop.)

Faculty Lecturer
S.T. Ahmedali

Adjunct Professors
H. Hofmann, W. Minarik, B. Sundby

Retired Professors
R. Hesse

The domain of Earth and Planetary Sciences includes the solid Earth and its hydrosphere and extends to the neighbouring terrestrial planets. It is a multidisciplinary field in which the principles of chemistry, physics, and mathematics are applied to the rich problems of the real world in order to understand how planets like the Earth work; in the past, the present, and the future.

Career opportunities are many and varied for graduates in the Earth and Planetary Sciences. There is presently a demand for graduates with expertise in many disciplines of the Earth Sciences. Our students are recruited for employment in the petroleum and mining industries, and in the environmental sector. During the Summer months, undergraduate students are generally able to obtain employment from industry or government agencies, providing them with both financial benefits and first-hand geoscientific experience. Career opportunities in planetary science are present in universities and research organizations.

The Department has a full-time staff of 14 professors and one faculty lecturer. There are approximately 40 graduate and 35 undergraduate students. Classes are therefore small at all levels, resulting in an informal and friendly atmosphere throughout the Department in which most of the faculty and students interact on a first-name basis. Emphasis is placed equally on quality teaching.
and research providing undergraduate students with a rich and exciting environment in which to explore and learn.

The undergraduate curriculum is designed to provide both a rigorous foundation in the physical sciences and the flexibility to create an individualized program in preparation for careers in industry, teaching, or research. In addition to the Major and Honours undergraduate programs, the Department also offers a Joint Major in Physics and Geophysics which provides a rigorous mathematics and physics preparation and a geological background in the geosciences, and is part of the Earth System Science Inter-departmental program.

The Minor in Earth and Planetary Sciences offers students from other departments the opportunity to obtain exposure to the Earth Sciences, while the Minor in Geochemistry is oriented towards Chemistry students who want to see the application of chemistry to problems in the Earth and Planetary Sciences.

Students interested in any of the programs should inquire at Room 238, Frank Dawson Adams Building, (514) 398-6767, or should consult the Undergraduate Director, Don Baker, Room 310, Frank Dawson Adams Building, (514) 398-7485, if they do not have an adviser.

A Science Major Concentration in Earth, Atmosphere and Ocean Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar, see "Earth, Atmosphere and Ocean Sciences", in section 5.12.7 for details.

MINOR IN EARTH AND PLANETARY SCIENCES
(18 credits)

Required Courses (6 credits)
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (3) Introductory Petrology

Complementary Courses (12 credits)
EPSC 201 (3) Understanding Planet Earth
or EPSC 233 (3) Earth and Life History

9 credits selected from:
EPSC 203 (3) Structural Geology 1
EPSC 231 (3) Field School 1
EPSC 243 (3) Environmental Geology
EPSC 334 (3) Invertebrate Paleontology
EPSC 350 (3) Tectonics
EPSC 451 (3) Hydrothermal Mineral Deposits
EPSC 452 (3) Ore-forming Processes 1
EPSC 542 (3) Chemical Oceanography
EPSC 549 (3) Mineral Deposits 2
EPSC 552 (3) Selected Topics 3
EPSC 562 (3) Vertebrate Evolution

Other Earth and Planetary Sciences courses may be substituted with permission.

MINOR IN GEOCHEMISTRY (24 credits)

Required Courses (9 credits)
EPSC 201 (3) Understanding Planet Earth
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (3) Introductory Petrology

Complementary Courses (15 credits)
15 credits selected from:
EPSC 220 (3) Principles of Geochemistry
EPSC 243 (3) Environmental Geology
EPSC 501 (3) Crystal Chemistry
EPSC 519 (3) Isotope Geology
EPSC 542 (3) Chemical Oceanography
EPSC 545 (3) Low-Temperature Geochemistry
EPSC 561 (3) Ore-forming Processes 1
EPSC 562 (3) Ore-forming Processes 2

MINOR IN EARTH AND PLANETARY SCIENCES (66 credits)

Undergraduate Director: Don R. Baker, FD Adams, Room 310, (514) 398-7485

U1 Required Courses (27 credits)
EPSC 203 (3) Structural Geology 1
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (3) Introductory Petrology
EPSC 220 (3) Principles of Geochemistry
EPSC 231 (3) Field School 1
EPSC 233 (3) Earth and Life History
EPSC 312 (3) Spectroscopy of Minerals
MATH 222 (3) Calculus 3 approved (3) statistics course

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH 133 Vectors, Matrices and Geometry.

U2 and/or U3 Required Courses (24 credits)
EPSC 320 (3) Elementary Earth Physics
EPSC 334 (3) Invertebrate Paleontology
EPSC 350 (3) Tectonics
EPSC 423 (3) Igneous Petrology
EPSC 445 (3) Metamorphic Petrology
EPSC 452 (3) Mineral Deposits 2
EPSC 455 (3) Sedimentary Geology
EPSC 519 (3) Isotope Geology

Complementary Courses (15 credits)
3 credits, one of:
EPSC 331 (3) Field School 2
EPSC 341 (3) Field School 3
plus 12 credits (4 courses) chosen from the following:
EPSC 330 (3) Earthquakes and Earth Structure
EPSC 425 (3) Sediments to Sequences
EPSC 435 (3) Geophysical Applications
EPSC 451 (3) Hydrothermal Mineral Deposits
EPSC 501 (3) Crystal Chemistry
EPSC 530 (3) Volcanology
EPSC 542 (3) Chemical Oceanography
EPSC 547 (3) High Temperature Geochemistry
EPSC 548 (3) Processes of Igneous Petrology
EPSC 549 (3) Hydrogeology
EPSC 550 (3) Selected Topics 1
EPSC 551 (3) Selected Topics 2
EPSC 552 (3) Selected Topics 3
EPSC 561 (3) Ore-forming Processes 1
EPSC 562 (3) Ore-forming Processes 2
EPSC 570 (3) Cosmochemistry
EPSC 580 (3) Aqueous Geochemistry
EPSC 590 (3) Applied Geochemistry Seminar

Note: Courses at the 300 or higher level in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of Undergraduate Studies.

HONOURS IN EARTH SCIENCES (75 credits)
(CGPA ≥ 3.20)

U1 Required Courses (27 credits)
EPSC 203 (3) Structural Geology 1
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (3) Introductory Petrology
EPSC 220 (3) Principles of Geochemistry
EPSC 231 (3) Field School 1
EPSC 233 (3) Earth and Life History
EPSC 312 (3) Spectroscopy of Minerals
MATH 222 (3) Calculus 3 approved (3) statistics course

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH 133 Vectors, Matrices and Geometry.

U2 and/or U3 Required Courses (33 credits)
EPSC 320 (3) Elementary Earth Physics
EPSC 350 (3) Tectonics

Complementary Courses (12 credits)
9 credits selected from:
EPSC 331 (3) Field School 2
EPSC 341 (3) Field School 3
plus 3 credits (1 course) chosen from:
EPSC 330 (3) Earthquakes and Earth Structure
EPSC 425 (3) Sediments to Sequences
EPSC 435 (3) Geophysical Applications
EPSC 451 (3) Hydrothermal Mineral Deposits
EPSC 501 (3) Crystal Chemistry
EPSC 530 (3) Volcanology
EPSC 542 (3) Chemical Oceanography
EPSC 547 (3) High Temperature Geochemistry
EPSC 548 (3) Processes of Igneous Petrology
EPSC 549 (3) Hydrogeology
EPSC 550 (3) Selected Topics 1
EPSC 551 (3) Selected Topics 2
EPSC 552 (3) Selected Topics 3
EPSC 561 (3) Ore-forming Processes 1
EPSC 562 (3) Ore-forming Processes 2
EPSC 570 (3) Cosmochemistry
EPSC 580 (3) Aqueous Geochemistry
EPSC 590 (3) Applied Geochemistry Seminar

Note: Courses at the 300 or higher level in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of Undergraduate Studies.
EPSC 423 (3) Igneous Petrology
EPSC 445 (3) Metamorphic Petrology
EPSC 452 (3) Mineral Deposits 2
EPSC 455 (3) Sedimentary Geochemistry
EPSC 480D1 (3) Honours Research Project
EPSC 480D2 (3) Honours Research Project
EPSC 519 (3) Isotope Geology
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations

Complementary Courses (15 credits)
3 credits, one of:
EPSC 331 (3) Field School 2
EPSC 341 (3) Field School 3
plus 12 credits (4 courses) chosen from the following:
EPSC 330 (3) Earthquakes and Earth Structure
EPSC 334 (3) Invertebrate Paleontology
EPSC 425 (3) Sediments to Sequences
EPSC 435 (3) Geophysical Applications
EPSC 451 (3) Hydrothermal Mineral Deposits
EPSC 501 (3) Crystal Chemistry
EPSC 530 (3) Volcanology
EPSC 542 (3) Chemical Oceanography
EPSC 547 (3) High Temperature Geochemistry
EPSC 548 (3) Processes of Igneous Petrology
EPSC 549 (3) Hydrogeology
EPSC 550 (3) Selected Topics 1
EPSC 551 (3) Selected Topics 2
EPSC 552 (3) Selected Topics 3
EPSC 553 (3) Ore-forming Processes 1
EPSC 554 (3) Ore-forming Processes 2
EPSC 555 (3) Sedimentary Geology
EPSC 580 (3) Aqueous Geochemistry
EPSC 590 (3) Applied Geochemistry Seminar

Note: Courses at the 300 or higher level in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of Undergraduate Studies.

HONOURS IN PLANETARY SCIENCES (81 credits)
CGPA: ≥ 3.20

U1 Required Courses (27 credits)
EPSC 203 (3) Structural Geology
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (3) Introductory Petrology
EPSC 220 (3) Principles of Geochemistry
EPSC 231 (3) Field School 1
EPSC 233 (3) Earth and Life History
EPSC 312 (3) Spectroscopy of Minerals
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH 133 Vectors, Matrices and Geometry.

U2 and/or U3 Required Courses (42 credits)
EPSC 320 (3) Elementary Earth Physics
EPSC 330 (3) Earthquakes and Earth Structure
EPSC 350 (3) Tectonics
EPSC 423 (3) Igneous Petrology
EPSC 480D1 (3) Honours Research Project
EPSC 480D2 (3) Honours Research Project
EPSC 510 (3) Geodynamics and Geomagnetism
EPSC 519 (3) Isotope Geology
EPSC 570 (3) Cosmochemistry
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations
MATH 317 (3) Numerical Analysis
MATH 319 (3) Partial Differential Equations
PHYS 340 (3) Electricity and Magnetism

Complementary Courses (12 credits)
3 credits, one of:
PHYS 251 (3) Classical Mechanics 1
PHYS 230 (3) Dynamics of Simple Systems
plus 9 credits (3 courses) chosen from the following:
EPSC 334 (3) Invertebrate Paleontology
EPSC 425 (3) Sediments to Sequences
EPSC 435 (3) Geophysical Applications
EPSC 451 (3) Hydrothermal Mineral Deposits
EPSC 501 (3) Crystal Chemistry
EPSC 530 (3) Volcanology
EPSC 542 (3) Chemical Oceanography
EPSC 547 (3) High Temperature Geochemistry
EPSC 548 (3) Processes of Igneous Petrology
EPSC 549 (3) Hydrogeology
EPSC 550 (3) Selected Topics 1
EPSC 551 (3) Selected Topics 2
EPSC 552 (3) Selected Topics 3
EPSC 553 (3) Ore-forming Processes 1
EPSC 554 (3) Ore-forming Processes 2
EPSC 555 (3) Sedimentary Geology
EPSC 580 (3) Aqueous Geochemistry
EPSC 590 (3) Applied Geochemistry Seminar

Note: Courses at the 300 or higher level in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of Undergraduate Studies.


11.12.11 Earth System Science Interdepartmental Major (ESYS)

Earth System Science (ESYS) views Earth as a single integrated system that provides a unifying context to examine the interrelationships between all components of the Earth system. The approach concentrates on the nature of linkages among the biological, chemical, human and physical subsystems of the Earth. ESS primarily involves studying the cycling of matter and energy through the atmosphere, biosphere, cryosphere, exosphere, and hydrosphere. ESS examines the dynamics and interrelationships among these processes at time scales that range from billions of years to days, and seeks to understand how these interrelationships have changed over time.

The ESS Major is offered jointly by the following departments:
- Atmospheric and Oceanic Sciences (ATO)
- Earth and Planetary Sciences (EPSC)
- Geography (GEOG)

The individual departments, their disciplines, and specific courses offered by them are described in their respective entries in this Calendar.

Program Advisers:
- Department of Atmospheric and Oceanic Sciences:
  Professor Peter Yau
  Burnside Hall, Room 818
  E-mail: peter.yau@mcgill.ca
  Telephone: (514) 398-3717

- Department of Earth and Planetary Sciences:
  Professor Don R. Baker
  Frank Dawson Adams, Room 310
  E-mail: donb@eps.mcgill.ca
  Telephone: (514) 398-7485

- Department of Geography:
  Professor Raja Sengupta
  Burnside Hall, Room 412
  E-mail: sengupta@geog.mcgill.ca
  Telephone: (514) 398-5316
### MAJOR IN EARTH SYSTEM SCIENCE (57 credits)
(Awaiting approval of the Ministère de l’Éducation, du Loisir, et du Sport)

#### Required Courses (33 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 322</td>
<td>Environmental Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 321</td>
<td>Climatic Environments</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 307</td>
<td>Socioeconomic Applications of GIS</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 306</td>
<td>Raster Geo-Information Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 305</td>
<td>Soils and Environment</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 590</td>
<td>Applied Geochemistry Seminar</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 580</td>
<td>Aqueous Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 549</td>
<td>Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 542</td>
<td>Chemical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 530</td>
<td>Volcanology</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 519</td>
<td>Isotope Geology</td>
<td>3</td>
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<tr>
<td>EPSC 455</td>
<td>Sedimentary Geology</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 452</td>
<td>Mineral Deposits 2</td>
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<td>EPSC 445</td>
<td>Metamorphic Petrology</td>
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</tr>
<tr>
<td>EPSC 425</td>
<td>Igneous Petrology</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 350</td>
<td>Tectonics</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 341</td>
<td>Field School 3</td>
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<tr>
<td>EPSC 334</td>
<td>Invertebrate Paleontology</td>
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<tr>
<td>EPSC 331</td>
<td>Field School 2</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 320</td>
<td>Elementary Earth Physics</td>
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<tr>
<td>EPSC 312</td>
<td>Spectroscopy of Minerals</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 309</td>
<td>Weather Radars and Satellites</td>
<td>3</td>
</tr>
<tr>
<td>ATOC 315</td>
<td>Water in the Atmosphere</td>
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<tr>
<td>ATOC 412</td>
<td>Atmospheric Dynamics</td>
<td>3</td>
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<tr>
<td>ATOC 419</td>
<td>Advances in Chemistry of Atmosphere</td>
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</tr>
<tr>
<td>ATOC 512</td>
<td>Atmospheric and Oceanic Dynamics</td>
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<tr>
<td>ATOC 513</td>
<td>Waves and Stability</td>
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<td>ATOC 530</td>
<td>Climate Dynamics 1</td>
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<tr>
<td>ATOC 531</td>
<td>Climate Dynamics 2</td>
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<td>ATOC 540</td>
<td>Synoptic Meteorology 1</td>
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<tr>
<td>ATOC 541</td>
<td>Synoptic Meteorology 2</td>
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<tr>
<td>BIOL 308</td>
<td>Ecological Dynamics</td>
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<tr>
<td>BIOL 309</td>
<td>Mathematical Models in Biology</td>
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<td>BIOL 432</td>
<td>Limnology</td>
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<td>BIOL 441</td>
<td>Biological Oceanography</td>
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<td>BIOL 465</td>
<td>Conservation Biology</td>
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<tr>
<td>BIOL 534</td>
<td>Theoretical Ecology</td>
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<tr>
<td>BIOL 540</td>
<td>Ecology of Species Invasions</td>
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</tr>
<tr>
<td>BREE 319</td>
<td>Engineering Mathematics (offered on Macdonald Campus)</td>
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</tr>
<tr>
<td>EPSC 312</td>
<td>Spectroscopy of Minerals</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 320</td>
<td>Elementary Earth Physics</td>
<td>3</td>
</tr>
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<td>EPSC 331</td>
<td>Field School 2</td>
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<td>Igneous Petrology</td>
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<td>EPSC 425</td>
<td>Sediments to Sequences</td>
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<td>EPSC 445</td>
<td>Metamorphic Petrology</td>
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<td>EPSC 452</td>
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<td>EPSC 519</td>
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<td>EPSC 542</td>
<td>Chemical Oceanography</td>
<td>3</td>
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<tr>
<td>EPSC 549</td>
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<td>EPSC 580</td>
<td>Aqueous Geochemistry</td>
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<tr>
<td>EPSC 590</td>
<td>Applied Geochemistry Seminar</td>
<td>3</td>
</tr>
<tr>
<td>GEG 305</td>
<td>Soils and Environment</td>
<td>3</td>
</tr>
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<tr>
<td>GEG 321</td>
<td>Climatic Environments</td>
<td>3</td>
</tr>
<tr>
<td>GEG 322</td>
<td>Environmental Hydrology</td>
<td>3</td>
</tr>
</tbody>
</table>

18 credits from the following course list, with at least 3 credits from each of subject codes ATOC, EPSC, and GEOG. At least 9 of the 18 credits must be at the 400 level or higher.

#### Complementary Courses (24 credits)

3 credits, one of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPSC 210</td>
<td>Introductory Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 220</td>
<td>Principles of Geochemistry</td>
<td>3</td>
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</tbody>
</table>

3 credits, one of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC 215</td>
<td>Oceans, Weather and Climate</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 212</td>
<td>Introductory Petrology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 272</td>
<td>Earth’s Changing Surface</td>
<td>3</td>
</tr>
</tbody>
</table>

18 credits from the following course list, with at least 3 credits from each of subject codes ATOC, EPSC, and GEOG. At least 9 of the 18 credits must be at the 400 level or higher.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC 309</td>
<td>Weather Radars and Satellites</td>
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<td>ATOC 315</td>
<td>Water in the Atmosphere</td>
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<tr>
<td>ATOC 412</td>
<td>Atmospheric Dynamics</td>
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<tr>
<td>ATOC 419</td>
<td>Advances in Chemistry of Atmosphere</td>
<td>3</td>
</tr>
<tr>
<td>ATOC 512</td>
<td>Atmospheric and Oceanic Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ATOC 513</td>
<td>Waves and Stability</td>
<td>3</td>
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<tr>
<td>ATOC 530</td>
<td>Climate Dynamics 1</td>
<td>3</td>
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<tr>
<td>ATOC 531</td>
<td>Climate Dynamics 2</td>
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<tr>
<td>ATOC 540</td>
<td>Synoptic Meteorology 1</td>
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</tr>
<tr>
<td>ATOC 541</td>
<td>Synoptic Meteorology 2</td>
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<td>BIOL 308</td>
<td>Ecological Dynamics</td>
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<td>BIOL 309</td>
<td>Mathematical Models in Biology</td>
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<td>BIOL 432</td>
<td>Limnology</td>
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<td>BIOL 441</td>
<td>Biological Oceanography</td>
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<td>BIOL 465</td>
<td>Conservation Biology</td>
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<td>BIOL 534</td>
<td>Theoretical Ecology</td>
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<tr>
<td>BIOL 540</td>
<td>Ecology of Species Invasions</td>
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<tr>
<td>BREE 319</td>
<td>Engineering Mathematics (offered on Macdonald Campus)</td>
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<tr>
<td>EPSC 312</td>
<td>Spectroscopy of Minerals</td>
<td>3</td>
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<tr>
<td>EPSC 320</td>
<td>Elementary Earth Physics</td>
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<td>EPSC 331</td>
<td>Field School 2</td>
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<td>EPSC 334</td>
<td>Invertebrate Paleontology</td>
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<td>EPSC 341</td>
<td>Field School 3</td>
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<td>EPSC 350</td>
<td>Tectonics</td>
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<td>EPSC 423</td>
<td>Igneous Petrology</td>
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<td>EPSC 425</td>
<td>Sediments to Sequences</td>
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<td>EPSC 445</td>
<td>Metamorphic Petrology</td>
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<td>EPSC 452</td>
<td>Mineral Deposits 2</td>
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<td>EPSC 455</td>
<td>Sedimentary Geology</td>
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<td>EPSC 519</td>
<td>Isotope Geology</td>
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<td>EPSC 530</td>
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<td>EPSC 542</td>
<td>Chemical Oceanography</td>
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<td>EPSC 549</td>
<td>Hydrogeology</td>
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<td>EPSC 580</td>
<td>Aqueous Geochemistry</td>
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<tr>
<td>EPSC 590</td>
<td>Applied Geochemistry Seminar</td>
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<td>GEG 305</td>
<td>Soils and Environment</td>
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<tr>
<td>GEG 306</td>
<td>Raster Geo-Information Science</td>
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</tr>
<tr>
<td>GEG 307</td>
<td>Socioeconomic Applications of GIS</td>
<td>3</td>
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</tbody>
</table>

#### Note:
Courses at the 300 level or higher in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of an academic adviser. Please see the list posted on the Departmental webpage.

### 11.12.12 Environment

All courses given by the McGill School of Environment (Subject Code ENVr) are considered as courses taught by the Faculty of Science.

Science students who are interested in studying the environment should refer to the "McGill School of Environment", in section 13, where they will find information concerning the Minor Program in Environment, the B.Sc. Major Program in Environment and the B.Sc. Honours Program in Environment.

### 11.12.13 Experimental Medicine (EXMD)

Lady Meredith House, Room 101
E-mail: experimental.medicine@mcgill.ca
Website: www.medicine.mcgill.ca/EXPMED/expmed1.html

Experimental Medicine is a division of the Department of Medicine. There are no B.Sc. programs in Experimental Medicine, but the EXMD courses listed in the Courses section of this Calendar are considered as courses taught by the Faculty of Science.

### 11.12.14 Geography (GEOG)

Burnside Hall, Room 705
805 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-4951 or 398-4111
Fax: (514) 398-7437
Website: www.geog.mcgill.ca

**Chair — G.O. Ewing**

*Emeritus Professor*

B.J. Garnier; M.A.(Cantab.)

*Professors*

P.G. Brown; B.A.(Haver.), M.A., Ph.D.(Col.) *(joint appoint. with McGill School of Environment and Natural Resource Sciences)*
T.R. Moore; B.Sc.(Swansea), Ph.D.(Aberd.) (on leave 2006)
N.T. Roulet; B.Sc., M.Sc.(Trent), Ph.D.(McM.) (James McGill Professor)
G.W. Wenzel; M.A.(Manit.), Ph.D.(McG.)

Associate Professors
G.L. Chmura; B.Sc.(Mass.), M.Sc.(R.I.), Ph.D.(L.S.U.)
O.T. Coomes; B.Sc.(Vic., B.C.), M.A.(Tor.), Ph.D.(Wisc.) (on leave July-Dec. 2006)
G.O. Ewing; M.A.(Glas.), M.A., Ph.D.(McM.)
B. Forest; A.B. (Chic.), M.A., Ph.D. (Calif.-LA)
M.F. Lapointe; B.Sc., M.Sc.(McG.), Ph.D.(Br.Col.)
T.C. Meredith; B.E.S.(Wat.), M.Sc., Dip.Cons.(Lond.), Ph.D.(Camb.)
L. Müller-Wille; Dr.phil.(Münster)
W.H. Pollard; B.A., M.Sc.(Guelph), Ph.D.(Ott.)
J. Unruh; B.A.(Kansas), M.S.(Wisc.), Ph.D.(Ariz.)

Assistant Professors
B. Lehner; Dip. Hydrol. (Freiburg) Ph.D. (Frankfurt)
G. Peterson; B.A., M.Sc.(Wat.), Ph.D.(Flor.)
N. Ramankutty; B.E. (P.S.G. Coll. of Tech.), M.S. (Ill.) Ph.D., (Wisc.)
N.A. Ross; B.A., M.A.(Qu.), Ph.D.(McM.)
J.W. Seakist; B.Sc.(Tor.), Ph.D.(Lund.)
R. Sengupta; B.Sc.(Bombay), M.Sc.(Indian IT, Mumbai), M.S., Ph.D.(S.Illinois-Carbondale) (joint appoint. with McGill School of Environment)
I.B. Strachan; B.Sc.(Tor.), M.Sc., Ph.D.(Qu.) (cross appoint. with Natural Resource Sciences)
J. Unruh; B.A., M.A.(Otago), Ph.D.(Qu.) (on leave 2006)

The Department of Geography offers programs in both Arts and Science. All B.A. programs in Geography (including Urban Systems) can be found in the Faculty of Arts entry "Geography (GEOG)", in section 4.12.25.

PREREQUISITES
There are no departmental prerequisites for entrance to the B.Sc. Geography programs. Students who have completed college or pre-university geography courses fully equivalent to those in the first year of university may, with an adviser's approval, substitute other courses as part of their program.

A Science Major Concentration in Geography - Physical Option is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Geography (GEOG)" section 4.12.25 for details.

Note: The Geography Department Orientation for newly admitted students who are in a Geography program will be held on September 8, 2006, at 2:00 PM, in Burnside Hall, Room 426.

MINOR IN GEOGRAPHY (expandable into the B.Sc. Major in Geography) (18 credits)
The Minor in Geography is designed to provide students in the Faculty of Science with an overview of basic elements of geography at the introductory and advanced level.

This Minor permits no overlap with any other programs.

Required Courses (12 credits)
GEOG 201 (3) Introductory Geo-Information Science
GEOG 306 (3) Raster Geo-Information Science
GEOG 307 (3) Socioeconomic Applications of GIS
GEOG 308 (3) Principles of Remote Sensing
GEOG 506 (3) Advanced Geographic Information Science

Complementary Courses (6 credits)
6 credits of Geography courses at the 300 and 400 level.

B.Sc. MINOR IN GEOGRAPHICAL INFORMATION SYSTEMS (18 credits)
The Minor in GIS is designed to provide students in the Faculty of Science who have an interest in GIS with a basic, but comprehensive, knowledge of concepts and methods relating to the analysis of geospatial data.

Required Courses (15 credits)
GEOG 201 (3) Introductory Geo-Information Science
COMP 420 (3) Secondary Storage Algorithms and Data Structures
GEOG 557* (3) Fundamentals of Computer Graphics
GEOG 535 (3) Remote Sensing and Interpretation
GEOG 551 (3) Environmental Decisions
URBP 505 (3) Geographic Information Systems

Note prerequisites

B.Sc. MAJOR IN GEOGRAPHY (58 credits)
The Major is designed to provide a coverage of the main elements of physical geography.

Required Courses (22 credits)
GEOG 201 (3) Introductory Geo-Information Science
GEOG 203 (3) Environmental Systems
GEOG 216 (3) Geography of the World Economy
GEOG 217 (3) The Canadian City
GEOG 272 (3) Earth's Changing Surface
GEOG 302 (3) Environmental Management 1
GEOG 351 (3) Environmental Decisions
GEOG 495 (6) Advanced Geographic Information Science

Complementary Courses (36 credits)
3 credits of statistics*
BIOL 373 (3) Biometry
GEOG 202 (3) Statistics and Spatial Analysis
MATH 203 (3) Principles of Statistics 1
PSYC 204 (3) Introduction to Psychological Statistics
SOC1 350 (3) Statistics in Social Research

* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 11.3.6.1

"Course Overlap"

3 credits of field courses:
GEOG 495 (3) Field Studies - Physical Geography
GEOG 496 (3) Geographical Excursion
GEOG 497 (3) Ecology of Coastal Waters
GEOG 499 (3) Subarctic Field Studies
(Field course availability is determined each year in February.)

15 credits from approved courses in Geography, or elsewhere in the Faculty of Science, or in the Faculty of Engineering; at least 9 credits of which are to be taken outside Geography. Students may also include any courses that are not already counted towards the GIS techniques or the systematic physical geography requirements. Admission to 500-level courses in Geography requires the instructor's permission. It is not advisable to take more than one 500-level course in a term.

Geography Approved Course List – Majors and Honours

GEOG 201 (3) Introductory Geo-Information Science
GEOG 203 (3) Environmental Systems
GEOG 272 (3) Earth's Changing Surface
GEOG 305 (3) Soils and Environment
GEOG 306 (3) Raster Geo-Information Science
GEOG 308 (3) Principles of Remote Sensing
GEOG 321 (3) Climatic Environments
GEOG 322 (3) Environmental Hydrology
GEOG 350 (3) Ecological Biogeography
GEOG 351 (3) Quantitative Methods
GEOG 352 (3) Advanced Geographical Information Science
GEOG 381 (3) Geographic Thought and Practice
GEOG 41D1 (3) Honours Research
GEOG 491D1 (3) Honours Research
GEOG 506 (3) Advanced Geographic Information Science
GEOG 510 (3) Global Biogeochemistry
GEOG 515 (3) Quantitative Methods
GEOG 516 (3) Advanced Fluvial Geomorphology
GEOG 517 (3) Historical Ecology Techniques

B.Sc. HONOURS IN GEOGRAPHY (66 credits)

The Honours program is designed to provide specialized systematic training in physical geography. In addition to the Faculty requirement that Honours students maintain a minimum CGPA of at least 3.00, students who enter a Geography Honours Program on or after September 2006 must have a program GPA of 3.3. Honours students are encouraged to participate in 500-level seminars with graduate students, but it is not advisable to take more than one in a term.

Required Courses (24 credits)
GEOG 201 (3) Introductory Geo-Information Science
GEOG 203 (3) Environmental Systems
GEOG 272 (3) Earth’s Changing Surface
GEOG 302 (3) Environmental Management 1
GEOG 351 (3) Quantitative Methods
GEOG 381 (3) Geographic Thought and Practice
GEOG 491D1 (3) Honours Research
GEOG 491D2 (3) Honours Research

Complementary Courses (42 credits)

6 credits of introductory courses, two of:
GEOG 210 (3) Global Places and Peoples
GEOG 216 (3) Geography of the World Economy
GEOG 217 (3) The Canadian City

3 credits of statistics*, one of:
BIOL 373 (3) Biometry
GEOG 202 (3) Statistics and Spatial Analysis

AFRICAN FIELD STUDY SEMESTER
The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1 "African Field Study Semester".

PANAMA FIELD STUDY SEMESTER
The program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. For more information, see section 14.3 "Panama Field Study Semester".

Geography courses of most interest to Science students:
GEOG 199 FYS: Geo-Environments
GEOG 201 Introductory Geo-Information Science
GEOG 203 Environmental Systems
GEOG 205 Global Change: Past, Present and Future
GEOG 272 Earth’s Changing Surface
GEOG 290 Local Geographical Excursion
GEOG 302 Environmental Management 1
GEOG 305 Soils and Environment
GEOG 306 Raster Geo-Information Science
GEOG 308 Principles of Remote Sensing
GEOG 321 Climatic Environments
GEOG 322 Environmental Hydrology
GEOG 350 Ecological Biogeography
GEOG 351 Quantitative Methods
GEOG 370 Protected Areas
GEOG 372 Running Water Environments
GEOG 404 Environmental Management 2
GEOG 490 Geography: Independent Studies
GEOG 495 Field Studies - Physical Geography
GEOG 496 Geographical Excursion
GEOG 497 Ecology of Coastal Waters
GEOG 499 Subarctic Field Studies
GEOG 501 Modelling Environmental Systems
GEOG 505 Global Biogeochemistry
GEOG 506 Advanced Geographic Information Science
GEOG 522 Advanced Environmental Hydrology
GEOG 523 Advanced Climatology
GEOG 535 Remote Sensing and Interpretation

SCIENCE – GEOGRAPHY
### EARTH SYSTEM SCIENCE INTERDEPARTMENTAL MAJOR, see section 11.12.11 "Earth System Science Interdepartmental Major (ESYS)", [Awaiting approval of the Ministère de l’Éducation, du Loisir et du Sport].

This program is offered by the Departments of Atmospheric & Oceanic Sciences, Earth & Planetary Sciences and Geography.

Students in the Department of Geography interested in this program should contact:
- Professor Malcolm Baines (malcolm.baines@mcgill.ca), (514) 398-4443 or (514) 398-3928 or Dr. Julie Desbarats, Physiology, julie.desbarats@mcgill.ca, (514) 398-5126.

#### INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY

(75 credits)

**Required Courses** (48 credits)

<table>
<thead>
<tr>
<th>U1 Required Courses (20 credits)</th>
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<tbody>
<tr>
<td>BIOL 200 (3) Molecular Biology</td>
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<tr>
<td>BIOL 201 (3) Cell Biology and Metabolism</td>
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<tr>
<td>or BIOC 212 (3) Molecular Mechanisms of Cell Function</td>
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<tr>
<td>CHEM 203 (3) Survey of Physical Chemistry</td>
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<tr>
<td>or CHEM 204 (3) Physical Chemistry/Biological Sciences 1</td>
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<tr>
<td>CHEM 212 (4) Introductory Organic Chemistry 1</td>
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<td>CHEM 222 (4) Introductory Organic Chemistry 2</td>
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<tr>
<td>PHGY 209 (3) Mammalian Physiology 1</td>
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<tr>
<td>or MIMM 211 (3) Introductory Microbiology</td>
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<tr>
<th>U2 Required Courses (13 credits)</th>
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<tr>
<td>ANAT 261 (4) Introduction to Dynamic Histology</td>
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<tr>
<td>BIOC 311 (3) Metabolic Biochemistry</td>
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<tr>
<td>BIOL 312 (3) Biochemistry of Macromolecules</td>
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<tr>
<td>MIMM 314 (3) Immunology</td>
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</table>

**U3 Required Courses** (15 credits)

| MIMM 414 (3) Advanced Immunology |  |
| PHGY 419D1 (4.5) Project and Seminar in Immunology |  |
| PHGY 419D2 (4.5) Project and Seminar in Immunology |  |
| PHGY 513 (3) Cellular Immunology |  |

**Complementary Courses** (27 credits)

**U1 Complementary Courses** (6 credits)

| BIOL 373 (3) Biometry |  |
| MATH 203 (3) Principles of Statistics 1 |  |
| PSYC 204 (3) Introduction to Psychological Statistics |  |

<table>
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<tr>
<th>plus 3 credits selected from:</th>
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<tbody>
<tr>
<td>ANAT 214 (3) Systematic Human Anatomy</td>
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<tr>
<td>ANAT 262 (3) Introductory Molecular and Cell Biology</td>
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<tr>
<td>BIOL 202 (3) Basic Genetics</td>
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</tbody>
</table>

| BIOL 205 (3) Biology of Organisms |  |
| BIOL 304 (3) Evolution |  |
| CHEM 257D1 (2) Introductory Analytical Chemistry |  |
| and CHEM 257D2 (2) Introductory Analytical Chemistry |  |
| COMP 202 (3) Introduction to Computing 1 |  |
| COMP 203 (3) Introduction to Computing 2 |  |
| MATH 204 (3) Principles of Statistics 2 |  |
| MIMM 211 (3) Introductory Microbiology |  |
| MIMM 212 (2) Laboratory in Microbiology |  |
| PHGY 209 (3) Mammalian Physiology 1 |  |
| PHGY 210 (3) Mammalian Physiology 2 |  |

**U2 Complementary Courses** (12 credits)

| BIOC 300D1 (3) Laboratory in Biochemistry |  |
| BIOC 300D2 (3) Laboratory in Biochemistry |  |
| or MIMM 386D1 (3) Laboratory in Microbiology and Immunology |  |

**U3 Complementary Courses** (9 credits)

| BIOL 520 (3) Gene Activity in Development |  |
| BIOL 404 (3) Biophysical Chemistry |  |
| BIOL 450 (3) Protein Structure and Function |  |
| BIOL 454 (3) Nucleic Acids |  |
| BIOC 458 (3) Membranes and Cellular Signaling |  |
| BIOC 503 (3) Immunoochemistry |  |
| or BIOL 458 (3) Membranes and Cellular Signaling |  |
| BIOL 513 (3) Parasitology |  |
| MIMM 465 (3) Bacterial Pathogenesis |  |
| MIMM 466 (3) Viral Pathogenesis |  |
| MIMM 509 (3) Inflammatory Processes |  |
| PHAR 503 (3) Drug Design and Development 1 |  |
| PHAR 504 (3) Drug Design and Development 2 |  |
| PHGY 531 (3) Topics in Applied Immunology |  |
| PHGY 552 (3) Cellular and Molecular Physiology |  |

Students must obtain a U1 GPA of 3.30 or a U2 CGPA of 3.30 for admission to this enrolment-limited program. U1 students should inform the program adviser of their intent to enter the Honours Immunology Program during their U1 Winter term and confirm their intention in writing by April 1. U2 or U3 students can apply for admission at any time.

For graduation in the Honours program, the student must complete a minimum of 90 credits, and achieve a CGPA of not less than 3.30. The five immunology courses (MIMM 314, BIOC 503, MIMM 414, PHGY 419D1/D2, PHGY 513) must all be passed with a grade not less than B.

Students who do not maintain Honours standing must transfer their registration to a program in one of the three participating Departments.

Apply to Dr. M. G. Baines, Microbiology and Immunology, malcolm.baines@mcgill.ca, (514) 398-4443 or (514) 398-3928 or Dr. Julie Desbarats, Physiology, julie.desbarats@mcgill.ca, (514) 398-5126.
11.12.16 Kinesiology for Science Students

The Minor in Kinesiology is designed to provide students in B.Sc. programs with basic but comprehensive knowledge of scientific bases of human physical activity and its relationship with health and well-being.

Students registered in the Minor in Kinesiology for Science Students may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor, all courses must be completed with a grade of C or better.

MINOR IN KINESIOLOGY FOR SCIENCE STUDENTS
(24 credits)

Required Courses (9 credits)
EDKP 206 (3) Biomechanics of Human Movement
EDKP 393 (3) Skill Learning and Expertise
EDKP 395 (3) Exercise Physiology

Complementary Courses (15 credits)
6 credits, two of the following courses:
PHGY 201 (3) Human Physiology: Control Systems
or PHGY 209 (3) Mammalian Physiology 1
PHGY 202 (3) Human Physiology: Body Functions
or PHGY 210 (3) Mammalian Physiology 2

9 credits, three of the following courses:
EDKP 281 (3) Motor Development
EDKP 303 (3) Advanced Biomechanics
EDKP 330 (3) Physical Activity and Health
EDKP 394 (3) Historical Perspectives
EDKP 396 (3) Adapted Physical Activity
EDKP 444 (3) Ergonomics
EDKP 445 (3) Exercise Metabolism
EDKP 446 (3) Physical Activity and Ageing
EDKP 447 (3) Motor Development 2
EDKP 448 (3) Exercise and Health Psychology
EDKP 449 (3) Exercise Pathophysiology 2
EDKP 485 (3) Exercise Pathophysiology 1
EDKP 495 (3) Scientific Principles of Training
EDKP 498 (3) Sport Psychology
EDKP 505 (3) Sport in Society
EDKP 542 (3) Environmental Exercise Physiology
EDKP 550 (3) Analyzing Instructional Behaviors
EDKP 553 (3) Physical Activity Assessments
EDKP 566 (3) Muscle Mechanics
EDKP 568 (3) Biomechanics Instrumentation

11.12.17 Management Minor Program

The Minor in Management allows Science students to include courses in their undergraduate program that will help prepare them for a career in management. Also available to Science students is the Minor in Technological Entrepreneurship for Science students, in section 11.12.32 “Technological Entrepreneurship for Science Students”.

Acceptance to the program is both competitive and restricted. At the time of application, a CGPA greater than 2.50 is required and at least one course (MGCR 211) toward the Minor program must have been completed with a grade of C or better.

Application procedures will be announced in September. Please consult Ron Critchley, Student Adviser, Desautels Faculty of Management Student Affairs Office, Bronfman 110, for details.

Students who are not formally registered for the Minor but who nevertheless complete all its requirements may apply to have the Minor approved during their last term.

Students registered in the Minor in Management may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor in Management, all courses must be completed with a grade of C or better.

MINOR IN MANAGEMENT (24 credits)

Required Courses (9 credits)
MGCR 211 (3) Introduction to Financial Accounting
MGCR 293 (3) Managerial Economics
MATH 203 (3) Principles of Statistics 1
or its equivalent as authorized by the Faculty of Science.
Students majoring in certain programs, for example in Mathematics, cannot take MATH 203 but must take MATH 324 instead. (Note: Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 11.3.6.1 ‘Course Overlap’.)

Complementary Courses (15 credits)
3 credits from:
MGCR 213 (3) Introduction to Management Accounting
MGCR 341 (3) Finance 1
MGCR 382 (3) International Business

3 credits from:
MGCR 222 (3) Introduction to Organizational Behaviour
MGCR 320 (3) Managing Human Resources
MGCR 352 (3) Marketing Management 1

3 credits from:
MGCR 360 (3) Social Context of Business
MGCR 373 (3) Operations Research 1
MGCR 423 (3) Organizational Policy

6 credits from:
any approved 300- or 400-level Management courses for which the prerequisites, if any, have been met.

Note: B.Sc. students must not take MGCR 331, ORGB 420, ORGB 429 or any INSY course.

11.12.18 Mathematics and Statistics (MATH)

Burndise Hall, Room 1005
805 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-3800
Fax: (514) 398-3899
Website: www.math.mcgill.ca

Chair — David Wolfson

Emeritus Professors
Michael Barr; A.B., Ph.D.(Penn.) (Peter Redpath Emeritus Professor of Pure Mathematics)
Mart Bunge; M.A., Ph.D.(Penn.)
Jal R. Choksi; B.A.(Can.), Ph.D.(Man.)
Joachim Lambek; M.Sc., Ph.D.(McG.), F.R.S.C. (Peter Redpath Emeritus Professor of Pure Mathematics)
Arak M. Mathai; M.Sc.(Kerala), M.A., Ph.D.(Tor.)
Sherwin A. Maslowe; B.Sc.(Wayne State), M.Sc., Ph.D.(Calif.)
William O.J. Moser; B.Sc.(Manit.), M.A.(Minn.), Ph.D.(Tor.)
V. Seshadri; B.Sc., M.Sc.(Madras), Ph.D.(Okla.)
George P.H. Styan; M.A., Ph.D.(Col.)
John C. Taylor; B.Sc.(Acad.), M.A.(Qu.), Ph.D.(McM.)

Professors
William J. Anderson; B.Eng., Ph.D.(McG.)
William G. Brown; M.A.(Col.), B.A., Ph.D.(Tor.)
Henri Darmon; B.Sc.(McG.), Ph.D.(Harv.), F.R.S.C. (James McGill Professor)
Stephen W. Drury; M.A., Ph.D.(Can.)
Kohur GowriSankaran; B.A., M.A.(Madras), Ph.D.(Bombay)
Pengfei Guan; B.Sc.(Zhejiang), M.Sc., Ph.D.(Princ.)
Jacques C. Hurtubise; B.Sc.(Montr.), Ph.D.(Oxf.), F.R.S.C.
Vojkan Jaksic; B.S.(Belgrade), Ph.D.(Galtech)
Niky Kamran; B.Sc., M.Sc.(Brussels), Ph.D.(Wat.), F.R.S.C. (James McGill Professor)
Olga Kharelampovich; M.A.(Ural State), Ph.D.(Leningrad), Dr.of.Sc.(Steklov Institute)
Alexei Miasnikov; M.Sc.(Novosibirsk), Ph.D., Dr.Sc.(Leningrad) (Canada Research Chair)
Faculty of Science

Michael Makkai; M.A., Ph.D.(Bud.) (Peter Redpath Professor of Pure Mathematics)
Charles Roth; M.Sc.(McG.), Ph.D.(Hebrew)
Karl Peter Russell; Vor.Dip.(Hamburg), Ph.D.(Calif.)
Georg Schmidt; B.Sc.(Natal), M.Sc.(S.A.), Ph.D.(Stan.)
David Wolfson; M.Sc.(Natal), Ph.D.(Purdue)
Keith J. Worsley; B.Sc., M.Sc., Ph.D.(Auckland), F.R.S.C. (James McGill Professor)
Jian-Ju Xu; B.Sc., M.Sc.(Beijing), M.Sc., Ph.D.(Renss.)

Associate Professors
Peter Bartello; B.Sc.(Tor.), M.Sc., Ph.D.(McG.) (joint appoint. with Atmospheric and Oceanic Sciences)
David Bryant; B.Sc.Hons., Ph.D.(Canterbury)
Eyal Z. Goren; B.A., M.S., Ph.D.(Hebrew)
Dmitry Jakobson; B.Sc.(MIT), Ph.D.(Princ.) (William Dawson Scholar)
Wilbur Jonsson; M.Sc.(Manit.), Dr.Rer.Nat.(Tubingen)
Antony Humphries; B.A., M.A.(Camb.), Ph.D.(Bath)
Ivo Klemes; B.Sc.(Tor.), Ph.D.(Calif.Tech.)
John P. Labute; B.Sc.(Windsor), M.A., Ph.D.(Harv.)
James G. Loveys; B.A.(ST.M.), M.Sc., Ph.D.(S.Frazier)
Neil G.F. Sancho; B.Sc., Ph.D.(Belgium)
John A. Toth; B.Sc., M.Sc.(McM.), Ph.D.(MIT) (William Dawson Scholar)
Daniel T. Wise; B.A.(Yeshiva), Ph.D.(Princ.).

Assistant Professors
Masoud Asgharian; B.Sc.(Shahid Beheshti), M.Sc., Ph.D.(McG.)
Nilima Nigam; B.Sc.(Indian IT, Bombay), M.Sc., Ph.D.(Delaware)
Russell Steele; B.S., M.S.(Carn. Mell.), Ph.D.(Wash.)
Paul Tupper; B.Sc.(S.Frazier), Ph.D.(Stan.)
Alain Vandal; B.Sc., M.Sc.(McG.), Ph.D.(Auckland)
Adrian Vetta; B.Sc., M.Sc.(London School of Economics), Ph.D.(MIT) (joint appoint. with Computer Science)
Thomas P. Wi Miller; B.S., M.Sc.(ETH)

Associate Members
Luc P. Devroey (Computer Science), P.R.L. Duttileil (Plant Science), Leon Glass (Physiology), Jean-Louis Goffin (Management), James A. Hanley (Epidemiology & Biostatistics), Lawrence Joseph (Epidemiology & Biostatistics), Michael Mackey (Physiology), Lawrence A. Mysak (A.O.S.), Prakash Panangaden (Computer Science), James O. Ramsay (Psychology), Bruce Reed (Computer Science), George Alexander Whitmore (Management), Peter Swain (Physiology), Christina Wolfson (Epidemiology & Biostatistics)

Adjunct Professors
Donald A. Dawson; B.Sc., M.Sc.(McG.), Ph.D.(MIT)
Martin J. Gander; M.S.(ETH), M.Sc., Ph.D.(Stan.)
Andrew Granville; B.A., CASM(Camb.), Ph.D.(Qu.)
M. Ram Murty; B.Sc.(Car.), Ph.D.(MIT), F.R.S.C.
Vladimir Remeslennikov; M.Sc.(Perm, Russia), Ph.D.(Novosibirsk)
Robert A. Seely; B.Sc.(McG.), Ph.D.(Cant.)

Faculty Lecturers
Jose A. Correa; M.Sc.(Wat.), Ph.D.(Car.)
Axel Hundemer; M.Sc., Ph.D.(Munich)

Mathematics has evolved to a discipline that is mainly characterized by its method of proof, its concern for a progressive broadening of its concepts, and by the search for mathematical entities and operations that represent aspects of reality. It is a subject that is pursued by many for its own sake, and regarded as part of the mainstream of human culture. Mathematics pervades modern society with an impact which, already immense, is rapidly growing.

The two principal divisions of mathematics are pure mathematics and applied mathematics. The pure mathematician is interested in abstract mathematical structures and in mathematics as an intellectual enterprise. The primary concern may not be with its utilitarian aspects or with the current needs of science and technology, although many problems in pure mathematics have developed from the sciences.

The applied mathematician is more interested in how mathematics can be used to study some aspects of the world. Mathematicians are engaged in the creation, study and application of advanced mathematical methods relevant to scientific problems. Statistical science and methodology today is concerned with phenomena in which there is a background of uncertainty arising from inherent variability and the investigator is obliged to arrive at decisions from limited data. A key tool in statistics is probability.

Some of the fields in which pure mathematicians work are algebra, analysis, geometry, topology, number theory and foundations. Applied mathematics, which once referred to the application of mathematics to such disciplines as mechanics and fluid dynamics, has currently assumed a much broader meaning and embraces such diverse fields as communication theory, theory of optimization, theory of games and numerical analysis.

Mathematics offers many vocational possibilities. Such fields as teaching, computing, applied statistics and actuarial science offer opportunities for B.Sc. graduates. Opportunities to do original research in pure and applied mathematics are available in universities and research institutions. Employment is to be found in financially or technologically oriented business firms. The Department of Mathematics and Statistics through its various programs attempts to provide courses to suit the diverse interests within mathematics and statistics.

The Honours Program in Mathematics demands of the student a talent for abstraction in addition to a high level of competence in the use of mathematical tools. This program is intended for students who plan to work in an area where mathematical innovations may be needed. It is almost essential for students contemplating a career in mathematical research.

The Major Program involves the same subjects as the Honours Program but is less demanding in terms of abstraction. It is designed primarily for students who will need mathematical tools in their work but whose creative activity will involve applications of mathematics to other areas. Within the framework of the Mathematics Major, various combinations of courses are suggested to meet the needs of different students. These include course suggestions for secondary school teachers, careers in management, and for careers in industry, government or actuarial sciences.

It is possible for Major students to include a number of Honours courses in their programs. This will be an advantage for those students who plan to use their mathematics in graduate studies.

Students interested in a less intensive mathematics program linked to other disciplines are advised to consider the available Faculty Programs.

In planning their programs students are advised to seriously consider developing some depth in another discipline – preferably one for which mathematics has some relevance and use. Mathematics has been closely linked to areas such as computer science, physics and engineering but has recently come to play an increasingly important role in fields such as biology, linguistics, management and psychology. Students should consider completing the requirements for Minor programs such as those available in Cognitive Science, Computer Science and Statistics.

Students considering programs in Mathematics and Statistics should contact the Department to arrange for academic advising.

The student's attention is called to the fact that a B.Com. degree with a Major in Mathematics is available from the Desautels Faculty of Management. In addition, the Schulich School of Music offers the B.Mus. degree with Honours in Theory with Mathematics Option.

Internship Year for Engineering and Science (IYES)
IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see "IYES: Internship Year for Engineering and Science", in section 7.2.8.

The following programs are also available with an Internship component:

- Major in Mathematics
- Honours in Mathematics
- Honours in Applied Mathematics
- Honours in Probability and Statistics
Joint Majors in Mathematics and Computer Science
Joint Honours in Mathematics and Computer Science

**Note:** Students entering a program listed below that has MATH 222 (Calculus 3) as a required course and who have successfully completed a course equivalent to MATH 222 e.g. CEGEP 201-303 or MATH 151 (Calculus B) with a grade of C or better may omit MATH 222 (Calculus 3) from the program, but must replace it with 3 credits of elective courses.

**MINOR IN MATHEMATICS** (24 credits)

The Minor may be taken in conjunction with any primary program in the Faculty of Science (other than programs in Mathematics). Students should declare their intention to follow the Minor in Mathematics at the beginning of the penultimate year and should obtain approval for the selection of courses to fulfill the requirements for the Minor from the Departmental Chief Adviser (or delegate).

It is strongly recommended that students in the Minor Program take MATH 323. The remaining credits may be freely chosen from the required and complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material. Alternatively, up to six credits may be allowed for appropriate courses from other departments.

All courses counted towards the Minor must be passed with a grade of C or better.

Generally no more than six credits of overlap are permitted between the Minor and the primary program. However, with an approved choice of substantial courses the overlap restriction may be relaxed to nine credits for students whose primary program requires 60 credits or more and to 12 credits when the primary program requires 72 credits or more.

**Required Courses** (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 222</td>
<td>3</td>
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<tr>
<td>MATH 223*</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>3</td>
</tr>
</tbody>
</table>

*MATH 223 may be replaced by MATH 235 and MATH 236. In this case the complementary credit requirement is reduced by three.

**Complementary Courses** (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 593</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 351</td>
<td>3</td>
</tr>
<tr>
<td>MATH 447</td>
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<td>MATH 523</td>
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<td>MATH 525</td>
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<td>MATH 556</td>
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<td>MATH 557</td>
<td>4</td>
</tr>
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<td>PHYS 362</td>
<td>3</td>
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<tr>
<td>PHYS 559</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 504</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 505</td>
<td>3</td>
</tr>
</tbody>
</table>

No more than 6 credits may be taken outside the Department of Mathematics and Statistics.

Further credits (if needed) may be freely chosen from the required and complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material.

**FACULTY PROGRAMS**

Programs linking mathematics and other disciplines are available. With careful selection of courses in U1, it is possible to transfer to a Major program in Mathematics in U2. Except where otherwise noted these Faculty Programs lead to a B.Sc. degree. Students interested in any of these Faculty Programs should consult the Department of Mathematics and Statistics for an adviser.

**FACULTY PROGRAM IN BIOLOGY AND MATHEMATICS** under "Biology (BIOL)", in section 11.12.5.

**FACULTY PROGRAM IN CHEMISTRY AND MATHEMATICS** under "Chemistry (CHEM)", in section 11.12.7.

**FACULTY PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE** (54 credits)

**Required Courses** (48 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COMP 202</td>
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<tr>
<td>COMP 203</td>
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<tr>
<td>COMP 206</td>
<td>3</td>
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<tr>
<td>COMP 251</td>
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<tr>
<td>COMP 273</td>
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<tr>
<td>COMP 302</td>
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<tr>
<td>COMP 310</td>
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<td>COMP 330</td>
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<td>COMP 420</td>
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<td>MATH 222</td>
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<td>MATH 223</td>
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<td>MATH 240</td>
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<td>MATH 323</td>
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<tr>
<td>MATH 324</td>
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</table>

**Complementary Courses** (6 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 314</td>
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<tr>
<td>MATH 318</td>
<td>3</td>
</tr>
<tr>
<td>MATH 327</td>
<td>3</td>
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<tr>
<td>MATH 328</td>
<td>3</td>
</tr>
<tr>
<td>MATH 340</td>
<td>3</td>
</tr>
<tr>
<td>MATH 407</td>
<td>3</td>
</tr>
<tr>
<td>MATH 417</td>
<td>3</td>
</tr>
</tbody>
</table>

**FACULTY PROGRAM IN MATHEMATICS, STATISTICS AND COMPUTER SCIENCE** (54 credits)

**Required Courses** (33 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 202</td>
<td>3</td>
</tr>
<tr>
<td>COMP 203</td>
<td>3</td>
</tr>
<tr>
<td>COMP 206</td>
<td>3</td>
</tr>
</tbody>
</table>
### FACULTY OF SCIENCE

**COMP 251 (3)** Data Structures and Algorithms  
**MATH 222 (3)** Calculus 3  
**MATH 223 (3)** Linear Algebra  
**MATH 240 (3)** Discrete Structures 1  
**MATH 315 (3)** Ordinary Differential Equations  
**MATH 323 (3)** Probability  
**MATH 324 (3)** Statistics  
**MATH 423 (3)** Regression and Analysis of Variance

**Complementary Courses** (21 credits)  
At least 3 credits selected from:  
- **MATH 314 (3)** Advanced Calculus  
- **MATH 317 (3)** Numerical Analysis  
- **MATH 319 (3)** Partial Differential Equations  
- **MATH 322 (3)** Matrix Numerical Analysis  
- **MATH 326 (3)** Nonlinear Dynamics and Chaos  
- **MATH 327 (3)** Discrete Structures 2  
- **MATH 407 (3)** Dynamic Programming  
- **MATH 417 (3)** Mathematical Programming

At least 6 credits in Statistics selected from:  
- **MATH 204 (3)** Principles of Statistics 2  
- **MATH 329 (3)** Theory of Interest  
- **MATH 447 (3)** Stochastic Processes  
- **MATH 523 (4)** Generalized Linear Models  
- **MATH 525 (4)** Sampling Theory and Applications

### FACULTY PROGRAM IN MATHEMATICS, CHEMISTRY AND PHYSICS (56 credits)

**Required Courses** (47 credits)  
- **CHEM 201 (3)** Modern Inorganic Chemistry 1  
  or **CHEM 281 (3)** Inorganic Chemistry 1  
- **CHEM 204 (3)** Physical Chemistry/Biological Sciences 1  
  or **CHEM 213 (3)** Introductory Physical Chemistry  
- **CHEM 212 (4)** Introductory Organic Chemistry 1  
- **CHEM 214 (3)** Physical Chemistry/Biological Sciences 2  
- **CHEM 222 (4)** Introductory Organic Chemistry 2  
- **MATH 222 (3)** Calculus 3  
- **MATH 223 (3)** Linear Algebra  
- **MATH 314 (3)** Advanced Calculus  
- **MATH 315 (3)** Ordinary Differential Equations  
- **MATH 319 (3)** Partial Differential Equations  
- **PHYS 230 (3)** Dynamics of Simple Systems  
- **PHYS 232 (3)** Heat and Waves  
- **PHYS 241 (3)** Signal Processing  
- **PHYS 340 (3)** Electricity and Magnetism  
- **COMP 202 (3)** Introduction to Computing  

**Complementary Courses** (9 credits)  
3 credits in Physics, 200 level or higher  
6 credits in Mathematics, Chemistry or Physics, chosen in consultation with the adviser.

### MAJOR IN MATHEMATICS (54 credits)

Students entering the Major program are normally expected to have completed MATH 133, MATH 140 and MATH 141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 54 credits of required courses.

Major students who have done well in MATH 242 and MATH 235 are urged to consider, in consultation with their adviser and the instructors concerned, entering the Honours stream by registering for MATH 251 and MATH 255.

### Guidelines for Selection of Courses in the Major Program

The following informal guidelines should be discussed with the student's adviser. Where appropriate, Honours courses may be substituted for equivalent Major courses. Students planning to pursue graduate studies are encouraged to make such substitutions.

- Students interested in computer science are advised to choose courses from the following: MATH 317, MATH 318, MATH 327, MATH 328, MATH 335, MATH 407, MATH 417 and to complete the Computer Science Minor.
- Students interested in probability and statistics are advised to take MATH 204, MATH 324, MATH 407, MATH 423, MATH 447, MATH 523, MATH 525.
- Students interested in applied mathematics should take MATH 317, MATH 319, MATH 324, MATH 326, MATH 327, MATH 407, MATH 417.
- Students considering a career in secondary school teaching are advised to take MATH 318, MATH 328, MATH 338, MATH 339, MATH 346, MATH 348.
- Students interested in careers in business, industry or government are advised to select courses from the following list: MATH 317, MATH 319, MATH 327, MATH 329, MATH 407, MATH 417, MATH 423, MATH 430, MATH 447, MATH 523, MATH 525.

### Required Courses (27 credits)

- **MATH 222 (3)** Calculus 3  
- **MATH 235 (3)** Algebra 1  
- **MATH 236 (3)** Algebra 2  
- **MATH 242 (3)** Analysis 1  
- **MATH 243 (3)** Analysis 2  
- **MATH 314 (3)** Advanced Calculus  
- **MATH 315 (3)** Ordinary Differential Equations  
- **MATH 317 (3)** Numerical Analysis  
- **MATH 324 (3)** Statistics  
- **MATH 335 (3)** Computational Algebra  
- **MATH 340 (3)** Discrete Structures 2

The remainder of the 21 credits to be selected from:

- **MATH 204 (3)** Principles of Statistics 2  
- **MATH 318 (3)** Mathematical Logic  
- **MATH 319 (3)** Partial Differential Equations  
- **MATH 320 (3)** Calculus 3  
- **MATH 322 (3)** Linear Algebra  
- **MATH 323 (3)** Probability  
- **MATH 324 (3)** Statistics  
- **MATH 326 (3)** Nonlinear Dynamics and Chaos  
- **MATH 327 (3)** Matrix Numerical Analysis  
- **MATH 328 (3)** Computability and Mathematical Linguistics  
- **MATH 329 (3)** Theory of Interest  
- **MATH 335 (3)** Foundations of Mathematics  
- **MATH 340 (3)** Discrete Structures 2  
- **MATH 407 (3)** Dynamic Programming  
- **MATH 417 (3)** Mathematical Programming  
- **MATH 423 (3)** Regression and Analysis of Variance  
- **MATH 447 (3)** Stochastic Processes  
- **MATH 523 (4)** Generalized Linear Models  
- **MATH 525 (4)** Sampling Theory and Applications

### Complementary Courses (27 credits)

21 credits selected from the following list, with at least 6 credits selected from:

- **MATH 317 (3)** Numerical Analysis  
- **MATH 324 (3)** Statistics  
- **MATH 335 (3)** Computational Algebra  
- **MATH 340 (3)** Discrete Structures 2

6 additional credits in Mathematics or related disciplines selected in consultation with the adviser.
JOINT MAJOR IN MATHEMATICS AND COMPUTER SCIENCE (72 credits)

**Required courses** (51 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 206</td>
<td>(3) Introduction to Software Systems</td>
</tr>
<tr>
<td>COMP 250*</td>
<td>(3) Introduction to Computer Science</td>
</tr>
<tr>
<td>COMP 251</td>
<td>(3) Data Structures and Algorithms</td>
</tr>
<tr>
<td>COMP 273</td>
<td>(3) Introduction to Computer Systems</td>
</tr>
<tr>
<td>COMP 302</td>
<td>(3) Programming Languages and Paradigms</td>
</tr>
<tr>
<td>COMP 310</td>
<td>(3) Computer Systems and Organization</td>
</tr>
<tr>
<td>COMP 330</td>
<td>(3) Theoretical Aspects: Computer Science</td>
</tr>
<tr>
<td>COMP 360</td>
<td>(3) Algorithm Design Techniques</td>
</tr>
<tr>
<td>MATH 222</td>
<td>(3) Calculus 3</td>
</tr>
<tr>
<td>MATH 235</td>
<td>(3) Algebra 1</td>
</tr>
<tr>
<td>MATH 236</td>
<td>(3) Algebra 2</td>
</tr>
<tr>
<td>MATH 242</td>
<td>(3) Analysis 1</td>
</tr>
<tr>
<td>MATH 315</td>
<td>(3) Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH 317</td>
<td>(3) Numerical Analysis</td>
</tr>
<tr>
<td>MATH 318</td>
<td>(3) Mathematical Logic</td>
</tr>
<tr>
<td>MATH 323</td>
<td>(3) Probability</td>
</tr>
<tr>
<td>MATH 340</td>
<td>(3) Discrete Structures 2</td>
</tr>
</tbody>
</table>

* Students with no basic knowledge of any high level programming language (e.g., Fortran, Basic, Pascal, C, C++, Java) may take COMP 202 and have it count as a complementary course in Computer Science.

**Complementary Courses** (21 credits)

- 9 credits from the set of courses recommended for a Major or Honours Program in Mathematics.
- 12 credits from the set of courses recommended for a Major or Honours Program in Computer Science.

**JOINT MAJOR IN PHYSIOLOGY AND MATHEMATICS** under "Physiology (PHGY)*, in section 11.12.27.

**HONOURS PROGRAMS**

The minimum requirement for entry into the Honours program is that the student has completed with standing the following courses: MATH 133, MATH 140, MATH 141, or their equivalents. In addition, a student who has not completed the equivalent of MATH 222 must take it in the first term without receiving credits towards the credits required in the Honours program.

Students who transfer to Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

To remain in an Honours program and to be awarded the Honours degree, the student must maintain a 3.00 GPA in the required and complementary Mathematics courses of the program, as well as an overall CGPA of 3.00.

**HONOURS IN MATHEMATICS** (60 credits)

**Required Courses** (45 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 235</td>
<td>(3) Algebra 1</td>
</tr>
<tr>
<td>MATH 242</td>
<td>(3) Analysis 1</td>
</tr>
<tr>
<td>MATH 248*</td>
<td>(3) Honours Advanced Calculus</td>
</tr>
<tr>
<td>MATH 251</td>
<td>(3) Honours Algebra 2</td>
</tr>
<tr>
<td>MATH 255</td>
<td>(3) Honours Analysis 2</td>
</tr>
<tr>
<td>MATH 325</td>
<td>(3) Honours Ordinary Differential Equations</td>
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<td>MATH 354</td>
<td>(3) Honours Analysis 3</td>
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<tr>
<td>MATH 355</td>
<td>(3) Honours Analysis 4</td>
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<tr>
<td>MATH 356</td>
<td>(3) Honours Probability</td>
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<tr>
<td>MATH 357</td>
<td>(3) Honours Statistics</td>
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<tr>
<td>MATH 366</td>
<td>(3) Honours Complex Analysis</td>
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<tr>
<td>MATH 370</td>
<td>(3) Honours Algebra 3</td>
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<tr>
<td>MATH 371</td>
<td>(3) Honours Algebra 4</td>
</tr>
<tr>
<td>MATH 375</td>
<td>(3) Honours Partial Differential Equations</td>
</tr>
<tr>
<td>MATH 380</td>
<td>(3) Honours Differential Geometry</td>
</tr>
</tbody>
</table>

* MATH 314 may be substituted for MATH 248 if MATH 222 had to be taken in the Fall.

**Complementary Courses** (15 credits)

- 15 credits selected from:
  - MATH 350 (3) Graph Theory and Combinatorics
  - MATH 352 (1) Problem Seminar
  - MATH 376 (3) Honours Nonlinear Dynamics and Chaos
  - MATH 377 (3) Honours Number Theory
  - MATH 387 (3) Honours Numerical Analysis
  - MATH 397 (3) Honours Matrix Numerical Analysis
  - MATH 470 (3) Honours Project (highly recommended)
  - MATH 480 (3) Honours Independent Study
  - MATH 487 (3) Honours Mathematical Programming
  - MATH 488 (3) Set Theory

all MATH 500-level courses

Honours-level courses from related disciplines:

- COMP 250* (3) Introduction to Computer Science
- COMP 252 (3) Algorithms and Data Structures

*COMP 250 may be preceded by COMP 202

no more than 6 credits from the following courses for which no Honours equivalent exists:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>MATH 242</td>
<td>(3) Analysis 1</td>
</tr>
<tr>
<td>MATH 235</td>
<td>(3) Algebra 2</td>
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<tr>
<td>MATH 236</td>
<td>(3) Algebra 2</td>
</tr>
<tr>
<td>MATH 251</td>
<td>(3) Analysis 3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>(3) Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH 317</td>
<td>(3) Numerical Analysis</td>
</tr>
<tr>
<td>MATH 318</td>
<td>(3) Mathematical Logic</td>
</tr>
<tr>
<td>MATH 323</td>
<td>(3) Probability</td>
</tr>
<tr>
<td>MATH 340</td>
<td>(3) Discrete Structures 2</td>
</tr>
</tbody>
</table>

**HONOURS IN APPLIED MATHEMATICS** (68 credits)

Aside from seeking to develop a sound basis in Applied Mathematics, one of the objectives of the program is to kindle the students’ interest in possible areas of application. The extra-mural courses are included to ensure that the student has some appreciation of the scope of Applied Mathematics and is familiar with at least one of the diverse areas in which applications can be found.

**Required Courses** (39 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 252</td>
<td>(3) Algorithms and Data Structures</td>
</tr>
<tr>
<td>COMP 250*</td>
<td>(3) Introduction to Computer Science</td>
</tr>
<tr>
<td>MATH 235</td>
<td>(3) Algebra 1</td>
</tr>
<tr>
<td>MATH 242</td>
<td>(3) Analysis 1</td>
</tr>
<tr>
<td>MATH 248</td>
<td>(3) Honours Advanced Calculus</td>
</tr>
<tr>
<td>MATH 251</td>
<td>(3) Honours Algebra 2</td>
</tr>
<tr>
<td>MATH 255</td>
<td>(3) Honours Analysis 2</td>
</tr>
<tr>
<td>MATH 325</td>
<td>(3) Honours Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH 356</td>
<td>(3) Honours Probability</td>
</tr>
<tr>
<td>MATH 357</td>
<td>(3) Honours Statistics</td>
</tr>
<tr>
<td>MATH 366</td>
<td>(3) Honours Complex Analysis</td>
</tr>
<tr>
<td>MATH 375</td>
<td>(3) Honours Partial Differential Equations</td>
</tr>
<tr>
<td>MATH 387</td>
<td>(3) Honours Numerical Analysis</td>
</tr>
</tbody>
</table>

*COMP 250 may be preceded by COMP 202

**Complementary Courses** (29 credits)

at least 6 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 350</td>
<td>(3) Graph Theory and Combinatorics</td>
</tr>
<tr>
<td>MATH 354</td>
<td>(3) Honours Analysis 3</td>
</tr>
<tr>
<td>MATH 355</td>
<td>(3) Honours Analysis 4</td>
</tr>
<tr>
<td>MATH 370</td>
<td>(3) Honours Algebra 3</td>
</tr>
<tr>
<td>MATH 371</td>
<td>(3) Honours Algebra 4</td>
</tr>
<tr>
<td>MATH 380</td>
<td>(3) Honours Differential Geometry</td>
</tr>
</tbody>
</table>

at least 9 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 352</td>
<td>(1) Problem Seminar</td>
</tr>
<tr>
<td>MATH 376</td>
<td>(3) Honours Nonlinear Dynamics and Chaos</td>
</tr>
<tr>
<td>MATH 397</td>
<td>(3) Honours Matrix Numerical Analysis</td>
</tr>
<tr>
<td>MATH 470</td>
<td>(3) Honours Project</td>
</tr>
<tr>
<td>MATH 487</td>
<td>(3) Mathematical Programming</td>
</tr>
<tr>
<td>MATH 490</td>
<td>(3) Mathematics of Finance</td>
</tr>
<tr>
<td>MATH 523</td>
<td>(4) Generalized Linear Models</td>
</tr>
<tr>
<td>MATH 525</td>
<td>(4) Sampling Theory and Applications</td>
</tr>
</tbody>
</table>
\textbf{Complementary Courses}\n
\begin{itemize}
\item MATH 552 (4) Combinatorial Optimization
\item MATH 555 (4) Fluid Dynamics
\item MATH 556 (4) Mathematical Statistics 1
\item MATH 557 (4) Mathematical Statistics 2
\item MATH 560 (4) Optimization
\item MATH 561 (4) Analytical Mechanics
\item MATH 574 (4) Ordinary Differential Equations
\item MATH 575 (4) Partial Differential Equations
\item MATH 578 (4) Numerical Analysis 1
\item MATH 579 (4) Numerical Differential Equations
\item MATH 580 (4) Applied Partial Differential Equations 1
\item MATH 581 (4) Applied Partial Differential Equations 2
\end{itemize}

and the following, for which half credit only may be counted:

\begin{itemize}
\item MATH 204 (3) Principles of Statistics 2
\item MATH 407 (3) Dynamic Programming
\item MATH 423 (3) Regression and Analysis of Variance
\item MATH 447 (3) Stochastic Processes
\end{itemize}

12 credits of extra-mural courses:

chosen in consultation with the student's adviser from approved courses in other departments. A list of such courses is available from the Department of Mathematics and Statistics. Student initiative is encouraged in suggesting other courses that fulfill the intentions of this section as described above. Such suggestions must receive departmental approval. They must be in a field related to Applied Mathematics such as Atmospheric and Oceanic Science, Biology, Biochemistry, Chemistry, Computer Science, Earth and Planetary Science, Economics, Engineering, Management, Physics, Physiology and Psychology. At least 6 credits must be chosen from a single department other than Computer Science.

\textbf{HONOURS IN PROBABILITY AND STATISTICS (63 credits)}

\textbf{Required Courses (45 credits)}

\begin{itemize}
\item COMP 250* (3) Introduction to Computer Science
\item MATH 235 (3) Algebra 1
\item MATH 242 (3) Analysis 1
\item MATH 248 (3) Honours Advanced Calculus
\item MATH 251 (3) Honours Algebra 2
\item or MATH 247 (3) Honours Applied Linear Algebra
\item MATH 255 (3) Honours Analysis 2
\item MATH 354 (3) Honours Analysis 3
\item MATH 355 (3) Honours Analysis 4
\item MATH 356 (3) Honours Probability
\item MATH 357 (3) Honours Statistics
\item MATH 423 (3) Regression and Analysis of Variance
\item MATH 523 (4) Generalized Linear Models
\item MATH 556 (4) Mathematical Statistics 1
\item MATH 557 (4) Mathematical Statistics 2
\end{itemize}

*COMP 250 may be preceded by COMP 202

\textbf{Complementary Courses (18 credits)}

selected from:

\begin{itemize}
\item MATH 325 (3) Honours Ordinary Differential Equations
\item MATH 350 (3) Graph Theory and Combinatorics
\item MATH 352 (1) Problem Seminar
\item MATH 366 (3) Honours Complex Analysis
\item MATH 375 (3) Honours Partial Differential Equations
\item MATH 380 (3) Honours Differential Geometry
\item MATH 387 (3) Honours Numerical Analysis
\item MATH 397 (3) Honours Matrix Numerical Analysis
\item MATH 470 (3) Honours Project
\item MATH 490 (3) Mathematics of Finance
\item MATH 524 (4) Nonparametric Statistics
\item MATH 525 (4) Sampling Theory and Applications
\item MATH 550 (4) Combinatorics
\item MATH 587 (4) Advanced Probability Theory 1
\item MATH 589 (4) Advanced Probability Theory 2
\end{itemize}

with at most 3 credits from the following courses having no Honours version:

\begin{itemize}
\item MATH 204 (3) Principles of Statistics 2
\item MATH 407 (3) Dynamic Programming
\item MATH 447 (3) Stochastic Processes
\end{itemize}

\textbf{JOINT HONOURS IN MATHEMATICS AND COMPUTER SCIENCE (72 credits)}

Students must consult an Honours adviser in both departments.

\textbf{Required Courses (42 credits)}

\begin{itemize}
\item COMP 206 (3) Introduction to Software Systems
\item COMP 250* (3) Introduction to Computer Science
\item COMP 252 (3) Algorithms and Data Structures
\item COMP 273 (3) Introduction to Computer Systems
\item COMP 302 (3) Programming Languages and Paradigms
\item COMP 310 (3) Computer Systems and Organization
\item COMP 330 (3) Theoretical Aspects: Computer Science
\item COMP 362 (3) Honours Algorithm Design
\item MATH 235 (3) Algebra 1
\item MATH 242 (3) Analysis 1
\item MATH 248 (3) Honours Advanced Calculus
\item MATH 251 (3) Honours Algebra 2
\item MATH 255 (3) Honours Analysis 2
\item MATH 350 (3) Graph Theory and Combinatorics
\item MATH 354 (3) Honours Analysis 3
\item MATH 355 (3) Honours Analysis 4
\item MATH 356* (3) Honours Probability
\item MATH 370 (3) Honours Algebra 3
\item MATH 371 (3) Honours Algebra 4
\item MATH 387 (3) Honours Numerical Analysis
\item MATH 389 (3) Honours Advanced Calculus
\item MATH 407 (3) Dynamic Programming
\item MATH 447 (3) Stochastic Processes
\end{itemize}

* Students with no basic knowledge of any high level programming language (e.g. Fortran, Basic, Pascal, C, C++, Java) are advised to take COMP 202 before COMP 250. In this case COMP 202 counts as an elective.

\textbf{Complementary Courses (30 credits)}

18 credits in Mathematics, at least 12 credits selected from:

\begin{itemize}
\item MATH 354 (3) Honours Analysis 3
\item MATH 355 (3) Honours Analysis 4
\item MATH 356* (3) Honours Probability
\item MATH 370 (3) Honours Algebra 3
\item MATH 371 (3) Honours Algebra 4
\item MATH 387 (3) Honours Numerical Analysis
\end{itemize}

The remaining credits selected from honours courses given by the Department of Mathematics and Statistics.

* Students with appropriate background in probability may substitute MATH 587 for MATH 356 and must then also register for MATH 355.

12 credits in Computer Science, selected from:

\begin{itemize}
\item COMP 303 (4) Programming Techniques
\item COMP 304 (3) Object-Oriented Design
\item COMP 335 (3) Software Engineering Methods
\end{itemize}

400-level and 500-level Computer Science courses with the exception of COMP 431.

Physics Major students may enter the Honours program after their first year if they have passed all of the following courses with a C or better, and obtained a GPA of 3.5 or better in these courses: under "Physics (PHYS)" in section 11.12.26.

\textbf{11.12.19  Microbiology and Immunology (MIMM)}

Lyman Duff Medical Sciences Building, Room 511
3775 University Street
Montreal, QC H3A 2B4
Telephone: (514) 398-3915
Fax: (514) 398-7052
E-mail: office.microimm@mcgill.ca
Website: www.mcgill.ca/microimm

\textit{Chair} — Greg J. Matlashewski

\textit{Professors}

Zafer Ali-Khan; B.Sc.(Bilar), M.Sc.(Karachi), Ph.D.(Tulane)
Malcolm G. Baines; B.Sc., M.Sc., Ph.D.(Queen's)
James W. Cottlou; B.Sc.(Tor.), M.Sc.(Calg.), Ph.D.(W.Ont.)
John Hiscott; B.Sc., M.Sc.(W.Ont.), Ph.D.(N.Y.)
Greg Matlashewski; B.Sc.(C'dia), Ph.D.(Ott.)
Robert A. Murgita; B.Sc.(Me.), M.S.(Vt.), Ph.D.(McG.)
Trevor Owens; B.Sc., M.Sc.(McG.), Ph.D.(Ott.)
Science – Microbiology and Immunology

Silvia Vidal; Ph.D. (U. Geneve)
Mark A. Wainberg; B.Sc.(McG.), M.Sc., Ph.D.(Col.)

Associate Professors
Albert Berghuis; M.Sc. (The Netherlands), Ph.D.(Br.Col.)
Dallus J. Briedis; B.A., M.D.(Johns H.)

Assistant Professors
Benoit Cousineau; B.Sc., M.Sc., Ph.D.(Montr.)
Samantha Grueneheid; Ph.D. (Br. Col.)
Sylvie Fournier; Ph.D.(Montr.)
Hervé Le Moual; Ph.D.(Montr.)
Shan-Lu Liu; Ph.D.(Wash.)
Gregory T. Marczynski; B.Sc., Ph.D.(Ill.)
Martin Olivier; B.Sc.(Montr.), Ph.D.(McG.)
Ciriaco Piccirillo; B.Sc., Ph.D.(McG.)
Donald Sheppard; M.D. (T.)

Associate Members
Institute of Parasitology: Gaetan Faubert, Armando Jardim, Paula Ribeiro, Terence Spithill
Division of Experimental Medicine: Clement Couture
Microbiology & Immunology: Lawrence Kleiman

Neuroimmunology: Amit Bar-Or
Neurology & Neurosurgery: Jack Antel
Oncology: Anne Gatignol, Matthias Gotte, Antonis E. Koromilas, Andrew Mouland, Arim Pause, Stephane Richard
Surgery: Nicholas V. Christou

Adjunct Professors
Vibhuti Dave; M.Sc., Ph.D.(Bombay)
Albert Descoteaux; B.Sc., M.Sc.(Montr.), Ph.D.(McG.)
Elia Haddad; B.Sc., M.Sc.(Beirut), Ph.D.(McG.)
Taff Jones; B.Sc., Ph.D.(U. College Lond.)
George Kukolj; B.Sc., Ph.D.(McG.)
Peter Lau; Ph.D.(Ottawa)
Andrew Makrigiannis; B.Sc., Ph.D.(Dalhouse)
Allan M. Matte; B.Sc., M.Sc.(Guelph), Ph.D.(Sask.)
Clement Rioux; B.Sc., M.Sc.(Laval), Ph.D.(Guelph)
Rafick-P. Sekaly; B.A.(Stanislas), B.Sc., M.Sc.(Montr.), Ph.D.(Lausanne)

Affiliated Centre:
Centre for Host Resistance, Montreal General Hospital, 1650 Cedar Avenue, Montreal, QC H3G 1A4
Telephone: (514) 398-8038. Director: E. Skamene

Microbiology is the study of microorganisms such as bacteria, viruses, unicellular eukaryotes, and parasites. Microorganisms play an important role in human and animal disease, food production (bread, cheese, wine), decay and spoilage, contamination and purification of water and soil. Microbiologists study these tiny, self-replicating machines to understand the basic principles of life: growth, metabolism, cell division, control of gene expression, response to environmental stimuli. Microbiologists are also concerned with controlling or harnessing microorganisms for the benefit of people, by isolating antibiotics or producing vaccines to combat diseases. Immunologists study the mechanisms by which the body recognizes foreign antigens, generates appropriate antibodies to an enormously diverse spectrum of antigens, and sequesters and kills invading microorganisms. Their discoveries lead to vaccination against disease, transfusions and organ transplants, allergies, cancer, autoimmune diseases and immune-deficiency diseases such as AIDS. Antibodies may soon be used in conjunction with antibiotics or chemical agents as specific “magic bullets” to diagnose disease and attack microbes and cancers.

The disciplines of microbiology and immunology are natural partners in research, and both fields use the modern methods of cell biology, molecular biology and genetics to study basic life processes. The members of the Department of Microbiology and Immunology perform research on microbial physiology and genetics, microbial pathogenesis, molecular virology, cellular and molecular immunology, and parasitology. Students registered in the Department therefore are exposed to these related areas and receive an excellent background in basic biology and chemistry as well as in the more applied areas of biotechnology and medicine.

Many opportunities exist for careers in basic or applied microbiology and immunology, medical microbiology, environmental microbiology, and biotechnology. They include positions in industry (pharmaceutical and biotechnology), hospitals, universities, and government (environment, public health, and energy). A degree in microbiology also provides an excellent basis for entering professional and postgraduate programs in medicine, dentistry, the veterinary sciences, research, and education.

Notes on admission to Microbiology and Immunology programs. Please note that enrolment in Microbiology and Immunology programs is limited to a total of 120 students per year. Students seek admission to the Faculty. Majors and Honours programs must have completed BIOI 112, CHEM 110 or CHEM 111, CHEM 120 or CHEM 121, MATH 112, MATH 139 or MATH 140, MATH 141, PHYS 101 and PHYS 102 or their equivalent with an overall average of at least of B+ (75%).

An Undergraduate Handbook, containing detailed course descriptions, a listing of faculty research interests, and information on careers in microbiology and immunology, is available from the Student Affairs Office in room 511 of the Lyman Duff Building and on the Web at www.mcgill.ca/microimm.

All students (U1, U2, U3) must attend an advising session. Please check www.mcgill.ca/microimm for dates.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Biomedical Sciences”, in section 5.12.4 for details.

Faculty Program in Microbiology and Immunology (67 credits)
The Faculty Program is intended to offer a basic education in microbiology and immunology to undergraduate students who wish greater flexibility to choose a substantial number of courses from other departments or faculties within the University.

U1 Required Courses (18 credits)
- BIOL 200 (3) Molecular Biology
- BIOL 201 (3) Cell Biology and Metabolism
- CHEM 212 (4) Introductory Organic Chemistry 1
- MIMM 211 (3) Introductory Microbiology
- MIMM 212 (2) Laboratory in Microbiology

U1, U2 or U3 Required Course (3 credits)
- BIOL 373 (3) Biometry
- BIOL 400 (3) Principles of Statistics 1
- PSYC 204 (3) Introduction to Psychological Statistics

U2 Required Courses (15 credits)
- MIMM 314 (3) Immunology
- MIMM 323 (3) Microbial Physiology

McGill University, Undergraduate Programs 2006-2007
MAJOR IN MICROBIOLOGY AND IMMUNOLOGY (67 credits)
The Major Program is designed for students who want to acquire a substantial background in microbiology and immunology and related disciplines (chemistry, biology, biochemistry) which will prepare them for professional schools, graduate education, or entry into jobs in industry or research institutes.

U1 Required Courses (25 credits)
as for the Faculty Program, plus:
CHEM 222 (4) Introductory Organic Chemistry 2
CHEM 203 (3) Survey of Physical Chemistry
or CHEM 204 (3) Physical Chemistry/Biological Sciences 1

U2 Required Courses (21 credits)
as for the Faculty program, plus
BIOC 311 (3) Metabolic Biochemistry
BIOC 312 (3) Biochemistry of Macromolecules

U3 Required Courses (9 credits)
MIMM 413 (3) Parasitology
MIMM 465 (3) Bacterial Pathogenesis
MIMM 466 (3) Viral Pathogenesis

Complementary Courses (9 credits)
6 credits selected from:
MIMM 387 (3) Applied Microbiology and Immunology
MIMM 414 (3) Advanced Immunology
MIMM 509 (3) Inflammatory Processes
ANAT 261 (4) Introduction to Dynamic Histology
ANAT 262 (3) Introductory Molecular and Cell Biology
ANAT 454 (3) Nucleic Acids
BIOL 300 (3) Molecular Biology of the Gene
PHAR 300 (3) Drug Action
PHAR 301 (3) Drugs and Diseases
MAMMALIAN PHYSIOLOGY 1

HONOURS IN MICROBIOLOGY AND IMMUNOLOGY (73 required credits)
The Honours Program is designed to offer, in addition to the substantial background given by the Major Program, a significant research experience in a laboratory within the Department during the U3 year. Students are prepared for this independent research project by following an advanced laboratory course in U2. This Program is intended to prepare students for graduate study in microbiology and immunology or related fields, but could also be chosen by students intending to enter medical research after medical school, or intending to enter the job market in a laboratory research environment.

Students intending to apply to Honours must follow the Major program in U1 and U2 and must obtain a CGPA of at least 3.0 at the end of their U2 year. For graduation in Honours, students must pass all required courses with a C or better, and achieve a sessional GPA of at least 3.0 in the U3 year.

U1 Required Courses (25 credits)
as for the Major Program

U1, U2 or U3 Required Statistics Courses (3 credits)
as for the Faculty Program

U2 Required Courses (21 credits)
as for the Major program

U3 Required Courses (21 credits)
as for the Major Program, plus:
MIMM 502D1 (6) Honours Research Project
MIMM 502D2 (6) Honours Research Project

Complementary Courses (3 credits)
3 credits selected from:
BIOL 520 (3) Gene Activity in Development
BIOT 505 (3) Selected Topics in Biotechnology
ANAT 458 (3) Membranes and Cellular Signalling
BIOC 454 (3) Nucleic Acids
BIOC 455 (3) Neurochemistry
PHAR 562 (3) General Pharmacology 1
PHAR 563 (3) General Pharmacology 2
INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY under "Immunology Interdepartmental Honours". in section 11.12.15.
This program is offered by the Departments of Biochemistry, Microbiology and Immunology, and Physiology.

Students interested in immunology may choose between this Honours program and the Honours program of the Department of Microbiology and Immunology.

Details of this program may also be obtained from Professor Baines in the Department of Microbiology and Immunology, Room 404, telephone (514) 398-4443 or 3928, e-mail malcolm.baines@mcgill.ca.

11.12.20 Music
Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Telephone: (514) 398-4535
Fax: (514) 398-8061
Website: www.mcgill.ca/music

Department of Theory — David Brackett (Chair)
Department of Performance — Douglas McNabney (Chair)
Adviser (B.A./B.Sc. Music programs) — B. Minorgan
(514) 398-4535, ext. 6333

SCIENCE MINOR IN MUSIC TECHNOLOGY (24 credits)
[Program registration done by Student Affairs Office]

Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Department of Theory office of the Schulich School of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2006 and must be completed and returned to that office by May 15, 2006. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2006.

Required Courses (24 credits)
MUHL 342 (3) History of Electroacoustic Music
MUMT 202 (3) Fundamentals of New Media
MUMT 203 (3) Introduction to Digital Audio
MUMT 301 (3) Music and the Internet
MUMT 302 (3) New Media Production 1
MUMT 303 (3) New Media Production 2
PHYS 224 (3) Physics and Psychophysics of Music
PHYS 225 (3) Musical Acoustics

Science students are eligible to take the Arts Minor Concentration in Music, see section 4.12.40 "Music (MUAR)".

Music courses listed as MUAR (see Faculty of Arts courses) are considered to be Arts courses. All other Music courses are considered by the Faculty of Science to be courses outside of Arts and Science (see section 11.3.6.2 "Courses Outside the Faculties of Arts and Science" for the relevant regulations).

11.12.21 Neurology and Neurosurgery (NEUR)

There are no B.Sc. programs in Neurology and Neurosurgery, but the NEUR course listed in the Courses section of this Calendar, which is part of the Minor in Neuroscience, is considered as a course taught by the Faculty of Science.

11.12.22 Neuroscience
Program Coordinator:
Professor Ellis Cooper, Department of Physiology
McIntyre Medical Sciences Building, Room 1127
E-mail: ellis.cooper@mcgill.ca
Telephone: (514) 398-4334

Neuroscience is a multidisciplinary science devoted to the understanding of the nervous system. The brain is one of the most complex systems in the universe, and understanding how it functions is among the most challenging questions in science. Scientists are investigating the brain at many levels, from the molecules that synapse to complex forms of behaviour, and use methods of inquiry that are drawn from a number of disciplines including molecular and cellular biology, physiology, psychological and cognitive psychology; computer science and artificial intelligence. In addition, scientists are investigating the nervous system of many different animals, from simple invertebrates to humans. These wide-ranging investigations are providing a clearer understanding of how neurons work; how they communicate with one another; how they are organized into local or distributed networks; how the connections between neurons are established and change with experience, how neuronal function is influenced by pharmacological agents, and during disease states. As a result, we are gaining deeper insights into the neural basis of mental activity, as well as developing new therapeutic approaches to alleviate neurological and psychological diseases.

MAJOR IN NEUROSCIENCE (66 credits)
(Awaiting approval of the Ministère de l’Éducation, du Loisir, et du Sport)

The interdepartmental Biology, Physiology and Psychology Major in Neuroscience is a focused program for students interested in how the nervous system functions. Research in neuroscience is highly interdisciplinary in nature, and borrows principles from a number of subjects including: biology, biochemistry, physiology, psychology, a well as mathematics, physics and computer science. To ensure that students have the appropriate foundation, they are required to take 27 credits in lower-level courses from physiology, biology, mathematics, computer science, psychology, and philosophy. While flexible, the program offers students a concentrated selection of 15 credits to be taken from one of three areas of current scientific activities in the sciences:
Cell/Molecular, Neurophysiology/Computation, or Cognition/Behaviour. In addition, students select 24 credits from a wide array of upper-level complementary courses to obtain more specialized training in areas of neuroscience that best suit their interest.

All course selections for the Major in Neuroscience must be approved by an adviser. Contact the Student Affairs Office, Department of Physiology.

Students should consult the Calendar for restrictions for the following four courses: ANAT 321, BIOL 306, PHGY 314, PSYC 308.

Core Required Courses (9 credits)
BIOL 200 (3) Molecular Biology
PHGY 209 (3) Mammalian Physiology 1
PSYC 311 (3) Human Cognition and the Brain

Core Complementary Courses (18 credits)
3 credits from:
PSYC 211 (3) Introductory Behavioural Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
3 credits from:
BIOL 373 (3) Biometry
PSYC 305 (3) Statistics for Experimental Design
3 credits from:
COMP 202 (3) Introduction to Computing 1 or equivalent in Computer Science
### PSYT 500 (3) Advances: Neurobiology of Mental Disorders
### PSYC 532 (3) Cognitive Science
### PSYC 526 (3) Advances in Visual Perception
### PSYC 470 (3) Memory and Brain
### PSYC 427 (3) Sensorimotor Behaviour
### PSYC 410 (3) Special Topics in Neuropsychology
### PSYT 500 (3) Advances: Neurobiology of Mental Disorders
### PHGY 314 (3) Integrative Neuroscience
### COMP 206 (3) Introduction to Software Systems
### MATH 222* (3) Calculus 3
### ANAT 321 (3) Circuitry of the Human Brain
### PHGY 222* (3) Calculus 3
### PHGY 311 (3) Intermediate Physiology 1
### PHGY 451 (3) Advanced Neurophysiology
### PHGY 520 (3) Ion Channels
### PHGY 556 (3) Topics in Systems Neuroscience
### PSYC 410 (3) Special Topics in Neuropsychology
### PSYC 427 (3) Sensorimotor Behaviour
### PSYC 470 (3) Memory and Brain
### PSYC 505 (3) The Psychology of Pain
### PSYC 526 (3) Advances in Visual Perception
### PSYC 532 (3) Cognitive Science
### PSYT 500 (3) Advances: Neurobiology of Mental Disorders
### B. Neurophysiology/Neural Computation Stream (15 credits)
### PHGY 314 (3) Integrative Neuroscience
### BIOC 311 (3) Metabolic Biochemistry
### BIOL 300 (3) Molecular Biology of the Gene
### BIOL 202 (3) Basic Genetics
### BIOL 201 (3) Cell Biology and Metabolism
### BIOL 202 (3) Basic Genetics
### BIOL 300 (3) Molecular Biology of the Gene
### BIOL 311 (3) Metabolic Biochemistry
### PHGY 314 (3) Integrative Neuroscience
### C. Cognitive/Behavioural Stream (15 credits)
### PSYC 308 (3) Behavioural Neuroscience 1
### PSYC 318 (3) Behavioural Neuroscience 2
### and 9 credits chosen from:
### PSYC 317 (3) Genes and Behaviour
### PSYC 342 (3) Hormones and Behaviour
### PSYC 410 (3) Special Topics in Neuropsychology
### PSYC 470 (3) Memory and Brain
### LING 390 (3) Neuroscience of Language
### 24 credits from the list below:
### At least 18 credits must be at the 400- or 500-level.
### BIOL 301 (4) Cell and Molecular Laboratory
### BIOL 389 (3) Laboratory in Neurobiology
### COMP 206 (3) Introduction to Software Systems
### or equivalent 300- or 400-level Computer Science course
### BIOL 530 (3) Neural Basis of Behaviour
### BIOL 531 (3) Neurobiology Learning Memory
### BIOL 532 (3) Developmental Neurobiology Seminar
### BIOL 588 (3) Molecular/Cellular Neurobiology
### BIOL 455 (3) Neurochemistry
### BMDE 519 (3) Biomedical Signals and Systems
### MATH 315 (3) Ordinary Differential Equations
### MATH 323 (3) Probability
### MATH 324 (3) Statistics
### MATH 437 (3) Mathematical Methods in Biology
### or PHYS 413 (3) Physical Basis of Physiology
### NEUR 310 (3) Cellular Neurobiology
### NEUR 550 (3) Free Radical Biomedicine
### PHAR 562 (3) General Pharmacology 1
### PHAR 563 (3) General Pharmacology 2
### PSYC 470 (3) Memory and Brain
### PSYC 505 (3) The Psychology of Pain
### PSYC 526 (3) Advances in Visual Perception
### PSYC 532 (3) Cognitive Science
### PSYT 500 (3) Advances: Neurobiology of Mental Disorders
### A maximum of 9 credits from:
### PHGY 461D1 (4.5) Experimental Physiology
### PHGY 461D2 (4.5) Experimental Physiology
### PSYC 395 (6) Psychology Research Project 1
### PSYC 495 (6) Psychology Research Project 2
### PSYC 494D1 (4.5) Psychology Research Project
### PSYC 494D2 (4.5) Psychology Research Project
### BIOL 377 (3) Independent Studies 1
### BIOL 469D1 (4.5) Independent Studies 2
### BIOL 469D2 (4.5) Independent Studies 2
### BIOL 471 (6) Independent Studies 3
### BIOL 477 (3) Independent Studies 4
### BIOL 478 (3) Independent Studies 5

**MINOR IN NEUROSCIENCE** (24 credits)

The Minor is composed of 24 credits, 18 of which must be selected from two of the five topic areas listed below. Twelve credits of the 18 must be at the 400/500 level and from at least two different departments. A maximum of 6 credits can be counted both for the student's primary program and for the Minor in Neuroscience, where appropriate.

All course selections for the Minor in Neuroscience must be approved by an adviser. Contact the Student Affairs Officer, Department of Psychology.

Students should consult the Calendar for restrictions for the following four courses: ANAT 321, BIOL 306, PHGY 314, PSYC 308.

**Complementary Courses** (24 credits)

6 credits selected from:

- ANAT 321 (3) Circuitry of the Human Brain
- NEUR 310 (3) Cellular Neurobiology
- PSYC 308 (3) Behavioural Neuroscience 1
- or BIOL 306 (3) Neurobiology and Behaviour
- or PHGY 311 (3) Intermediate Physiology 1

18 additional credits:

- 9 credits each from 2 of the 5 areas listed below, 6 credits in each area must be from 400- or 500-level courses.

**Neurobiology and Behaviour**

- BIOL 306 (3) Neurobiology and Behaviour
- BIOL 389 (3) Laboratory in Neurobiology
- BIOL 530 (3) Neural Basis of Behaviour
- BIOL 531 (3) Neurobiology Learning Memory
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 556 (3) Topics in Systems Neuroscience
- PSYC 318 (3) Behavioural Neuroscience 2
- PSYC 427 (3) Sensorimotor Behaviour
- PSYC 505 (3) The Psychology of Pain
- PSYC 522 (3) Neurochemistry and Behaviour
- PSYT 500 (3) Advances: Neurobiology of Mental Disorders

**Molecular and Developmental Neurobiology**

- BIOL 306 (3) Neurobiology and Behaviour
- BIOL 389 (3) Laboratory in Neurobiology
- BIOL 530 (3) Neural Basis of Behaviour
- BIOL 531 (3) Neurobiology Learning Memory
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 451 (3) Advanced Neurophysiology

**Neurophysiology**

- ANAT 322 (3) Neuroendocrinology
- BIOL 389 (3) Laboratory in Neurobiology
- BIOL 530 (3) Neural Basis of Behaviour
- BIOL 531 (3) Neurobiology Learning Memory
- BIOL 588 (3) Molecular/Cellular Neurobiology
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 451 (3) Advanced Neurophysiology
- PHGY 520 (3) Ion Channels
PHGY 556 (3) Topics in Systems Neuroscience
PSYC 427 (3) Sensorimotor Behaviour

Neuropsychology
ANAT 321 (3) Circuitry of the Human Brain
ANAT 322 (3) Neuroendocrinology
BIOC 306 (3) Neurobiology and Behaviour
PSYC 311 (3) Human Cognition and the Brain
PSYC 318 (3) Behavioural Neuroscience 2
PSYC 410 (3) Special Topics in Neuropsychology
PSYC 470 (3) Memory and Brain
PSYC 505 (3) The Psychology of Pain
PSYC 522 (3) Neuropsychology and Behaviour
PSYC 526 (3) Advances in Visual Perception

Neuropharmacology
ANAT 321 (3) Circuitry of the Human Brain
BIOC 455 (3) Neurochemistry
BIOL 588 (3) Molecular/Cellular Neurobiology
PHAR 300 (3) Drug Action
PHAR 301 (3) Drug and Disease
PHAR 562 (3) General Pharmacology 1
PHGY 311 (3) Intermediate Physiology 1
PHGY 451 (3) Advanced Neurophysiology
PHGY 520 (3) Ion Channels
PSYT 301 (3) Issues in Drug Dependence
PSYT 500 (3) Advances in Pharmacology of Mental Disorders

11.12.23 Nutrition (NUTR)
The School of Dietetics and Human Nutrition offers a Minor in Human Nutrition which can be taken by Science students, see section 12.6.4 “School of Dietetics and Human Nutrition”. NUTR 307 is considered as a course taught by the Faculty of Science and is offered simultaneously on both campuses.

11.12.24 Pathology (PATH)
There are no B.Sc. programs in Pathology, but the PATH course listed in the Courses section of this Calendar is considered as one taught by the Faculty of Science.

11.12.25 Pharmacology and Therapeutics (PHAR)
McIntyre Medical Building
3655 Promenade Sir William Osler
Montreal, QC H3G 1Y6
Telephone: (514) 398-3623
Website: www.pharma.mcgill.ca

Chair — Hans H. Zingg

Emeritus Professor
Theodore Sourkes; Ph.D.(C'nell)

Professors
Guillermina Almazan; Ph.D.(McG.)
Radan Cappek; M.D., Ph.D.(Prague)
Paul B.S. Clarke; M.A.(Cant.), Ph.D.(Lond.)
Brian Collier; B.Sc., Ph.D.(Leeds)
A. Claudio Cuello; M.D.(Buenos Aires), M.A., D.Sc.(Oxf.) F.R.S.C.
Barbara Hales; M.Sc.(Phil. Coll. of Pharm. and Science), Ph.D.(McG.)
Peter J. McLeod; M.D.(Manit.), F.R.C.P.(C)
Alfredo Ribeiro-da-Silva; M.D., Ph.D.(Oporto)
Bernard Robaire; B.A.(Calif.), Ph.D.(McG.)
Moshe Szyf; M.Sc., Ph.D.(Hebrew)
Jacqueta Trasler; M.D.C.M., Ph.D.(McG.)
Daya R. Varma; M.D.(Lucknow), Ph.D.(McG.)
Hans H. Zingg; M.D., Ph.D.(McG.)

Associate Professors
Barbara Esplin; M.D.(Warsaw)
Terence Hébert; M.Sc.(Windsor), Ph.D.(Tor.)
Dusica Maysinger; Ph.D.(S. Calif.)

Anne McKinney; Ph.D.(Ulster)
Stanley Nattel; B.Sc., M.D., C.M.(McG.)
Ante L. Padjen; M.D., M.Sc., D.Sc.(Zagreb)
H. Uri Saragovi; Ph.D.(Miami)
Betty I. Sasyniuk; B.S.P., Ph.D.(Manit.)
Edith A. Zorychta; B.Sc.(St. FX), M.Sc., Ph.D.(McG.)

Assistant Professor
Derek Bowie; B.Sc., Ph.D.(Lond.)

Associate Members
Moulay Alaoui-Jamali; Ph.D.(Sorbonne)
Gerald Batist; M.D.,C.M.(McG.)
Giovanni Di Battista; B.Sc., Ph.D.(Montr.)
Pierre Fiset; M.D.(Laval), F.R.C.P.S.(C)
Serge Gauthier; M.D.(Montr.)
Bertrand Jean-Claude; M.Sc.(Moncton), Ph.D.(McG.)
Roger Prichard; B.Sc., Ph.D.(N.S.W.)
Romi Quirion; M.Sc., Ph.D.(Sher.)

Adjunct Professors
Sylvain Chemtob; M.D.(Montr.), Ph.D.(McG.)
Yves De Koninck; Ph.D.(McG.)
Lorella Garofalo; Ph.D.(McG.)
Jennifer M.A. Laird; Ph.D.(Brist.)
Joseph Mancini; M.Sc., Ph.D.(McG.)
Kathleen Metters; Ph.D.(Lond.)

Pharmacology is the science that deals with all aspects of drugs and their interactions with living organisms. Thus, it involves the physical and chemical properties of drugs, their biochemical and physiological effects, mechanisms of action, pharmacokinetics, and therapeutic and other uses. Since the word “drug” encompasses all chemical substances that produce an effect on living cells, it is evident that pharmacology is a very extensive subject. Pharmacology is a multidisciplinary science. It has developed its own set of principles and methods to study the mode of the action of drugs, but it has also utilized many techniques and approaches from various disciplines including biochemistry, physiology, anatomy and molecular biology, as well as others. Pharmacology encompasses a number of different areas such as pharmacogenomics, molecular biology, bioinformatics, neuropharmacology, reproductive pharmacology, endocrine pharmacology, receptor pharmacology, cardiovascular pharmacology, toxicology, developmental pharmacology, autonomic pharmacology, biochemical pharmacology, and therapeutics.

Training in pharmacology is conducted at both the undergraduate and graduate levels. Because of its breadth, students may be attracted to the subject from a variety of viewpoints; this includes those completing a Bachelor's degree in any number of basic science disciplines, such as biology, zoology, chemistry, physics, biochemistry, microbiology, anatomy and physiology. At the undergraduate level, seven lecture courses are offered. A course involving research projects in pharmacology is also available to provide the student with the opportunity to get first-hand experience in a pharmacology research laboratory. These courses provide students with knowledge concerning the actions of drugs on living systems and insight into approaches to basic pharmacological research.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Biomedical Sciences", in section 5.12.4 for details.

MINOR IN PHARMACOLOGY (24 credits)
The Minor in Pharmacology is intended for students registered in a complementary B.Sc. program who are interested in a focused introduction to specialized topics in pharmacology to prepare them for professional schools, graduate education, or entry into jobs in industry or research institutes. Students should declare their intent to enter the Minor in Pharmacology at the beginning of their U2 year. They must consult with, and obtain the approval of, the Coor-
Required Courses (9 credits)
PHAR 300 (3) Drug Action
PHAR 562 (3) General Pharmacology 1
PHAR 563 (3) General Pharmacology 2

Complementary Courses (15 credits)
3 credits, one of:
BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOC 212 (3) Molecular Mechanisms of Cell Function

9 credits, chosen from
PHGY 209 (3) Mammalian Physiology 1
PHGY 210 (3) Mammalian Physiology 2

* can be taken with PHAR 503 only.

11.12.26 Physics (PHY)
Rutherford Physics Building, Room 108
3600 University Street
Montreal, QC H3A 2T8

Chair — C. Gale
Emeritus Professors
Subal Das Gupta; B.A., M.Sc.,(Calc.), Ph.D.(McM.)
Harry C.S. Lam; B.Sc.(McG.), Ph.D.(MIT)
M.P. Langleben; B.Sc., M.Sc., Ph.D.(McG.), F.R.S.C.
Tommy S.K. Mark; B.Sc., M.Sc., Ph.D.(McG.) (William C. Macdonald Emeritus Professor of Physics)
E.R. Pounder; B.Sc., Ph.D.(McG.), F.R.S.C. (William C. Macdonald Emeritus Professor of Physics)
Douglas C. Stairs; B.Sc., M.Sc.(Qu.), Ph.D.(Harv.) (William C. Macdonald Emeritus Professor of Physics)
Martin J. Zuckermann; M.A., D.Phil.(Oxf.), F.R.S.C. (William C. Macdonald Emeritus Professor of Physics)

Post-Retirement
Andreas P. Contogouris; B.A.(Athens), Ph.D.(C'nell)
John E. Crawford; B.A., M.A.(Tor.), Ph.D.(McG.)
Jonathan K.P. Lee; B.Eng., M.Sc., Ph.D.(McG.)
Robert B. Moore; B.Eng., M.Sc., Ph.D.(McG.)
Papat M. Patel; B.Sc., M.Sc.(Manc.), Ph.D.(Harv.)
John O. Strom-Olsen; B.A., M.S., Ph.D.(Cant.)

Professors
Jean Barrette; B.Sc., M.Sc., Ph.D.(Montr.)
Robert Brandenberger; Dipl., A.M., Ph.D.(Harv.) (Canada Research Chair)
François Corriveau; B.Sc.(Laval), M.Sc.(Br. Col.), Docteur Sc.Nat.(Zurich)
Nicholas DeTakacsy; B.Sc., M.Sc.(Montr.), Ph.D.(McG.)
Charles Gale; B.Sc.(Ott.), M.Sc., Ph.D.(McG.) (James McGill Professor)
Martin Grant; B.Sc.(PEL), M.Sc., Ph.D.(Harv.) (James McGill Professor)
Peter Grutter; Dipl., Ph.D.(Basel) (William Dawson Scholar)
Hong Guo; B.Sc.(Basel) (William Dawson Scholar)

David Hanna; B.Sc.(McG.), M.A., Ph.D.(Harv.) (William C. Macdonald Professor of Physics)
Richard Harris; B.A.(Oxf.), D.Phil.(Sus.)
Shaun Lovejoy; B.A.(Cant.), Ph.D.(McG.)
Kenneth J. Ragan; B.Sc.(Alta.), D.Sc.(Geneva) (William C. Macdonald Professor of Physics)
Dominic H. Ryan; B.A., Ph.D.(Trin.Coll.)
Mark Sutton; B.Sc., M.Sc., Ph.D.(Tor.) (Ernest Rutherford Professor of Physics)

Associate Professors
James M. Cline; B.Sc.(Calif.), M.Sc., Ph.D.(Calif. Tech.)
Victoria Kaspi; B.Sc.(McG.), M.A., Ph.D.(Princ.) (Canada Research Chair)

Assistant Professors
Roland Bennenewitz; Dipl.,Ph.D.(Freie Universität Berlin) (Canada Research Chair)
Aashish Clerk; B.Sc.(Toronto), Ph.D.(C'nell) (Canada Research Chair)
Andrew Cumming; B.A.(Camb.), Ph.D.(Calif., Berk.)
Keshav Dasgupta; B.Sc., M.Sc. (Indian IT), Ph.D.(Tata)
Matt Dobbs; B.Sc.(McG.), Ph.D.(Victoria) (Canada Research Chair)
Guillaume Gervais, B.Sc.(Sherb.), M.Sc. (McM), Ph.D.(North. Univ.)
Michael Hlke; B.Sc., M.Sc., Ph.D.(Geneva)
Gil Holder; B.Sc., M.Sc (Qu.), Ph.D.(Chic.) (Canada Research Chair)

Physics is in many ways the parent of the other natural sciences and its discoveries and laws continually affect their development. Its range and scope extend in space and time from subnuclear particles to the universe itself. The subfields of physics such as mechanics, thermodynamics, electricity, atomic physics and quantum mechanics, to mention but a few, permeate all other scientific disciplines. People trained in physics are employed in industry, government, and educational systems where they find many challenges as teachers, researchers, administrators and in the rapidly developing area of scientific business.
and a professional or academic career. Although these two programs have different biases for theoretical work, they are broad enough and strong enough to prepare students for further study in either experimental physics or respectively mathematics or chemistry. High standing in CEGEP or Freshman-year mathematics and physics is a requirement for admission to these Honours programs.

The Major program, on the other hand, offers a broad training in classical and modern physics and yet leaves room for the student to take a meaningful sequence of courses in other areas. It is intended primarily for students who wish to pursue careers in fields for which physics provides a basis. However, this program also provides a preparation for graduate studies, especially if a student chooses, in consultation with the departmental adviser, a number of Honours Physics courses in the U2 and U3 years.

It is possible for students to transfer from the Major program to the Honours program after the first year of studies; see comments to this effect below after the description of the Honours program.

There are also a number of other Major programs: Atmospheric Sciences and Physics, Physics and Computer Science, Physics and Geophysics, and Physiology and Physics, offered jointly with other departments, and a Minor program in Electrical Engineering, available only to students in the Physics Major program. In addition, there is a Minor in Physics, a Faculty program in Physics and a Joint Faculty program in Mathematics, Chemistry and Physics, which provide a broad base for students less interested in a specialized education.

For those interested in a career as a high school science teacher, the concurrent program leading to both a B.Sc. and a B.Ed. degree provides several physics options. These combine physics courses from the Major and Minor programs with courses from either Biology or Chemistry and with Education courses. (For details, see "Science for Teachers", in section 11.12.31.)

Students from outside of the Province of Quebec will ordinarily register in the Science Freshman program. Physics offers two sequences of courses for this program; they are described below. The list of pre- and corequisites is not absolute. In many cases permission of the Department may be sought to have a specific prerequisite waived. The procedure is to ask the professor in charge of the course to review the request for such a waiver. The prerequisites of the 100-level courses are described in the following section entitled Science Freshman Program.

Students interested in any of the Physics programs should contact the Department for an Adviser.

A Science Major Concentration in Physics is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Physics (PHYS)", in section 11.12.26 for details.

**Internship Year for Engineering and Science (IYES)**

IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see "IYES: Internship Year for Engineering and Science", in section 7.2.8, under Faculty of Engineering.

The following programs are also available with an internship component:

- Faculty Program in Physics
- Major in Physics
- Honours in Physics
- Joint Honours Program in Physics and Chemistry
- Joint Faculty Program in Mathematics, Chemistry and Physics
- Joint Major Program in Atmospheric Science and Physics
- Joint Major Program in Physics and Computer Science
- Joint Major Program in Physics and Geophysics

**SCIENCE FRESHMAN PROGRAM**

Students entering McGill with a Quebec CEGEP profile in Science will normally begin their programs in Physics with courses at the 200 level.

Students without this profile will normally take courses PHYS 131 and PHYS 142 if they have previously taken physics at the high school level and will be taking differential calculus concurrently with PHYS 131 and integral calculus concurrently with PHYS 142. Those students who have not previously taken physics at the high school level and who intend to do programs in the Biological Sciences may instead take courses PHYS 101 and PHYS 102. All students are expected to have reasonable fluency in algebra, geometry and trigonometry at the high school level. If this is not the case, then MATH 112 should be taken concurrently with PHYS 101. Those for whom this is not necessary are advised to take MATH 139 concurrently with PHYS 101.

**MINOR IN PHYSICS** 18 credits

The 18-credit Minor permits no overlap with any other programs. It contains no Mathematics courses, although many of the courses in it have Math pre- or corequisites. It will, therefore, be particularly appropriate to students in Mathematics, but it is also available to any Science student with the appropriate mathematical background.

Students in certain programs (e.g., the Major in Chemistry) will find that there are courses in the Minor that are already part of their program, or that they may not take for credit because of a substantial overlap of material with a course or courses in their program. After consultation with an adviser, such students may complete the Minor by substituting any other physics course(s) from the Major or Honours Physics programs.

**Required Course** (3 credits)

- PHYS 257 (3) Experimental Methods 1

**Complementary Courses** (15 credits)

15 credits to be selected as follows:

- PHYS 230 (3) Dynamics of Simple Systems
- or PHYS 251 (3) Classical Mechanics 1
- PHYS 232 (3) Heat and Waves
- or PHYS 253 (3) Thermal Physics
- PHYS 258 (3) Experimental Methods 2
- or PHYS 241 (3) Signal Processing
- PHYS 271 (3) Quantum Physics
- or PHYS 260 (3) Modern Physics and Relativity
- PHYS 214 (3) Introductory Astrophysics
- or PHYS 225 (3) Musical Acoustics
- PHYS 340 (3) Electricity and Magnetism
- or PHYS 350 (3) Electromagnetism

**FACULTY PROGRAM IN PHYSICS** (54 credits)

**Required Courses** (36 credits)

- MATH 222 (3) Calculus 3
- MATH 223 (3) Linear Algebra
- MATH 314 (3) Advanced Calculus
- MATH 315 (3) Ordinary Differential Equations
- PHYS 230 (3) Dynamics of Simple Systems
- PHYS 232 (3) Heat and Waves
- PHYS 257 (3) Experimental Methods 1
- PHYS 258 (3) Experimental Methods 2
- PHYS 333 (3) Thermal and Statistical Physics
- PHYS 340 (3) Electricity and Magnetism
- PHYS 436 (3) Modern Physics
- PHYS 446 (3) Quantum Physics

**Complementary Courses** (18 credits)

at least 3 credits selected from:

- PHYS 241 (3) Signal Processing
- PHYS 434 (3) Optics
- PHYS 439 (3) Laboratory in Modern Physics

the remainder selected from:

- COMP 202 (3) Introduction to Computing 1
- EPSC 320 (3) Elementary Earth Physics
- MATH 316 (3) Complex Variables
- MATH 317 (3) Numerical Analysis
- MATH 319 (3) Partial Differential Equations
- PHYS 328 (3) Electronics
- PHYS 331 (3) Topics in Classical Mechanics
- PHYS 339 (3) Measurements Laboratory in General Physics
PHYS 342  (3) Electromagnetic Waves

FACULTY PROGRAM IN MATHEMATICS, CHEMISTRY AND PHYSICS, see under "Mathematics and Statistics (MATH)", in section 11.12.18.

MAJOR IN PHYSICS  (60 credits)
U1 Required Courses  (21 credits)
MATH 222  (3) Calculus 3
MATH 223  (3) Linear Algebra
PHYS 230  (3) Dynamics of Simple Systems
PHYS 232  (3) Heat and Waves
PHYS 241  (3) Signal Processing
PHYS 257  (3) Experimental Methods 1
PHYS 258  (3) Experimental Methods 2

U2 Required Courses  (24 credits)
MATH 314  (3) Advanced Calculus
MATH 315  (3) Ordinary Differential Equations
PHYS 328  (3) Electronics
PHYS 331  (3) Topics in Classical Mechanics
PHYS 333  (3) Thermal and Statistical Physics
PHYS 339  (3) Measurements Laboratory in General Physics
PHYS 340  (3) Electricity and Magnetism
PHYS 342  (3) Electromagnetic Waves

U3 Required Courses  (15 credits)
PHYS 434  (3) Optics
PHYS 436  (3) Modern Physics
PHYS 439  (3) Laboratory in Modern Physics
PHYS 446  (3) Quantum Physics
PHYS 449  (3) Majors Research Project

It is possible for students to transfer from the Major to the Honours program after the U1 year; see the conditions and courses described after the description of the Honours program.

JOINT MAJOR IN PHYSICS AND GEOPHYSICS  (69 credits)
The Joint Major program in Physics and Geophysics provides a firm basis for graduate work in geophysics and related fields as well as a sound preparation for those who wish to embark on a career directly after the B.Sc. Students should consult undergraduate advisers in both departments.

JOINT MAJOR IN PHYSICS AND COMPUTER SCIENCE  (66 credits)
The Joint Major in Physics and Computer Science is designed to give motivated students the opportunity to combine the two fields in a way that will distinguish them from the graduates of either field by itself. The two disciplines complement each other, with physics providing an analytic problem-solving outlook and basic understanding of nature, while computer science enhances the ability to make practical and marketable applications, in addition to having its own theoretical interest. Graduates of this program may be able to present themselves as being more immediately useful than a pure physics major, but with more breadth than just a programmer.

They will be able to demonstrate their combined expertise in the Special Project course which is the centrepiece of the final year of the program.

U1 Required Courses  (21 credits)
COMP 250  (3) Introduction to Computer Science
MATH 222  (3) Calculus 3
MATH 223  (3) Linear Algebra
MATH 240  (3) Discrete Structures 1
PHYS 230  (3) Dynamics of Simple Systems
PHYS 257  (3) Experimental Methods 1
PHYS 258  (3) Experimental Methods 2

U2 Required Courses  (24 credits)
COMP 206  (3) Introduction to Software Systems
COMP 251  (3) Data Structures and Algorithms
COMP 302  (3) Programming Languages and Paradigms
COMP 350  (3) Numerical Computing
MATH 314  (3) Advanced Calculus
MATH 315  (3) Ordinary Differential Equations
PHYS 232  (3) Heat and Waves
PHYS 241  (3) Signal Processing

U3 Required Courses  (21 credits)
COMP 360  (3) Algorithm Design Techniques
MATH 323  (3) Probability
PHYS 331  (3) Topics in Classical Mechanics
PHYS 339  (3) Measurements Laboratory in General Physics
PHYS 340  (3) Electricity and Magnetism
PHYS 446  (3) Quantum Physics
PHYS 489  (3) Special Project

JOINT MAJOR IN ATMOSPHERIC SCIENCE AND PHYSICS
under "Atmospheric and Oceanic Sciences (ATOC)", in section 11.12.3. This program provides a firm basis for graduate work in atmospheric science and related fields as well as a sound preparation for those who wish to embark on a career directly after the B.Sc. Students should consult undergraduate advisers in both departments.

JOINT MAJOR IN PHYSICS AND ATMOSPHERIC SCIENCE
under "Atmospheric and Oceanic Sciences (ATOC)", in section 11.12.3. This program provides a firm basis for graduate work in atmospheric science and related fields as well as a sound preparation for those who wish to embark on a career directly after the B.Sc. Students should consult undergraduate advisers in both departments.

HONOURS IN PHYSICS  (78 credits)
Students entering this program for the first time should have high standing in mathematics and physics. In addition, a student who has not completed the equivalent of MATH 222 must take it in the first term without receiving credits toward the 78 credits required in the Honours program.

A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in the Honours program the following year, or graduate with the Honours degree, except with the permission of the Department.

U1 Required Courses  (27 credits)
MATH 247  (3) Honours Applied Linear Algebra
MATH 248  (3) Honours Advanced Calculus
A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in this Joint Honours program the following year, or graduate with the Joint Honours degree, except with permission of both Departments.

The student will have two advisers, one from Mathematics and the other from Physics.

**JOINT HONOURS IN PHYSICS AND CHEMISTRY**

(80 credits)

This is a specialized and demanding program intended primarily, although not exclusively, for students with a theoretical bias who are interested in working in fields of study at the crossroads of physical chemistry and physics. The program will prepare students for either theoretical or experimental graduate work in departments where there is an emphasis on such cross-disciplinary areas as condensed matter physics, chemical physics, or material science.

A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in this Joint Honours program the follow-
ing year, or graduate with the Joint Honours degree, except with permission of both Departments.

**U1 Required Courses** (28 credits)
- CHEM 213 (3) Introductory Physical Chemistry
- CHEM 273 (1) Chemical Kinetics
- MATH 247 (3) Honours Applied Linear Algebra
- MATH 248 (3) Honours Advanced Calculus
- MATH 249 (3) Honours Complex Variables
- MATH 325 (3) Honours Ordinary Differential Equations
- PHYS 241 (3) Signal Processing
- PHYS 251 (3) Classical Mechanics 1
- PHYS 257 (3) Experimental Methods 1
- PHYS 258 (3) Experimental Methods 2

**U2 Required Courses** (26 credits)
- CHEM 212 (4) Introductory Organic Chemistry 1
- CHEM 281 (3) Inorganic Chemistry 1
- CHEM 355 (3) Molecular Properties and Structure 2
- CHEM 363 (2) Physical Chemistry Laboratory 1
- CHEM 365 (2) Statistical Thermodynamics
- COMP 208 (3) Computers in Engineering
- PHYS 350 (3) Electromagnetism
- PHYS 357 (3) Quantum Physics 1
- PHYS 457 (3) Quantum Physics 2

**U3 Required Courses** (14 credits)
- CHEM 393 (2) Physical Chemistry Laboratory 2
- CHEM 455 (3) Introductory Polymer Chemistry
- CHEM 556 (3) Advanced Quantum Mechanics
- PHYS 352 (3) Electromagnetic Waves
- PHYS 558 (3) Solid State Physics

**U3 Complementary Courses** (12 credits)
(with at least 3 credits in Chemistry and 3 credits in Physics)
- 3 credits selected from:
  - CHEM 593 (3) Statistical Mechanics
  - PHYS 559 (3) Advanced Statistical Mechanics
- 9 credits selected from:
  - CHEM 480D1 (3) Research Project
  - PHYS 490D1/D2 (3) Research Project
  - CHEM 531 (3) Chemistry of Inorganic Materials
  - CHEM 575 (3) Chemical Kinetics
  - CHEM 585 (3) Colloid Chemistry
  - MATH 375 (3) Honours Partial Differential Equations
  - PHYS 434 (3) Optics
  - PHYS 451 (3) Classical Mechanics
  - PHYS 469 (3) Laboratory in Modern Physics 2
  - PHYS 479 (3) Honours Research Project
  - PHYS 562 (3) Electromagnetic Theory

**MINOR IN ELECTRICAL ENGINEERING** (23 or 25 credits)
[Program registration done by Student Affairs Office]
The Minor program does not carry professional recognition. Only students who satisfy the requirements of the Major in Physics are eligible for this Minor. Students registered for this option cannot count PHYS 241 towards the requirements of the Major in Physics, and should replace this course by another Physics or Mathematics course. Students who select ECSE 334 in the Minor cannot count PHYS 328 towards the requirements of the Major in Physics, and should replace this course by another Physics or Mathematics course.

**Required Courses** (17 or 19 credits)
- ECSE 200 (3) Fundamentals of Electrical Engineering
- ECSE 210 (3) Circuit Analysis
- ECSE 291 (2) Electrical Measurements Laboratory
- ECSE 303 (3) Signals and Systems 1
- ECSE 305 (3) Probability and Random Sig. 1
  or ECSE 334 (5) Introduction to Microelectronics
- ECSE 330 (3) Introduction to Electronics

**Complementary Courses** (6 credits)

**11.12.27 Physiology (PHGY)**
McIntyre Medical Sciences Building, Room 1021
3655 Promenade Sir William Osler
Montreal, QC H3G 1Y6
Telephone: (514) 398-4316
Fax: (514) 398-7452
Website: [www.medicine.mcgill.ca/physio](http://www.medicine.mcgill.ca/physio)

Chair — John Orlowski

Emeritus Professors
- G. Melvill Jones; B.A., M.A., M.B., B.Ch., M.D.(Can.)
- Kresimir Kmjevic; O.C., B.Sc., Ph.D., M.B., Ch.B.(Edin.), F.R.S.C.
- Professors
- Thomas M.S. Chang; B.Sc., M.D., C.M., Ph.D.(McG.), F.R.C.P.(C)
- Monroe W. Cohen; B.Sc., Ph.D.(McG.)
- Ellis J. Cooper; B.Eng.(Sir G.Wms.), M.Sc.(Surrey), Ph.D.(McM.)
- Mony M. Frojmovic; B.Sc., Ph.D.(McG.)
- Leon Glass; B.S.(Brooklyn), Ph.D.(Chic.) (Isadore Rosenfeld Professor of Cardiology)
- Phil Gold; C.C., B.Sc., M.Sc., Ph.D., M.D., C.M.(McG.), F.R.C.P.(C), F.R.S.C. (joint appoint. with Medicine)
- David Goltzman; B.Sc., M.D., C.M.(McG.), (Josef Morley Drake Professor of Physiology)
- John Hanrahan; Ph.D.(Br. Col.)
- Mortimer Levy; B.Sc., M.D., C.M.(McG.), F.R.C.P.(C) (joint appoint. with Medicine)
- Michael Mackey; B.A., Ph.D.(Wash.) (Joseph Morley Drake Professor of Physiology)
- Jacapo P. Mortola; M.D.(Milan)
- John Orlowski; B.Sc.(McG.), M.Sc., Ph.D.(Qu.) (James McGill Professor)
- Premysl Ponka; M.D., Ph.D.(Prague)
- Alvin Shrier; B.Sc.(C'dia), Ph.D.(Dal.) (Hosmer Professor of Physiology)
- Douglas G.D. Watt; M.D., Ph.D.(McG.)

Assistant Professors
- Erik Cook; Ph.D.(Baylor College, Houston)
- Julia Desbarats; Ph.D.(McG.)
- Pejmun Haghhighi; Ph.D.(McG.)
- Julio Martinez-Turriol; Ph.D.(Tübingen)
- Peter Swain; Ph.D.(Univ. London)

Associate Professors
- Kathleen Cullen; B.Sc.(Brown), Ph.D.(Chicago) (William Dawson Scholar)
- Riaz Farookhi; B.Sc., M.Sc.(MIT), Ph.D.(Tufts)
- Mladen Glavinovic; B.Sc.(Zagreb), M.Sc.(Tor.), Ph.D.(McG.)
- Michael Guevara; B.Sc., M.Eng., Ph.D.(McG.)
- Sheldon Magder; M.D.(Tor.) (joint appoint. with Medicine)
- Ursula Stochaj; Ph.D.(Cologne)
- Teresa Trippenbach; M.D., Ph.D.(Warsaw)
- Ann Wechsler; B.A.(Tor.), M.Sc., Ph.D.(McG.)
- John White; B.Sc., M.Sc.(Car.), Ph.D.(Harv.)

Associate Professor (Part Time)
- Nicole Bernard; B.Sc.(McG.), Ph.D.(Duke)

Associate Members
- Anaesthesia: Steven Backman
- Biomedical Engineering: Robert E. Kearney, Satya Prakash, Tomoko Takano
- Dentistry: James Lund
- Nephrology: Serge Lemay
Physiology has its roots in many of the basic sciences including biology, chemistry, mathematics, and physics. Physiology overlaps with other biomedical sciences such as anatomy, biochemistry, pathology and pharmacology, and with psychology and biomedical engineering, and is one of the prime contributors of basic scientific knowledge to the clinical medical sciences.

Members of the Department of Physiology at McGill are engaged in studies dealing with molecules, single cells, or entire systems in a variety of vertebrates, including man. A wide range of interest and expertise is represented, including cardiovascular, respiratory, gastrointestinal and renal physiology, the physiology of exercise, neurophysiology, endocrinology, immunology, biophysics and biomathematics. Some faculty members have formal or informal links with the departments of mathematics, physics, electrical engineering, and chemistry, and with clinical departments (medicine, surgery, pediatrics, neurology, obstetrics, psychiatry, anesthesia), reflecting and reinforcing the close ties between physiology and other disciplines.

Graduates at the B.Sc. level have found rewarding careers in teaching, in secondary schools and CEGEPs, government service, and laboratory technical assistance, such as in pharmaceutical houses, hospitals, and institutions of higher learning. Moreover, physiology provides an excellent background for medicine, dentistry or other postgraduate work, in such fields as physiology, experimental medicine, pharmacology, biochemistry or physiological psychology.

The programs offered in Physiology differ in their orientation but they all have a common core of material covering cardiovascular, respiratory, gastrointestinal and renal physiology, neurophysiology, endocrinology and immunology. The specified U1 courses are identical for all programs except the Joint Major Programs in Physiology, a strong core content of related biomedical sciences. Admission to the Major Program will be in U2, upon completion of the U1 required courses, and in consultation with the student's adviser.

If not previously taken CHEM 212 Introductory Organic Chemistry 1 must be completed in addition to the 55 program credits.

**FACULTY PROGRAM IN PHYSIOLOGY** (55 credits)

If not previously taken CHEM 212 Introductory Organic Chemistry 1 must be completed in addition to the 55 program credits.

**Required Courses** (34 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 200</td>
<td>(3)</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>(3)</td>
<td>Basic Genetics</td>
</tr>
<tr>
<td>BIOL 301</td>
<td>(4)</td>
<td>Cell and Molecular Laboratory</td>
</tr>
<tr>
<td>CHEM 222</td>
<td>(4)</td>
<td>Introductory Organic Chemistry 2</td>
</tr>
<tr>
<td>PHGY 209</td>
<td>(3)</td>
<td>Mammalian Physiology 1</td>
</tr>
<tr>
<td>PHGY 210</td>
<td>(3)</td>
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</tr>
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<td>PHGY 212</td>
<td>(1)</td>
<td>Introduction Physiology Laboratory 1</td>
</tr>
<tr>
<td>PHGY 213</td>
<td>(1)</td>
<td>Introduction Physiology Laboratory 2</td>
</tr>
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</table>

**Complementary Courses** (21 credits)

6 credits selected from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>(3)</td>
<td>Cell Biology and Metabolism</td>
</tr>
<tr>
<td>BIOL 373</td>
<td>(3)</td>
<td>Biometry</td>
</tr>
<tr>
<td>BIOL 309</td>
<td>(3)</td>
<td>Mathematical Models in Biology</td>
</tr>
</tbody>
</table>

9 credits selected from upper level physiology courses – see approved list on Department Website.

**U1 Required Courses** (18 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 200</td>
<td>(3)</td>
<td>Molecular Biology</td>
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<tr>
<td>BIOL 202</td>
<td>(3)</td>
<td>Basic Genetics</td>
</tr>
<tr>
<td>CHEM 222</td>
<td>(4)</td>
<td>Introductory Organic Chemistry 2</td>
</tr>
<tr>
<td>PHGY 209</td>
<td>(3)</td>
<td>Mammalian Physiology 1</td>
</tr>
<tr>
<td>PHGY 210</td>
<td>(3)</td>
<td>Mammalian Physiology 2</td>
</tr>
<tr>
<td>PHGY 212</td>
<td>(1)</td>
<td>Introduction Physiology Laboratory 1</td>
</tr>
<tr>
<td>PHGY 213</td>
<td>(1)</td>
<td>Introduction Physiology Laboratory 2</td>
</tr>
</tbody>
</table>

**U2 and U3 Required Courses** (19 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHGY 311</td>
<td>(3)</td>
<td>Intermediate Physiology 1</td>
</tr>
<tr>
<td>PHGY 312</td>
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<td>PHGY 313</td>
<td>(3)</td>
<td>Intermediate Physiology 3</td>
</tr>
<tr>
<td>PHGY 314</td>
<td>(3)</td>
<td>Integrative Neuroscience</td>
</tr>
<tr>
<td>BIOL 301</td>
<td>(4)</td>
<td>Cell and Molecular Laboratory</td>
</tr>
<tr>
<td>BIOL 311</td>
<td>(3)</td>
<td>Metabolic Biochemistry</td>
</tr>
</tbody>
</table>

**Complementary Courses** (27-28 credits)

12-13 credits selected from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>(3)</td>
<td>Cell Biology and Metabolism</td>
</tr>
<tr>
<td>BIOL 373</td>
<td>(3)</td>
<td>Biometry</td>
</tr>
<tr>
<td>BIOL 309</td>
<td>(3)</td>
<td>Mathematical Models in Biology</td>
</tr>
<tr>
<td>CHEM 203</td>
<td>(3)</td>
<td>Survey of Physical Chemistry</td>
</tr>
<tr>
<td>CHEM 204</td>
<td>(3)</td>
<td>Physical Chemistry/Biological Sciences 1</td>
</tr>
<tr>
<td>ANAT 214</td>
<td>(3)</td>
<td>Systemic Human Anatomy</td>
</tr>
<tr>
<td>ANAT 261</td>
<td>(4)</td>
<td>Introduction to Dynamic Histology</td>
</tr>
</tbody>
</table>

9 credits selected from upper level physiology courses – see approved list on Department Website.

6 credits selected from upper level science courses – see approved list on Department Website.
**JOINT MAJOR IN PHYSIOLOGY AND MATHEMATICS**  
*(77 credits)*  

**U1 Required Courses** *(14 credits)*  
- PHGY 212 (1) Introductory Physiology Laboratory 1  
- PHGY 213 (1) Introductory Physiology Laboratory 2  
- MATH 222 (3) Calculus 3  
- MATH 247 (3) Honours Applied Linear Algebra  
  or MATH 223 (3) Linear Algebra  
- BIOL 200 (3) Molecular Biology  
- BIOL 309 (3) Mathematical Models in Biology  

**U1 Complementary Courses** *(15 credits)*  
9 credits selected from:  
- BIOL 201 (3) Cell Biology and Metabolism  
  or BIOL 212 (3) Molecular Mechanisms of Cell Function  
- PHGY 209 (3) Mammalian Physiology 1  
  and PHGY 210 (3) Mammalian Physiology 2  
  or PHGY 201 (3) Human Physiology: Control Systems  
  and PHGY 202 (3) Human Physiology: Body Functions  

6 credits selected from:  
- MATH 248 (3) Honours Advanced Calculus  
  or MATH 314 (3) Advanced Calculus  
- MATH 325 (3) Honours Ordinary Differential Equations  
  or MATH 315 (3) Ordinary Differential Equations  

**U2 Required Courses** *(24 credits)*  
- MATH 242 (3) Analysis 1  
- MATH 243 (3) Analysis 2  
- MATH 323 (3) Probability  
- MATH 326 (3) Nonlinear Dynamics and Chaos  
- PHGY 311 (3) Intermediate Physiology 1  
- PHGY 312 (3) Intermediate Physiology 2  
- PHGY 313 (3) Intermediate Physiology 3  
- PHGY 314 (3) Integrative Neuroscience  

**U2 or U3 Required Courses** *(6 credits)*  
- MATH 437 (3) Mathematical Methods in Biology  
- PHYS 413 (3) Physical Basis of Physiology  

**U3 Required Courses** *(18 credits)*  
- BMDE 519 (3) Analysis of Biomedical Systems and Signals  
- MATH 319 (3) Partial Differential Equations  
- MATH 324 (3) Statistics  
- PHGY 461D1 (4.5) Experimental Physiology  
- PHGY 461D2 (4.5) Experimental Physiology  

**JOINT MAJOR IN PHYSIOLOGY AND PHYSICS** *(80 credits)*  
This program provides a firm foundation in physics, mathematics and physiology. It is appropriate for students interested in applying methods of the physical sciences to problems in physiology and allied biological sciences.  

**U1 Required Courses** *(17 credits)*  
- MATH 222 (3) Calculus 3  
- PHGY 212* (1) Introductory Physiology Laboratory 1  
- PHGY 213* (1) Introductory Physiology Laboratory 2  
- PHYS 230 (3) Dynamics of Simple Systems  
- PHYS 232 (3) Heat and Waves  
- PHYS 257 (3) Experimental Methods 1  
- PHYS 258 (3) Experimental Methods 2  

**U1 Complementary Courses** *(9 credits)*  
- MATH 223 (3) Linear Algebra  
  or MATH 247 (3) Honours Applied Linear Algebra  
- PHGY 209 (3) Mammalian Physiology 1  
  and PHGY 210* (3) Mammalian Physiology 2  
  or PHGY 201 (3) Human Physiology: Control Systems  
  and PHGY 202 (3) Human Physiology: Body Functions  
  * The corequisite BIOL 200, BIOL 201 is waived for this program.  

**U2 Required Courses** *(21 credits)*  
- MATH 326 (3) Nonlinear Dynamics and Chaos  
- PHGY 311 (3) Intermediate Physiology 1  
- PHGY 312 (3) Intermediate Physiology 2  

- PHGY 313 (3) Intermediate Physiology 3  
- PHGY 314 (3) Integrative Neuroscience  
- PHYS 328 (3) Electronics  
- PHYS 339 (3) Measurements Laboratory in General Physics  

**U2 Complementary Course** *(6 credits)*  
- MATH 315 (3) Ordinary Differential Equations  
  or MATH 325 (3) Honours Ordinary Differential Equations  
- MATH 314 (3) Advanced Calculus  
  or MATH 248 (3) Honours Advanced Calculus  

**U2 or U3 Required Courses** *(6 credits)*  
- MATH 437 (3) Mathematical Methods in Biology  
- PHYS 413 (3) Physical Basis of Physiology  

**U3 Required Courses** *(21 credits)*  
- BMDE 519 (3) Analysis of Biomedical Systems and Signals  
- PHGY 461D1 (4.5) Experimental Physiology  
- PHGY 461D2 (4.5) Experimental Physiology  
- PHYS 333 (3) Thermal and Statistical Physics  
- PHYS 340 (3) Electricity and Magnetism  
- PHYS 446 (3) Quantum Physics  

**HONOURS IN PHYSIOLOGY** *(75 credits)*  
All admissions to the Honours program will be in U2, and the student must have a U1 GPA of 3.30, with no less than a B in PHGY 209 and PHGY 210. Admission to U3 requires a U2 CGPA of 3.20 with no less than a B in U2 Physiology courses. Decisions for admission to U3 will be heavily influenced by student standing in U2 courses.  

The Department reserves the right to restrict the number of entering students in the Honours program. Students who do not maintain Honours standing may transfer their registration to the Major Program in Physiology.  

The deadline to apply to the Honours Program is June 1. Application forms are available in McIntyre 1021. Students should include in their letters telephone numbers where they can be reached during the last week of August. Students are responsible for picking up their letters of decision in McIntyre 1021 no later than one week before classes start.  

Graduation: To graduate from the Honours Physiology Program the student will have a CGPA of 3.20 with a mark no less than a B in all Physiology courses.  

If not previously taken CHEM 212 Introductory Organic Chemistry 1 must be completed in addition to the 75 program credits.  

**Required Courses** *(60 credits)*  
- ANAT 261 (4) Introduction to Dynamic Histology  
- BIOL 311 (3) Metabolic Biochemistry  
- BIOL 200 (3) Molecular Biology  
- BIOL 202 (3) Basic Genetics  
- BIOL 301 (4) Cell and Molecular Laboratory  
- CHEM 222 (4) Introductory Organic Chemistry 2  
- PHGY 209 (3) Mammalian Physiology 1  
- PHGY 210 (3) Mammalian Physiology 2  
- PHGY 212 (1) Introductory Physiology Laboratory 1  
- PHGY 213 (1) Introductory Physiology Laboratory 2  
- PHGY 311 (3) Intermediate Physiology 1  
- PHGY 312 (3) Intermediate Physiology 2  
- PHGY 313 (3) Intermediate Physiology 3  
- PHGY 314 (3) Integrative Neuroscience  
- PHGY 351 (3) Research Techniques: Physiology  
- PHGY 359D1 (.5) Tutorial in Physiology  
- PHGY 359D2 (.5) Tutorial in Physiology  
- PHGY 459D1 (3) Physiology Seminar  
- PHGY 459D2 (3) Physiology Seminar  
- PHGY 461D1 (4.5) Experimental Physiology  
- PHGY 461D2 (4.5) Experimental Physiology  

**Complementary Courses** *(15 credits)*  
- BIOL 201 (3) Cell Biology and Metabolism
11.12.28  Psychology (PSYT)

There are no B.Sc. programs in Psychiatry, but the PSYT courses listed in the Courses section of this Calendar are administered by the Faculty of Science and are not considered as courses outside of Arts and Science.

11.12.29  Psychology (PSYC)

Stewart Biological Sciences Building, Room W8/1
1205 Avenue Docteur Penfield
Montreal, QC, H3A 1B1
Telephone: (514) 398-6100
Fax: (514) 398-4996
E-mail: info@psych.mcgill.ca
Website: www.psych.mcgill.ca

Chair — K.B.J. Franklin
Emeritus Professors
Albert S. Bregman; M.A.(Tor.), Ph.D.(Yale)
Virginia I. Douglas; B.A.(Qu.), M.A., M.S.W., Ph.D.(Mich.)
Wallace E. Lambert; M.A.(Colgate), Ph.D.(N.Carolina), F.R.S.C.
A.A.J. Marley; B.Sc.(Birm.), Ph.D.(Penn.)
Ronald Melzack; M.Sc., Ph.D.(McG.), F.R.S.C.
Peter M. Milner; B.Sc.(Leeds), M.Sc., Ph.D.(McG.)

Professors
Frances E. Aboud; B.A.(Tor.), M.A., Ph.D.(McG.)
Irving M. Bink; B.A.(NYU), B.H.L.(Jewish Theological Seminary), M.A., Ph.D.(Penn.)
Avi Chaudhuri; B.Sc., M.Sc.(Tor.), Ph.D.(Berk.) (James McGill Professor)
Blaine Ditto; B.S.(Iowa), Ph.D.(Ind.)
Keith B.J. Franklin; B.A., M.A.(Auck.), Ph.D.(Lond.)
Fred H. Genesee; B.A.(W.Ont.), M.A., Ph.D.(McG.)
Richard F. Koestner; B.A., Ph.D.(Roch.)
Jeffrey S. Mogil; B.Sc.(Tor.), Ph.D.(Calif.-LA) (E.P. Taylor Emeritus Professor of Psychology)
P. Miller; B.Sc.(Leeds), M.Sc., Ph.D.(McG.)

Associate Professors
John R.Z. Abela; B.A.(Brown), M.A., Ph.D.(Penn.)
A.G. Baker; B.A.(Br. Col.), M.A., Ph.D.(Dal.)
Evan S. Balaban; B.A.(Mich. St.), Ph.D.(Rockefeller)
Mark Baldwin; B.A.(Tor.), M.A., Ph.D.(Wat.)
Don C. Donderi; B.A., B.Sc.(Chic.), Ph.D.(C’nell)
Daniel J. Levitin; A.B.(Stan.), M.S., Ph.D.(Or.) (Bell Professor of Psychology and E-Commerce)

Psychiatry (PSYT)

Morton J. Mendelson; B.Sc.(McG.), A.M., Ph.D.(Harv.)
Gianni A. O’D’Riscoll; B.A.(Welles.), M.A., Ph.D.(Harv.) (William Dawson Scholar)

Assistant Professors
Ian F. Bradley; B.Sc., M.Sc.(Tor.), Ph.D.(Wat.) (part-time)
Moon-Ho R. Ho; B.Sc., M.Phil.(Chinese Univ. of Hong Kong), M.S., Ph.D.(Ill.)

Part-time Appointments
Debra Titone; B.A.(NY), M.A., Ph.D.(SUNY, Binghamton)
Athena Vouloumanos; B.Sc.(McG.), Ph.D.(Br. Col)

Lecturers
Nicole Allard; B.A.(W.Ont.), M.A.(Guelph), M.Ed.(McG.)
Rhonda Amsel; B.Sc., M.Sc.(McG.)

Associate Members
Clinical Research Institute of Montreal: Terrance J. Codere
Douglas Hospital: Howard Steiger
Desautels Faculty of Management (McG.): Ulf Bockenholt
Montreal Neurological Institute: Marilyn Jones-Gotman, Brenda Milner, Tomas Paus, Edward Ruthazer, Wayne Sossin, Viviane Sztijak, Robert Zatorre
Psychiatry: Francesco Abbotti

Vision Research Unit (Ophthalmology): Curtis Baker, Robert Hess, Frederick A.A. Kingdom, Kathleen Mullen

Adjunct Professors
S. Bergeron; B.Sc.(Montr.), Ph.D.(McG.)
S. Burstein; B.Sc.(McG.), M.A., Ph.D.(Wat.)
F. Cramer-Azima; B.A.(Qu.), M.A.(C’nell), Ph.D.(Montr.)
P. Delise; B.Sc., M.Ps., Ph.D.(C’dia)

Part-time Appointments
Jill Desbarats; B.Sc., M.A.Sc., Ph.D.(McG.)

Associate Professors
Veronique Bobbot; B.A.(McG.), M.A., Ph.D.(Ariz.)
Geert-Jan Boudewijnen; M.Sc. (Leiden), Ph.D. (McG.)
Pasqualina Di Dio; B.A.(McG.), M.A., Ph.D.(Roch.)
Judith LeGallais; B.A., M.A., Ph.D.(McG.)
Martin LePage; B.A.(C’dia), Ph.D.(UQAM)

The Department of Psychology offers programs in both Arts and Science. All B.A. programs in Psychology can be found in the Faculty of Arts entry, see section 4.12.45 “Psychology (PSYC)”.

Psychology is the scientific study of mind and behaviour. It is both a social and a biological science. As a social science, psychology studies social interactions. As a biological science, it regards
humans as the product of evolution and so studies them in biological perspective, comparing and contrasting human behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of behaviour, and outside the laboratory by systematic observation of the behaviour of humans and animals. The aim is to formulate general principles of perception, learning, motivation, cognition and social psychology that are relevant to different aspects of human life. Experimentation, laboratory techniques, observational procedures, measurement, and statistical methods are important tools of the psychologist.

Psychology has many interdisciplinary aspects. The study of psychological problems often involves knowledge drawn from other disciplines such as biology, physiology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why humans think and behave as they do. Although a number of undergraduate courses in psychology have applied implications, applied training is not the purpose of the undergraduate curriculum. Its purpose is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.Sc. or B.A. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Quebec the minimum requirement for membership in the Order of Psychologists, the professional association governing the work of psychologists in the province, is an M.A. or M.Sc. degree, or other equivalent degree. All students planning to practise in the Province of Quebec will be examined on their proficiency in French before being admitted to the professional association. Undergraduate courses in psychology may prove of considerable value to students planning careers in professional fields other than psychology. These include but are not restricted to medicine, education, social work, human communication sciences, or business and industry.

Students who are interested in psychology as a career must pursue graduate studies. Persons who hold graduate degrees in psychology, usually the Ph.D., may find employment in universities, research institutes, hospitals, community agencies, government departments, large corporations, or may act as self-employed consultants. At the graduate level, psychology has many specialized branches including social psychology, physiological psychology, experimental psychology, clinical psychology, child psychology, industrial psychology, community psychology, educational psychology, and others.

Requirements for admission to graduate studies in psychology vary from one university to another and from one country to another. Nonetheless, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided that sufficiently high grades are obtained. During the U2 year, undergraduate students are strongly advised to verify the admission requirements of various graduate programs. This is to ensure that sufficient time is available for students to complete all necessary requirements for admission to their preferred graduate programs.

The essential differences between the Honours and the Major program are an emphasis on research methodology courses and practice in the Honours program, and that higher academic standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

INFORMATION MEETINGS FOR NEW STUDENTS

All new students entering the Psychology undergraduate program are required to attend an Information Meeting prior to registration. Students who have been accepted into a Bachelor of Science program in Psychology must attend the meeting on August 29, 2006 at 13:00. The meeting will be held in Room S1/3 of the Stewart Biological Sciences Building. Students accepted into a Bachelor of Arts program must attend a separate information meeting. For details, consult the Psychology program listing in the Faculty of Arts section. At this meeting, Nicole Allard, the Academic Adviser, will explain the requirements of the Department's programs. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. Students will make appointments for individual advising sessions, during which they will fill out their Study Plan form for registration.

Entering students must bring their letter of acceptance and a copy of their collegial transcript(s). They will also need this Calendar and a preliminary Class Schedule. Students will also find the Psychology Department Handbook helpful. It contains more detailed descriptions of psychology courses, as well as providing guidelines for how students might pursue particular areas of interest. The Handbook is available on the Department Website, www.psych.mcgill.ca/ugrad/ugradm.htm

Students entering the Psychology program in January are encouraged to call the academic adviser, Nicole Allard, in December to clarify their course selections.

MINOR IN PSYCHOLOGY (24 credits)

A Minor program in Psychology is available to students registered in any B.Sc. program (other than Psychology). This program is intended to complement a student's primary field of study by providing a focused introduction to specialized topics in psychology.

A separate Minor Concentration exists for students registered in a program in the Faculty of Arts. Please see section 4.12.45 “Psychology (PSYC)” in Faculty of Arts section for more information.

The Minor program for Science students requires the completion of 24 credits, of which no more than 6 may overlap with the primary program. All courses in the Minor program must be passed with a minimum grade of C. A prerequisite to the program is PSYC 204 or equivalent, see section 11.3.6.1 “Course Overlap”.

Complementary Courses (24 credits)

at least 3, but no more than 6, credits selected from:

- PSYC 211 (3) Intro Behavioural Neuroscience
- PSYC 212 (3) Perception
- PSYC 213 (3) Cognition
- PSYC 215 (3) Social Psychology

18-21 credits selected from among Psychology courses at the 300 level or above

MAJOR AND HONOURS PROGRAMS IN PSYCHOLOGY

Recommended Background

It is expected that most students who enter a Major or Honours Program in Psychology will have taken introductory psychology, biology and statistics at the collegial level. Recommended CEGEP courses include Psychology 350-101 or 350-102 or equivalent, Biology CEGEP objective 00UK, 00XU or equivalent, Statistics (Mathematics) 201-307 or 201-337 or equivalent. Students must obtain a minimum grade of 75% in their CEGEP level statistics course. In the first year those students who have not taken the recommended collegial level statistics course, or those who have obtained a grade below 75%, must take Psychology PSYC 204. Those who have not taken the recommended collegial level biology must take BIOL 111 or BIOL 112, and those who have not taken Introductory Psychology in college must take PSYC 100.

Course Groups: List A and List B

The study of psychology covers many fields. To develop a breadth of understanding in psychology, students are expected to obtain knowledge beyond the introductory level in two or more areas of psychology. To ensure this requirement is met, Psychology courses are divided into two lists: List A covers all areas of behavioural neuroscience, cognition and quantitative methods. List B covers social, health and developmental psychology.
PSYC 353 (3) Laboratory in Cognitive Psychology
PSYC 352 (3) Laboratory in Human Perception
PSYC 403 (3) Modern Psychology in Historical Perspective
PSYC 406 (3) Psychological Tests
PSYC 410 (3) Special Topics in Neuropsychology
PSYC 413 (3) Cognitive Development
PSYC 427 (3) Sensorimotor Behaviour
PSYC 451 (3) Human Factors Research and Techniques
PSYC 470 (3) Memory and Brain
PSYC 472 (3) Scientific Thinking and Reasoning
PSYC 503 (3) Computational Psychology
PSYC 505 (3) The Psychology of Pain
PSYC 510 (3) Statistical Analysis of Tests
PSYC 522 (3) Neurochemistry and Behaviour
PSYC 526 (3) Advances in Visual Perception
PSYC 529 (3) Music Cognition
PSYC 531 (3) Structural Equation Models
PSYC 532 (3) Cognitive Science
PSYC 536 (3) Correlational Techniques
PSYC 541 (3) Multilevel Modelling

List B (Social, Health and Developmental Psychology)
PSYC 304 (3) Child Development
PSYC 316 (3) Psychology of Deafness
PSYC 331 (3) Inter-Group Relations
PSYC 332 (3) Introduction to Personality
PSYC 333 (3) Personality and Social Psychology
PSYC 337 (3) Introduction: Abnormal Psychology 1
PSYC 338 (3) Introduction: Abnormal Psychology 2
PSYC 343 (3) Language Acquisition in Children
PSYC 351 (3) Research Methods in Social Psychology
PSYC 408 (3) Principles of Cognitive Behaviour Therapy
PSYC 412 (3) Deviations: Child Development
PSYC 414 (3) Social Development
PSYC 416 (3) Advanced Topics in Child Development
PSYC 429 (3) Health Psychology
PSYC 436 (3) Human Sexuality and its Problems
PSYC 471 (3) Human Motivation
PSYC 473 (3) Social Cognition and the Self
PSYC 474 (3) Interpersonal Relationships
PSYC 491D1 (3) Advanced Study: Behavioural Disorders
PSYC 491D2 (3) Advanced Study: Behavioural Disorders
PSYC 511 (3) Infant Competence
PSYC 530 (3) Applied Topics in Deafness
PSYC 533 (3) International Health Psychology
PSYC 534 (3) Community Psychology
PSYC 535 (3) Advanced Topics in Social Psychology

Unclassified Courses
PSYC 395 (6) Psychology Research Project 1
PSYC 450D1 (4.5) Research Project and Seminar
PSYC 450D2 (4.5) Research Project and Seminar
PSYC 492 (3) Special Topics Seminar 1
PSYC 493 (3) Special Topics Seminar 2
PSYC 494D1 (4.5) Psychology Research Project
PSYC 494D2 (4.5) Psychology Research Project
PSYC 495 (6) Psychology Research Project 2

B.Sc. MAJOR IN PSYCHOLOGY (54 credits)
Students majoring in Psychology must obtain a minimum grade of C in all 54 credits of the program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one).

U1 Required Courses (12 credits)
PSYC 211 (3) Intro Behavioural Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 215 (3) Social Psychology

Note: PSYC 100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC 305 (3) Statistics for Experimental Design

Complementary Courses (39 credits)
6 credits in Psychology from List A
6 credits in Psychology from List B
9 credits in Psychology at the 300 level or above
12 credits at the 300 level or above in the following disciplines:
- Psychology (PSYC), Anatomy and Cell Biology (ANAT), Biology (Biol), Biochemistry (BIOC), Chemistry (CHEM), Computer Science (COMP), Mathematics (MATH), Physiology (PHGY), Psychiatry (PSYT).

B.Sc. HONOURS IN PSYCHOLOGY (60 credits)
Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of their U2 year, and the two-year sequence of Honours courses continues through U3. Admission to Honours is selective. Students with a cumulative grade point average of 3.00 or better are eligible to apply; since enrolment is limited the usual GPA for admission to this program is 3.50 (based on a 27-30 graded credit program over two terms). Students must complete the following courses in their U1 year to be eligible to apply to the Honours Program: PSYC 204, PSYC 211, PSYC 212, PSYC 213 and PSYC 215. Students who have been exempted from PSYC 204 due to previous courses completed in CEGEP are advised to complete PSYC 305 in their U1 year. Once in the Honours Program, the student must obtain a GPA of 3.00 in the U2 year in order to continue in the program for U3. Students in the Honours Program are required to complete a minimum of 27 graded credits per academic year.

Applications can be obtained from the Undergraduate Office of the Department of Psychology, Room N7/9A, Stewart Biological Sciences Building. The applications must be completed and returned to the Undergraduate Office by August 15 for September admission and by December 1 for January admission. Candidates will be advised of the Department's decision through a notice posted in front of the Undergraduate Adviser's Office, N7/9, before classes begin in September or in January.

Students should note that awarding of the Honours degree will depend on both cumulative grade point average and a minimum grade of B on PSYC 380D1/PSYC 380D2, PSYC 482, PSYC 483. "First Class Honours" is awarded to students who obtain a minimum cumulative grade point average of 3.50 and a minimum CGPA of 3.50 in the three Honours courses of which 9 out of 12 credits received at least an A- grade. "Honours" is awarded to students with a minimum cumulative grade point average of 3.00 and a minimum program GPA of 3.00 on each of the three Honours courses. Moreover, the awarding of the Honours degree normally requires completion of two full years of study. U2 and U3, in the Psychology Department. Students with particularly strong academic records may be admitted for the U3 year only on the basis of their marks and research experience. These students must complete all honours program requirements.
U1 Required Courses (12 credits)
PSYC 211 (3) Intro Behavioural Neuroscience
PSYC 212 (3) Perception
PSYC 213 (3) Cognition
PSYC 215 (3) Social Psychology

Note: PSYC 100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC 305 (3) Statistics for Experimental Design

U2 Required Courses (9 credits)
PSYC 380D1 (4.5) Honours Research Project and Seminar
PSYC 380D2 (4.5) Honours Research Project and Seminar

U3 Required Courses (3 credits)
PSYC 482 (3) Advanced Honours Seminar 1

Complementary Courses (33 credits)
12 credits to be selected from:
PSYC 403 (3) Modern Psychology in Historical Perspective
PSYC 483 (3) Advanced Honours Seminar 2
PSYC 495 (6) Psychology Research Project 2
PSYC 496 (6) Seniors Honours Research 1
PSYC 497 (6) Seniors Honours Research 2
PSYC 498D1 (4.5) Senior Honours Research
PSYC 498D2 (4.5) Senior Honours Research
Any Psychology course at the 500 level.
6 credits in Psychology from List A
6 credits in Psychology from List B
9 credits at the 300 level or above selected from: Anatomy and Cell Biology (ANAT), Biochemistry (BIOC), Biology (BIOL), Chemistry (CHEM), Computer Science (COMP), Mathematics (MATH), Physiology (PHGY), Psychiatry (PYST), Psychology (PSYC).

* Please see Faculty Regulations concerning "Course Requirements", section 11.3.6.

11.12.31 Science for Teachers

Rutherford Physics Building
3600 University Street
Montreal, QC, H3A 2T8
Fax: (514) 398-8434
E-mail: bscbed@physics.mcgill.ca

Coordinator - Science — R. Harris
Coordinator - Education — M. Schwartz

The training and certification of school teachers has traditionally been the responsibility of the Faculty of Education and requires the completion of a Bachelor of Education.

The Faculties of Education and of Science have introduced a number of measures to make the B.Ed. degree as accessible as possible to Science students, subject to Ministère de l'Éducation, du Loisir et du Sport (MELS) regulations. Two of these measures are the Minor in Education for Science Students and the Concurrent B.Sc./B.Ed. programs.

MINOR IN EDUCATION FOR SCIENCE STUDENTS (18 credits)

This Minor allows Science students to develop or explore an interest in Education without committing themselves to completing a B.Ed. degree. Only a few students are prepared to commit to a teaching career at the start of university, but many students see it as a viable option toward the end of their B.Sc. program. At that time, Science students who have taken this Minor in Education will have completed a substantial number of the necessary credits for the B.Ed. degree. Students whose B.Sc. degree also substantially matches the content of one of the concurrent B.Sc./B.Ed. programs (see below) are likely eligible for the maximum number of 60 Advanced standing credits, as specified in the Faculty of Education section "Advanced Standing/Transfer Credits", in section 6.2.1.4.

The 18 credits for the Minor are the same courses approved by the Faculty of Science as Education electives within the Concurrent B.Sc./B.Ed.

Required Courses (12 credits)
EDEM 220 (3) Contemporary Issues in Education
EDEC 262 (3) Media, Technology and Education
EDPE 300 (3) Educational Psychology
EDPI 309 (3) Exceptional Students

Complementary Courses (6 credits)
3 credits from:
EDEC 260 (3) Philosophical Foundations
EDEC 261 (3) Philosophy of Catholic Education
3 credits from:
EDEC 233 (3) First Nations and Inuit Education
EDEC 248 (3) Multicultural Education

CONCURRENT B.SC./B.ED.PROGRAM

The Concurrent B.Sc./B.Ed. is intended as a very rigorous but rewarding alternative to taking the B.Sc. and the B.Ed. in sequence. The Concurrent program is specifically designed to
train teacher/scientists. The program is rigidly structured and closely integrated so as to satisfy the academic requirements of both degrees.

Concurrency is an essential characteristic of the B.Sc./B.Ed.; it is not intended that the Science and Education components be taken separately and then combined. Normally students will be admitted to both components of the Concurrent Program simultaneously, but it is possible for Science students to opt into this program at any time during their B.Sc. program. However, because this is a concurrent program, both degrees must be granted at the same Convocation. It will not be possible to receive one degree first, and the other subsequently.

Students in the Concurrent Program may apply to transfer to either a conventional B.Sc. or a conventional B.Ed program. To do so, they must submit a Faculty Transfer Application to the appropriate Student Affairs Office. The decision will be based on their grades in the relevant component of the Concurrent Program. Students who do transfer to a conventional program may not transfer back to the Concurrent Program.

Students who receive an F or J in an Education Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program. However, they may apply to transfer to a conventional B.Sc. program as outlined above.

To be admitted, candidates must satisfy the admission requirements of both faculties.

Students who wish to be registered in the Concurrent Program must contact one of the coordinators through the Student Affairs Office of either faculty.

This program has been designed to provide students with the opportunity to attain a Bachelor of Science degree and a Bachelor of Education degree after 135 credits of study (165 credits for students who have not completed the basic sciences).

The two components of the Concurrent Program are the B.Ed. Secondary Program and one of the B.Sc. programs for teachers. These two components are described in what follows, including an identification of the elements that are counted towards the requirements of both degrees. These provisions are exceptional and apply exclusively to the Concurrent Program.

The following Science components have been approved for the Concurrent Program:

- biology, with chemistry
- biology, with physics
- chemistry, with biology
- chemistry, with physics
- physics, with biology
- physics, with chemistry
- mathematics

The aim of this B.Ed. is to prepare teachers for the secondary school level through a program of academic studies and professional studies centred on school-based practicum components supported by courses in pedagogy, curriculum and educational foundations. In the case of the Concurrent Program, the academic component must be chosen from those listed above.

See the Faculty of Education for a full description of the "Bach-


er of Education Secondary Program", in section 8.5.1.1. In sum-

may, it consists of the following:

Academic components (54 credits): In the present case these courses will be selected from the B.Sc. components of the Concurrent Program, and will count towards both degrees.

Professional components (60 credits): These include professional seminars, field experiences, foundation courses, pedagogy courses, and pedagogical support courses.

Pedagogy courses for the Concurrent program must include EDES 370 Teaching General Science and EDEC 335 Teaching Secondary Science, or, if Mathematics is the academic compo-


The following 18 credits can be included as electives in the B.Sc. component of the Concurrent program, and will count towards both degrees: EDEC 247, EDEC 262, EDPI 309, EDPE 300, either EDEC 260 or EDEC 261, and one of EDEC 248 or EDEC 233.

Electives (6 credits).

BACHELOR OF SCIENCE MAJOR OR MAJOR CONCENTRATION WITH A MINOR FOR TEACHERS (120 credits)

These B.Sc. programs, with the exception of the Major in Mathematics, are designed specifically as the Science component of the Concurrent B.Sc./B.Ed. Program. The general structure of these B.Sc. programs is as follows:

Basic sciences (30 credits): Quebec students with a DCS in Science are granted 30 credits advanced standing and will have normally completed the equivalent of, and are therefore exempt from, the basic science courses in biology, chemistry, mathematics and statistics, and physics. Students with satisfactory results in International Baccalaureate, French Baccalaureate and Advanced Levels, and Advanced Placement tests may be exempt from some or all of the basic science courses.

Required and complementary courses (54-70 credits):

The details of these programs are given below. Note that 54 of these credits can be counted towards the academic component of the B.Ed. program, but only for students in the Concurrent Program.

Elective courses (20-36 credits): These are electives from the B.Sc. perspective, but they must be suitably chosen if the student wishes to complete the Concurrent Program with the minimum of 135 credits. The following Education courses can count towards both the B.Sc. and the B.Ed. components of the Concurrent Program.

EDEC 247 (3) Policy Issues in Quebec Education
EDEC 260 (3) Philosophical Foundations
or EDEC 261 (3) Philosophy of Catholic Education
EDEC 262 (3) Media, Technology and Education
EDEC 248 (3) Multicultural Education
or EDEC 233 (3) First Nations and Inuit Education
EDPE 300 (3) Educational Psychology
EDPI 309 (3) Exceptional Students

MAJOR CONCENTRATION IN BIOLOGY WITH A MINOR IN CHEMISTRY FOR TEACHERS (69 or 70 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION", under "Biology (BIOL)", in section 5.12.3 or the 37 credits of the "MAJOR CONCENTRATION IN BIOLOGY - ORGANISMS OPTION", under "Biology (BIOL)", in section 5.12.3 and the 18 credits of the "MINOR IN CHEMISTRY", under "Chemistry (CHEM)", in section 11.12.7, as well as the 15 credits of Science courses listed below.

Additional Science courses (15 credits)

BIOL 210 (3) Perspectives of Science
CHEM 381 (3) Inorganic Chemistry 2
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3
plus 3 credits, one of:
CHEM 150 (3) World of Chemistry: Food
CHEM 160 (3) World of Chemistry: Technology
CHEM 170 (3) World of Chemistry: Drugs
CHEM 180 (3) World of Chemistry: Environment

Note: Students must take one additional BIOL course (3 credits) to be approved by the Biology Department. This course is required because both the Major Concentration and the Minor include CHEM 212 Introductory Organic Chemistry 1.
MAJOR CONCENTRATION IN BIOLOGY WITH A MINOR IN PHYSICS FOR TEACHERS (69 or 70 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION", under "Biology (Biol)", in section 5.12.3 or the 37 credits of the "MAJOR CONCENTRATION IN BIOLOGY - ORGANISMSAL OPTION", under "Biology (Biol)", in section 5.12.3, and the 18 credits of the "MINOR IN PHYSICS", under "Physics (PHYS)", in section 11.12.26, as well as the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus

MAJOR CONCENTRATION IN CHEMISTRY WITH A MINOR IN BIOLOGY FOR TEACHERS (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN CHEMISTRY", under "Chemistry (CHEM)", in section 5.12.5, the 24 credits of the "MINOR IN BIOLOGY", under "Biology (BIOL)", in section 11.12.5 and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3

MAJOR CONCENTRATION IN CHEMISTRY WITH A MINOR IN PHYSICS FOR TEACHERS (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN CHEMISTRY", under "Chemistry (CHEM)", in section 5.12.5, the 18 credits of the "MINOR IN PHYSICS", under "Physics (PHYS)", in section 11.12.26, and the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus

MAJOR CONCENTRATION IN PHYSICS WITH A MINOR IN BIOLOGY FOR TEACHERS (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN PHYSICS", under "Physics (PHYS)", in section 5.12.10, the 24 credits of the "MINOR IN BIOLOGY", under "Biology (BIOL)", in section 11.12.5, and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1

plus 3 credits, one additional Physics course approved by the Physics Department.

MAJOR CONCENTRATION IN PHYSICS WITH A MINOR IN CHEMISTRY FOR TEACHERS (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN PHYSICS", under "Physics (PHYS)", in section 5.12.10, the 18 credits of the "MINOR IN CHEMISTRY", under "Chemistry (CHEM)", in section 11.12.7 and the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL 210 (3) Perspectives of Science
CHEM 381 (3) Inorganic Chemistry 2
MATH 203 (3) Principles of Statistics 1

plus 3 credits, one additional Physics course approved by the Physics Department.

MAJOR IN MATHEMATICS FOR TEACHERS (54 credits)

This program includes the 54 credits of the "MAJOR IN MATHEMATICS", under "Mathematics and Statistics (MATH)", in section 11.12.18. Students taking the Major in Mathematics as part of the Concurrent Program are required to include the following courses as part of the Major.

COMP 202* (3) Introduction to Computing 1
MATH 324 (3) Statistics
MATH 338 (3) History and Philosophy of Mathematics
MATH 348 (3) Topics in Geometry
* or equivalent

MAJOR CONCENTRATION IN BIOLOGY WITH A MINOR IN CHEMISTRY (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN BIOLOGY", under "Biology (BIOL)", in section 11.12.5, the 18 credits of the "MINOR IN CHEMISTRY", under "Chemistry (CHEM)", in section 11.12.7 and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus

MAJOR CONCENTRATION IN CHEMISTRY WITH A MINOR IN BIOLOGY (69 credits)

This program includes the 36 credits of the "MAJOR CONCENTRATION IN CHEMISTRY", under "Chemistry (CHEM)", in section 5.12.5, the 18 credits of the "MINOR IN BIOLOGY", under "Biology (BIOL)", in section 11.12.5, and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL 210 (3) Perspectives of Science
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus

MAJOR IN TECHNOLOGICAL ENTREPRENEURSHIP FOR SCIENCE STUDENTS (18 credits)

Science students who wish to become entrepreneurs or to enter small to medium-sized companies in the high technology sector will find within this Minor a set of six (6) courses that cover relevant management concepts and skills.

Also available to Science students is the Minor in Management, under "Kinesiology for Science Students", in section 11.12.16.

Acceptance to the program is both competitive and restricted. Application procedures will be announced in September. Please consult Ron Critchley, Student Adviser, Desautels Faculty of Management Student Affairs Office, Bronfman 110, for details.

Students registered in the Minor in Technological Entrepreneurship for Science Students may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor, all courses must be completed with a grade of C or better.

Please note: the courses must be taken sequentially over five terms, as follows: ACCT 210, MRKT 360 and either MGCR 320 or ORGB 321, BUSA 465, MGPO 562, BUSA 466.

MINOR IN TECHNOLOGICAL ENTREPRENEURSHIP FOR SCIENCE STUDENTS (18 credits)

Required Courses (15 credits)
ACCT 210 (3) Accounting for Managers
MRKT 360 (3) Marketing of Technology
BUSA 465 (3) Technological Entrepreneurship
MGPO 562 (3) Seminar in Organizational Strategy
BUSA 466 (3) Technological Entrepreneurship Project

Complementary Courses (3 credits)
one of the following courses:
MGCR 320 (3) Managing Human Resources
ORGB 321 (3) Leadership

11.12.32 Technological Entrepreneurship for Science Students
12 Faculty of Agricultural and Environmental Sciences, including School of Dietetics and Human Nutrition

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12.1 The Faculty

Mission statement: The Faculty of Agricultural and Environmental Sciences is committed to excellence in teaching, research and service to ensure that humanity’s present and future food, health and natural resource needs are met while protecting the environment.

12.1.1 Location

McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: (514) 398-7928
Website: www.mcgill.ca/macdonald

The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition are located on the Macdonald Campus of McGill University in Sainte-Anne-de-Bellevue at the western end of the Island of Montreal.

Served by public transport (STM, bus and train), it is easily reached from the McGill downtown campus and from Dorval (Pierre Elliott Trudeau) International Airport. A McGill intercampus shuttle bus service is also available.
12.1.2 Administrative Officers

Chandra Madramootoo; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.), P.Eng.(James McGill Professor) - Dean, Faculty of Agricultural and Environmental Sciences, and Associate Vice-Principal (Macdonald Campus)

William H. Hendershot; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(U.B.C.) - Associate Dean (Academic)

TBA - Associate Dean (Community Relations)

Suha Jabaji-Hare; B.Sc.(AUB), M.Sc.(Guelph), Ph.D.(Wat.) - Associate Dean (Research)

David J. Lewis; B.Sc., M.Sc., Ph.D.(Mem.) - Associate Dean (Student Affairs)

Suzanne Higgins; B.A.(McG.) - Associate Director, Admissions and Student Affairs

Gary O’Connell; B.Comm.(C’dia) - Director, Academic and Administrative Services

William R. Ellyett; B.A.(Sir G. Wms.), B.Ed.(Phys.Ed.)(McG.) - Director of Athletics

Philip Lavoie; Dip.Agr., B.Sc.(Agr.)(McG.) - Manager, Macdonald Campus Farm

Ginette Legault - Manager, Campus Housing

Peter D.L. Knox; B.Sc.(Agr.)(McG.) - Supervisor, Property Maintenance

12.1.3 Programs

The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition offer degrees in Bachelor of Science in Agricultural and Environmental Sciences, Bachelor of Engineering in Bioresource Engineering, Bachelor of Science in Food Science, Bachelor of Science in Nutritional Sciences, Certificate in Ecological Agriculture, Certificate in Entrepreneurship, Diploma in the Environment, and Diploma of Collegial Studies in Farm Management and Technology.

The Faculty of Agricultural and Environmental Sciences is one of the three faculties in partnership with the McGill School of Environment.

Several programs offered by the Faculty and School lead toward professional accreditation. These include Dietetics (membership in the Ordre des diététistes du Québec); Agricultural Economics, Agricultural Sciences, Agricultural Sciences Internship, Animal Science and Plant Science (membership in the Ordre des agronomes du Québec and other provincial Institutes of Agriculture); Bioresource Engineering (membership as a professional Engineer in any province of Canada plus the Ordre des agronomes du Québec); Food Science (Ordre des chimistes du Québec); Professional Practice experience to complete the dietetics practicum are provided in the McGill teaching hospitals and in a wide variety of health, education, business, government and community agencies.

The Faculty also offers M.Sc. and Ph.D. programs in the areas of Agricultural Sciences, Biological Sciences, Bioresource Engineering, Biotechnology, Environmental Sciences, Food Science, and Nutritional Sciences. M.Sc.(A) programs are offered in some disciplines. In addition, a Graduate Certificate in Biotechnology and a Graduate Diploma in Dietitian Credentialing are offered.

12.1.3.1 Internship Opportunities and Co-op Experience

All students in agricultural programs have the opportunity to participate in a summer-long internship on a farm or related agricultural enterprise. Students who register in the Agricultural Sciences Internship Program benefit from two summers of internship experience, one on a farm and the other in industry, in research, or with an accredited agrologist.

Most undergraduate programs offered in the Faculty include the opportunity for a Co-op work experience. Internships and Co-op experience both involve a work placement of a minimum 12 weeks’ duration where the student is exposed to the main areas of operation of the employer. Each work placement is unique, and the student benefits from a program developed by both the employer and the instructor exclusively for that student.

Students who register for a Co-op experience benefit from practical learning arising from work-term employment in a meaningful job situation. Students also benefit from the non-tangible learning experience arising from the increased responsibilities required to obtain and successfully complete the work term. Students have the opportunity to pursue a 6 credit internship within the Barbados and Panama Field Studies semesters. For details, see www.mcgill.ca/mse -> Programs

12.1.3.2 Exchange Programs

The Faculty of Agricultural and Environmental Sciences participates in all university-wide student exchange programs available at McGill and also has faculty-specific exchange programs. For more information, please see section 14.4 “Exchange Programs”.

12.1.4 Macdonald Campus Facilities

Morgan Arboretum

The Morgan Arboretum has 245 hectares of managed and natural woodlands, fields and tree plantations used for environmental research and teaching in a wide range of courses. Groups of most Canadian native trees and many useful and important exotics are also present. The Arboretum features self-guided interpretation trails, 20 kilometres of wooded trails, a variety of forest ecosystems, conservation projects, and forest operations such as plantation management, timber harvesting and maple syrup production. A nature interpretation program is also offered.

Macdonald Campus Library

Located in the Barton Building, the Macdonald Campus Library’s collection encompasses a wide variety of resources in agriculture, food and animal science, nutrition, entrepreneurship, the environment, ecology, plant science, and biotechnology. The library is a depository for many print and electronic government publications. All computers provide access to the on-line catalogue (MUSE), databases, electronic journals and resources, as well as the Internet. In the electronic classroom, students can do research, write papers, and save documents. The library is a wireless zone allowing students to use laptops that have wireless network interface cards. There are designated areas in the library that allow laptops to connect to the McGill server and Internet via VPN (Virtual Private Network). Students can request articles or books through the interlibrary loan service; the forms are available on-line. Reference service is available to assist users in obtaining necessary print or electronic resources, and a comprehensive library instruction service is provided throughout the year. For further information about Macdonald Campus Library visit the Website at www.mcgill.ca/macdonald-library or feel free to drop by.

Macdonald Campus Computing Centre

The Macdonald Campus Computing Centre is responsible for a multi-platform network of Novell and Windows servers. Housed in the Macdonald-Stewart Building complex are 3 undergraduate labs open 24/7, 15 public e-mail stations around campus and a first-level help desk during regular work hours. Apart from supporting the staff and student servers, the centre is also the gateway to the many services offered from the downtown campus such as e-mail, WWW, and library services.

Lyman Entomological Museum and Research Laboratory

Originally established in 1914 and formerly housed in the Redpath Museum, the Lyman Entomological Museum was moved to the Macdonald Campus in 1961. It houses the largest university collection of insects in Canada, second in size only to the National Collection. The Museum also has an active graduate research program in association with the Department of Natural Resource Sciences. Study facilities are available, on request from the Curator,
to all bona fide students of entomology. Visits by other interested parties can be arranged by calling (514) 398-7914. More information is available at www.agrenv.mcgill.ca/facility/lyman.htm.

Brace Centre for Water Resources Management
The Brace Centre for Water Resources Management is located on the Macdonald Campus. It is a multidisciplinary and advanced research and training centre of McGill University, dedicated to solving problems of water management for all human and environmental uses. It brings together staff from several McGill faculties to undertake research, teaching, specialized training, and policy and strategic studies, both in Canada and internationally. The Centre draws on the wide range of facilities available within the University. More information is available at www.mcgill.ca/brace.

12.1.5 The Student Affairs Office
The Student Affairs Office, located in Laird Hall Room 106, provides a wide variety of academic services. These include information about admission (prerequisites and program requirements), academic standing, examinations (deferrals, conflicts, rereads), exchange programs, inter-faculty and intra-faculty transfers, registration (course change, withdrawals), scholarships (entrance and in-course), second degrees, second majors, minors, session away, and graduation (convocation). www.mcgill.ca/macdonald/studentaffairs.

12.2 Summary of Academic Programs

12.2.1 Outline of Academic Programs

Programs leading to three degrees are offered on the Macdonald Campus, with Majors associated with each degree. In addition, Certificates are offered in Ecological Agriculture and in Entrepreneurship.

12.2.1.1 Major Programs

BACHELOR OF SCIENCE IN AGRICULTURAL AND ENVIRONMENTAL SCIENCES - B.S.C.(AG.ENV.SC.)

Graduates of programs marked with an asterisk * are eligible for membership in the Ordre des agronomes du Québec and other provincial institutes of agriculture.

Agricultural Economics*:
  Agribusiness Option, page 372
  Agricultural Systems Option, page 372
  Natural Resource Economics Option, page 372

Agricultural Sciences*:
  General Option, page 384
  Agricultural Biotechnology Option, page 385
  Ecological Agriculture Option, page 385
  International Agriculture Option, page 386
  Soils Option, page 386
  Agricultural Sciences Internship*:
    General Option, page 385
    Agricultural Biotechnology Option, page 385
    Ecological Agriculture Option, page 386
    International Agriculture Option, page 386
    Soils Science Option, page 387
  Animal Biology, page 374
  Animal Science*, page 373
  Applied Zoology, page 379
  Botanical Science:
    Ecology Option, page 382
    Molecular Option, page 382
  Environmental Biology, page 380
  Environment, under McGill School of Environment:
    Biodiversity and Conservation Domain, page 401
    Ecological Determinants of Health Domain, page 402
    Environmetrics Domain, page 404
  Food Production and Environment Domain, page 405
  Land Surface Processes and Environmental Change Domain, page 406
  Renewable Resource Management Domain, page 407
  Water Environments and Ecosystems Domain, page 408
  Microbiology:
    Biotechnology Option, page 380
    Ecology Option, page 380
    Environment Option, page 381
  Plant Science*, page 382
  Resource Conservation, page 381
  Wildlife Biology, page 381

BACHELOR OF ENGINEERING IN BIORESOURCE ENGINEERING - B.ENG.(BIORESOURCE)

This normally leads to professional qualification in any provincial professional engineering order plus the Ordre des agronomes du Québec.

Bioresource Engineering:
  BioEnvironmental Engineering Stream, page 374
  Soil and Water Engineering Stream, page 374
  Food and Bioprocess Engineering Stream, page 374

BACHELOR OF SCIENCE IN FOOD SCIENCE - B.SC.(F.SC.)

  Food Science:
    Food Chemistry, page 378
    Food Industry, page 378
    Food Science, page 378

BACHELOR OF SCIENCE IN NUTRITIONAL SCIENCES - B.SC.(NUTR.SC.)

  Two Majors are offered by the School of Dietetics and Human Nutrition.
  Dietetics, page 376
  Nutrition:
    Nutritional Biochemistry, page 377
    Global Nutrition, page 377
    Food Function and Safety, page 377
    Sports Nutrition, page 377

12.2.1.2 Minor Programs

Agricultural Economics, page 372
Agricultural Production, page 383
Ecological Agriculture, page 383
Entrepreneurship, page 373
"Minor in Environment", under McGill School of Environment, page 395
Environmental Engineering, page 375
Human Nutrition, page 377

12.2.1.3 Certificate Programs

  Ecological Agriculture, page 384
  Entrepreneurship, page 373
  Food Science, page 379

12.2.1.4 Diploma Program

  Diploma in Environment, under McGill School of Environment, page 412

12.2.1.5 Diploma in Collegial Studies

  Farm Management and Technology, page 387

12.2.2 Environmental Sciences Programs

McGill School of Environment (MSE)

The MSE is a joint initiative of the Faculty of Agricultural and Environmental Sciences, the Faculty of Arts, and the Faculty of Science. It offers a B.Sc.(Ag.Env.Sc.) Major in Environment, B.Sc.
Major in Environment, a B.A. Faculty Program in Environment, a Minor in Environment and a Diploma in Environment. Many of the MSE programs allow students to choose to study exclusively on the Macdonald or downtown campuses, or to take advantage of both.

A list of the B.Sc.(Ag.Env.Sc.) Domains is given under section 12.2.1.1 “Major Programs”. Further information on all programs is given under the McGill School of Environment.

Other Environmental Programs at Macdonald Campus

A number of other integrated environmental science programs are also offered on the Macdonald Campus. The objective of these interdepartmental programs is to provide the student with a well-rounded training in a specific interdisciplinary subject as well as the basis for managing the natural resource. The programs include:

- Agricultural Economics Major, Natural Resource Economics Option
- Agricultural Science Major, Ecological Agriculture Option
- Agricultural Sciences Internship Major, Ecological Agriculture Option
- Applied Zoology Major
- Bioresource Engineering Major, BioEnvironmental Engineering Option
- Bioresource Engineering Major, Soil & Water Engineering Option
- Botanical Science Major, Ecology Option
- Environmental Biology Major
- Microbiology Major, Ecology Option
- Microbiology Major, Environment Option
- Resource Conservation Major
- “Wildlife Biology Major”

12.3 Faculty Admission Requirements

For information about the admission requirements for this faculty please refer to "2006-07 Undergraduate Admissions Guide (Appendix A)". For information about inter-faculty transfers, see section 3.3.12 “Inter-Faculty Transfer”.

Applications are submitted directly online at www.mcgill.ca/applying. Please note that the same application is used for all undergraduate programs at McGill and two program choices can be entered. For further information contact:

Student Affairs Office
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, Quebec H9X 3V9
Telephone: (514) 398-7928
E-mail: studentinfo.macdonald@mcgill.ca
Website: www.mcgill.ca/macdonald/studentaffairs

More specific information on application deadlines and admission requirements can be found on the Web or in the “2006-07 Undergraduate Admissions Guide (Appendix A)”.

12.4 Student Information

12.4.1 Student Services
Students who study on the Macdonald Campus may make full use of all McGill "Student Services", see section 3.12. The Office of the Dean of Students offers students direct access to several services, see "Student Services – Macdonald Campus", section 3.12.3.


12.4.2 Athletic Services

All students who have paid Student Services fees are also eligible to use any Athletic facility without additional expense. For further information please visit the Website www.agrenv.mcgill.ca/society/athletic or telephone the Stewart Athletic Complex at (514) 398-7789.

12.4.3 Macdonald Campus Residences

Students may apply for residence in either of two distinctive facilities:

- Laird Hall, with a capacity of 253 students, is arranged on a co-educational basis and provides single and double room accommodation for both undergraduate and graduate students.
- The EcoResidence, Canada’s first ecologically friendly student residence and winner of the Prix d’excellence from the Ordre des architectes du Québec, accommodates 100 students in apartment-style living.

For further information, please refer to “Residence Fees – Macdonald Campus”, section 3.13.2.1, or the Faculty Website, www.mcgill.ca/macdonald-residences, or e-mail residences.macdonald@mcgill.ca.

12.4.4 Extracurricular Activities

All undergraduate, postgraduate, and Farm Management and Technology students are members of the Macdonald Campus Students' Society. The MCSS, through the 19-member Students' Council, is involved in numerous campus activities such as social events, academic affairs, and the coordination of clubs and organizations. Student life is informal and friendly and student groups range from the Outdoor Adventure Club to the Photography Society. Major social events include Orientation activities, Halloween Party and Winter Carnival. The Ceilidh, a student-run bar located in the Centennial Centre, is open every Thursday night.

The Centennial Centre is the centre of student life, offering facilities for student activities, such as meeting rooms, a Yearbook room, pool tables, great places to relax, listen to music and meet friends. Also located in the Centre are the Students' Council offices, an information desk, the Robber's Roost Campus Bookstore and cafeteria.

12.4.5 Student Rights and Responsibilities

The Handbook of Student Rights and Responsibilities is published jointly by the Office of the Dean of Students and the University Secretariat. A copy of the Handbook can be found on the Web at www.mcgill.ca/secretariat/documents or obtained from the Student Affairs Office or the Macdonald Campus Student Services Office.

12.4.6 Fees

The University reserves the right to make changes without notice in its published scale of tuition, residence and other fees.

Payment of student fees can be made directly on Minerva through internet banking or pre-authorized debit charges. The first fee statement is sent by regular mail followed by e-billing viewable on Minerva which students are notified of at their McGill e-mail address.

The University shall have no obligation to issue any transcript of record, award any diploma or re-register a student in case of non-payment of tuition fees, library fines, residence fees, or loans on their due date.

Tuition Fees
General information on Tuition and other fees is found under “Fees”, section 3.5.
Other Expenses
In addition to tuition fees and the cost of accommodation and meals, students should be prepared to spend a minimum of $1,000 (dependent on program) on prescribed textbooks and classroom supplies. These may be purchased at the Campus Bookstore in the Centennial Centre.

Uniforms are required for food laboratories. Students in the B.Sc.(Nutr.Sc.) program will be advised of the uniform requirements on acceptance or promotion.

12.4.7 Scholarships and Bursaries
Various entrance and in-course scholarships and bursaries are available. For full details see www.mcgill.ca/scholarships.

12.4.8 Immunization for Dietetics Majors
Students in the Dietetics Major are required to complete the Compulsory Immunization Program for Health Care Students prior to registration. Participation in Professional Practice (Stage) in Dietetics will only be permitted for those students who have completed all immunization requirements.

12.4.9 Language Requirement for Professions
Quebec law requires that candidates seeking admission to provincially recognized Quebec professional corporations or orders possess a working knowledge of the French language, i.e., be able to communicate verbally and in writing in that language. Agrologists, chemists, dietitians, and engineers are among those within this group.

For additional information, see section 3.11.1 “Language Requirements for Professions”.

12.5 Faculty Information and Regulations
Each student in the Faculty of Agricultural and Environmental Sciences must be aware of the Faculty Regulations as stated in this Calendar. While departmental and faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration, for compliance with, and completion of program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student’s responsibility to seek guidance if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

12.5.1 Minimum Credit Requirement
Students must complete the minimum credit requirement for the degree as specified in the letter of admission.

Students are normally admitted to a four-year program requiring the completion of 120 credits, but advanced standing of up to 30 credits may be granted to students who obtain satisfactory results in the Diploma of Collegial Studies, International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests.

Normally, Quebec students who have completed the Diplôme d'études collégiales (DEC) or equivalent diploma are admitted to the first year of a program requiring the completion of a minimum of 90 credits, 96 credits for Agricultural Sciences Major Internship Options, 111 credits for Bioresource Engineering, or 115 credits for Dietetics.

Students from outside Quebec who are admitted on the basis of a high school diploma enter the Freshman Major (see “Freshman Major”, section 12.5.3).

Students will not receive credit towards their degree for any course that overlaps in content with a course successfully completed at McGill, at another university, at CEGEP, or Advanced Placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate.

Students entering university for the first time from a high school system (outside of Quebec CEGEP system) will be required to complete the 30 credits listed below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEBI 120 General Biology</td>
<td>3.0</td>
</tr>
<tr>
<td>AEMA 101 Calculus 1</td>
<td>3.0</td>
</tr>
<tr>
<td>AEPH 112 Introductory Physics 1</td>
<td>4.0</td>
</tr>
<tr>
<td>AGRI 195* Freshman Seminar 1</td>
<td>0.5</td>
</tr>
<tr>
<td>FDSC 230 Organic Chemistry</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Total Credits 30.0

* AGRI 195 and AGRI 196 are required for all freshmen, excluding Bioresource Engineering and optional for Dietetics and Nutritional students who may substitute an elective.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Freshman students in the B.Sc.(Ag.Env.Sc.) degree will automatically be moved to the default major, Agricultural Sciences-General Option, upon completion of their freshman year. Students must provide a program change form if this is not the major of their choice.

12.5.4 Academic Advisers
Before registration, all students entering the Faculty must consult with the Academic Adviser of their program for selection and scheduling of required, complementary, and elective courses. The Academic Adviser will normally continue to act in this capacity for the duration of the student’s studies in the Faculty.

12.5.5 Categories of Students
Full-Time Students
Full-time students in satisfactory standing take a minimum of 12 credits per term.

Full-time students in probationary standing are not normally permitted to take more than 14 credits per term. In exceptional circumstances the Committee on Academic Standing may give permission to attempt more.

Part-time Students
Part-time students carry fewer than 12 credits per term.
12.5.6 Academic Standing

All students are required to give satisfactory evidence of mastery of the material of lectures and laboratories. Examinations are normally held at the end of each course but other methods of evaluation may also be used. The grade assigned for a course represents the standing of the student in all the work of the course.

The following rules apply to the academic standing of a student:

1. When a student's CGPA (or TGPA in the first term of the program) falls below 2.00, the student's academic standing becomes Probationary.

2. Students in Probationary standing may register for no more than 14 credits per term.

3. While in Probationary standing, students must achieve a TGPA of 2.50 to continue in Probationary standing or a CGPA of 2.00 in order to return to Satisfactory standing. Failure to meet at least one of these conditions will result in Unsatisfactory standing. (In the case of Fall term, this will be Interim Unsatisfactory standing and the rules for Probationary standing will apply.)

4. When a student's CGPA (or TGPA in the first term of the program) falls below 1.50, the student's academic standing becomes Unsatisfactory and withdrawal is required. (In the case of Fall term, the standing will be Interim Unsatisfactory standing and the rules for Probationary standing will apply.)

5. Students in Unsatisfactory standing may not continue in their program. Application for readmission may be made only after registration has been interrupted for at least one term (not including Summer term).

6. Readmission will be in the standing Unsatisfactory/Readmit and a CGPA of 2.00 must be achieved to return to Satisfactory standing or a TGPA of 2.50 must be achieved for Probationary standing. Failure to meet at least one of these conditions will result in requirement for permanent withdrawal.

Committee on Academic Standing

The Faculty's Committee on Academic Standing, consisting of academic staff, administrative staff and a student representative, reviews special requests made by students regarding their academic life.

12.5.7 Credit System

The credit assigned to a particular course reflects the amount of effort it demands of the student. As a guideline, a three-credit course would represent approximately 45 hours total work per course. This is, in general, a combination of lecture hours and other contact hours such as laboratory periods, tutorials and problem periods as well as personal study hours. Please refer to "Credit System", section 3.6.2.

12.5.7.1 Continuing Education Courses

Not all Continuing Education credit courses are recognized for credit within faculty degree programs. Please communicate with the Student Affairs Office before registering for such courses.

12.5.8 Academic Credit Transfer

Transfer credits based on courses taken at other institutions (completed with a grade of C or better) before entrance to this Faculty are calculated and assigned after an accepted applicant has confirmed that s/he is accepting the offer of admission.

Transfer credits may also be granted for courses taken at other institutions (completed with a grade of C or better) during a student's attendance at McGill University. Permission to apply such credits to a program in this faculty must be secured by the student before the work is undertaken. Prior Approval Forms are available in the Student Affairs Office in the Faculty. Grades obtained in such courses do not enter into calculations of grade point averages (GPA).

Exemption from a required or complementary course on the basis of work completed at another institution must be approved by both the instructor of the appropriate McGill course and the Academic Adviser.

Full-time degree students may register, with approval of the Student Affairs Office, for course(s) at any university in the province of Quebec. These courses successfully completed with a minimum grade of C (according to the standards of the university giving the course), will be recognized for the purpose of the degree but the grades obtained will not enter into calculations of GPA. For further details, see section 3.3.5 "Quebec Inter-University Transfer Agreement (IUT)" or go to www.crepuq.qc.ca to access the online application.

12.5.9 Regulations Regarding Second Academic Majors

While registered in a Major in the Faculty of Agricultural and Environmental Sciences, a student may pursue a second set of courses of greater scope than a Minor (e.g., Faculty Program, Major, Honours Program, Major Concentration) in either this Faculty or another faculty. Application for a Second Academic Major shall be made to the Associate Dean (Student Affairs) in the Student Affairs Office, Laird Hall, Room 106. Following are the regulations and procedures for Second Academic Majors:

1. The applicant for a Second Academic Major must be in Satisfactory academic standing with a minimum CGPA of 3.00.

2. The applicant, in consultation with the appropriate authority associated with each Major (Academic Adviser, Associate Dean) must construct a proposal showing all the courses that are to be taken to satisfy the entrance and program requirements of both the First and Second Academic Majors.

3. A minimum of 36 credits must be unique to the Second Major (i.e., not part of the Required or Complementary courses taken for the First Major).

4. Students in the Faculty of Agricultural and Environmental Sciences must obtain prior approval for all proposed Second Academic Majors from their Academic Adviser and the Student Affairs Office and from the Associate Dean, adviser or appropriate committee of the other faculty concerned.

5. Normally, proposals for Second Academic Majors will be initiated before completion of U1 year of the First Academic Major.

6. The academic standards applicable to each Major will be respected.

12.5.10 Course Change Information

1. Courses: please refer to "Course Change Period", section 3.3.7 and the Calendar of Dates.

2. Course withdrawal (Transcript notation of "W"): please refer to "Regulations Concerning Course Withdrawal", section 3.3.8 and the Calendar of Dates.

3. Other changes: Information about changes may be obtained from the Student Affairs Office of the Faculty.

12.5.11 Graduate Courses Available to Undergraduates

Undergraduates wishing to take such courses must have a cumulative grade point average (CGPA) of at least 3.20. Final approval must be obtained from the Graduate and Postdoctoral Studies Office.

12.5.12 Attendance and Conduct in Class

Matters of discipline connected with, or arising from, the general arrangement for teaching are under the jurisdiction of the Dean of the Faculty.

Students may be admonished by a professor or instructor for dishonest or improper conduct or may be reported to the Associate Dean (Student Affairs) for disciplinary action.

Punctual attendance at all classes, laboratory periods, tests, etc., is expected of all students.
12.5.13 Incomplete Grades

An instructor who believes that there is justification for a student to delay submitting term work may extend the deadline until after the end of the course. In this case, the instructor will submit a grade of K (incomplete), indicating the date by which the work is to be completed. The maximum extensions for the submission of grades to the Student Affairs Office are as follows:

- Students graduating in June:
  - Fall courses: January 15
  - Winter courses, and courses spanning Fall/Winter: April 30
- Non-graduating students:
  - Fall courses: January 15
  - Winter courses, and courses spanning Fall/Winter: May 15

Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time. It is important to note that instructors may impose earlier deadlines than those listed above.

If marks to clear Ks have not been submitted to the Student Affairs Office by the above dates, the K is automatically changed to a KF and counts as an F in the GPA.

Students with a grade of K who have serious extenuating circumstances may request an extension of the K deadline (KE) from the Associate Dean (Student Affairs). Please refer to "Grading and Grade Point Averages (GPA)" section 3.6.3 for more information about grading and credit.

12.5.14 Examinations

Students should refer to "Examinations", section 3.7 for information about final examinations and deferred examinations. Examination schedules are posted on the McGill website, www.mcgill.ca, normally one month after the start of classes for the Tentative Exam Schedule, and two months after the start of classes for the Final Exam Schedule.

Every student has a right to write essays, examinations and theses in English or in French except in courses where knowledge of a language is one of the objects of the course.

Oral presentations made as part of course requirements shall be in English.

12.5.14.1 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark as well as the right to discuss this submission with the examiner.

If, after discussion with the instructor, students request a formal final examination reread, they must apply in writing to the Associate Dean (Student Affairs). The following conditions apply:

- grades may be either raised or lowered as the result of a reread;
- rereads in courses outside the Faculty of Agricultural and Environmental Sciences are subject to the deadlines, rules and regulations of the relevant faculty.

Application for rereads must be made by March 31 for Fall term courses and by September 30 for Winter term and Summer term courses. Students are assessed a fee for formal rereads. Any request to have term work re-evaluated must be made directly to the instructor concerned. Students should consult the Student Affairs Office for further information.

12.5.14.2 Deferred Examinations

The Faculty offers deferred exams for medical reasons and exceptional circumstances (to be approved by the Associate Dean (Student Affairs)) for the Fall and Winter period. Verify date in Calendar of Dates and consult the Student Affairs Office for procedures.

12.5.15 Degree Requirements

To be eligible for a B.Eng.(Bioresource), B.Sc.(Ag.Env.Sc.), B.Sc.(F.Sc.), or B.Sc.(Nutr.Sc.) degree, students must have passed, or achieved exemption, with a minimum C grade in all required and complementary courses of the program. They must have a CGPA of at least 2.00.

Students must have completed all Faculty and program requirements, "Minimum Credit Requirement", section 12.5.1.

A student must complete a minimum residency requirement of 60 credits at McGill in order to qualify for a McGill degree. Students in the B.Sc.(Ag.Env.Sc.) must take a minimum if 2/3 of their course credits within the Faculty of Agricultural and Environmental Sciences.

In addition, students in the Dietetics program must have completed the Stages of professional formation requiring a CGPA of 2.5.

12.5.16 Distinction or Great Distinction

Students in Major programs whose academic performance is appropriate may be awarded their degrees with Distinction or Great Distinction under the following conditions:

- for Distinction, the CGPA at graduation must be 3.30 to 3.49;
- for Great Distinction, the CGPA at graduation must be 3.50 or greater.

12.5.17 Dean’s Honour List

The designation Dean’s Honour List may be awarded to graduating students under the following conditions:

- students must be in the top 10% of the Faculty’s graduating students.

12.5.18 Medals and Prizes

Various medals, scholarships and prizes are open to graduating students. No application is required. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available in the Student Affairs Office, Laird Hall, Room 106.

12.6 Academic Programs

12.6.1 Department of Agricultural Economics

Macdonald Stewart Building – Room MS-3040
Telephone: (514) 398-7820
Fax: (514) 398-8130
Website: www.agrecon.mcgill.ca

Chair — John C. Henning
Assistant Professor — Anwar Naseem
Associate Professors — Laurence Baker, John C. Henning, Paul Thomasson

AGRICULTURAL ECONOMICS MAJOR

Increasingly complex economic problems facing the agriculture and food system and our natural environment have intensified the need for specialized knowledge and training in the field of agricultural economics. The curriculum is designed to provide students with the knowledge, analytical and decision-making skills required in a career in agribusiness, resource management, international development, and research. The selection of courses from the agribusiness, agricultural system or natural resource economics options permits a degree of specialization along those lines, in conjunction with the core courses listed below.

Graduates are eligible to apply for membership in the Ordre des agronomes du Québec (OAQ) if they fulfill the agronomic course requirements (consult the academic adviser).

Core Required Courses: 39 credits
Core Complementary Courses: 12 credits

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE 200 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>AGE 201 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>AGE 230 Agricultural and Food Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>
FACULTY OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

AGEC 231 Economic Systems of Agriculture 3
AGEC 242 Management Theories and Practices 3
AGEC 320 Economics of Agricultural Production 3
AGEC 333 Resource Economics 3
AGEC 343 Accounting and Cost Control 3
AGEC 425 Agricultural Econometrics 3
AGEC 430 Agriculture, Food and Resource Policy 3
AGEC 440 Advanced Agriculture and Food Marketing 3
AGEC 442 Economics of International Agricultural Development 3
AGEC 491 Research Seminar in Agricultural Economics 3

Complementary Courses: 12
One course in introductory statistics (approved by adviser) 3
plus 9 credits chosen from the following list 9
BREE 300 (3) Elements of Agricultural Engineering
ANSC 250 (3) Principles of Animal Science
FDSC 200 (3) Introduction to Food Science
PLNT 211 (3) Principles of Plant Science
SOIL 210 (3) Principles of Soil Science

AGRIBUSINESS OPTION
Whether one has interests in agricultural supply, production, marketing, finance, food processing or retailing, professional management skills are the key to success. The agribusiness option prepares students for managerial responsibility by drawing on the resources of both the Desautels Faculty of Management and the Faculty of Agricultural and Environmental Sciences. This special partnership provides students with not only a first-class business training but also a specialization in the field of agriculture.

Core Required and Complementary Courses: 51 credits
Option Required and Complementary Courses: 21 credits
Electives: To meet the minimum credit requirement for the degree.

Option Required Courses:

AGEC 331 Farm Business Management 3
AGEC 350 Agricultural Finance 3
AGEC 450 Agriculture Business Management 3
AGEC 453 Venture Capital Opportunities 3

Option Complementary Courses: 9
9 credits chosen from the following list: 9
ACCT 311 (3) Financial Accounting 1
ACCT 313 (3) Management Accounting 1
AGEC 344 (3) Entrepreneurial Leadership
BUS 364 (3) Business Law 1
FIND 448 (3) Derivatives and Risk Management
MGCR 341 (5) Finance 1
MGCR 352 (5) Management Seminar
MRKT 451 (3) Marketing Research
NUTR 446 (3) Applied Human Resources

AGRICULTURAL SYSTEMS OPTION
The smooth functioning of the agriculture and food system requires good market analysis and appropriate policy and program development and management in the public sector. Agricultural economists are called upon to perform these tasks, utilizing their knowledge of the economic forces that affect the industry and the methods of analysis to predict the outcome of the numerous changes that occur. The agricultural systems orientation is intended to provide students with a broad understanding of the many dimensions of agriculture and food systems, including economic development, international agriculture, and food and agricultural policy.

Electives: To meet the minimum credit requirement for the degree.

NATURAL RESOURCE ECONOMICS OPTION
This option integrates biological sciences and environmental decision making with the economics of natural resource use and development. The natural resource economics option is intended to prepare students for careers in the management of natural resources and the analysis of natural resource problems and policies.

Core Required and Complementary Courses: 51 credits
Option Required and Complementary Courses: 32 credits
Electives: To meet the minimum credit requirement for the degree.

MINOR IN AGRICULTURAL ECONOMICS
A Minor in Agricultural Economics will complement a student’s education in four ways. First, as a social science, Economics will provide an alternative perspective for students in the Faculty. Second, the Minor will provide an excellent foundation of the workings of the economy at large. Third, it will aid students to understand the business environment surrounding the agri-food industry. Finally, it will challenge students to analyze the interaction between the agricultural economy and the natural resource base.

General Regulations:
To obtain a Minor in Agricultural Economics, students must:
a) Ensure that their academic record at the University includes a C grade or higher in the courses specified in the course requirements below.
b) Complete a minimum total of 24 credits from the courses given below, of which not more than 6 credits may be counted for both Major and Minor programs. This restriction does not apply to elective courses in the Major program.
To obtain a Minor in Entrepreneurship, students must:

a) Ensure that their academic record at the University includes a C grade or higher in the courses as specified in the course requirements listed below.

b) Complete the 24 credits listed below, of which not more than 6 credits may be counted for both the Major and the Minor programs.

**Required Courses: 27 credits**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AGEC 200 Principles of Microeconomics</td>
<td>3</td>
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<tr>
<td>AGEC 230 Agricultural and Food Marketing</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 242 Management Theories and Practices</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 244 Economics of International Development</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 450 Agriculture Business Management</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 491 Special Topics in Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 492 Applied Human Resources</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses:**

- 3 credits of one of the following courses:
  - ENVR 201 Society and Environment
  - ENVR 203 Knowledge, Ethics and Environment
  - RELG 270 Religious Ethics and the Environment

**MINOR IN ENTREPRENEURSHIP**

Academic Adviser: Robert Oxley

The Minor is concerned with the genesis and development of entrepreneurial activities. It deals with marketing, finance, organization, and policy in the development and expansion of small businesses in the agri-food and environment sectors. The Certificate will be of interest to students who already hold a bachelor’s degree and wish to develop the skills and perspectives necessary to be successful in an entrepreneurial environment, whether it be self-employed in a start-up business or within an established corporation that employs entrepreneurial management strategies.

Students holding a B.Sc. in agriculture or a related area are eligible to register for this program provided that they are otherwise acceptable for admission to the Faculty. Students who have completed the Minor in Entrepreneurship are not permitted to register for this program.

**General Regulations**

To obtain a Certificate in Entrepreneurship, students must complete a minimum of 30 credits from the courses as given below.

**Required Courses: 27 credits**

**Complementary Course:** 3 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AGEC 200 Principles of Microeconomics</td>
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<td>3</td>
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<tr>
<td>AGEC 343 Accounting and Cost Control</td>
<td>3</td>
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<tr>
<td>AGEC 450 Agriculture Business Management</td>
<td>3</td>
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<tr>
<td>AGEC 453 Venture Capital Opportunities</td>
<td>3</td>
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<tr>
<td>AGEC 492 Special Topics in Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 446 Applied Human Resources</td>
<td>3</td>
</tr>
</tbody>
</table>

**Certificate in Entrepreneurship**

Academic Adviser: Robert Oxley

This 30-credit Certificate Program is very similar to the Minor Program and is concerned with the genesis and development of entrepreneurial activities. It deals with marketing, finance, organization, and policy in the development and expansion of small businesses in the agri-food and environment sectors. The Certificate will be of interest to students who already hold a bachelor’s degree and wish to develop the skills and perspectives necessary to be successful in an entrepreneurial environment, whether it be self-employed in a start-up business or within an established corporation that employs entrepreneurial management strategies.

Students holding a B.Sc. in agriculture or a related area are eligible to register for this program provided that they are otherwise acceptable for admission to the Faculty. Students who have completed the Minor in Entrepreneurship are not permitted to register for this program.

**General Regulations**

To obtain a Certificate in Entrepreneurship, students must complete a minimum of 30 credits from the courses as given below.

**Required Courses: 27 credits**

**Complementary Course:** 3 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>AGEC 200 Principles of Microeconomics</td>
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<td>AGEC 492 Special Topics in Agricultural Economics</td>
<td>3</td>
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<tr>
<td>NUTR 446 Applied Human Resources</td>
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</tbody>
</table>

**Certificate in Entrepreneurship**

Academic Adviser: Robert Oxley

This 30-credit Certificate Program is very similar to the Minor Program and is concerned with the genesis and development of entre-
extension, teaching or postgraduate studies. Some students go on
to study veterinary medicine.

**Required Courses:** 63 credits

**Complementary Courses:** 6 credits

**Electives:** 21 credits to meet the minimum credit requirement for the
degree

### Required Courses:

- **AEMA 310** Statistical Methods 1 3
- **AGEC 200** Principles of Microeconomics 3
- **AGRI 341** Ecological Agriculture Systems 3
- **ANSC 250** Principles of Animal Science 3
- **ANSC 301** Principles of Animal Breeding 3
- **ANSC 312** Animal Health and Disease 3
- **ANSC 323** Mammalian Physiology 4
- **ANSC 324** Animal Reproduction 3
- **ANSC 330** Fundamentals of Nutrition 3
- **ANSC 433** Animal Nutrition 3
- **ANSC 450** Dairy Cattle Production 3
- **ANSC 452** Beef Cattle and Sheep Production 3
- **ANSC 454** Swine Production 3
- **ANSC 456** Poultry Production 3
- **ANSC 495** Seminar 1 1
- **ANSC 496** Seminar 2 1
- **BREE 322** Organic Waste Management 3
- **FDSC 211** Biochemistry 1 3
- **MICR 230** Introductory Microbiology 3
- **PLNT 211** Principles of Plant Science 3
- **SOIL 210** Principles of Soil Science 3
- **WILD 375** Issues: Environmental Sciences 3

### Complementary Courses:

- One Ethics course: 3
- **ENVR 203** (3) Knowledge, Ethics and Environment
- **RELG 270** (3) Religious Ethics and the Environment

One additional Economics course 3

### ANIMAL BIOLOGY MAJOR

**Academic Adviser:** H. Monardes

The Animal Biology Major is directed towards students who wish
to further their studies in the basic biology of the larger mammals
and birds. Successful completion of the program will enable students
to qualify in applying to most professional schools in North America,
to postgraduate schools in a variety of biological-oriented programs,
and to work in most laboratory settings. The program is
not intended for students wishing to become professional agro-
gists.

**Required Courses:** 34 credits

**Complementary Courses:** 24 credits, minimum

**Electives:** To meet the minimum credit requirement for the degree

### Required Courses:

- **AEBI 202** Cellular Biology 3
- **AEMA 310** Statistical Methods 1 3
- **ANSC 234** Biochemistry 2 3
- **ANSC 250** Principles of Animal Science 3
- **ANSC 251** Comparative Anatomy 3
- **ANSC 323** Mammalian Physiology 4
- **ANSC 330** Fundamentals of Nutrition 3
- **ANSC 495** Seminar 1 1
- **ANSC 496** Seminar 2 1
- **CELL 204** Genetics 4
- **FDSC 211** Biochemistry 1 3
- **MICR 230** Introductory Microbiology 3

### Complementary Courses:

A minimum of 24 credits selected from the following list in consultation with the Academic Adviser:

- **ANSC 301** (3) Principles of Animal Breeding
- **ANSC 312** (3) Animal Health and Disease
- **ANSC 324** (3) Animal Reproduction
- **ANSC 400** (3) Eukaryotic Cells and Viruses
- **ANSC 424** (3) Metabolic Endocrinology
- **ANSC 433** (3) Animal Nutrition
- **ANSC 460** (3) Biology of Lactation
- **MICR 341** (3) Mechanisms of Pathogenicity
- **ENTO 550** (3) Veterinary and Medical Entomology
- **PARA 438** (3) Immunology
- **WILD 307** (3) Natural History of Vertebrates
- **WILD 311** (3) Ethology
- **WILD 410** (3) Wildlife Ecology
- **WILD 424** (3) Parasitology
- **WILD 350** (3) Mammalogy

The student may replace up to 12 credits of the complementary courses listed above by choosing, with the student adviser’s approval, any course offerings (300 level or higher) in Anatomy and Cell Biology, Biochemistry, Biology, Microbiology and Immunology, Neurology and Neurosurgery, Pharmacology and Therapeutics, Physiology, and Psychology. Any prerequisites for these courses must be taken as electives.

### 12.6.3 Department of Bioresource Engineering

Macdonald Stewart Building – Room MS1-027
Telephone: (514) 398-7773
Fax: (514) 398-8387
E-mail: robert.kok@mcgill.ca
Website: www.mcgill.ca/agreng

**Chair — Robert Kok**

**Emeritus Professor — Robert S. Broughton**

**Professors — Suzelle Barrington, Robert Kok,**
Chandra Madramootoo (James McGill Professor),
Edward McKyes, Shiv O. Prasher (James McGill Professor),
G.S. Vijaya Raghavan (James McGill Professor)

**Associate Professors — Robert B. Bonnell (Brace Centre for Water Resources Management), Michael O. Nqadi (William Dawson Scholar), John D.J. Sheppard**

**Assistant Professor — Ning Wang**

### BIORESOURCE ENGINEERING MAJOR

The Department of Bioresource Engineering collaborates with other departments and the Faculty of Engineering in providing courses of instruction for a curriculum in Bioresource Engineering. Graduates qualify to apply for registration as professional engineer-ers in any province of Canada.

There are four streams offered within the Bioresource Engineer-
ing Major. Via the appropriate choice of elective course sets, a par-
ticular area of study may be emphasized.

In the **Bio-Environmental Engineering** stream students learn about soil and water quality management and conservation, geo-
matics, hydrology and water resources, organic waste treatment,
use of GIS for biosystem operation, engineering for land develop-
ment, climate control in buildings, ecosystem remediation, and
many other, related topics.

Students who follow the **Soil and Water** stream learn about
hydrology, irrigation and drainage, soil and water management,
environmental quality control and remediation, structural design,
machinery design, artificial intelligence, GIS, and remote sensing.

In the **Food and Bioprocessing** stream students are taught
about the engineering of foods and food process, physical proper-
ties of biological materials, post-harvesting technology, fermentation
and bio-processing, the management of organic wastes,
bio-technology, the design of machinery for bioprocessing, etc.
Students who specialize in the **Agricultural Engineering** stream will learn about machine design, machinery, robotics, structural design, environmental quality control, waste management, artificial intelligence, GIS, remote sensing, complex system simulation, and much more.

All required and complementary courses must be passed with a minimum grade of C. One term is spent taking courses from the Faculty of Engineering on the McGill downtown campus.

Students also have the opportunity to pursue a Minor. Several possibilities are: Agricultural Production, Environment, Ecological Agriculture, Biotechnology, Computer Science, Construction Engineering and Management, Entrepreneurship, and Environmental Engineering. Details of some of these Minors can be found in the Faculty of Engineering "Minor Programs", section 7.6. To complete a Minor, it is necessary to spend at least one extra term beyond the normal requirements of the B.Eng.(Bioresource) program.

(Program under revision)

**Required Courses:** 50 credits

**Complementary Courses:** 61 credits

<table>
<thead>
<tr>
<th>Required Courses:</th>
<th>Complementary Courses:</th>
<th>Credits</th>
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<tbody>
<tr>
<td>50 credits</td>
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<tr>
<td>BREE 205 Elements of Bioresource Engineering 3</td>
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<td>BREE 210 Mechanical Analysis and Design 3</td>
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<td>BREE 225 Computing for Engineers 3</td>
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<td>BREE 301 Biothermodynamics 3</td>
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<td>BREE 305 Fluid Mechanics 3</td>
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<td>BREE 312 Electric Circuits and Machines 3</td>
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<td>BREE 319 Engineering Mathematics 3</td>
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<td>BREE 327 Bio-Environmental Engineering 3</td>
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<td>BREE 341 Mechanics of Materials 3</td>
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<tr>
<td>BREE 481 Undergraduate Seminar 1 .5</td>
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<td>BREE 482 Undergraduate Seminar 2 .5</td>
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<td>BREE 483 Undergraduate Seminar 3 .5</td>
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<td>BREE 484 Undergraduate Seminar 4 .5</td>
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<td>BREE 485 Undergraduate Seminar 5 .5</td>
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<td>BREE 486 Undergraduate Seminar 6 .5</td>
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<tr>
<td>BREE 490 Design 1 3</td>
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<td>BREE 495 Design 2 3</td>
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<tr>
<td>AEMA 202 Intermediate Calculus 3</td>
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<td>AEMA 305 Differential Equations 3</td>
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<td>MECH 291 Graphics 3</td>
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<tr>
<td>MIME 221 Engineering Professional Practice 2</td>
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<tr>
<td>MIME 310 Engineering Economy 3</td>
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**Complementary Courses:** 61 credits

<table>
<thead>
<tr>
<th>Set A (6 credits):</th>
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<tbody>
<tr>
<td>One of the following:</td>
<td></td>
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<tr>
<td>AEMA 310 (3) Statistical Methods 1</td>
<td></td>
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<td>CIVE 302 (3) Probabilistic Systems</td>
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<td>MATH 323 (3) Probability</td>
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<td>One of the following:</td>
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<tr>
<td>CHEE 315 (4) Heat and Mass Transfer</td>
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<td>MECH 346 (3) Heat Transfer</td>
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<thead>
<tr>
<th>Set B - Basic Sciences (9 credits):</th>
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<tbody>
<tr>
<td>9 credits from the following, with at least 3 credits chosen from:</td>
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<tr>
<td>AEBI 202 (3) Cellular Biology</td>
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<tr>
<td>FDSC 211 (3) Biochemistry 1</td>
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<tr>
<td>MICR 230 (3) Introductory Microbiology</td>
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<tr>
<td>PLNT 201 (3) Comparative Plant Biology</td>
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<td>WILD 200 (3) Comparative Zoology</td>
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<td>WILD 205 (3) Principles of Ecology</td>
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<td>and the remainder, if any, chosen from:</td>
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<tr>
<td>ANSC 250 (3) Principles of Animal Science</td>
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<tr>
<td>FDSC 200 (3) Introduction to Food Science</td>
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<tr>
<td>GEOG 203 (3) Environmental Systems</td>
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<tr>
<td>NRSC 201 (3) Introductory Meteorology</td>
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<tr>
<td>BREE 301 Bio-Environmental Engineering 3</td>
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<tr>
<td>MIME 221 Engineering Professional Practice 2</td>
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<tr>
<td>MIME 310 Engineering Economy 3</td>
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**Set C - Social Sciences (9 credits):**

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<tr>
<th>Credits</th>
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**Set D - Engineering (37 credits, minimum):**

<table>
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<tr>
<th>Credits</th>
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<td>37</td>
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</tbody>
</table>

**NRSC 333 (3) Physical and Biological Aspects of Pollution**

**NRSC 437 (3) Assessing Environmental Impact**

**NRSC 510 (3) Agricultural Micrometeorology**

**PLNT 211 (3) Principles of Plant Science**

**PLNT 300 (3) Cropping Systems**

**PLNT 322 (3) Greenhouse Management**

**PLNT 421 (3) Landscape Plant Materials**

**SOIL 200 (3) Introduction to Earth Science**

**SOIL 210 (3) Principles of Soil Science**

**SOIL 326 (3) Soil Genesis and Classification**

**SOIL 331 (3) Soil Physics**

**SOIL 410 (3) Soil Chemistry**

**Set C - Social Sciences (9 credits):**

<table>
<thead>
<tr>
<th>Credits</th>
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</table>

**Two 3-credit courses in the humanities and social sciences/administrative studies and law/language courses. (Any language course which is deemed by the academic adviser to have a sufficient cultural component or, in the case of the student who is not proficient in a specific language, program credit will be given for the second of two successfully completed, academically approved 3-credit language courses.)**

**Set D - Engineering (37 credits, minimum):**

<table>
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<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>37</td>
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**37 credits (minimum) from the following courses:**

<table>
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<tr>
<th>Credits</th>
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<td>3</td>
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</table>

**BREE 214 (3) Geometrics**

**BREE 217 (3) Hydrology and Water Resources**

**BREE 314 (3) Agri-Food Buildings**

**BREE 315 (3) Design of Machines**

**BREE 322 (3) Organic Waste Management**

**BREE 323 (3) Properties of Bio-Materials**

**BREE 325 (3) Food Process Engineering**

**BREE 412 (3) Machinery Systems Engineering**

**BREE 416 (3) Engineering for Land Development**

**BREE 418 (3) Soil Mechanics and Foundations**

**BREE 419 (3) Structural Design**

**BREE 430 (3) GIS for Bioresource Management**

**BREE 501 (3) Simulation and Modelling**

**BREE 502 (3) Drainage/Irrigation Engineering**

**BREE 504 (3) Instrumentation and Control**

**BREE 506 (3) Advances in Drainage Management**

**BREE 509 (3) Hydrologic Systems and Modelling**

**BREE 512 (3) Soil Cutting and Tillage**

**BREE 515 (3) Soil Hydrologic Modelling**

**BREE 518 (3) Bio-Treatment of Wastes**

**BREE 519 (3) Advanced Food Engineering**

**BREE 525 (3) Climate Control for Buildings**

**BREE 530 (3) Fermentation Engineering**

**BREE 531 (3) Post-Harvest Drying**

**BREE 532 (3) Post-Harvest Storage**

**AGRI 435 (3) Soil and Water Quality Management**

**CHEE 474 (3) Biochemical Engineering**

**CIVE 202 (4) Construction Materials**

**CIVE 317 (3) Structural Engineering 1**

**CIVE 318 (3) Structural Engineering 2**

**ENVIRONMENTAL ENGINEERING MINOR**

The Minor program consists of 27 credits in courses that are environment related. By means of a judicious choice of complementary and elective courses, Bioresource Engineering students may obtain this Minor with a minimum of 12 additional credits.
The "Environmental Engineering Minor", section 7.6.8, is administered by the Faculty of Engineering, Department of Civil Engineering and Applied Mechanics.

Courses available in the Faculty of Agricultural and Environmental Sciences (partial listing):
BREE 322 Organic Waste Management
BREE 416 Engineering for Land Development
BREE 518 Bio-Treatment of Wastes
MICR 331 Microbial Ecology
WILD 333 Physical and Biological Aspects of Pollution

BARBADOS FIELD STUDY SEMESTER
This program takes place at Bellairs Research Institute in Barbados; it has a full 15-credit program offered each Fall semester. For more information, see section 14.2.2 "Barbados Field Study Semester".

12.6.4 School of Dietetics and Human Nutrition
Macdonald Stewart Building – Room MS2-039
Telephone: (514) 398-7840
Fax: (514) 398-7739
E-mail: nutrition.dietetics@mcgill.ca
Website: www.mcgill.ca/dietetics

Director — Kristine G. Koski
Emeritus Professor — Helen R. Neilson
Professors — Timothy A. Johns, Harriett V. Kuhnlein
Associate Professors — Grace Egeland (Canada Research Chair), Katherine Gray-Donald, Kristine G. Koski, Stan Kubow, Louise Thibault, Hope Weiler (Canada Research Chair), Linda Wykes (William Dawson Scholar)

Lecturers — Peter Bender (PT), Judy Campbell-Gordon, Lynda Fraser (PT), Linda Jacobs Starkey, Mélanie Journoud, Maureen Rose, Joanne Routhier, Sandy Phillips, Hugues Plourde, Heidi Ritter

Adjunct Professors — Mary l’Abbé, Laurie Chan (NSERC Northern Research Chair), Kevin A. Cockell, Jeffrey S. Cohn, Edward Farnsworth, Peter J.H. Jones

Cross-Appointed Staff —
Food Science and Agricultural Chemistry: Selim Kermasha
Medicine: Louis Beaumier, Franco Carli, Réjeanne Gougeon, L. John Hoffer, Errol Marliss, Thomas Schricker, Jean-François Yale
Parasitology: Marilyn E. Scott
Psychiatry: Simon Young
MUHC: Sonya Page

Health and well-being of individuals in relation to food choices and physiological status prevails as the unifying theme of the programs in the School of Dietetics and Human Nutrition. The availability of food, normal metabolism and clinical nutrition, community nutrition at the local and international level, the evaluation of nutritional products and their use in nutrition, and the communication of information about food and health form the core of academic programs.

DIETETICS MAJOR
Academic Advising Coordinator: Linda Jacobs Starkey, Ph.D., RD, FDC

Graduates are qualified for challenging professional and leadership positions related to food and health, as dietitians, nutritionists and food administrators. The designations “Dietitian” and “Nutritionist” are indicators of reserved titles and reserved acts in the province of Quebec. As clinical nutritionists, dietitians may work in health-care settings and food service centres, nutrition counselling centres, clinics and private practice. As community nutritionists, dietitians are involved in nutrition education programs through school boards, sports centres and local and international health agencies. The dietitian in the food service sector participates in all aspects of management to assure quality food products. Postgraduate programs are available to qualified graduates. The duration of the program is three and one-half years.

Successful graduates are qualified for membership in Dietitians of Canada and the Ordre professionnelle de diététistes du Québec. Forty weeks of supervised professional experience in clinical and community nutrition and food service systems management are included. (Currently under revision).

Required Courses: 100 credits
Note: The School firmly applies prerequisite requirements for registration in all required courses in the Dietetics Major.
All required and complementary courses must be passed with a minimum grade of C.

Complementary Courses: 6 credits
Electives: 9 credits to meet the minimum credit requirements for the degree.

CREDITS

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<td>NUTR 446</td>
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Two Complementary Courses are to be selected from the following, as specified:
3 credits of Human Behavioural Science courses chosen from:
NUTR 301 (3) Psychology
or equivalent course from another faculty.
3 credits from the social sciences:
AGRICULTURAL AND ENVIRONMENTAL SCIENCES — DIETETICS AND HUMAN NUTRITION

AGEC 200 (3) Principles of Microeconomics
AGEC 230 (3) Agricultural and Food Marketing
ENVR 201 (3) Society and Environment
ENVR 203 (3) Knowledge, Ethics and Environment
RELG 270 (3) Religious Ethics and the Environment
or equivalent courses from another faculty.

Elective Courses:
The following courses most often fit the timetable; elective choice is not limited to these courses.
FDSC 200 (3) Introduction to Food Science
FDSC 212 (3) Bioseparation Techniques
FDSC 251 (3) Food Chemistry 1
FDSC 425 (3) Principles of Quality Assurance
NUTR 420 (3) Toxicology and Health Risks
NUTR 430 (3) Directed Studies: Dietetics and Nutrition 1
NUTR 451 (3) Analysis of Nutrition Data
NUTR 501 (3) Nutrition in Developing Countries
NUTR 503 (3) Bioenergetics and the Lifespan
NUTR 511 (3) Nutrition and Behaviour
NUTR 512 (3) Herbs, Foods and Phytochemicals

* Successful completion of all component parts of each level of Stage (Professional Practice) in Dietetics courses is a prerequisite for the next level and must be passed with a minimum grade of C. Undergraduate registration is restricted to students in the Dietetics Major, CGPA greater than or equal to 2.50. Visiting students must contact the Academic Advising Coordinator (Dietetics) regarding course registration eligibility.

Students are reminded that ethical conduct on Professional Practice (Stage) rotations is required. The Faculty reserves the right to require the withdrawal of any student at any time if it (Faculty) feels the student has displayed unprofessional conduct or demonstrates incompetence.

A compulsory immunization program exists at McGill which is required for Dietetics students to practice. Students should complete their immunization before arriving at Macdonald Campus; medical/health documentation must be received prior to commencement of Stage.

NUTRITION MAJOR

Academic Advising Coordinator: Kristine G. Koski, Ph.D., RD (USA)

This Major covers the many aspects of human nutrition and food and gives first, an education in the scientific fundamentals of these disciplines and second, an opportunity to focus in (a) nutritional biochemistry and metabolism, (b) global nutrition issues, (c) food function, product development and safety and (d) sports nutrition. Graduates are qualified for careers in pharmaceutical and/or food industries or government laboratories, the health sciences, communications field, sports clinics and national or international food support programs. Graduates often continue on to further studies preparing for careers in research, medicine, and dentistry or as specialists in nutrition. Aside from working as university teachers and researchers, postgraduates may be employed by government and health protection agencies, in world development programs or in the food sector.

(Currently under revision).
[Revised, March 2006: section begins.]

Required Courses: 54 credits
All required courses must be passed with a minimum grade of C. Complementary Courses: 15/16 credits
Electives: 17/18 credits to meet the minimum credit requirement for the degree. Reciprocal agreement allows all students to take a limited number of electives at any Quebec university. With prior approval students can take electives at any Canadian or international university.

CREDITS

Required Courses: 54

Term 1

FDSC 211 Biochemistry 1 3
FDSC 212 Bioseparation Techniques 2
NUTR 207 Nutrition and Health 3
NUTR 214 Food Fundamentals 3

Term 2
ANS 234 Biochemistry 2 3
MICR 230 Introductory Microbiology 3
FDSC 251 Food Chemistry 1 3

Term 3
ANS 323 Mammalian Physiology 4
NUTR 322 Applied Sciences Communication 2
AEMA 310 Statistical Methods 1 3
FDSC 305 Food Chemistry 2 3

Term 4
ANS 424 Metabolic Endocrinology 3
NUTR 337 Nutrition Through Life 3
NUTR 344 Clinical Nutrition 1 4

Term 5
NUTR 420 Toxicology and Health Risks 3
NUTR 450 Research Methods: Human Nutrition 3
NUTR 451 Analysis of Nutrition Data 3
NUTR 512 Herbs, Foods, and Phytochemicals 3

Complementary Courses: 15/16
One of the following courses:
NUTR 307 Human Nutrition 3
or ANSC 330 Fundamentals of Nutrition
And one of the following sets of 12/13 credits. 12/13

Nutritional Biochemistry:
ANS 551 Carbohydrate & Lipid Metabolism 3
ANS 552 Protein Metabolism & Nutrition 3
CELL 204 Genetics 4
PARA 438 Immunology 3

Global Nutrition:
AGRI 340 Principles of Ecological Agriculture 3
NRSC 340 Global Perspectives on Food 3
NUTR 403 Nutrition in Society 3
NUTR 501 Nutrition in Developing Countries 3

Food Function and Safety:
FDSC 300 Principles of Food Analysis 3
FDSC 315 Separation Techniques in Food Analysis 3
FDSC 319 Principles of Food Analysis 3
FDSC 425 Principles of Quality Assurance 3

Sports Nutrition:
ANAT 214 Systemic Human Anatomy 3
or EDKP 205 Structural Anatomy 3
EDKP 391 Physiology in Sport & Exercise 3
EDKP 495 Scientific Principles of Training 3
NUTR 503 Bioenergetics and the Life Span 3

[Revised, March 2006: section ends.]

MINOR IN HUMAN NUTRITION

Academic Adviser: Linda Wykes, Ph.D.

The Minor in Human Nutrition is intended to complement a student’s primary field of study by providing a focused introduction to the metabolic aspects of human nutrition. It is particularly accessible to students in Biochemistry, Biology, Physiology, Anatomy and Cell Biology, Microbiology and Immunology, Animal Science or Food Science programs. The completion of 24 credits is required, of which at least 18 must not overlap with the primary program. All courses must be taken in the appropriate sequence and passed with a minimum grade of C. Students may declare their intent to follow the Minor program at the beginning of their U2 year. They must then consult with the Academic Adviser for the Human Nutrition Minor in the School of Dietetics and Human Nutrition to obtain approval for their course selection. Since some courses may not
be offered every year and many have prerequisites, students are cautioned to plan their program in advance. The Minor program does not carry professional recognition; therefore, it is not suitable for students wishing to become nutritionists or dietitians. However, successful completion may enable students to qualify for many postgraduate nutrition programs.

**Required Courses: **6 credits

**Complementary Courses:** 18 or 19 credits

**Required Courses:**

- NUTR 337 Nutrition Through Life 3
- NUTR 450 Research Methods: Human Nutrition 3

**Complementary Courses:** 18 or 19

3 credits in biochemistry, one of:
- ANSC 234 (3) Biochemistry 2
- BIOC 311 (3) Metabolic Biochemistry

3 or 4 credits in physiology, one of:
- ANSC 323 (4) Mammalian Physiology
- PHGY 210 (3) Mammalian Physiology 2
- PHGY 202 (3) Human Physiology: Body Functions

3 credits in nutrition, one of:
- ANSC 330 (3) Fundamentals of Nutrition
- NUTR 307 (3) Human Nutrition

8 or 9 credits from the following list:
- ANSC 551 (3) Carbohydrate and Lipid Metabolism
- ANSC 552 (3) Protein Metabolism and Nutrition
- MIMM 314 (3) Immunology
- or PARA 438 (3) Immunology
- NUTR 403 (3) Nutrition in Society
- NUTR 451 (3) Analysis of Nutrition Data
- NUTR 436 (2) Nutritional Assessment
- NUTR 420 (3) Toxicology and Health Risks
- NUTR 512 (3) Herbs, Foods and Phytochemicals
- NUTR 501 (3) Nutrition in Developing Countries
- NUTR 430 (3) Directed Studies: Dietetics and Nutrition 1
- or NUTR 431 (3) Directed Studies: Dietetics and Nutrition 2
- PATH 300 (3) Human Disease

**Electives:** selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree. A portion of these credits should be in the humanities/social sciences.

**Notes:**
1. Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study well before their final year.
2. Some courses may not be offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.

**12.6.5 Department of Food Science and Agricultural Chemistry**

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Telephone: (514) 398-7998
Fax: (514) 398-7977
E-mail: foodscience@mcgill.ca
Website: www.mcgill.ca/foodscience

**Chair — Selim Kermasha**

**Professors —** Inteaz Alli, William D. Marshall, Hosahalli S. Ramaswammy, James P. Smith, Frederik R. van de Voort

**Associate Professors —** Ashraf A. Ismail, Selim Kermasha, Benjamin K. Simpson, Varoujan Yaylayan

**Adjunct Professors —** John W. Austin, Raymond Dupuis, Byong H. Lee, Yasuo Konishi, Michèle Maroictte, André Morin, J.R. Jocelyn Paré

**FOOD SCIENCE MAJOR**

This program is intended for those students interested in the multidisciplinary field of food science. The courses are integrated to acquaint the student with food processing, food chemistry, quality assurance, analytical procedures, food products, standards and regulations. The program prepares graduates for employment as scientists in industry or government, in regulatory, research, quality assurance, or product development capacities.

Graduates have the academic qualifications for membership in the Canadian Institute of Food Science and Technology. Graduates can also qualify for recognition by the Institute of Food Technologists (IFT) and the Ordre des chimistes du Québec (OCQ) by selection of an appropriate option.

All options are completed to 90 credits with free elective courses.

**Required Courses:** 54 or 81 credits

**Electives:** selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree. A portion of these credits should be in the humanities/social sciences.

**Required Courses Common to all 3 Options:**

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**Food Science Option Additional Required Credits**

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**Complementary Courses**

Students completing the Food Science or Food Industry options complete 12 credits of complementaries.

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CREDENTIAL IN FOOD SCIENCE  
Academic Adviser: Varoujan Yaylayan  

This 30 credit program will appeal to mature students who have a first degree in a science-related discipline. Students must complete the Introduction to Food Science, Food Microbiology and Quality Assurance courses, at least three food chemistry/analysis courses, two processing/engineering courses, and at least one course in communication skills, ethics or business skills. Entry to this program is permitted only in September.

Required Courses: 9 credits  
Complementary Courses: 21 credits

FDSC 200 Introduction to Food Science 3  
FDSC 425 Principles of Quality Assurance 3  
FDSC 442 Food Microbiology 3  

At least 9 credits from the following:  
FDSC 251 Food Chemistry 1 3  
FDSC 300 Principles of Food Analysis 3  
FDSC 305 Food Chemistry 2 3  
FDSC 315 Separation Techniques in Food Analysis 3  
FDSC 319 Food Commodities 3  

At least 6 credits from the following:  
BREE 324 Elements of Food Engineering 3  
FDSC 310 Post Harvest Fruit and Vegetable Technology 3  
FDSC 330 Food Processing 3  

At least 3 credits from the following:  
AGEC 242 Management Theories and Practices 3  
AGEC 344 Entrepreneurial Leadership 3  
AGRI 510 Professional Practice 3  

NRSC 315 (3) Science of Inland Waters  
NRSC 491 Scientific Communication 1 1  

NUTR 420 Toxicology and Health Risks 3  
NUTR 512 Herbs, Foods and Phytochemicals 3  

APPLIED ZOOLOGY MAJOR  
Academic Advisers: Professor T. A. Wheeler (U2), C. Buddle (U1, U3)  

The great diversity of animals form the focus of this Major, from the invertebrates, with their many beneficial and pest insects, to vertebrates, including fish and wildlife. The interaction of animals with each other and with human populations is stressed. By careful course selection students may emphasize life in soils or water, entomology, physiology, parasitology or vertebrate biology and ecology. Career opportunities exist in both the public and private sectors in research, program development and implementation, pest control, wildlife management, etc.

Required Courses: 27 credits  
Complementary Courses: 36 credits  
Electives: To meet the minimum credit requirement for the degree.

List A (Animal Diversity)  
BIOL 327 (1) Herpetology  
BIOL 351 (1) The Biology of Invertebrates  
MICR 230 (3) Introductory Microbiology  
WILD 306 (3) Natural History of Vertebrates  
WILD 350 (3) Mammalogy  
WILD 420 (3) Ornithology  
WILD 424 (3) Parasitology  

List B (Entomology)  
ENTO 330 (3) Insect Biology  
ENTO 336 (3) Economic Entomology  
ENTO 352 (3) Control of Insect Pests  
ENTO 425 (3) Insect Ecology  
ENTO 440 (3) Systematic Entomology  
ENTO 515 (3) Parasitoid Behavioural Ecology  
ENTO 520 (3) Insect Physiology  
ENTO 535 (3) Aquatic Entomology  
ENTO 550 (3) Veterinary and Medical Entomology  

List C (Interactions and Applications)  
BIOL 331 (1) Ecology/Behaviour Field Course  
BIOL 465 (1) Conservation Biology  
NRSC 315 (3) Science of Inland Waters
MACDONALD SUMMER FIELD COURSE:

One course is available during Summer Session that provides students the opportunity to participate in supervised field research concerning soil, flora and fauna not easily studied at other times of the year, and to apply knowledge from the classroom to environmental issues in the field.

NRSC 304 (3) Field Research Project

ENVIRONMENTAL BIOLOGY MAJOR

Academic Advisers: Professors M.E. Rau (U2), I. Strachan (U1, U3)

This program provides scientists with basic knowledge in Biology and strong emphasis in Ecology. As ecologists they will be equipped to investigate the scientific aspects of the relationships between organisms and their environment.

Required Courses: 27 credits

Complementary Courses: 30 credits

Electives: To meet the minimum credit requirement for the degree.

With the permission of the Academic Adviser and the Committee on Academic Standing, ecological or environmental courses offered on the Downtown Campus may be substituted for those appearing in the above list of Complementary Courses.

MICROBIOLOGY MAJOR

Academic Advisers: Professors L. Whyte (U1), B. Driscoll (U2), D. Niven (U3)

Students receive training in fundamental principles and applied aspects of Microbiology, choosing one of the three options: Biotechnology, Ecology or Environment. Successful graduates are competent to work in university, government and industrial research laboratories and in the pharmaceutical, fermentation and food industries.

Required Courses: 51 credits

Complementary Courses: 12 credits, chosen from one option (Biotechnology or Ecology or Environment)

Electives: To meet the minimum credit requirement for the degree.

With the permission of the Academic Adviser and the Committee on Academic Standing, ecological or environmental courses offered on the Downtown Campus may be substituted for those appearing in the above list of Complementary Courses.
**Environment**

- 12 credits chosen from the following list of courses:
  - ENV 200 (3) The Global Environment
  - ENV 201 (3) Society and Environment
  - ENV 202 (3) The Evolving Earth
  - ENV 203 (3) Knowledge, Ethics and Environment
  - EPSC 205 (3) Astrobiology
  - NRSC 201 (3) Introductory Meteorology
  - NRSC 333 (3) Physical and Biological Aspects of Pollution
  - NUTR 420 (3) Toxicology and Health Risks
  - PARA 410 (3) Environment and Infection
  - WILD 375 (3) Issues: Environmental Sciences

**RESOURCE CONSERVATION MAJOR**

Academic Adviser: Professor B. Côté

The Major prepares students to deal with problems in integrated resource management and environmental protection with the objective of making optimal use of natural resources under any given set of economic, social and ecological conditions. Students follow a series of required courses and select complementary courses on physical, biological, soil and aquatic resources from approved lists on each of these themes.

**Required Courses:** 26 credits

**Complementary Courses:** 33 credits

**Electives:** To meet the minimum credit requirement for the degree.

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<td>AGEC 200 Principles of Microeconomics 3</td>
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<td>AGEC 333 Resource Economics 3</td>
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<td>FDSC 211 Biochemistry 1 3</td>
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<td>NRSC 315 Science of Inland Waters 3</td>
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<td>NRSC 437 Assessing Environmental Impact 3</td>
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<td></td>
<td>NRSC 491 Scientific Communication 1</td>
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<td>NRSC 492 Scientific Communication 2</td>
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<tr>
<td></td>
<td>SOIL 200 Introduction to Earth Science 3</td>
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<tr>
<td></td>
<td>SOIL 210 Principles of Soil Science 3</td>
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<td></td>
<td>WILD 205 Principles of Ecology 3</td>
</tr>
</tbody>
</table>

**Complementary Courses:** 33 credits

A minimum of 33 credits selected from the following list in consultation with the Academic Adviser

- AEMA 310 (3) Statistical Methods 1
- or MATH 203 (3) Principles of Statistics 1
- PLNT 201 (3) Comparative Plant Biology
- or PLNT 211 (3) Principles of Plant Science

At least two of the following:

- BREE 214 (3) Geomatics
- BREE 217 (3) Hydrology and Water Resources
- or GEOG 322 (3) Environmental Hydrology
- BREE 416 (3) Engineering for Land Development
- NRSC 201 (3) Introductory Meteorology
- NRSC 333 (3) Physical and Biological Aspects of Pollution

At least three of the following:

- AEMA 306 (3) Mathematical Methods in Ecology
- BIOL 465 (3) Conservation Biology
- MIRC 331 (3) Microbial Ecology
- PLNT 358 (3) Flowering Plant Diversity
- SOIL 335 (3) Soil Ecology and Management
- WILD 401 (4) Fisheries and Wildlife Management
- WOOD 410 (3) The Forest Ecosystem

At least three of the following:

- AGRI 435 (3) Soil and Water Quality Management
- SOIL 315 (3) Soil Fertility and Fertilizer Use
- SOIL 326 (3) Soil Genesis and Classification
- SOIL 331 (3) Soil Physics

**SOIL 410 (3) Soil Chemistry**

**SOIL 521 (3) Soil Microbiology and Biochemistry**

At least one of the following: 3

- GEGO 201 (3) Introductory Geo-Information Science
- BREE 430 (3) GIS for Biosystems Engineering
- WILD 310 (3) Air Photo and Imagery Interpretation

| CREDITS | Other courses on the Downtown Campus may be equivalent to some required courses; consult the Academic Adviser. Course substitutions must be approved by the Committee on Academic Standing. |

**WILDLIFE BIOLOGY MAJOR**

Academic Advisers: Professors D. Bird (U1), M. Humphries (U2), R. Titman (U3)

This program emphasizes understanding the ecology of vertebrate animals, their biological and physical environment and the interactions that are important in the management of ecological communities and wildlife species. Employment opportunities exist in resource planning, nature interpretation, wildlife management and environmental impact assessment. By careful course selection students may meet requirements for certification by the Wildlife Society.

**Required Courses:** 37 credits

**Complementary Courses:** 27 credits

**Electives:** To meet the minimum credit requirement for the degree

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>Required Courses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
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<td>CELL 204 Genetics 4</td>
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<td>FDSC 211 Biochemistry 1 3</td>
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<td></td>
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<td>PLNT 201 Comparative Plant Biology 3</td>
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<tr>
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<td>PLNT 358 Flowering Plant Diversity 3</td>
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<td>WILD 200 Comparative Zoology 3</td>
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<td>WILD 205 Principles of Ecology 3</td>
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<td></td>
<td>WILD 212 Evolution and Systematics 3</td>
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<td></td>
<td>WILD 307 Natural History of Vertebrates 3</td>
</tr>
<tr>
<td></td>
<td>WILD 401 Fisheries and Wildlife Management 4</td>
</tr>
</tbody>
</table>

**Complementary Courses:** 27 credits

- 9 credits from List A (Organismal Biology)
- BIOL 327 (3) Herpetology
- WILD 311 (3) Ethology
- WILD 350 (3) Mammalogy
- WILD 420 (3) Ornithology
- WILD 424 (3) Parasitology

- 18 credits from List B (Integration and Applications)
- AEMA 306 (3) Mathematical Methods in Ecology
- AGEC 333 (3) Resource Economics
- ANSC 323 (4) Mammalian Physiology
- BIOL 465 (3) Conservation Biology
- NRSC 315 (3) Science of Inland Waters
- NRSC 437 (3) Assessing Environmental Impact
- NRSC 497 (2) Research Project 1
- NRSC 498 (3) Research Project 2
- NUTR 420 (3) Toxicology and Health Risks
- PLNT 460 (3) Plant Ecology
- WILD 313 (3) Phylogeny and Zoogeography
- WILD 382 (3) Fish and Wildlife Propagation
- WILD 415 (2) Conservation Law
- WILD 421 (3) Wildlife Conservation
- WILD 475 (3) Desert Ecology
- WOOD 410 (3) The Forest Ecosystem
- WOOD 441 (3) Integrated Forest Management
The Department of Plant Science offers Majors in Botanical Sciences and Agricultural Sciences and the Environmetrics and Food Production and Plant Science, and participates in administering Majors in Agricultural Sciences and the Environmetrics and Food Production and Plant Science. The Molecular Option emphasizes molecular genetics, plant improvement, and biotechnology. These two options form botany of plants, one emphasizing the ecology of plants and their environment and the other emphasizing the physical and molecular biology of plants. The Ecology Option emphasizes ecology, conservation, and environmental sciences. The Molecular Option emphasizes molecular genetics, plant improvement, and biotechnology. These two options form botanists prepared for exciting careers in the knowledge economy. Graduates find employment within private industry, government services, consulting, teaching, or go on to do postgraduate research. These programs can be completed entirely on the MacDonald Campus or one term can be spent taking courses on the Downtown Campus during the final year.

**Required Courses:** 42 credits

**Complementary Courses:** 18 credits, selected from an approved list in consultation with the Academic Adviser; taken in either the Ecology or the Molecular Option.

**Electives:** To meet the minimum credit requirement for the degree.

**Note:** Courses marked with an asterisk (*) are offered on the downtown campus.

### CREDITS

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<tr>
<td>WILD 200</td>
<td>3</td>
</tr>
<tr>
<td>WILD 205</td>
<td>3</td>
</tr>
</tbody>
</table>

### Complementary Courses

Either the Ecology Option or the Molecular Option

#### Ecology Option:

at least 12 credits must be chosen from the following:

- AEMA 306 (3) Mathematical Methods in Ecology
- AGRI 340 (3) Principles of Ecological Agriculture
- *BIOL 324 (3) Ecological Genetics
- *BIOL 331 (3) Ecology/Behavior Field Course
- *BIOL 334 (3) Applied Tropical Ecology
- *BIOL 465 (3) Conservation Biology
- *GEOG 350 (3) Ecological Biogeography
- MICR 331 (3) Microbial Ecology
- NRSC 315 (3) Science of Inland Waters
- NRSC 437 (3) Assessing Environmental Impact
- WILD 415 (2) Conservation Law
- WOOD 410 (3) The Forest Ecosystem
- WOOD 420 (3) Environmental Issues: Forestry

the remaining credits to be chosen from any of the three option lists.

#### Molecular Option:

at least 12 credits must be chosen from the following:

- AEBI 306 (3) Experiments in Biotechnology
- ANSC 400 (3) Eukaryotic Cells and Viruses
- *BIOL 301 (4) Laboratory in Molecular and Cellular Biology
- *BIOL 303 (3) Developmental Biology
- *BIOL 333 (3) Plant Biotechnology
- BTEC 501 (3) Bioinformatics
- CELL 500 (3) Techniques Plant Molecular Genetics
- CELL 501 (3) Plant Molecular Biology and Genetics
- FDSC 212 (2) Bioseparation Techniques
- MICR 200 (3) Laboratory Methods in Microbiology
- MICR 230 (3) Introductory Microbiology
- MICR 338 (3) Bacterial Molecular Genetics
- PLNT 424 (3) Cellular Regulation
- PLNT 525 (3) Advanced Micropropagation
- PLNT 535 (3) Plant Breeding

the remaining credits to be chosen from any of the three option lists.

### General Complementary Courses:

- BIOL 355 (3) Trees: Ecology & Evolution
- NUTR 512 (3) Herbs, Foods and Phytochemicals
- PLNT 215 (1) Agricultural Enterprise Visits
- PLNT 304 (3) Biology of Fungi
- PLNT 305 (3) Plant Pathology
- PLNT 310 (3) Plant Propagation
- PLNT 434 (3) Weed Biology and Control
- PLNT 450 (2) Special Topics: Plant Science
- PLNT 451 (3) Special Topics: Plant Science 2
- SOIL 210 (3) Principles of Soil Science

### PLANT SCIENCE MAJOR

**Academic Adviser:** Professor J. Bede

E-mail: jacqueline.bede@mcgill.ca

The Plant Science Major offers intensive training in agricultural plant science. Comprehensive studies are offered in all aspects of biology and production practices related to important crop plant species. Studies include laboratory, greenhouse, and field exposure relating to agronomic, horticultural, or field crop development, production and management.

Graduates are eligible to apply for membership in the Ordre des agronomes du Québec (OAQ) and the Agricultural Institute of
Canada (AIC). Graduates rapidly find employment in agricultural industries, government services, extension, consulting, teaching, or go on to do postgraduate research.

**Required Courses:** 49 credits
**Complementary Courses:** 18 credits
**Electives:** To meet the minimum credit requirement for the degree.

### Required Courses

- **CREDITS**
- **AEMA 310** Statistical Methods 1 3
- **AGEC 200** Principles of Microeconomics 3
- **ANSC 250** Principles of Animal Science 3
- **CELL 204** Genetics 4
- **FDSC 211** Biochemistry 1 3
- **MICR 230** Introductory Microbiology 3
- **PLNT 211** Principles of Plant Science 3
- **PLNT 300** Cropping Systems 3
- **PLNT 305** Plant Pathology 3
- **PLNT 310** Plant Propagation 3
- **PLNT 353** Plant Structure and Function 4
- **PLNT 358** Flowering Plant Diversity 3
- **PLNT 434** Weed Biology and Control 3
- **PLNT 495** Seminar 1 1
- **PLNT 496** Seminar 2 1
- **SOIL 210** Principles of Soil Science 3
- **SOIL 315** Soil Fertility and Fertilizer Use 3

### Complementary Courses

- Credit at least one of:
  - **BREE 300** (3) Elements of Agricultural Engineering
  - **ENTO 352** (3) Control of Insect Pests

A minimum of 3 credits selected from the following list:

- **AGEC 231** (3) Economic Systems of Agriculture
- **AGEC 320** (3) Economics of Agricultural Production
- **AGEC 331** (3) Farm Business Management
- **AGEC 350** (3) Agricultural Finance

plus a minimum of 12 credits selected from the course list given below:

- **FDSC 310** (3) Post Harvest Fruit and Vegetable Technology
- **PLNT 215** (1) Agricultural Enterprise Visits
- **PLNT 221** (1) Introduction to Fungi
- **PLNT 322** (3) Greenhouse Management
- **PLNT 331** (3) Field Crops
- **PLNT 341** (1) Horticulture - The Alliums
- **PLNT 342** (1) Horticulture - Cole Crops
- **PLNT 343** (1) Horticulture - Root Crops
- **PLNT 344** (1) Horticulture - Salad Crops
- **PLNT 345** (1) Horticulture - Solanaceous Crops
- **PLNT 346** (1) Horticulture - Temperate Fruits
- **PLNT 347** (1) Horticulture - Small Fruits
- **PLNT 348** (1) The Brassicas
- **ANSC 450** (3) Dairy Cattle Production
- **ANSC 452** (3) Beef Cattle and Sheep Production
- **ANSC 454** (3) Swine Production
- **ANSC 456** (3) Poultry Production
- **PLNT 331** (3) Field Crops
- **PLNT 341** (1) Horticulture - The Alliums
- **PLNT 342** (1) Horticulture - Cole Crops
- **PLNT 343** (1) Horticulture - Root Crops
- **PLNT 344** (1) Horticulture - Salad Crops
- **PLNT 345** (1) Horticulture - Solanaceous Crops
- **PLNT 346** (1) Horticulture - Temperate Fruits
- **PLNT 347** (1) Horticulture - Small Fruits
- **PLNT 348** (1) The Brassicas

**Notes:**
1. Most courses listed at the 300 level and higher have prerequi-sites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study well before their final year.
2. Not all courses are offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/min-erva; complete listings can be found in the Courses section of this Calendar.

### 12.6.8 Interdisciplinary Studies

**Ecological Agriculture Program**

- **Telephone:** (514) 398-7928
- **Website:** www.agrenv.mcgill.ca/agrecon/ecoagr

**MINOR IN AGRICULTURAL PRODUCTION**

- **Academic Adviser:** Professor K. A. Stewart
- **E-mail:** katrine.stewart@mcgill.ca

This Minor program is designed to allow students in non-agricultural production Majors to receive credit for courses in agricultural production and to stimulate “cross-over” studies. The Minor can be associated with existing Major programs in the Faculty, but in some instances it may require more than 90 credits to meet the requirements of both the Major and the Minor.

Students are advised to consult their Major Program adviser and the Academic Adviser of the Minor in their first year. At the time of registration for their penultimate year, students must declare their intent to obtain a Minor in Agricultural Production. With the agreement of their Major Program adviser they must submit their program of courses already mit their program of courses already taken, and to be taken in their final year, to the Academic Adviser of the Agricultural Production Minor. The Academic Adviser of the Agricultural Production Minor will then certify which courses the student will apply toward the Minor and that the student's program conforms with the require-ments of the Minor.

### General Regulations

To obtain a Minor in Agricultural Production, students must:

- **a)** ensure that their academic record at the University includes a C grade or higher in the courses as specified in the course requirements given below.
- **b)** offer a minimum total of 24 credits from the courses as given below, of which not more than 6 credits may be counted for both the Major and the Minor programs. This restriction does not apply to elective courses in the Major program.

### Required Courses: 12 credits

**Complementary Courses:** 12 credits

- **CREDITS**
- **ANSC 250** Principles of Animal Science 3
- **PLNT 211** Principles of Plant Science 3
- **PLNT 300** Cropping Systems 3
- **SOIL 210** Principles of Soil Science 3

### Complementary Courses: 12 credits

- credits chosen from the following list in consultation with the Academic Adviser for the Minor:

**Notes:**

1. Most courses listed at the 300 level and higher have prerequi-sites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study well before their final year.
2. Not all courses are offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/min-erva; complete listings can be found in the Courses section of this Calendar.

**MINOR IN ECOLOGICAL AGRICULTURE**

- **Academic Adviser:** Professor J. Henning

This Minor program is designed to focus on the principles underlying the practice of ecological agriculture and is suitable for students wishing to farm, do extension and government work, and those intending to pursue postgraduate studies in this field.

The Minor can be associated with existing Major programs in the Faculty, but in some instances it may require more than 90 credits to meet the requirements of both the Major and the Minor.

Students are advised, during the U1 year, to consult their Major Program adviser and the academic adviser of the Minor. At the time of registration for the U2 year, students must declare their intent to obtain the Minor. With the agreement of their Major Program adviser they must submit their program of courses already...
taken, and to be taken, to the academic adviser of the Minor. The academic adviser of the Minor will then certify which courses the student will apply toward the Minor and confirm that the student's program conforms with the requirements of the Minor.

General Regulations
To obtain a Minor in Ecological Agriculture, students must:

a) Ensure that their academic record at the University includes a C grade or higher in the courses as specified in the course requirements given below.

b) Offer a minimum total of 24 credits from the courses as given below, of which not more than 6 credits may be counted for both the Major and the Minor programs. This restriction does not apply to elective courses in the Major program.

Required Courses: 9 credits
Complementary Courses: 15 credits

Required Courses:

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<th>Course Title</th>
<th>Credits</th>
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<td>AGRI 210</td>
<td>Agro-Ecological History</td>
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<td>AGRI 340</td>
<td>Principles of Ecological Agriculture</td>
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<tr>
<td>AGRI 341</td>
<td>Ecological Agriculture Systems</td>
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</table>

Complementary Courses:

15 credits chosen from the following, in consultation with the Academic Adviser for Ecological Agriculture

with at least 3 credits chosen from:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>SOIL 335</td>
<td>Soil Ecology and Management</td>
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</tr>
<tr>
<td>SOIL 445</td>
<td>Agroenviron. Fertilizer Use</td>
<td>3</td>
</tr>
</tbody>
</table>

and the remaining credits to be chosen from:

9-12 credits

AGEC 333 (3) Resource Economics
AGRI 435 (3) Soil and Water Quality Management
AGRI 491D1 (1.5) Co-op Experience
AGRI 491D2 (1.5) Co-op Experience
ENTO 352 (3) Control of Insect Pests
MICR 331 (3) Microbial Ecology
NUTR 512 (3) Herbs, Foods and Phytochemicals
PLNT 300 (3) Cropping Systems
PLNT 361 (3) Pest Management and the Environment
PLNT 434 (3) Weed Biology and Control
PLNT 460 (3) Plant Ecology
RELG 270 (3) Religious Ethics and the Environment
WILD 205 (3) Principles of Ecology
WILD 311 (3) Ethology
WILD 375 (3) Issues: Environmental Sciences
WOOD 410 (3) The Forest Ecosystem

Notes:
1. Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study to ensure that they have met all conditions.
2. Not all courses are offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.
3. Students using AGRI 491D1/AGRI 491D2 towards the requirements of the Certificate/Minor are limited to an experience on farms or other enterprises that are either organic, biodynamic, or practising permaculture. The placement must be approved by the academic adviser for the Certificate/Minor.
4. SOIL 521 is an alternate year course.

CERTIFICATE IN ECOLOGICAL AGRICULTURE

Academic Adviser: Professor J. Henning

This 30-credit Certificate Program is very similar to the Minor Program and is designed to focus on the principles underlying the practice of ecological agriculture. The Certificate may be of special interest to professional agrologists who wish further training, as well as formal recognition that they have completed a coherent program of courses beyond their B.Sc. studies.

Students holding a B.Sc. in agriculture or a related area are eligible to register for this program provided that they are otherwise acceptable for admission to the University. Students who have completed the Minor in Ecological Agriculture are not permitted to register for this program.

General Regulations
To obtain a Certificate in Ecological Agriculture, students must offer a minimum total of 30 credits from the courses as given below.

Required Courses: 9 credits
Complementary Courses: 21 credits

Required Courses:

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<tr>
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<tr>
<td>AGRI 210</td>
<td>Agro-Ecological History</td>
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</table>

Complementary Courses:

21 credits chosen from the following, in consultation with the Academic Adviser for Ecological Agriculture with at least 3 credits chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SOIL 335</td>
<td>Soil Ecology and Management</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 445</td>
<td>Agroenviron. Fertilizer Use</td>
<td>3</td>
</tr>
</tbody>
</table>

and the remaining credits to be chosen from:

15-18 credits

AGEC 333 (3) Resource Economics
AGRI 435 (3) Soil and Water Quality Management
AGRI 491D1 (1.5) Co-op Experience
AGRI 491D2 (1.5) Co-op Experience
ENTO 352 (3) Control of Insect Pests
MICR 331 (3) Microbial Ecology
NUTR 512 (3) Herbs, Foods and Phytochemicals
PLNT 300 (3) Cropping Systems
PLNT 361 (3) Pest Management and the Environment
PLNT 434 (3) Weed Biology and Control
PLNT 460 (3) Plant Ecology
RELG 270 (3) Religious Ethics and the Environment
WILD 205 (3) Principles of Ecology
WILD 311 (3) Ethology
WILD 375 (3) Issues: Environmental Sciences
WOOD 410 (3) The Forest Ecosystem

Notes:
1. Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study to ensure that they have met all conditions.
2. Not all courses are offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.
3. Students using AGRI 491D1/AGRI 491D2 towards the requirements of the Certificate/Minor are limited to an experience on farms or other enterprises that are either organic, biodynamic, or practising permaculture. The placement must be approved by the academic adviser for the Certificate/Minor.
4. SOIL 521 is an alternate year course.

AGRICULTURAL SCIENCES MAJORS

Academic Adviser: Katherine McClintock
Department of Plant Science
Telephone: (514) 398-7940

The Agricultural Sciences Majors are designed to provide students with a broad appreciation of the scientific and applied aspects of modern agriculture and the flexibility to pursue individual interests. During the summer months, students can gain valuable practical field experience (and obtain additional course credit) in the Agricultural Sciences Internship Major.

Both majors consist of a similar core of required courses that confer eligibility to apply for membership in the Ordre des agronomes du Québec and other provincial institutes of agrology. Students in the Agricultural Sciences Majors can enroll in the General Option, or obtain more specialized experience by selecting the Ecological Agriculture, International Agriculture, Soil Science or Agricultural Biotechnology Options.

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 52 credits
Complementary Courses: 19 credits
Electives: To meet the minimum credit requirement for the degree.
### Agricultural and Environmental Sciences – Interdisciplinary Studies

#### Required Courses:

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<td>AEMA 310</td>
<td>Statistical Methods</td>
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<td>AGEC 200</td>
<td>Principles of Microeconomics</td>
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<td>AGEC 231</td>
<td>Economic Systems of Agriculture</td>
<td>3</td>
</tr>
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<td>AGRI 210</td>
<td>Agro-Ecological History</td>
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<td>CELL 204</td>
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<tr>
<td>FDSC 211</td>
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<td>MICR 230</td>
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<td>RELG 270</td>
<td>Religious Ethics and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 210</td>
<td>Principles of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 315</td>
<td>Soil Fertility and Fertilizer Use</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Complementary Courses:

- at least one of:
  - ANSC 323 (Mammalian Physiology)
  - PLNT 353 (Plant Structure and Function)

- at least one production course in Agricultural Science:
  - AGEC 331 (Farm Business Management)
  - ANSC 450 (Dairy Cattle Production)
  - ANSC 452 (Beef Cattle and Sheep Production)
  - ANSC 454 (Swine Production)
  - ANSC 456 (Poultry Production)
  - PLNT 331 (Field Crops)

- and a minimum of 12 credits chosen in consultation with the Academic Adviser from courses with Subject Codes BRE, AGR, ANSC, ENTO, NRSC, PLNT, and SOIL.

### Agricultural Sciences Internship Major – General Option (96 credits)

#### Required Courses:

- 64 credits

#### Complementary Courses:

- 19 credits

#### Electives:

- To meet the minimum credit requirement for the degree.

#### Required Courses:

- 61 credits

- All of the required courses (52 credits) specified for the Agricultural Sciences Major – General Option, with the addition of:
  - AEBI 202 (Cellular Biology)
  - MICR 338 (Bacterial Molecular Genetics)
  - PARA 400 (Eukaryotic Cells and Viruses)

#### Complementary Courses:

- 16 credits

- At least one of:
  - ANSC 323 (Mammalian Physiology)
  - PLNT 353 (Plant Structure and Function)

#### Operational Sciences Major – General Option

- 52 credits

#### Electives:

- To meet the minimum credit requirement for the degree.

### Agricultural Sciences Internship Major – Agricultural Biotechnology Option (96 credits)

#### Required Courses:

- 73 credits

#### Complementary Courses:

- 16 credits

#### Electives:

- To meet the minimum credit requirement for the degree.

#### Required Courses:

- 61 credits

- All of the required courses (52 credits) specified for the Agricultural Sciences Major – Agricultural Biotechnology Option, with the addition of:
  - AGRI 201D1 (Agri-Environment Internship)
  - AGRI 201D2 (Agri-Environment Internship)
  - AGRI 301D1 (Agrology Internship)
  - AGRI 301D2 (Agrology Internship)

#### Complementary Courses:

- 16 credits

- At least one of:
  - ANSC 323 (Mammalian Physiology)

### Agricultural Sciences Internship Major – Ecological Agriculture Option (90 credits)

#### Required Courses:

- 61 credits

#### Complementary Courses:

- 16-19 credits

#### Electives:

- To meet the minimum credit requirement for the degree.

#### Required Courses:

- 61 credits

- All of the required courses (52 credits) specified for the Agricultural Sciences Major – General Option, with the addition of:
  - AGRI 340 (Principles of Ecological Agriculture)
  - AGRI 341 (Ecological Agriculture Systems)
  - WILD 205 (Principles of Ecology)

#### Complementary Courses:

- 16 to 19 credits

- At least one of:
  - ANSC 323 (Mammalian Physiology)
AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (90 credits)

Required Courses: 58 credits

Complementary Courses: 16 credits

Electives: To meet the minimum credit requirement for the degree.

CREDITS

Required Courses: 58 credits

All of the required courses (52 credits) specified for the Agricultural Sciences Major – General Option, with the addition of:

AGRI 411 International Agriculture 3
AGEC 442 Economics of International Agricultural Development 3

Complementary Courses: 16 credits

at least one of:

ANSC 323 (4) Mammalian Physiology
PLNT 353 (4) Plant Structure and Function

at least one production course in Agricultural Science:

AGRI 301D2 Agrology Internship 3
AGRI 301D1 Agrology Internship 3
AGRI 201D2 Agri-Environment Internship 3
AGRI 201D1 Agri-Environment Internship 3

Choose 9 credits from the following list, with a maximum of 3 credits at the 200-level. Courses marked with an asterisk (*) are part of either the “Barbados Field Study Semester”, section 14.2.2 or the "Panama Field Study Semester", section 14.3, and must be taken as part of the 15-credit field study semester.

Students should be aware that participation in AGRI 305 or an International Field Semester will entail extra cost.

AGEC 333 (3) Resource Economics
AGRI 305 (3) Barbasos Agro-Ecosystems
AGRI 341 (3) Ecological Agriculture Systems
AGRI 452* (3) Water Resources in Barbados
AGRI 519* (6) Sustainable Development Plans
AGRI 550* (3) Sustained Tropical Agriculture
ANTH 212 (3) Anthropology of Development
ENVR 451* (6) Research in Panama
GEOG 216 (3) Geography of the World Economy
NRSC 340 (3) Global Perspectives on Food
NRSC 540 (3) Socio-Cultural Issues in Water
NUTR 501 (3) Nutrition in Developing Countries
POLI 227 (3) Developing Areas/Introduction
SOCI 254 (3) Development and Underdevelopment

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (96 credits)

Required Courses: 70 credits

Complementary Courses: 16 credits

Electives: To meet the minimum credit requirement for the degree.

CREDITS

Required Courses: 70 credits

All of the required courses (58 credits) specified for the Agricultural Sciences Major – International Agriculture Option, with the addition of:

AGRI 201D1 Agri-Environment Internship 3
AGRI 201D2 Agri-Environment Internship 3
AGRI 301D1 Agrology Internship 3
AGRI 301D2 Agrology Internship 3

Complementary Courses: 16 credits

As described for the Agricultural Sciences Major – International Agriculture Option.
AGRICULTURAL AND ENVIRONMENTAL SCIENCES – FARM MANAGEMENT AND TECHNOLOGY PROGRAM

AGRICULTURAL SCIENCES MAJOR – SOIL SCIENCE OPTION (90 credits)
Required Courses: 52 credits

Complementary Courses: 25 credits
Electives: To meet the minimum credit requirement for the degree.

Required Courses: 64 credits
All of the required courses (52 credits) specified for the Agricultural Sciences Major – General Option.

Complementary Courses: 25 credits
at least one of:
- ANSC 332 (4) Mammalian Physiology
- PLNT 353 (4) Plant Structure and Function
- SOIL 326 (3) Soil Genesis and Classification

at least one production course in Agricultural Science:
- AGEC 331 (3) Farm Business Management
- ANSC 450 (3) Dairy Cattle Production
- ANSC 452 (3) Beef Cattle and Sheep Production
- ANSC 454 (3) Swine Production
- ANSC 456 (3) Poultry Production
- PLNT 331 (3) Field Crops

A minimum of 18 credits chosen from the following:
- AGRI 435 (3) Soil and Water Quality Management
- BREE 217 (3) Hydrology and Water Resources
- SOIL 200 (3) Introduction to Earth Science
- SOIL 326 (3) Soil Genesis and Classification
- SOIL 330 (3) Soil Physics
- SOIL 335 (3) Soil Ecology and Management
- SOIL 410 (3) Soil Chemistry
- SOIL 521 (3) Soil Microbiology and Biochemistry

AGRICULTURAL SCIENCES INTERNSHIP MAJOR – SOIL SCIENCE OPTION (96 credits)
Required Courses: 64 credits
Complementary Courses: 25 credits
Electives: To meet the minimum credit requirement for the degree.

Required Courses: 64 credits
All of the required courses (52 credits) specified for the Agricultural Sciences Major – Soil Science Option, with the addition of:

- AGRI 201D1 Agri-Environment Internship 3
- AGRI 201D2 Agri-Environment Internship 3
- AGRI 301D1 Agrology Internship 3
- AGRI 301D2 Agrology Internship 3

Complementary Courses: 25 credits
As described for the Agricultural Sciences Major – Soil Science Option.

12.6.9 Field Studies

African Field Study Semester
The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1 "African Field Study Semester".

Barbados Field Study Semester
This program takes place at Bellairs Research Institute in Barbados, it is a full 15 credit program offered each fall semester. For more information, see section 14.2.2 "Barbados Field Study Semester".

Macdonald Summer Field Course
The Department of Natural Resource Sciences coordinates a summer field course which offers students the opportunity to participate in supervised field research not otherwise easily conducted at other times of the year. For more information, see the Department of Natural Resource Sciences, section 12.6.6 "Department of Natural Resource Sciences".

Panama Field Study Semester
The program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. For more information, see section 14.3 “Panama Field Study Semester”. You can also visit the following website for details: www.mcgill.ca/mse -> Programs

12.7 Graduate Programs

Graduate work may be undertaken on the Macdonald Campus, through the Departments of Agricultural Economics, Animal Science, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences, and Plant Science, the Institute of Parasitology, and the School of Dietetics and Human Nutrition.

The advanced courses of study offered lead to the degrees of Master of Science, Graduate Certificate in Biotechnology, Graduate Certificate in Integrated Water Resources Management (IWRM), and Doctor of Philosophy.

Information on these programs and related fellowships is available from the Student Affairs Office, Macdonald Campus of McGill University, Sainte-Anne-de-Bellevue, QC H9X 3V9.

The Graduate and Postdoctoral Studies Calendar and full information regarding graduate courses, theses, registration, fellowships, etc., can be accessed on the McGill Website, www.mcgill.ca.

12.8 Farm Management and Technology Program
Farm Management and Technology Program
Faculty of Agricultural and Environmental Sciences
P.O. Box 204, Macdonald Campus of McGill
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Telephone: (514) 398-7814
Fax: (514) 398-7955
E-mail: fmt.macdonald@mcgill.ca
Website: www.mcgill.ca/fmt

Director — Peter Enright

12.8.1 Program – FMT

This 3-year academic and practical program is offered on the Macdonald Campus and taught by the staff of the Faculty of Agricultural and Environmental Sciences of McGill University. The program is funded by the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec and authorized by the Ministère de l'Éducation, du Loisir et du Sport du Québec.

The educational goals of the program are:
1. to make our graduates competent in the exercise of their profession;
2. to help the student's integration into professional life;
3. to foster professional mobility;
4. to foster a need for continual development of professional knowledge.

Six academic terms are spent on the Macdonald Campus studying a sequence of courses in soil, plant science, animal science, engineering, economics and management. The first summer of the program includes a 13-week internship on an agricultural enterprise other than the home farm, or an agricultural business where the student learns the many skills and encounters the many problems related to modern commercial agriculture. Students prepare
for their Enterprise internship during both academic semesters of Year 1 through two Farm Practice courses.

During the second summer, students are registered in Entrepreneurship 1, which involves agricultural enterprises. The students will be responsible for data collection to be used in their Farm Project and the Nutrient Management Plan 2 when they return to campus for the Fall semester. The internships and practicums will enable the students to relate their academic work to the reality of farming and the agri-food sector.

Finally, courses in English, French, Humanities, Physical Education and two complementary courses taken during the program will entitle the student to receive a Diplôme d'études collégiales (DEC) from the Ministère de l'Éducation, du Loisir et du Sport du Québec. Students will also receive a certification from Macdonald Campus stating that they have successfully completed the requirements of the Farm Management and Technology Program.

12.8.2 Entrance Requirements – FMT

1. Students should have a good practical knowledge of farming under eastern Canadian conditions. One year of experience is recommended but under special conditions a four-month summer season is acceptable.

2. The minimum academic entrance requirements are a Quebec High School Leaving Certificate (Secondary V), or its equivalent and any other academic requirement set by the M.E.L.S.

3. All candidates for admission must make arrangements to come to the Macdonald Campus for an interview prior to admission to the program.

4. Admission to this program is only in the Fall semester.

5. We strongly encourage incoming students to acquire their driver’s permit (both for cars and farm equipment) before coming to Macdonald Campus. This is first for safety reasons, given that students work with farm equipment (Soil Preparation) very early on as they arrive at Macdonald. As well, most farmers require that their employees and stagiaires know how to drive and possess the appropriate driver’s license.

12.8.3 Registration – FMT

Students in the Farm Management and Technology Program must register on-line using Minerva at www.mcgill.ca/minerva-students for each semester at McGill.

Note: The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules, conditions of admission and credit requirements and the revision or cancellation of particular courses. In normal circumstances, individual courses will not be offered with less than five registrants.

12.8.4 Program Outline

Administrative Unit
FMTP 001 Farm Practice 1
FMTP 011 Farm Practice 2
FMTP 036 Enterprise Internship
FMTP 007 Health and Farm Safety
FMTP 037 Entrepreneurship 1

Bioresource Engineering
FMTP 018 Building Maintenance
FMTP 024 Farm Building Planning
FMTP 014 Machinery Management
FMTP 004 Microcomputing
FMTP 027 Precision Farming
FMTP 021 Soil and Water Conservation
FMTP 003 Soil Preparation
FMTP 019 Tools and Machinery Maintenance

Agricultural Economics
FMTP 039 Agri-Marketing
FMTP 002 Introduction to Economics
FMTP 038 Financial and Managerial Accounting

FMTP 042 Budgeting, Finance and Policies
FMTP 043 Entrepreneurship 2
FMTP 025 Farm Project
FMTP 044 Management of Human Resources

Animal Science
FMTP 005 Animal Anatomy and Physiology
FMTP 008 Introduction to Animal Science

English
FMTP 080 English Upgrading
FMTP 084 English for FMT
FMTP 081 Components of Discourse
FMTP 082 Literary Genres
FMTP 083 Literary Themes

Français
FMTP 075 Langue française et communication
FMTP 098 Français agricole

Humanities
FMTP 085 Humanities 1: Knowledge
FMTP 086 Humanities 2: World Views
FMTP 087 Environmental and Organizational Issues

Natural Resource Sciences
FMTP 040 Nutrient Management Plan 1
FMTP 041 Nutrient Management Plan 2
FMTP 009 Soil Fertilization

Physical Education
FMTP 093 Health and Physical Education
FMTP 094 Physical Activity
FMTP 095 Active Living

Plant Science
FMTP 006 Agricultural Botany
FMTP 017 Pesticide Use

ELECTIVE PRODUCTION COURSES

We offer four production courses in the area of Animal Science and four production courses in the area of Plant Science. Students must take a minimum of two courses in each category for a total of four courses. Students could elect to take more than four courses if they wish, after a discussion with their academic adviser. They must take a minimum of two courses per semester.

Animal Science category
FMTP 028 Dairy Heifer Management
FMTP 029 Dairy Herd Management
FMTP 030 Swine and Poultry
FMTP 031 Beef and Sheep

Plant Science category
FMTP 034 Feed Crops
FMTP 035 Industrial Crops
FMTP 033 Greenhouse Crops
FMTP 032 Fruit and Vegetable Crops

COMPLEMENTARY COURSES *

Students must take the following complementary courses to meet the program requirements:
FMTP 096 Forests, Forestry and Society
FMTP 097 Landscape Design

* After consultation with their academic adviser, students can substitute complementary courses taken at another collegial institution. This includes science courses which are required for further studies in a degree program. The cost associated with courses taken elsewhere must be assumed by the students.

COMPREHENSIVE ASSESSMENT

The objective of this examination is to ensure that students have attained the objectives and standards for each competency in the program. Successful completion of the Comprehensive Assessment is mandatory to obtain the D.E.C.

The passing grade is 60%. The mark indicating that the student has successfully completed the Comprehensive Assessment will appear on the student’s transcript. Students who failed the Comprehensive Assessment will be offered the possibility of completing the same the following year.
ENGLISH EXIT EXAMINATION
All students who wish to graduate and obtain the D.E.C. must pass the English Exit Examination that is offered by the M.E.L.S. Students must take this examination on the date selected by the M.E.L.S.

12.8.5 Academic Rules and Regulations – FMT

12.8.5.1 Sessional Dates
The number of teaching and examination days is set by the Ministère de l’Éducation, du Loisir et du Sport du Québec. The sessional dates vary from year to year. At the present time, each semester has 75 teaching days and 7 days of exams.

12.8.5.2 Last Day for Withdrawal or Course Additions
The last day to make course registration changes for Fall term courses is September 20.

12.8.5.3 Academic Standing
Attendance in class is compulsory. Students with attendance of less than 80% may not be permitted to write examinations.

Examinations and other work in courses will be marked according to the percentage system. The minimum passing mark in a course is 60%.

When a student’s cumulative percent average (CPA) or semester percent average (SPA) first drops below 60%, or they fail four or more courses in a semester, withdrawal is advised. Students who choose to remain in the program are on probation.

Students on probation are normally permitted to register for not more than 10 credits per semester. They are not permitted to be on probation for more than one semester unless they obtain an SPA of 70% or higher.

Students who do not raise their CPA to 60% (or obtain an SPA of 70%) while on probation are not permitted to continue. They are required to withdraw from the program for one year. If, after this period, students wish to be readmitted, they must apply in writing to the Director of the Program.

12.8.5.4 Handbook on Student Rights and Responsibilities
This Handbook is a compendium of regulations and policies governing student rights and responsibilities at McGill University. It is published jointly by the Dean of Students’ Office and the Secretariat. A copy of the Handbook can be found on the Web at www.mcgill.ca/secretariat/statutes/documents or obtained from the Student Affairs Office or the Macdonald Campus Student Affairs Office.

12.8.5.5 Institutional Policy on the Evaluation of Student Achievement
The policy has the following objectives:
• to establish and explain the principles followed in evaluating student learning;
• to describe the means of translating these principles into practice and to establish the required procedures;
• to articulate the appropriate responsibilities of students, instructors, departments, and academic administrators;
• to account to students, parents, universities and employers for the standards of learning at the campus;
• to create an environment of awareness and free discussion of pedagogical concerns within all segments of the campus community;
• to provide information which will allow students to more fully understand and participate in the educational process;
• to provide the framework within which instructors and academic administrators can exercise their professional judgment in a competent, just, and coherent fashion.

Copies are available in the Library and students are informed of it at registration.

12.8.6 Fees and Expenses – FMT

12.8.6.1 Fees
Tuition fees for all full-time students who are eligible for the Farm Management and Technology Program are paid by the ministère de l’Agriculture, des Pêcheries et de l’Alimentation du Québec. Student Services and Student Societies’ fees, as well as course material fees, will be charged according to the schedule in effect for all Macdonald Campus students. At the time of printing, the fees were $690.95 for the Fall semester and $546.35 for the Winter semester.

* 2006-07 fees, subject to change without notice.

12.8.6.2 Textbooks and Supplies
The cost of textbooks and supplies is estimated at $200.00 per semester.

12.8.6.3 Financial Assistance
A limited number of loans are granted on the basis of financial need to full-time students who maintain satisfactory academic standing, however, all applicants for McGill aid must apply for maximum government aid or other assistance for which they are eligible.

Applicants must arrange for an interview with the Loan Administrator for the Quebec region. During the academic year, the Administrator visits Macdonald Campus once a week to help students with financial difficulties.

For more information see “Scholarships and Financial Aid”, section 3.9, or contact the Student Services Centre, telephone (514) 398-7992. Applications for McGill loans are available on-line. Applicants must log-in to Minerva and visit Financial Aid to complete an application.

12.8.7 Residence Accommodation – FMT
The Laird Hall Residence has a capacity of 250 students. It accommodates undergraduate, graduate, and Farm Management and Technology Program students on the Macdonald Campus. For more information, see section 3.13.2 “University Residences – Macdonald Campus”.

12.9 Instructional Staff

All, Inteaz; B.Sc.(Guyana), M.Sc., Ph.D.(McG.); Professor of Food Science and Agricultural Chemistry
Baker, Laurence; B.B., M.Sc.(Manit.), Ph.D.(McG.); Associate Professor of Agricultural Economics
Barrington, Suzelle; B.Sc.(Agr.Eng.), Ph.D.(McG.); Professor of Bioresource Engineering
Bede, Jacqueline; B.Sc.(Calg.), M.Sc., Ph.D.(Tor.); Assistant Professor of Plant Science
Beech, Robin N.; B.Sc.(Nott.), Ph.D.(Edin.); Associate Professor of Parasitology
Begg, Caroline; B.Sc.(Agr.)(McG.), M.Sc.(Sask.), Ph.D.(McG.); Faculty Lecturer, Department of Plant Science
Bennett, Elena; B.A.(Oberlin), M.Sc., Ph.D.(Wisc.); Assistant Professor of Ecosystem Ecology
Bird, David M.; B.Sc.(Guelph), M.Sc., Ph.D.(McG.); Fellow A.O.U.; Professor of Wildlife Biology and Director, Avian Science and Conservation Centre
Blackwood, A. Clark; B.Sc., M.Sc.(Alta.), Ph.D.(Wisc.), F.R.S.C.; Emeritus Professor of Microbiology
Bonnell, Robert B.; B.Sc.(C’dia), B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.); Associate Professor of Bioresource Engineering (Brace Associate Professor)
Bordignon, Vilceu; Ag.Tec.(EAPC), D.V.M., M.Sc., Ph.D.; Assistant Professor of Animal Science
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FACULTY OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

Broughton, Robert S.; B.A., B.A.Sc.(Tor.), S.M.(MIT), Ph.D.(McG., I.D.(Dal.); F.A.S.A.E., F.C.S.A.E.; Emeritus Professor of Bioresource Engineering

Brown, Peter G.; B.A.(Haver.), M.A., Ph.D.(Col.); Associate Professor of Natural Resource Sciences (joint appoint. with Geography and McGill School of Environment)

Buckland, Roger B.; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Md.); Emeritus Professor of Animal Science

Buddle, Christopher; B.Sc.(Guelph), Ph.D. (Alta.); Assistant Professor of Forest Insect Ecology

Buszard, Deborah J.I.; B.Sc.(Bath), Ph.D.(Lond.); Professor of Plant Science

Campbell-Gordon, Judy; B.Sc.(Nutr.Sc.)(McG.); Faculty Lecturer, School of Dietetics and Human Nutrition

Côté, Benoît; B.Sc., Ph.D.(Laval); Associate Professor of Woodland Resources, Chair of Department of Natural Resource Sciences

Cue, Roger I.; B.Sc.(Newcastle, UK), Ph.D.(Edin.); Associate Professor of Animal Science

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de Blois, Sylvie; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.); Assistant Professor of Plant Science and McGill School of Environment

Donnelly, Danielle J.; B.Sc.(Agr.)(McG.), M.Sc.(Br.Col.), Ph.D.(S. Fraser); Associate Professor of Plant Science

Driscoll, Brian T.; B.Sc., Ph.D.(McM.); Associate Professor of Microbiology

Dunphy, Gary B.; B.Sc., M.Sc., Ph.D.(Nfld.); Associate Professor of Entomology

Dutilleul, Pierre R.; B.Sc., Ph.D.(Belgium); Professor of Statistics

Egelund-Hovda, Grace M.; B.A.(Luther), Ph.D.(Pitt.); Associate Professor of Human Nutrition and Canada Research Chair

Ellyett, William R.; B.A.(Sir G. Wms.), B.Ed.(P.E.)(McG.), Faculty Lecturer, Farm Management and Technology Program and Director of Athletics

Enright, Peter; B.Sc.(Agr.), M.Sc.(McG.), Faculty Lecturer, Director, Farm Management and Technology Program


Faubert, Gaétan M.; B.Sc.(Sher.), M.Sc.(Montr.), Ph.D.(McG.); Professor of Parasitology

Fortin, Marc G.; B.Sc., M.Sc.(Laval), Ph.D.(McG.); Associate Professor of Plant Science

Fyles, James W.; B.Sc., M.Sc.(Vic., BC), Ph.D.(Alta.); Professor of Woodland Resources (Tomlinson-Fowler Professor of Forest Ecology)

Geary, Timothy G.; B.Sc.(Notre Dame), Ph.D. (Mich.); Professor, Institute Parasitology, Canada Research Chair in Parasite Biotechnology

Georges, Elias; B.Sc., Ph.D.(McG.); Associate Professor of Parasitology

Grant, William F.; B.A., M.A.(McM.), Ph.D.(Virqg.), F.L.S.; Emeritus Professor of Genetics

Gray-Donald, Katherine; B.Sc., Ph.D.(McG.); Associate Professor of Human Nutrition

Hayes, J. Flannan; B.Agr.Sc., M.Agr.Sc.(Dublin), Ph.D.(N.Carolina St.); Professor of Animal Science

Hendershot, William H.; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(U.B.C.); Associate Dean (Academic), Professor of Soil Science

Henning, John C.; B.Sc., Ph.D.(Guelph); Associate Professor of Agricultural Economics and Chair of Department

Humphries, Murray; B.Sc.(Manit.), Ph.D.(Alta.); Assistant Professor of Wildlife Biology

Ismail, Ashraf A.; B.Sc., Ph.D.(McG.); Associate Professor of Food Science and Agricultural Chemistry

Jabaji-Hare, Suha; B.Sc.(AUB), M.Sc.(Guelph), Ph.D.(Wat.); Associate Professor of Plant Science and Associate Dean (Research)

Jodr, Jacob; B.Sc., B.A.(H.Ec.) (Mt. St.Vin.), M.Sc., Ph.D.(McG.), RD, FDC; Faculty Lecturer, School of Dietetics and Human Nutrition

Johs, Timothy A.; B.Sc.(McM.), M.Sc.(Br.Col.), Ph.D.(Mich.); Professor of Animal Nutrition

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Kermasha, Selim; B.Sc.(Baghdad), D.Sc.(Nancy); Associate Professor of Food Science and Agricultural Chemistry and Chair of Department

Kimmins, Sarah; B.Sc.(Dal.), M.Sc.(Nova Scotia Ag.), Ph.D.(Dal.), Assistant Professor of Animal Science

Knowles, Roger; B.Sc.(Birm.), Ph.D., D.Sc.(Lond.), F.R.S.C.; Emeritus Professor of Microbiology

Kok, Robert; B.E.Sc., Ph.D.(W.Ont.); Professor of Bioresource Engineering and Chair of Department

Koski, Kristine G.; B.S., M.S.(Wash.); Ph.D.(Calif.), Davis; Emeritus Professor of Human Nutrition and Director, School of Dietetics and Human Nutrition

Kubow, Stan; B.Sc.(McG.), M.Sc.(Tor.); Associate Professor of Animal Science

Kuhnlein, Harriet V.; B.S.(Penn. St.), M.S.(Ore.), Ph.D.(Calif.); Emeritus Professor of Animal Nutrition

Kuhnlein, Urs; B.Sc.(Fed. Inst. of Tech., Zurich), Ph.D.(Geneva Coll.); Professor of Animal Science

Kushalappa, Ajamadra C.; B.Sc., Ph.D.(B'lere), Ph.D.(Flor.); Associate Professor of Plant Science

Lewis, David J.; B.Sc., M.Sc., Ph.D.(Mem.); Associate Dean (Student Affairs) and Associate Professor of Entomology

Lussi, Serge; B.Sc.(Agr./McG.); Assistant Director and Faculty Lecturer, Farm Management and Technology Program

MacKenzie, Angela F.; B.S.A., M.Sc.(Sask.), Ph.D.(C'nell); Emeritus Professor of Soil Science

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McCIntock, Katherine; B.A.(Welles.), B.Sc.(Agr.), M.Sc. (McG.); Faculty Lecturer, Department of Plant Science

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Moffat, Donald; B.Ed.(McG.), Grad Dip in Sports Admin.(C'dia); Faculty Lecturer (PT), Farm Management and Technology Program and Instructional Coordinator of Athletics

Molot, Christian; B.Sc.(Guelph), B.Sc.(Ott.); Faculty Lecturer, Farm Management and Technology Program

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Monardes, Humberto G.; B.Sc.(Concepcion, Chile), M.Sc. (McG.); Professor of Animal Science

Moxley, John E.; B.Sc.(Agr.), M.Sc.(McG.); Assistant Professor of Agricultural Economics and Chair of Department

Mustafa, Arif F.; B.Sc., M.Sc.(Khartoum), Ph.D.(Sask.); Associate Professor of Animal Science (William Dawson Scholar)

Naseem, Anwar; B.Sc.(McG.), M.A., M.Sc. (Penn.), Ph.D.(Mich. St.); Assistant Professor of Agricultural Economics and Plant Science

Ngadi, Michael O.; B.Eng.(Nigeria), M.A.Sc., Ph.D.(Tech.UNS); Associate Professor of Bioresource Engineering (William Dawson Scholar)

Ngadi, Michael O.; B.Eng.(Nigeria), M.A.Sc., Ph.D.(Tech.UNS); Associate Professor of Bioresource Engineering (William Dawson Scholar)

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13 McGill School of Environment

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13.1 The School

13.1.1 Location
For advising, contact:
Program Coordinator, Mr. Peter Barry
Telephone: (514) 398-4306
Fax: (514) 398-1643
E-mail: pete.barry@mcgill.ca
Website: www.mcgill.ca/mse

Downtown Campus
3534 University Street
Montreal, QC H3A 2A7
Telephone: (514) 398-2827
Fax: (514) 398-1643

Macdonald Campus
Rowles House
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Telephone: (514) 398-7559
Fax: (514) 398-7846

13.1.2 Administrative Officers
Chandra Madramootoo; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.)
Dean, Faculty of Agricultural and Environmental Sciences

John G. Galaty; B.A.(Trinity), M.A., Ph.D.(Chic.)
Interim Dean, Faculty of Arts

Martin Grant; B.Sc.(PEI), M.Sc., Ph.D.(Tor.)
Dean, Faculty of Science

Nigel Roulet; B.Sc.(Trent), Ph.D.(McM.)
Director

Peter Barry; B.Sc.(’dia), M.Sc.(McG.)
Program Coordinator

13.1.3 Academic Staff

Professors
Peter G. Brown; B.A.(Haverford), M.A., Ph.D.(Col.) (joint appoint. with Geography and Natural Resource Sciences)

Colin Chapman; B.Sc., M.A., Ph.D.(Alta.) (joint appoint. with Anthropology)

Nigel Roulet; B.Sc., M.Sc.(Trent), Ph.D.(McM.) (joint appoint. with Geography)

Associate Professors
Frédéric Fabry; B.Sc., M.Sc., Ph.D.(McG.) (joint appoint. with Atmospheric and Oceanic Sciences)


Assistant Professors
Madhav Badami; B.Tech., M.Sc.(Indian IT), M.E.Des.(Calg.), Ph.D.(Br.Col.) (joint appoint. with School of Urban Planning)

Elena Bennett; B.A.(Oberlin), M.Sc., Ph.D.(Wisc.) (joint appoint. with Natural Resource Sciences)

Sylvie de Blois; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.) (joint appoint. with Plant Science)

Jaye Ellis; B.A.(Calg.), LL.B., B.C.L.(McG.), LL.M.(Br.Col.) (joint appoint. with Law)

Brian Leung; B.Sc.(Br.Col.), Ph.D.(Car.) (joint appoint. with Biology)

Gregory Mikkelson; B.A.(Trinity), M.S., Ph.D.(Chic.) (joint appoint. with Philosophy)

Garry Peterson; B.Sc. (Wat.), M.Sc., Ph.D. (Flor.) (joint appoint. with Geography)

Anthony Ricciardi; B.Sc.(Agr.), M.Sc., Ph.D.(McG.) (joint appoint. with Redpath Museum)
McGill School of Environment

Raja Sengupta; B.Sc. (Bombay), M.Sc.(Indian IT), Ph.D. (S. Illinois) (joint appoint. with Geography)

Faculty Lecturers
Colin Duncan; B.A.(Qu.), M.A., Ph.D.(York)
George McCourt; B.Sc., M.Sc (Alta.); M.Sc.(McG.)
Joan Marshall; B.A. (McG.), M.A.(Tor.), Ph.D. (McG.)

Associate Members
Agricultural Economics: John Henning
Anthropology: Andre Costopoulos, Nicole Couture, John Galaty, Colin H. Scott
Architecture: Avi Friedman
Art History and Communication Studies: Darin Barney
Atmospheric and Oceanic Sciences: Parisa Aarya, Charles Lin
Avian Science and Conservation Centre: David Bird
Brace Centre for Water Resources Management: Chandra Madramootoo
Biology: Lauren Chapman, Gregor Fussmann, Andrew Gonzalez, Irene Gregory-Eaves, Frederic Guichard, Andrew Hendry, Martin Lechowicz, Catherine Polvin
Bioresource Engineering: Suzelle Barrington, Robert Bonnell, Robert Kok
Chemical Engineering: Nathalie Tufenkji, Viviane Yargeau
Civil Engineering and Applied Mechanics: Susan Gaskin, Subhasis Ghoshal, Van-Thanh-Van Nguyen, Jim Nicell
Dietetics and Human Nutrition, School of: Laurie Chan, Tim Johns, Harriet Kuhnlein
Economics: Robert Cairns, Myron Frankman, Chris Green, Franque Grimard, Tom Naylor
Education, Integrated Studies: Elizabeth Wood
Epidemiology and Biostatistics: Mark Goldberg
Geography: Gail Chmura, Oliver Coomes, Thom Meredith, Tim Moore, Wayne H. Pollard, Nancy Ross, Jon Unruh
History: Gwyn Campbell, Myron Echenberg
Law, Faculty of: Jane Glenn
Management, Faculty of: Steve Maguire, Vedat Verter
Medicine, Ethics, Law: Margaret Somerville
Mining and Metallurgical Engineering: Jim Finch
Natural Resource Sciences: Benoit Côté, Mark Curtis, Brian Driscoll, Jim W. Fyles, William Hendershot, Murray Humphries, Ian Strachan, Roger Titman, Joann Whalen, Terry Wheeler
Parasitology, Institute of: Marilyn Scott, James Smith
Pathology: Bruce Case, Edith Zorychta
Philosophy: Philip Buckley
Plant Science: Pierre Dutilleul, Marc Fortin, Don Smith, Marcia Wateray
Political Science: Hudson Meadowl, Philip Oxhorn
Psychology: Daniel Levitin
Redpath Museum: Graham Bell, David M. Green
Sociology: Uli Locher, John Sandberg, Jonathan Seaquist
Urban Planning, School of: Jeanne Wolfe

13.1.4 Creation of the School

McGill's Faculties of Agricultural and Environmental Sciences, Arts, and Science have forged a unique approach to the study of environment through the inter-faculty, trans-disciplinary McGill School of Environment (MSE).

The growth of technology, globalizing economies, and rapid increase in population have had dramatic and significant environmental impacts. These changes have been accompanied by an increasing awareness of the relationship between human activity and the environment. Environmental problems range from local and short-term degradation through to the perturbation observed over the entire globe and for many years. The importance of human-environment relations for environmental and social well-being, and the complexity and conflict involved in environmental analysis and decision making, requires a depth and breadth of knowledge. The MSE has developed its programs with the approach of introducing students to a broad range of ideas early in the program to provide a foundation and an openness upon which more specialized, disciplinary knowledge can be built.

13.1.5 Goals of the School

The McGill School of Environment has the following goals:

- to provide an exciting and rigorous program that allows for intellectual growth in the comprehension of environmental systems or components of the environment;
- to impart to students an understanding of current environmental concerns;
- to help students gain an understanding of the complexity and conflicts that underlie most environmental problems; and
- to give students an opportunity to apply their knowledge in the analysis of specific, contemporary environmental issues.

13.2 Admission, Registration and Regulations

13.2.1 Admission

Students may be admitted to a B.A., B.A.&Sc., B.Sc.(Ag.Env.Sc.), or a B.Sc. program, offered by the MSE on the University’s two campuses: the Macdonald Campus and the Downtown Campus. They register as students within their Faculty of admission and are governed by all rules and regulations of that Faculty.

Students who have already completed a Bachelor or an equivalent degree may be admitted to the Diploma in Environment through any of the three MSE Faculties: Agricultural and Environmental Sciences, Arts, and Science. They register as students within the Faculty of admission and are governed by all rules and regulations of that Faculty relative to the Diploma.

Please see section “2006-07 Undergraduate Admissions Guide (Appendix A)".

13.2.2 Degree Requirements

To be eligible for a B.A. degree, students must fulfill all the faculty and program requirements as indicated under Arts (see section 4.3 “Faculty Degree Requirements”).

To be eligible for a B.A.&Sc. degree, students must fulfill all the faculty and program requirements as indicated under the Bachelor of Arts and Science (see section 5.3 “Degree Requirements”).

To be eligible for a B.Sc.(Ag.Env.Sc.) degree, students must fulfill all the faculty and program requirements as indicated under Agricultural and Environmental Sciences (see section "2006-07 Undergraduate Admissions Guide (Appendix A)"").

To be eligible for a B.Sc. degree, students must fulfill all the faculty and program requirements as indicated under Science (see section 11.3 “Faculty Degree Requirements”).

To be eligible for the Diploma in Environment, students must fulfill all program requirements as specified in section 13.11 “Diploma in Environment”.

To be eligible for an Honours degree, students must fulfill all the faculty and program requirements as indicated under their home faculty. For Arts, see section 4.10.1 “Honours and First-Class Honours”; for Arts & Science, see section 5.10.1 “Honours and First-Class Honours”; for Science, see section 11.10.1 “Honours and First-Class Honours”.

In addition to the requirements above, students must also fulfill the honours program requirements outlined in Honours Program in Environment, section 13.10.

13.2.3 Important Information about Program Selection

The MSE uses students’ program selections to identify which students are in the School’s major programs (and, by extension, which students are in the McGill Environmental Students’ Society).
Students in U1 who are unsure of the Domain they want to pursue may register in the Major or Faculty program in Environment without picking a Domain. However, they must pick a Domain in their U2 year.

**Note:** Students must select a Domain in order to graduate; they cannot graduate without choosing a Domain.

(None of the above applies to students in the B.A.&Sc., Minor or Diploma Programs.)

### 13.2.4 Course Numbering System at McGill

The first four characters of a McGill course number refer to the unit offering the course. For example, MSE courses begin with the Subject Code ENV (formerly 170-).

The three numbers following the Subject Code refer to the course itself, with 200-level courses usually taken by U1 students, 300-level by U2 students, and 400-level by U3 students. Senior undergraduate students can also take some 500-level courses, but they should limit themselves to no more than one per term.

### 13.2.5 Examination Regulations

Regulations concerning the method of evaluation of any course (including those governing supplemental examinations) are those of the faculty that offers the course. Students should note that supplemental exams are available for courses taught in the Faculties of Arts, of Science, and of Education, but not for courses taught in the Faculties of Agricultural and Environmental Sciences, of Engineering, or of Management.

**Note:** All ENVR courses, regardless of where they are taught, are offered only by the Faculty of Science.

### 13.2.6 Courses Outside the Student’s Faculty

Students in the School’s B.A., B.A.&Sc., B.Sc. and B.Sc.(Ag.Env.Sc.) programs may take courses outside their faculty according to the regulations of their faculty of admission. These regulations are not identical:

- Arts students, see Faculty of Arts, see section 3.6.2 “Courses outside the Faculties of Arts and of Science”.
- Arts and Science students, see Bachelor of Arts and Science, see section 5.3.6.2 “Courses outside the Faculties of Arts and of Science”.
- Science students, see Faculty of Science, see section 3.6.3 “Courses outside the Faculties of Arts and Science”.
- Agricultural and Environmental Sciences students, see section 12.5.1 “Minimum Credit Requirement”.
- Faculty of Science students in particular should be aware that some courses are restricted and cannot be taken for credit. See the Science Student Affairs Website at www.mcgill.ca/artscisao. Check under Departmental Students; Course and Program Selection; Science Students; Policy for Courses Outside Arts and Science.
- Students in the Diploma of Environment follow the program as specified; see section 13.11 “Diploma in Environment”.

### 13.3 Programs Offered

The McGill School of Environment has developed seven programs, which are offered on the Downtown and Macdonald campuses. These programs strive to offer the flexibility necessary to deal with the environment through a set of core courses that provide the general knowledge base of the program combined with a progressive series of courses in a trans-disciplinary area of environmental specialization, referred to as a Domain.

The programs are designed to prepare students for further study in environment or discipline-based graduate programs, and for employment in industry, government, and education.

The MSE offers five options for students interested in pursuing environmental studies.

1. **A Minor in Environment** is open to all undergraduate students. For more information, see section 13.5 “Minor in Environment” on page 395.
2. **A Faculty Program in Environment leading to a B.A.** is open to students meeting the entrance requirements of the Faculty of Arts. For more information, see section 13.6 “B.A. Faculty Program in Environment” on page 396.
3. **A Faculty Program in Environment leading to a B.A & Sc.** is open to students meeting the entrance requirements for the Bachelor of Arts and of Science. For more information, see section 13.7 “B.A. & Sc. Faculty Program in Environment” on page 399.
4. **A Major in Environment leading to a B.Sc.(Ag.Env.Sc.)** is open to students meeting the entrance requirements of the Faculty of Agricultural and Environmental Sciences. For more information, see section 13.8 “Major in Environment – B.Sc.(Ag.Env.Sc.) and B.C.” on page 401.
5. **A Major in Environment leading to a B.Sc.** is open to students meeting the entrance requirements of the Faculty of Science. For more information, see section 13.9 “Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc.” on page 401.
6. **Honours Program in Environment**, which is open to senior Environment students in the B.A., B.A.&Sc., B.Sc.(Ag.Env.Sc.) and B.Sc. degrees. For more information, see section 13.10 “Honours Program in Environment” on page 411.
7. **A Diploma in Environment** is available only to students who have already completed a Bachelor or an equivalent degree, and who wish to return to university for further undergraduate study. The Diploma is offered by all three MSE Faculties: Agricultural and Environmental Sciences, Arts, and Science. For more information, see section 13.11 “Diploma in Environment” on page 412.

### 13.4 Suggested Courses for Freshmen Students

The MSE does not recommend that students in their Freshman (U0) year take the ENVR Core courses. Instead, a list of courses that provide an introductory exposure to the concepts and issues in the natural and social environmental sciences can be found on the MSE website. Students in their U1 to U3 years are welcome to take selected ENVR courses, even if they are not in the Environment programs.

### 13.5 Minor in Environment

The Minor in Environment is intended to complement an expertise obtained through a Major, Major Concentration or a Faculty Program offered by an academic unit other than the MSE. Students taking the Minor in Environment are exposed to different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie environmental problems.

Students, after consulting with their adviser in their major program or concentration and the MSE Program Coordinator, can declare their intention to do a Minor in Environment.

To obtain a Minor in Environment, students must:

a. register for the Minor on-line, using Minerva;

b. submit their program of courses already taken and to be taken for the Minor in Environment to the MSE Program Coordinator for approval;

c. pass all courses counted towards the Minor with a grade of C or higher;
d. complete 18 credits from the courses listed below not otherwise counted towards the student’s Major program or concentration or a second Minor program; and

e. ensure that all the credits specified in (c) above are taken outside the discipline or field of the student’s Major program or concentration.

13.5.1 Minor Concentration in Environment

This 18-credit Minor is intended for Arts students in the multi-track system.

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Telephone: (514) 398-4306

Complementary Courses (18 credits)
12 credits selected from the MSE core courses:
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 400 (3) Environmental Thought

6 credits in environmentally related subjects selected with the approval of the program adviser (at least 3 credits must be in natural sciences).

A list of suggested courses is available on the MSE Website in “Undergraduate Programs: Minor”. Students are also encouraged to examine the course lists of the various Domains in the Environment Program on the next few pages of the Calendar for courses that interest them.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

13.5.2 Minor in Environment

This 18-credit Minor is intended for Science and Agricultural and Environmental Science students, but is open to students from other faculties as well, except Arts.

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Telephone: (514) 398-4306

Complementary Courses (18 credits)
12 credits selected from the MSE core courses:
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 400 (3) Environmental Thought

6 credits in environmentally related subjects selected with the approval of the program adviser (at least 3 credits must be in natural sciences).

A list of suggested courses is available on the MSE Website in “Undergraduate Programs: Minor”. Students are also encouraged to examine the course lists of the various Domains in the Environment Program on the next few pages of the Calendar for courses that interest them.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

13.6 B.A. Faculty Program in Environment

The B.A. Faculty Program has two components: Core and Domain. Students follow three steps in their degree program.

1. Core: The Core consists of four introductory courses and one intermediate-level course where students are exposed to the different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie most environmental problems. Through the Core program students go beyond the confines of their individual views of environment.

2. Domain: Domains provide a trans-disciplinary study of a particular theme or component of the environment.

3. Senior Core and Research: In the two senior courses of the Core, students will apply the general and specialized knowledge that they have gained in the program to the analysis of some specific, contemporary environmental problems.

To obtain a B.A. Faculty Program in Environment students must:

a. register in a Domain on-line, using Minerva;

b. satisfy the co- / prerequisite for the program (calculus and a basic science course);

c. pass all courses counted towards the Faculty Program with a grade of C or higher;

d. confirm that their course selection satisfies the required components of the MSE Core and their chosen Domain, and that the complementary courses are approved courses in their chosen Domain;

e. fulfill all Faculty requirements as specified for the B.A. in the Arts, see section 3 “Faculty Degree Requirements”, which include meeting the minimum credit requirement as specified in their letter of admission.

B.A. FACULTY PROGRAM IN ENVIRONMENT (54 credits)

The B.A. Faculty Program requires, as either a pre- or corequisite for the first year of the program:
3 credits of calculus:
MATH 139 Calculus
or MATH 140 Calculus 1
or equivalent (e.g., CEGEP objective 00UN)

3 credits of basic science chosen from:
BIOL 111 Principles: Organismal Biology (required for the Ecological Determinants of Health in Society Domain) or
CHEM 110 General Chemistry 1 or
PHYS 101 Introductory Physics - Mechanics or
their equivalents (e.g., CEGEP objectives: Biology 00UK, Chemistry 00UL, Physics 00UR).

Core: Required Courses (18 credits)
The Core courses are listed below in the Domain descriptions.

Core: Complementary Course – Senior Research Project (3 credits)
The research courses are listed in the Domain descriptions.

Domain (33 credits)
one MSE Domain selected from those available to students in the B.A. Faculty program.
Currently available:
Ecological Determinants of Health in Society Economics and the Earth's Environment Environment and Development

Each Domain has different requirements which are listed below. Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

13.6.1 Ecological Determinants of Health in Society Domain

This Domain (54 credits including Core) is open only to students in the B.A. Faculty Program in Environment.
Adviser: Professor Tim Johns  
E-mail: tim.johns@mcgill.ca  
Telephone: (514) 398-7847

An understanding of the interface between human health and environment depends not only on an appreciation of the biological and ecological determinants of health, but equally on an appreciation of the role of social sciences in the design, implementation, and monitoring of interventions. Demographic patterns and urbanization, economic forces, ethics, indigenous knowledge and culture, and an understanding of how social change can be effected are all critical if we are to be successful in our efforts to assure health of individuals and societies in the future. Recognizing the key role that nutritional status plays in maintaining a healthy body, and the increasing importance of infection as a health risk linked intimately with the environment, this domain prepares students to contribute to the solution of problems of nutrition and infection by tying the relevant natural sciences to the social sciences.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

**Prerequisite or Corequisite Courses for Program**

**MATH 139** (4) Calculus  
or MATH 140 (3) Calculus 1  
or equivalent (e.g., CEGEP objective 00UN)

**BIOL 111** (3) Principles: Organisms Biology  
or **AEBI 120** (3) General Biology (M)  
or equivalent (e.g., CEGEP objective 00UK or equivalent)

**NOTE:** Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Program prerequisites or corequisites listed above.

**Core: Required Courses** (18 credits)

- **ENVR 200** (3) The Global Environment  
- **ENVR 201** (3) Society and Environment  
- **ENVR 202** (3) The Evolving Earth  
- **ENVR 203** (3) Knowledge, Ethics and Environment  
- **ENVR 301** (3) Environmental Research Design  
- **ENVR 400** (3) Environmental Thought

**Core: Complementary Course – Senior Research Project** (3 credits*)

- **AGRI 519** (6) Sustainable Development Plans (in Barbados)  
- **ENVR 401** (3) Environmental Research  
- **ENVR 451** (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

**Domain: Required Courses** (6 credits)

- **PARA 410** (3) Environment and Infection (M)  
- **SOCI 234** (3) Population and Society

**Domain: Complementary Courses** (27 credits)

- 12 credits of Fundamentals (maximum 3 credits from any one category):
  - **Health and Pollution**
    - **ANTH 227** (3) Medical Anthropology  
    - **NRSC 333** (3) Physical and Biological Aspects of Pollution (M)
  - **Economics**
    - **AGEC 200** (3) Principles of Microeconomics (M)  
    - **ECON 208** (3) Microeconomic Analysis and Applications  
    - **NUTR 200** (3) Contemporary Nutrition  
    - **NUTR 207** (3) Nutrition and Health (M)
  - **Statistics**
    - **AEMA 310** (3) Statistical Methods 1 (M)  
    - **MATH 203** (3) Principles of Statistics 1  
    - **SOCI 350** (3) Statistics in Social Research

- 9 credits from List A (maximum 3 credits from any one category):
  - **Hydrology and Climate**
    - **BREE 217** (3) Hydrology and Water Resources (M)
    - **GEOG 321** (3) Climatic Environments  
    - **GEOG 322** (3) Environmental Hydrology  
    - **NRSC 510** (3) Agricultural Micrometeorology (M)  
  - **Agriculture**
    - **AGRI 210** (3) Agro-Ecological History (M)  
    - **AGRI 340** (3) Principles of Ecological Agriculture (M)  
    - **AGRI 411** (3) International Agriculture (M)
  - **Decision Making**
    - **AGEC 242** (3) Management Theories and Practices (M)  
    - **ECON 440** (3) Health Economics  
    - **PHIL 343** (3) Biomedical Ethics  
    - **BIOL Fundamentals**
      - **BIOL 200** (3) Molecular Biology  
      - **BIOL 205** (3) Biology of Organisms  
      - **BIOL 308** (3) Ecological Dynamics  
      - **FDSC 211** (3) Biochemistry 1 (M)  
    - **Development and Ecology**
      - **PHGY 202** (3) Human Physiology: Body Functions  
      - **PLNT 201** (3) Comparative Plant Biology (M)  
      - **WILD 200** (3) Comparative Zoology (M)  
      - **WILD 205** (3) Principles of Ecology (M)
  - **Societies**
    - **ANTH 212** (3) Anthropology of Development  
    - **ANTH 339** (3) Ecological Anthropology  
    - **GEOG 300** (3) Human Ecology in Geography  
    - **SOCI 254** (3) Development and Underdevelopment

- 6 credits from List B (maximum 3 credits from any one category):
  - **Advanced Ecology**
    - **BIOL 465** (3) Conservation Biology  
    - **BIOL 553** (3) Neotropical Environments (in Panama)  
    - **WILD 410** (3) Wildlife Ecology (M)  
    - **WOOD 410** (3) The Forest Ecosystem (M)
  - **Pest Management**
    - **BIOL 350** (3) Insect Biology and Control  
    - **ENTO 352** (3) Control of Insect Pests (M)  
    - **PLNT 361** (3) Pest Management and the Environment (M)
  - **Techniques and Management**
    - **BREE 430** (3) GIS for Biosystems Engineering (M)  
    - **CHEE 230** (3) Environmental Aspects of Technology  
    - **GEOG 201** (3) Introductory Geo-Information Science  
    - **GEOG 302** (3) Environmental Management 1  
    - **GEOG 380** (3) Adaptive Environmental Management  
    - **Social Change**
      - **AGRI 413** (3) Globalization: Issues of Change (in Barbados)  
      - **EDER 461** (3) Society and Change  
      - **ENVR 465** (3) Environment and Social Change (at Bay of Fundy)
  - **Immunology and Infectious Disease**
    - **MIMM 314** (3) Immunology  
    - **MIMM 324** (3) Fundamental Virology  
    - **MIMM 413** (3) Parasitology  
    - **PARA 438** (3) Immunology (M)
  - **Populations and Place**
    - **CANS 407** (3) Regions of Canada  
    - **GEOG 303** (3) Health Geography  
    - **GEOG 498** (3) Humans in Tropical Environments (in Panama)  
    - **PSYC 533** (3) International Health Psychology  
    - **SOCI 520** (3) Migration and Immigrant Groups  
    - **SOCI 550** (3) Developing Societies  
    - **SOCI 565** (3) Social Change in Panama (in Panama)

McGill University, Undergraduate Programs 2006-2007   397
### 13.6.2 Economics and the Earth’s Environment Domain

This Domain (54 credits including Core) is open only to students in the B.A. Faculty Program in Environment.

**Adviser:** Professor Don Baker  
E-mail: donb@eps.mcgill.ca  
Telephone: (514) 398-7485

Understanding Earth's geologic processes provides us with the knowledge to mitigate many of our society's environmental impacts due to resource extraction and waste disposal. This knowledge is not always enough, as economics often plays a controlling role in how we use and abuse our environment.

This Domain educates students in the fundamentals of economics and Earth sciences. The fundamentals of economics are provided, as is their application to the effects of economic choices on Earth's environment. Examples of these applications include the economic effects of public policy towards resource industries and methods of waste disposal, and the potential effects of global warming on the global economy. Students also learn of minerals, rocks, soils, and waters that define much of Earth’s environment and how these materials interact with each other and with the atmosphere. Courses in specific subdisciplines of Earth sciences combined with courses presenting a global vision of how the Earth and its environment operate provide the student with the necessary knowledge of geologic processes. Examples of this knowledge include the effects of mineral and energy extraction on the environment and how industrial waste interacts with solids and liquids in the environment. The Earth science and economics studies merge in the final year when the students apply what they have learned in the Domain to current environmental issues.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

**Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)**

#### Prerequisite or Corequisite Courses for Program

3 credits of calculus:  
MATH 139 Calculus  
or MATH 140 Calculus 1  
or equivalent (e.g., CEGEP objective 00UN)

3 credits of basic science chosen from:  
BIOL 111 Principles: Organismal Biology  
or CHEM 110 General Chemistry 1  
or PHYS 101 Introductory Physics - Mechanics  
or their equivalents (e.g., CEGEP objectives: Biology 00UK, Chemistry 00UL, Physics 00UR).

**NOTE:** Students are required to take a maximum of 34 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

#### Core: Required Courses (18 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 200</td>
<td>The Global Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 201</td>
<td>Society and Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 202</td>
<td>The Evolving Earth</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 203</td>
<td>Knowledge, Ethics and Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 301</td>
<td>Environmental Research Design</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 400</td>
<td>Environmental Thought</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Core: Complementary Course – Senior Research Project (3 credits*)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 519</td>
<td>Sustainable Development Plans (in Barbados)</td>
<td>6</td>
</tr>
<tr>
<td>ENVR 401</td>
<td>Environmental Research</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 451</td>
<td>Research in Panama (in Panama)</td>
<td>6</td>
</tr>
</tbody>
</table>

* Only 3 credits will be applied to the program; extra credits will count as electives.

#### Domain: Required Courses (16 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 230D1</td>
<td>Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 230D2</td>
<td>Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 405</td>
<td>Natural Resource Economics</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 210</td>
<td>Introductory Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 212</td>
<td>Introductory Petrology</td>
<td>4</td>
</tr>
</tbody>
</table>

### Domain: Complementary Courses (17 credits)

#### 3 credits of ecology:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 308</td>
<td>Ecological Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>WILD 205</td>
<td>Principles of Ecology (M)</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 3 credits of statistics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEMA 310</td>
<td>Statistical Methods 1 (M)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 202</td>
<td>Statistics and Spatial Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 203</td>
<td>Principles of Statistics 1 or equivalent</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 6 credits of economics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 333</td>
<td>Resource Economics (M)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 326</td>
<td>Ecological Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 347</td>
<td>Economics of Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>ECON 416</td>
<td>Topics in Economic Development 2</td>
<td>3</td>
</tr>
<tr>
<td>ECON 525</td>
<td>Project Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 5 credits minimum of advanced courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 413</td>
<td>Globalization: Issues of Change (in Barbados)</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 435</td>
<td>Soil and Water Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 452</td>
<td>Water Resources in Barbados (in Barbados)</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 550</td>
<td>Sustained Tropical Agriculture (in Panama)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 339</td>
<td>Ecological Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 305</td>
<td>Animal Diversity</td>
<td>3</td>
</tr>
<tr>
<td>CHEE 340</td>
<td>Technology Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>ECON 305</td>
<td>Industrial Organization</td>
<td>3</td>
</tr>
<tr>
<td>ECON 313</td>
<td>Economic Development 1</td>
<td>3</td>
</tr>
<tr>
<td>ECON 314</td>
<td>Economic Development 2</td>
<td>3</td>
</tr>
<tr>
<td>ECON 408D1</td>
<td>Public Sector Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 408D2</td>
<td>Public Sector Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 412</td>
<td>Topics in Economic Development 1</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 312</td>
<td>Spectroscopy of Minerals</td>
<td>3</td>
</tr>
<tr>
<td>EPSC 334</td>
<td>Invertebrate Paleontology</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 465</td>
<td>Environmental and Social Change (at Bay of Fundy)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 302</td>
<td>Environmental Management 1</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 322</td>
<td>Environmental Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 360</td>
<td>Adaptive Environmental Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 404</td>
<td>Environmental Management 2 (in Panama)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 498</td>
<td>Humans in Tropical Environments (in Panama)</td>
<td>3</td>
</tr>
<tr>
<td>NRSC 437</td>
<td>Assessing Environmental Impact (M)</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 410</td>
<td>Soil Chemistry (M)</td>
<td>3</td>
</tr>
<tr>
<td>WILD 415</td>
<td>Conservation Law (M)</td>
<td>2</td>
</tr>
</tbody>
</table>

### 13.6.3 Environment and Development Domain

This Domain (54 credits including Core) is open only to students in the B.A. Faculty Program in Environment.

**Adviser:** Mr. Peter Barry, MSE Program Coordinator  
E-mail: pete.barry@mcgill.ca  
Telephone: (514) 398-4306

The quest for sustainable paths to economic development requires scholars and practitioners to transcend the boundaries of traditional disciplines. This Domain offers students sufficient depth and breadth of study to acquire a strong grasp of current theories, concepts, and approaches to environment and development. It prepares them for graduate study in interdisciplinary programs (e.g., development studies or environmental studies) as well as in integrative social sciences (e.g., anthropology, geography, etc.).

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.
Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Prerequisite or Corequisite Courses for Program

3 credits of calculus:
MATH 139 Calculus
or MATH 140 Calculus 1
or equivalent (e.g., CEGEP objective 00UN)

3 credits of basic science chosen from:
BIOL 111 Principles: Organismal Biology
or CHEM 110 General Chemistry 1
or PHYS 101 Introductory Physics - Mechanics
or their equivalents (e.g., CEGEP objectives: Biology 00UK, Chemistry 00UL, Physics 00UR).

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)

ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 301 (3) Environmental Research Design
ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)

AGRI 519 (6) Sustainable Development Plans (in Barbados)
ENVR 401 (3) Environmental Research
ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (12 credits)

ANTH 339 (3) Ecological Anthropology
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
GEOG 302 (3) Environmental Management 1

Domain: Complementary Courses (21 credits)

3 credits of microeconomics:
AGEC 200 (3) Principles of Microeconomics (M)
ECON 208 (3) Microeconomic Analysis and Applications

3 credits of statistics:
AEMA 310 (3) Statistical Methods 1 (M)
GEOG 202 (3) Statistics and Spatial Analysis
MATH 203 (3) Principles of Statistics 1
PSYC 204 (3) Introduction to Psychological Statistics or equivalent

3 credits of ecology:
BIOL 308 (3) Ecological Dynamics
WILD 205 (3) Principles of Ecology (M)

6 credits of advanced development courses:
AGEC 442 (3) Economics of International Agricultural Development
ANTH 418 (3) Environment and Development
GEOG 408 (3) Geography of Development
GEOG 410 (3) Geography of Underdevelopment: Current Problems

3 credits of natural sciences:
AGRI 550 (3) Sustained Tropical Agriculture (in Panama)
BIOL 465 (3) Conservation Biology
BIOL 553 (3) Neotropical Environments (in Panama)
GEOG 305 (3) Soils and Environment
GEOG 322 (3) Environmental Hydrology
NUTR 403 (3) Nutrition in Society (M)
NUTR 501 (3) Nutrition in Developing Countries (M)
PARA 410 (3) Environment and Infection (M)

3 credits of social sciences:
AGEC 333 (3) Resource Economics (M)
AGEC 442 (3) Economics of International Development (M)
AGRI 210 (3) Agro-Ecological History (M)
AGRI 413 (3) Globalization: Issues of Change (in Barbados)
AGRI 452 (3) Water Resources in Barbados (in Barbados)
ANTH 439 (3) Theories of Development
ANTH 445 (3) Property and Land Tenure
CANS 407 (3) Regions of Canada
ECON 326 (3) Ecological Economics
ECON 405 (3) Natural Resource Economics
ENVR 465 (3) Environment and Social Change (at Bay of Fundy)

GEOG 201 (3) Introductory Geo-Information Science
GEOG 300 (3) Human Ecology in Geography
GEOG 331 (3) Urban Social Geography
GEOG 380 (3) Adaptive Environmental Management
GEOG 404 (3) Environmental Management 2 (in Panama or Africa)

GEOG 408 (3) Geography of Development
GEOG 496 (3) Regional Geographical Excursion (in Barbados)

GEOG 498 (3) Humans in Tropical Environments (in Panama)
GEOG 510 (3) Humid Tropical Environments
GEOG 561 (3) Environmental Decisions
MGPO 440 (3) Strategies for Sustainability
POLI 445 (3) IPE: North-South Relations
POLI 472 (3) Developing Areas/ Social Movements
SOCI 565 (3) Social Change in Panama (in Panama)
URBP 507 (3) Planning and Infrastructure (in Barbados)

13.7 B.A. & Sc. Faculty Program in Environment

To obtain a B.A. & Sc. Faculty Program in Environment students must:
a. register in the program on-line, using Minerva;
b. satisfy the co- / prerequisites for the program
c. pass all courses counted towards the Faculty Program with a grade of C or higher;
d. confirm that their course selection satisfies the required components of the program
e. fulfill all requirements specified for the B.A. & Sc. in section 5.3 "Degree Requirements", which include meeting the minimum credit requirement as specified in their letter of admission.

B.A. & Sc. FACULTY PROGRAM IN ENVIRONMENT

This program (54 credits) is open only to students in the B.A.&Sc. degree.

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Telephone: (514) 398-4306

The growth of technology, globalization of economies, and rapid increases in population and per capita consumption have all had dramatic environmental impacts. The Faculty Program in Environment for the Bachelor of Arts and Science is designed to provide students with a broad "Liberal Arts/Science" training. In combination with careful mentoring, this program offers a great degree of flexibility, allowing students to develop the skills and knowledge base required to face the myriad of environmental problems that currently need to be addressed.

1. Students are required to take a maximum of 21 credits at the 200-level and a minimum of 12 credits at the 400-level or higher in this program. This includes Required courses.

2. Students must complete at least 30 credits in the Faculty of Arts and at least 30 in the Faculty of Science as part of their faculty program and their minor or minor concentration. ENVR courses are considered courses in both Arts and Science, and
so the credits are split between the two faculties for the purpose of this regulation.

**Required Courses** (18 credits)
- ENVR 200 (3) The Global Environment
- ENVR 201 (3) Society and Environment
- ENVR 202 (3) The Evolving Earth
- ENVR 203 (3) Knowledge, Ethics and Environment
- ENVR 301 (3) Environmental Research Design
- ENVR 400 (3) Environmental Thought

**Complementary Courses** (36 credits)
- (3 credits*) – Senior Research Project
- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENVR 401 (3) Environmental Research
- ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

3 credits of statistics:
- AEMA 310 (3) Statistical Methods 1 (M)
- BIOL 373 (3) Biometry
- GEOG 202 (3) Statistics and Spatial Analysis
- PSYC 204 (3) Introduction to Psychological Statistics

30 credits – students must take courses from 3 of the following areas and at least 6 credits must be at the 400-level or higher, selected either from these lists or in consultation with the program advisor.

**Area 1: Population, Community and Ecosystem Ecology**
- BIOL 308 (3) Ecological Dynamics
- BIOL 432 (3) Limnology
- BIOL 441 (3) Biological Oceanography
- ENVR 540 or (3) Ecology of Species Invasions
- or BIOL 540 (3) Ecology of Species Invasions
- GEOG 350 (3) Ecological Biogeography
- PLNT 460 (3) Plant Ecology (M)
- WILD 205 (3) Principles of Ecology (M)
- WILD 410 (3) Wildlife Ecology (M)
- WOOD 410 (3) The Forest Ecosystem (M)

**Area 2: Biodiversity and Conservation**
- BIOL 305 (3) Animal Diversity
- BIOL 327 (3) Herpetology
- BIOL 341 (3) History of Life.
- BIOL 355 (3) Trees: Ecology & Evolution
- BIOL 465 (3) Conservation Biology
- ENTO 440 (3) Systematic Entomology (M)
- MICR 331 (3) Microbial Ecology (M)
- PLNT 358 (3) Flowering Plant Diversity (M)
- WILD 307 (3) Natural History of Vertebrates (M)
- WILD 350 (3) Mammalogy (M)
- WILD 420 (3) Ornithology (M)

**Area 3: Field studies in ecology and conservation**
- BIOL 240 (3) Monteregean Flora (at Mont St. Hilaire)
- BIOL 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)
- BIOL 334 (3) Applied Tropical Ecology (in Barbados)
- BIOL 553 (3) Neotropical Environments (in Panama)
- GEOG 495 (3) Field Studies - Physical Geography (in Southern Quebec)
- GEOG 499 (3) Subarctic Field Studies (in Schefferville)
- WILD 475 (3) Desert Ecology (in Arizona)

**Area 4: Hydrology and water resources**
- GEOG 322 (3) Environmental Hydrology
- or BREE 217 (3) Hydrology and Water Resources (M)
- or CIVE 323 (3) Hydropower and Water Resources (M)
- EPSC 549 (3) Hydrogeology
- GEOG 372 (3) Running Water Environments
- GEOG 522 (3) Advanced Environmental Hydrology
- GEOG 537 (3) Advanced Fluvial Geomorphology
- NRSC 540 (3) Socio-Cultural Issues in Water (M)

**Area 5: Human Health**
- ANSC 330 (3) Fundamentals of Nutrition (M)
- or NUTR 307 (3) Human Nutrition (M)
- PATH 300 (3) Human Disease
- PARA 410 (3) Environment and Infection (M)
- PHAR 303 (3) Principles of Toxicology
- or NUTR 420 (3) Toxicology and Health Risks (M)

**Area 6: Earth and soil sciences**
- ATOC 215 (3) Oceans, Weather and Climate
- EPSC 201 (3) Understanding Planet Earth
- GEOG 272 (3) Earth’s Changing Surface
- GEOG 305 (3) Soils and Environment
- GEOG 321 (3) Climatic Environments
- SOIL 326 (3) Soil Genesis and Classification (M)

**Area 7: Economics**
- AGEC 333 (3) Resource Economics (M)
- ECON 208 (3) Microeconomic Analysis and Applications
- or AGEC 200 (3) Principles of Microeconomics (M)
- ECON 326 (3) Ecological Economics
- ECON 347 (3) Economics of Climate Change
- ECON 405 (3) Natural Resource Economics
- GEOG 216 (3) Geography of the World Economy

**Area 8: Development and Underdevelopment**
- ANTH 212 (3) Anthropology of Development
- ANTH 418 (3) Environment and Development
- ECON 313 (3) Economic Development 1
- ECON 314 (3) Economic Development 2
- GEOG 408 (3) Geography of Development
- GEOG 410 (3) Geography of Underdevelopment: Current Problems
- POLI 227 (3) Developing Areas/Introduction
- POLI 445 (3) IPE: North-South Relations
- SWRK 374 (3) Community Development/Social Action

**Area 9: Cultures and People**
- ANTH 201 (3) Anthropology of Development
- ANTH 318 (3) Ecological Anthropology
- GEOG 201 (3) Global Places and Peoples
- ANTH 227 (3) Medical Anthropology
- GEOG 300 (3) Human Ecology in Geography
- GEOG 403 (3) Health Geography
- PHIL 343 (3) Biomedical Ethics
- SOCI 225 (3) Medicine and Health in Modern Society
- SOCI 309 (3) Health and Illness

**Area 10: Human Ecology and Health**
- ANTH 206 (3) Anthropology of Development
- ANTH 339 (3) Ecological Anthropology
- GEOG 201 (3) Global Places and Peoples
- ANTH 227 (3) Medical Anthropology
- GEOG 300 (3) Human Ecology in Geography
- GEOG 403 (3) Health Geography
- PHIL 343 (3) Biomedical Ethics
- SOCI 225 (3) Medicine and Health in Modern Society
- SOCI 309 (3) Health and Illness

**Area 11: Spirituality, Philosophy, Thought**
- EDER 461 (3) Society and Change
- PHIL 220 (3) Introduction to History and Philosophy of Science 1
- PHIL 221 (3) Introduction to History and Philosophy of Science 2
- PHIL 237 (3) Contemporary Moral Issues
- PHIL 341 (3) Philosophy of Science 1
- PHIL 348 (3) Philosophy of Law 1
- RELG 270 (3) Religious Ethics and the Environment
- RELG 340 (3) Religion and the Sciences
- RELG 370 (3) Human Condition

**Area 12: Environmental management**
- AGRI 210 (3) Agro-Ecological History (M)
- AGRI 435 (3) Soil and Water Quality Management (M)
- AGRI 452 (3) Water Resources in Barbados (in Barbados)
- ENTO 336 (3) Economic Entomology (M)
- GEOG 302 (3) Environmental Management 1
- GEOG 380 (3) Adaptive Environmental Management
- GEOG 404 (3) Environmental Management 2 (in Panama)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- NRSC 382 (3) Ecological Monitoring and Analysis (M)
- NRSC 383 (3) Land Use: Redesign and Planning (M)
13.8 Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc.

Students in the Faculty of Agricultural and Environmental Sciences B.Sc.(Ag.Env.Sc.) program and students in the Faculty of Science B.Sc. program can register in the Major in Environment.

The Major has two components: Core and Domain. Students follow three steps in their degree program.

1. **Core:** The Core consists of four introductory courses and one intermediate-level course where students are exposed to the different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie most environmental problems. Through the Core program students go beyond the confines of their individual views of environment.

2. **Domain:** Domains provide a trans-disciplinary study of a particular theme or component of the environment.

3. **Senior Core and Research:** In the two senior courses of the Core, students will apply the general and specialized knowledge that they have gained in the program to the analysis of some specific, contemporary environmental problems.

To obtain a Major in Environment, students must:

a. register in a Domain, on-line using Minerva;

b. pass all courses counted towards the Major with a grade of C or higher;

c. confirm that their course selection satisfies the required components of the MSE Core and their chosen Domain, and that the complementary courses are approved courses in their chosen Domain; and

d. fulfill all faculty requirements as specified by the faculty in which they are registered: for the B.Sc.(Ag.Env.Sc.) refer to Agricultural and Environmental Sciences section 12.5 “Faculty Information and Regulations”; for the B.Sc. see section 11.3 “Faculty Degree Requirements”. This includes meeting the minimum credit requirement as specified in their letter of admission.

**MAJOR PROGRAM IN ENVIRONMENT** (57 to 66 credits – depending upon Domain selected)

**Core:** Required Courses (18 credits)
The Core courses are listed below in the Domain descriptions.

**Core:** Complementary Course – Senior Research Project (3 credits)
The research courses are listed in the Domain descriptions.

**Domain** (36 to 45 credits – depending upon Domain selected)
One MSE Domain selected from those available to students in the Major.

Currently available for B.Sc.(Ag.Env.Sc.) or B.Sc.:

- Biodiversity and Conservation (42 credits)
- Ecological Determinants of Health – Population Stream or Cellular Stream (42 credits)
- Environmetrics (42 credits)
- Food Production and Environment (42 credits)
- Land Surface Processes and Environmental Change (42 credits)
- Renewable Resource Management (42 credits)
- Water Environments and Ecosystems
- Physical Stream or Biological Stream (36 - 39 credits)

Currently available for B.Sc. only (see section 13.9 “Major in Environment – B.Sc.”):

- Atmospheric Environment and Air Quality (39 credits)
- Earth Sciences and Economics (45 credits)

Each Domain has different requirements, which are listed below. Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

**13.8.1 Biodiversity and Conservation Domain**

This Domain (63 credits including Core) is open only to students in the B.Sc. (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

**Adviser:** Professor David Green
**E-mail:** david.m.green@mcgill.ca
**Telephone:** (514) 398-4086 ext. 4088

This Domain links the academic study of biological diversity with the applied field of conservation biology. The study of biological diversity, or “biodiversity”, lies at the intersection of evolution with ecology and genetics, combining the subdisciplines of evolutionary ecology, evolutionary genetics and ecological genetics. It has two main branches, the creation of diversity and the maintenance of diversity. Both processes are governed by a general mechanism of selection acting over different scales of space and time. This gives rise to a distinctive set of principles and generalizations that regulate rates of diversification and levels of diversity, as well as the abundance or rarity of different species. Conservation biology constitutes the application of these principles in the relevant social and economic context to the management of natural systems, with the object of preventing the extinction of rare species and maintaining the diversity of communities. As the impact of industrialization and population growth on natural systems has become more severe, conservation has emerged as an important area of practical endeavour.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

**NOTE:** Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

**Core:** Required Courses (18 credits)

- **ENVR 200 (3)** The Global Environment
- **ENVR 201 (3)** Society and Environment
- **ENVR 202 (3)** The Evolving Earth
- **ENVR 203 (3)** Knowledge, Ethics and Environment
- **ENVR 301 (3)** Environmental Research Design
- **ENVR 400 (3)** Environmental Thought

**Core:** Complementary Course – Senior Research Project (3 credits)

- **AGRI 519 (6)** Sustainable Development Plans (in Barbados)
- **ENVR 401 (3)** Environmental Research
- **ENVR 451 (6)** Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

**Domain:** Required Courses (9 credits)

9 credits, basic courses in the biological principles of diversity, systematics and conservation:

- **BIOL 304 (3)** Evolution
- **BIOL 305 (3)** Animal Diversity
- **BIOL 465 (3)** Conservation Biology

**Domain:** Complementary Courses (33 credits)

3 credits of ecology:

- **BIOL 308 (3)** Ecological Dynamics

**Domain:** Complementary Courses (33 credits)
or WILD 205 (3) Principles of Ecology (M)
3 credits of statistics:
BIOI 373 (3) Biometry
or AEMA 310 (3) Statistical Methods 1 (M)
9 credits, interface between science, policy and management:
ANTH 418 (3) Environment and Development
ECON 208 (3) Microeconomic Analysis and Applications
or AGEC 200 (3) Principles of Microeconomics (M)
ECON 225 (3) Economics of the Environment
or GEOG 302 (3) Environmental Management 1
or GEOG 380 (3) Adaptive Environmental Management
GEOG 408 (3) Geography of Development
GEOG 410 (3) Geography of Underdevelopment: Current Problems
3 credits of field courses:
BIOI 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)
BIOI 334 (3) Applied Tropical Ecology (in Barbados)
BIOI 553 (3) Neotropical Environments (in Panama)
GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
GEOG 499 (3) Subarctic Field Studies (in Schefferville)
WILD 475 (3) Desert Ecology (in Arizona)
6 credits of general scientific principles:
BREE 430 (3) GIS for Bioresource Management (M)
or GEOG 306 (3) Raster Geo-Information Science
BIOL 324 (3) Ecological Genetics
BIOL 341 (3) History of Life
BIOL 432 (3) Limnology
BIOL 441 (3) Biological Oceanography
BIOL 442 (3) Marine Biology
BIOL 505 (3) Diversity and Systematics Seminar
GEOG 272 (3) Earth’s Changing Surface
GEOG 321 (3) Climatic Environments
GEOG 350 (3) Ecological Biogeography
MICR 331 (3) Microbial Ecology (M)
NRSC 437 (3) Assessing Environmental Impact (M)
PLNT 460 (3) Plant Ecology (M)
WILD 313 (3) Phylogeny and Zoogeography (M)
WILD 375 (3) Issues: Environmental Sciences (M)
WILD 410 (3) Wildlife Ecology (M)
WOOD 410 (3) The Forest Ecosystem (M)
WOOD 420 (3) Environmental Issues: Forestry (M)
(A second field course from the Domain curriculum may also be taken)
3 credits of social science:
AGEC 333 (3) Resource Economics (M)
AGRI 413 (3) Globalization: Issues of Change (in Barbados)
ANTH 339 (3) Ecological Anthropology
ANTH 416 (3) Environment/Development: Africa (in Africa)
ECON 326 (3) Ecological Economics
ENVR 465 (3) Environment and Social Change (at Bay of Fundy)
GEOG 404 (3) Environmental Management 2 (in Panama)
GEOG 498 (3) Humans in Tropical Environments (in Panama)
GEOG 510 (3) Humid Tropical Environments
WILD 415 (2) Conservation Law (M)
(Wildlife Conservation (M)
6 credits of organisms and diversity:
AGRI 340 (3) Principles of Ecological Agriculture (M)
ANTH 311 (3) Primate Behaviour and Ecology
BIOL 327 (3) Herpetology
BIOL 335 (3) Marine Mammals (at Bay of Fundy)
BIOL 350 (3) Insect Biology and Control

13.8.2 Ecological Determinants of Health Domain
This Domain (63 credits including Core) is open only to students in the B.Sc (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Anna Marie Zepeda
E-mail: anna.marie.zepeda@mcgill.ca
Telephone: (514) 398-7847

This Domain considers the interface between the environment and human well-being, with particular focus on the triad that ties human health to the environment through the elements of food and infectious agents. Each of these elements is influenced by planned and unplanned environmental disturbances.

In designing interventions that aim to prevent or reduce infectious contaminants in the environment, or to improve food production and nutritional quality, not only is it important to understand methods of intervention, but also to understand social forces that influence how humans respond to such interventions.

Students in the Population Concentration will gain a depth of understanding at an ecosystem level that looks at society, land and population health. Students in the Cellular Concentration will explore the interactions in more depth, at a physiological level.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Ecological Determinants of Health Domain – Cellular

The Cellular Concentration (63 credits) in this Domain is open only to students in the B.Sc. (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 301 (3) Environmental Research Design
ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits*)
AGRI 519 (6) Sustainable Development Plans (in Barbados)
Domain: Required Courses

18 credits of fundamentals, maximum of 3 credits from any one category:
- Toxicology
- Cellular Biology
- Genetics
- Molecular Biology
- Statistics
- Nutrition

12 credits chosen from Human Health, maximum of 3 credits from any one category:
- Immunology and Pathogenicity
- Infectious Disease
- Drugs and Hormones

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:
- Hydrology and Climate
- Techniques and Management

Domain - Cellular Concentration: Complementary Courses

(36 credits)
18 credits of fundamentals, maximum of 3 credits from any one category:
- Toxicology
- Cellular Biology
- Genetics
- Molecular Biology
- Statistics
- Nutrition

12 credits chosen from Human Health, maximum of 3 credits from any one category:
- Immunology and Pathogenicity
- Infectious Disease
- Drugs and Hormones

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:
- Hydrology and Climate
- Techniques and Management

Domain: Core Courses

Core: Required Courses (18 credits)

Core: Complementary Course – Senior Research Project (3 credits*)

Domain: Required Courses (6 credits)

Domain - Population Concentration: Complementary Courses (36 credits)

18 credits of fundamentals, maximum of 3 credits from each category:
- Toxicology
- Genetics
- Biology
- Ecology
- Core: Complementary Course – Senior Research Project (3 credits*)

Domain: Required Courses (6 credits)

Domain - Population Concentration: Complementary Courses (36 credits)

18 credits of fundamentals, maximum of 3 credits from each category:
- Toxicology
- Genetics
- Biology
- Ecology
- Core: Complementary Course – Senior Research Project (3 credits*)

* Only 3 credits will be applied to the program; extra credits will count as electives.

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.
Nutrition
ANSC 330 (3) Fundamentals of Nutrition (M)
NUTR 207 (3) Nutrition and Health (M)
NUTR 307 (3) Human Nutrition (Video conference Downtown and Macdonald)

Advanced Ecology
AEMA 306 (3) Mathematical Methods in Ecology (M)
BIOI 465 (3) Conservation Biology
BIOI 553 (3) Neotropical Environments (in Panama)
ENVR 540 (3) Ecology of Species Invasions
or BIOL 540 (3) Ecology of Species Invasions
GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
MICR 331 (3) Microbial Ecology (M)
PLNT 460 (3) Plant Ecology (M)
WILD 410 (3) Wildlife Ecology (M)
WOOD 410 (3) The Forest Ecosystem (M)

6 credits from the following List A, maximum of 3 credits from each category:
Hydrology, Climate, and Agriculture
AGRI 340 (3) Principles of Ecological Agriculture (M)
AGRI 452 (3) Water Resources in Barbados (in Barbados)
AGRI 550 (3) Sustained Tropical Agriculture (in Panama)
BREE 217 (3) Hydrology and Water Resources (M)
GEOG 321 (3) Climatic Environments
GEOG 322 (3) Environmental Hydrology
NRSC 510 (3) Agricultural Micrometeorology (M)

Decision Making and Social Change
AGEC 242 (3) Management Theories and Practices (M)
AGEC 200 (3) Principles of Microeconomics
or ECON 208 (3) Microeconomic Analysis and Applications
AGRI 413 (3) Globalization: Issues of Change
EDER 461 (3) Society and Change
ENVR 465 (3) Environment and Social Change (at Bay of Fundy)
GEOG 302 (3) Environmental Management 1
GEOG 404 (3) Environmental Management 2 (in Panama)
PHIL 343 (3) Biomedical Ethics

Development and History
AGRI 210 (3) Agro-Ecological History (M)
ANTH 212 (3) Anthropology of Development
HIST 292 (3) History and the Environment
SOCI 254 (3) Development and Underdevelopment

12 credits from the following list B, maximum of 3 credits from each category:
Techniques and Management
BREE 430 (3) GIS for Bioresource Management (M)
CHEE 230 (3) Environmental Aspects of Technology
GEOG 201 (3) Introductory Geo-Information Science
NRSC 437 (3) Assessing Environmental Impact (M)
URBP 507 (3) Planning and Infrastructure (in Barbados)

Immunology and Infectious Disease
ANSC 400 (3) Eucaryotic Cells and Viruses (M)
MIMM 314 (3) Immunology
MIMM 324 (3) Fundamental Virology
MIMM 413 (3) Parasitology
PARA 438 (3) Immunology (M)
WILD 424 (3) Parasitology (M)

Nutrition and Agriculture
AGRI 411 (3) International Agriculture (M)
NUTR 403 (3) Nutrition in Society (M)
NUTR 501 (3) Nutrition in Developing Countries (M)
NUTR 512 (3) Herbs, Foods and Phytochemicals (Video conference Downtown and Macdonald)

Populations and Place
CANS 407 (3) Regions of Canada
GEOG 300 (3) Human Ecology in Geography
GEOG 303 (3) Health Geography
GEOG 498 (3) Humans in Tropical Environments (in Panama)

PSYC 533 (3) International Health Psychology

Pollution and Pest Management
BIOL 350 (3) Insect Biology and Control
BREE 322 (3) Organic Waste Management (M)
ENTO 352 (3) Control of Insect Pests (M)
NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
PLNT 361 (3) Pest Management and the Environment (M)

13.8.3 Environmetrics Domain

This Domain (63 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Pierre Dutilleul
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Telephone: (514) 398-7870

In view of the crucial need for sound study design and appropriate statistical methods for analyzing environmental changes and their impacts on humans and various life forms and their ecological relationships, this program is intended to provide students with a strong background in the use of statistical methods of data analysis in environmental sciences.

Graduates will be capable of effectively participating in the design of environmental studies and adequately analyzing data for use by the environmental community. Accordingly, the list of courses for the Environmetrics Domain is composed primarily of statistics courses and mathematically oriented courses with biological and ecological applications. The list is completed by general courses that refine the topics introduced in the MSE core courses by focusing on the ecology of living organisms, soil sciences or water resources, and impact assessment. These courses should allow the students to understand their interlocutors and be understood by them in their future job. Students can further develop their background in applied or mathematical statistics and their expertise in environmental sciences by taking complementary courses along each of two axes: statistics and mathematics, and environmental sciences. An internship is also offered to students to provide them with preliminary professional experience.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 301 (3) Environmental Research Design
ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)
AGRI 519 (6) Sustainable Development Plans (in Barbados)
ENVR 401 (3) Environmental Research
ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Course (6 credits)
AEMA 403 (3) Environmetrics Stage (internship) (M)
AEMA 414 (3) Temporal and Spatial Statistics (M)
Domain - Complementary Courses (36 credits, minimum)
12 credits of fundamentals (maximum 3 credits from any one category):
Ecology
- WILD 205 (3) Principles of Ecology (M)
- BIOL 308 (3) Ecological Dynamics
Impacts
- MIME 308 (3) Social and Economic Impacts of Technology
- NRSC 437 (3) Assessing Environmental Impact (M)
Modeling
- AEMA 306 (3) Mathematical Methods in Ecology (M)
- BIOL 309 (3) Mathematical Models in Biology
GIS Techniques
- BREE 430 (3) GIS for Bioresource Management (M)
- GEOG 201 (3) Introductory Geo-Information Science

3 credits of basic environmental science:
- BREE 217 (3) Hydrology and Water Resources (M)
- CIVE 323 (3) Hydrology and Water Resources
- GEOG 305 (3) Soils and Environment
- GEOG 322 (3) Environmental Hydrology
- GEOG 350 (3) Ecological Biogeography
- SOIL 210 (3) Principles of Soil Science (M)

6 credits of Statistics, one of the following two options:
Option 1:
- MATH 323 (3) Probability
- MATH 324 (3) Statistics
Option 2:
- AEMA 310 (3) Statistical Methods 1 (M)
or BIOL 373 (3) Biometry
- AEMA 411 (3) Experimental Designs
or CIVE 555 (3) Environmental Data Analysis
or GEOG 351 (3) Quantitative Methods
or SOCI 461 (3) Quantitative Data Analysis

15 credits total chosen from the following two lists:
3 credits minimum of statistics and mathematics chosen from:
- BIOL 534 (3) Theoretical Ecology
- BREE 252 (3) Computing for Engineers (or equivalent) (M)
- BREE 319 (3) Engineering Mathematics (or equivalent) (M)
- GEOG 501 (3) Modelling Environmental Systems
- MATH 223 (3) Linear Algebra
- MATH 326 (3) Nonlinear Dynamics and Chaos
- MATH 423 (3) Regression and Analysis of Variance
- MATH 447 (3) Stochastic Processes
- MATH 525 (4) Sampling Theory and Applications
- SOCI 504 (3) Quantitative Methods 1
- SOCI 505 (3) Quantitative Methods 2
- SOCI 580 (3) Social Research Design and Practice.

3 credits, minimum of environmental sciences chosen from:
- AGRI 452 (3) Water Resources in Barbados (in Barbados)
- AGRI 550 (3) Sustained Tropical Agriculture (in Panama)
- BIOL 331 (3) Ecology/Behavior Field Course (at Mont St. Hilaire)
- BIOL 553 (3) Neotropical Environments (in Panama)
- GEOG 300 (3) Human Ecology in Geography
- GEOG 302 (3) Environmental Management 1
- GEOG 404 (3) Environmental Management 2 (in Panama)
- GEOG 494 (3) Urban Field Studies
- GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
- GEOG 499 (3) Subarctic Field Studies (in Schefferville)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- PLNT 460 (3) Plant Ecology (M)
- WILD 313 (3) Phylogeny and Zoogeography (M)
- WILD 401 (4) Fisheries and Wildlife Management (M)
- WOOD 300 (3) Urban Forests and Trees (M)
- WOOD 420 (3) Environmental Issues: Forestry (M)

13.8.4 Food Production and Environment Domain
This Domain (63 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc in Environment program.
Adviser: Professor Sylvie de Blois
E-mail: sylvie.deblois@mcgill.ca
Telephone: (514) 398-7581

The business of food production is an area of human activity with a large and intimate interaction with the environment. Modern agriculturalists must strike a delicate balance between trying to provide food for themselves, their families and urban dwellers while trying to minimize environmental damage. When negative effects due to agricultural activities do occur, they are not usually the classic point source effects that we have come to associate with industry or large cities. Rather, the effects are over extremely large land areas cumulating, perhaps, in pollution of river systems or lakes some distance away. As world populations grow, and as diets change, potentially negative interactions between agricultural systems and other facets of the environment will become more frequent. In the same way, urban sprawl will make conflicts between agriculture and urbanites more common.

With a judicious choice of courses, graduates of this Domain may be eligible for membership in the Ordre des agronomes du Québec (OAQ) and the Agricultural Institute of Canada (AIC). See the MSE Website for details at www.mcgill.ca/mse: (BSc Programs: Food Production and Environment Domain).

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Pre requisite or Core requisite Courses for Domain
- FDSC 211 (3) Biochemistry 1 (M)
or BIOL 112 (3) Cell and Molecular Biology
or CEQEP equivalent (e.g., CEQEP objective 00XU)
- FDSC 230 (4) Organic Chemistry (M)
or CHEM 212 (4) Introductory Organic Chemistry 1
or CEQEP equivalent (e.g., CEQEP objective 00XV)

NOTE: Students are required to take a maximum of 34 credits at the 200 level and a minimum of 15 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
- ENV 200 (3) The Global Environment
- ENV 201 (3) Society and Environment
- ENV 202 (3) The Evolving Earth
- ENV 203 (3) Knowledge, Ethics and Environment
- ENV 301 (3) Environmental Research Design
- ENV 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits)
- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENV 401 (3) Environmental Research
- ENV 451 (6) Research in Panama (in Panama)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (9 credits)
- AGRI 210 (3) Agro-Ecological History (M)
- PLNT 211 (3) Principles of Plant Science (M)
- PLNT 300 (3) Cropping Systems (M)

Domain: Complementary Courses (33 credits)
15 or 16 credits of Basic Sciences:
- AEMA 310 (3) Statistical Methods 1 (M)
or MATH 203 (3) Principles of Statistics 1 or equivalent
13.8.5 Land Surface Processes and Environmental Change Domain

This Domain (63 credits including Core) is open only to students in the B.Sc. (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Ian Strachan  
E-mail: ian.strachan@mcgill.ca  
Telephone: (514) 398-7935

The thin soil layer on the planet’s land surfaces controls the vital inputs of water, nutrients and energy to terrestrial and freshwater aquatic ecosystems. Widespread occurrences around the globe of desertification, soil erosion, deforestation and land submergence over water reservoirs indicate that this dynamic system is under increasing pressure from population growth and changes in climate and land uses. Production of key greenhouse gases (water vapor, CO2 and methane) is controlled by complex processes operating at the land surface, involving climate change feedbacks that need to be fully understood, given current global warming trends.

The program introduces students to the interacting physical and biogeochemical processes at the atmosphere-lithosphere interface, which fashion land surface habitats and determine their biological productivity and response to anthropogenic or natural environmental changes. Through an appropriate selection of courses, students can prepare for graduate training in emerging research areas such as earth system sciences, environmental hydrology and landscape ecology.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)

- ENVR 200 (3) The Global Environment
- ENVR 201 (3) Society and Environment
- ENVR 202 (3) The Evolving Earth
- ENVR 203 (3) Knowledge, Ethics and Environment
- ENVR 301 (3) Environmental Research Design
- ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)

- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENVR 401 (3) Environmental Research
- ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Course (3 credits)

- GEOG 203 (3) Environmental Systems

Domain: Complementary Courses (39 credits)

3 credits of statistics chosen from:
- AEMA 310 (3) Statistical Methods 1 (M)
- GEOF 202 (3) Statistics and Spatial Analysis
- MATH 203 (3) Principles of Statistics 1 or equivalent

3 credits of ecology chosen from:
- BIOL 308 (3) Ecological Dynamics
- WILD 205 (3) Principles of Ecology (M)
- WILD 415 (2) Conservation Law (M)

3 credits of weather and climate chosen from:
- ATOC 215 (3) Oceans, Weather and Climate
- FDSC 535 (3) Food Biotechnology
- FDSC 200 (3) Introduction to Food Science
- ENVR 451 (6) Research in Panama (in Panama)
- NRSC 437 (3) Assessing Environmental Impact (M)
- NUTR 403 (3) Nutrition in Society (M)
- NUTR 420 (3) Toxicochemistry and Health Risks (M)
- PARA 410 (3) Environmental and Infection (M)
- PHAR 303 (3) Principles of Toxicology
- PLNT 361 (3) Pest Management and the Environment (M)
- PLNT 434 (3) Weed Biology and Control (M)
- SOIL 315 (3) Soil Fertility and Fertilizer Use (M)
- SOIL 410 (3) Soil Chemistry (M)
- SOIL 445 (3) Agroenvironmental Fertilizer Use
- SOIL 521 (3) Soil Microbiology and Biochemistry (M)
- WILD 401 (4) Fisheries and Wildlife Management (M)
- ENTO 446 (3) Apiculture
- FDSC 200 (3) Introduction to Food Science (M)
- or NUTR 207 (3) Nutrition and Health (M)
- FDSC 535 (3) Food Biotechnology (M)
- GEOF 302 (3) Environmental Management 1
- GEOF 380 (3) Adaptive Environmental Management
- MICR 331 (3) Microbial Ecology (M)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- NRSC 437 (3) Assessing Environmental Impact (M)
- NUTR 403 (3) Nutrition in Society (M)
- NUTR 420 (3) Toxicochemistry and Health Risks (M)
- PARA 410 (3) Environmental and Infection (M)
- PHAR 303 (3) Principles of Toxicology
- PLNT 361 (3) Pest Management and the Environment (M)
- PLNT 434 (3) Weed Biology and Control (M)
- SOIL 315 (3) Soil Fertility and Fertilizer Use (M)
- SOIL 410 (3) Soil Chemistry (M)
- SOIL 445 (3) Agroenvironmental Fertilizer Use
- SOIL 521 (3) Soil Microbiology and Biochemistry (M)
- WILD 401 (4) Fisheries and Wildlife Management (M)
- ENTO 446 (3) Apiculture
- FDSC 200 (3) Introduction to Food Science (M)
- or NUTR 207 (3) Nutrition and Health (M)
- FDSC 535 (3) Food Biotechnology (M)
- GEOF 302 (3) Environmental Management 1
- GEOF 380 (3) Adaptive Environmental Management
- MICR 331 (3) Microbial Ecology (M)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- NRSC 437 (3) Assessing Environmental Impact (M)
- NUTR 403 (3) Nutrition in Society (M)
- NUTR 420 (3) Toxicochemistry and Health Risks (M)
- PARA 410 (3) Environmental and Infection (M)
- PHAR 303 (3) Principles of Toxicology
- PLNT 361 (3) Pest Management and the Environment (M)
- PLNT 434 (3) Weed Biology and Control (M)
- SOIL 315 (3) Soil Fertility and Fertilizer Use (M)
- SOIL 410 (3) Soil Chemistry (M)
- SOIL 445 (3) Agroenvironmental Fertilizer Use
- SOIL 521 (3) Soil Microbiology and Biochemistry (M)
- WILD 401 (4) Fisheries and Wildlife Management (M)
- ENTO 446 (3) Apiculture
- FDSC 200 (3) Introduction to Food Science (M)
- or NUTR 207 (3) Nutrition and Health (M)
- FDSC 535 (3) Food Biotechnology (M)
- GEOF 302 (3) Environmental Management 1
- GEOF 380 (3) Adaptive Environmental Management
- MICR 331 (3) Microbial Ecology (M)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
9 credits of fundamental land surface processes chosen from:
- GEOG 272 (3) Earth's Changing Surface
- or SOIL 200 (3) Introduction to Earth Science (M)
- GEOG 305 (3) Soils and Environment
- or SOIL 326 (3) Soil Genesis and Classification (M)
- GEOG 321 (3) Climatic Environments
- GEOG 322 (3) Environmental Hydrology
- or BREE 217 (3) Hydrology and Water Resources (M)

3 credits of environment and resource management chosen from:
- AGRI 435 (3) Soil and Water Quality Management (M)
- AGRI 452 (3) Water Resources in Barbados (in Barbados)
- AGRI 550 (3) Sustained Tropical Agriculture (in Panama)
- BIOL 465 (3) Conservation Biology
- CHEE 230 (3) Environmental Aspects of Technology
- CIVE 225 (4) Environmental Engineering
- GEOG 302 (3) Environmental Management 1
- GEOG 380 (3) Adaptive Environmental Management
- GEOG 404 (3) Environmental Management 2 (in Panama)
- NRSC 437 (3) Assessing Environmental Impact (M)
- WOOD 420 (3) Environmental Issues: Forestry (M)
- WOOD 441 (3) Integrated Forest Management

3 credits of a field course chosen from:
- BIOL 553 (3) Neotropical Environments (in Panama)
- GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
- GEOG 496 (3) Geographical Excursion (in Barbados)
- GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
- GEOG 499 (3) Subarctic Field Studies (in Schefferville)
- NRSC 382 (3) Ecological Monitoring and Analysis (M)
- WILD 475 (3) Desert Ecology (in Arizona)

3 credits of social science issues chosen from:
- AGRI 413 (3) Globalization: Issues of Change (in Barbados)
- ANTH 339 (3) Ecological Anthropology
- ECON 225 (3) Economics of the Environment
- ECON 326 (3) Ecological Economics
- ECON 405 (3) Natural Resource Economics
- or AGEC 333 (3) Resource Economics (M)
- ENVR 465 (3) Environment and Social Change (at Bay of Fundy)

ENVR 400 (3) The Global Environment
- ENVR 401 (3) Environmental Research
- ENVR 402 (3) Society and Environment
- ENVR 451 (6) Research in Panama (in Panama)

12 credits total of advanced studies chosen from the following two lists:

3 credits minimum of advanced study of particular environments:
- PLNT 358 (3) Flowering Plant Diversity (M)
- BIOL 432 (3) Limnology
- or NRSC 315 (3) Science of Inland Waters (M)
- GEOG 350 (3) Ecological Biogeography
- GEOG 372 (3) Running Water Environments
- GEOG 536 (3) Geocryology
- GEOG 550 (3) Historical Ecology Techniques
- PLNT 460 (3) Plant Ecology (M)
- WOOD 410 (3) The Forest Ecosystem (M)

6 credits minimum of advanced study of surface processes:
- BREE 509 (2) Hydrologic Systems and Modelling (M)
- ATOC 315 (3) Water in the Atmosphere
- EPSC 549 (3) Hydrogeology
- EPSC 580 (3) Aqueous Geochemistry
- GEOG 501 (3) Modelling Environmental Systems
- GEOG 505 (3) Global Biogeochemistry
- GEOG 522 (3) Advanced Environmental Hydrology
- GEOG 537 (3) Advanced Fluvial Geomorphology
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- SOIL 331 (3) Soil Physics (M)
- SOIL 410 (3) Soil Chemistry (M)

13.8.6 Renewable Resource Management Domain

This Domain (63 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Joann Whalen
E-mail: whalenj@nrs.mcgill.ca
Telephone: (514) 398-7943

Renewable resource management is an emerging field that focuses on the ecosystem structures and processes required to sustain the delivery, to humanity, of ecosystem goods and services such as food, clean water and air, essential nutrients, and the provision of beauty and inspiration. Renewable resource management recognizes humans as integral components of ecosystems and is used to develop goals that are consistent with sustainability and ecosystem maintenance.

The Renewable Resource Management domain provides students with an understanding of: 1) the interactions between physical and biological factors that determine the nature and dynamics of populations and entities in the natural environment; 2) the ways in which ecosystems can be managed to meet specific goals for the provision of goods and services; 3) the economic and social factors that determine how ecosystems are managed; 4) the ways in which management of natural resources can affect the capability of natural ecosystems to continue to supply human needs in perpetuity; and 5) the approaches and technologies required to monitor and analyze the dynamics of natural and managed ecosystems.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required Courses are offered on both campuses.)

Prerequisite or Corequisite Courses for Domain
- FDSC 211 (4) Biochemistry 1 (M)
- or BIOC 112 (3) Cell and Molecular Biology
- or CEGEP equivalent (e.g., CEGEP objective 00XU)
- FDSC 230 (4) Organic Chemistry (M)
- or CHEM 212 (4) Introductory Organic Chemistry 1
- or CEGEP equivalent (e.g., CEGEP objective 00XV)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
- ENVR 200 (3) The Global Environment
- ENVR 201 (3) Society and Environment
- ENVR 202 (3) The Evolving Earth
- ENVR 203 (3) Knowledge, Ethics and Environment
- ENVR 301 (3) Environmental Research Design
- ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)
- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENVR 401 (3) Environmental Research
- ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Complementary Courses (42 credits)
9 credits of basic principles of ecosystem processes and diversity
- WILD 200 (3) Comparative Zoology (M)
- or BIOL 305 (3) Animal Diversity
- or PLNT 201 (3) Comparative Plant Biology (M)
- WILD 205 (3) Principles of Ecology (M)
or BREE 430 (3) GIS for Bioresource Management (M)
or GEOG 201 (3) Introductory Geo-Information Science
AEMA 310 (3) Statistical Methods 1 (M)
or BIOL 373 (3) Biometry

6 credits of advanced ecosystem components
PLNT 358 (3) Flowering Plant Diversity (M)
BIOG 553 (3) Neotropical Environments (in Panama)
GEOG 372 (3) Running Water Environments
SOIL 326 (3) Soil Genesis and Classification (M)
WILD 307 (3) Natural History of Vertebrates (M)

6 credits of advanced ecological processes
BREE 217 (3) Hydrology and Water Resources (M)
or GEOG 322 (3) Environmental Hydrology
BIOG 432 (3) Limnology
or NRSC 315 (3) Science of Inland Waters (M)
BIOG 465 (3) Conservation Biology
GEOG 372 (3) Running Water Environments
GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
MICR 331 (3) Microbial Ecology (M)
NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
PLNT 460 (3) Plant Ecology (M)
WILD 410 (3) Wildlife Ecology (M)
WOOD 410 (3) The Forest Ecosystem (M)

6 credits of social processes:
WOOD 441 (3) Integrated Forest Management
WILD 401 (4) Fisheries and Wildlife Management
SOIL 335 (3) Soil Ecology and Management
AGRI 435 (3) Water Resources in Barbados (in Barbados)
AGRI 452 (3) Water Resources in Barbados (in Barbados)
AGRI 550 (3) Sustained Tropical Agriculture (in Panama)
AGRI 555 (3) Sustained Tropical Agriculture (in Panama)
AGRI 558 (3) Sustained Tropical Agriculture (in Panama)
AGRI 560 (3) Sustained Tropical Agriculture (in Panama)
AGRI 570 (3) Sustained Tropical Agriculture (in Panama)
AGRI 575 (3) Sustained Tropical Agriculture (in Panama)
AGRI 580 (3) Sustained Tropical Agriculture (in Panama)
AGRI 585 (3) Sustained Tropical Agriculture (in Panama)
AGRI 590 (3) Sustained Tropical Agriculture (in Panama)
AGRI 595 (3) Sustained Tropical Agriculture (in Panama)
AGRI 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
AGRI 519 (6) Sustainable Development Plans (in Barbados)
AGRI 308 (3) Environmental Management
AGRI 310 (3) Statistical Methods 1 (or equivalent) (M)
AGRI 373 (3) Resource Economics (M)
AGRI 413 (3) Globalization Issues of Change

Those selecting the biological concentrations will focus on the mechanisms regulating the different forms of life in water bodies. They will acquire, as well, a good understanding of the physical mechanisms controlling water properties.

Students interested in studying the transport and transformation mechanisms of water on the planet, from rivers to the oceans and atmosphere, will select the physical concentrations. They will acquire, as well, a solid background in the biological processes taking place in water bodies.

Graduates of this Domain are qualified to enter the work force or to pursue advanced studies in fields such as marine biology, geography, physical oceanography and atmospheric science.

### Water Environments and Ecosystems – Biological

This concentration (57 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Phone: (514) 398-4306

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required Courses are offered on both campuses.)

**NOTE:** Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

**Core: Required Courses** (18 credits)

- ENVR 200 (3) The Global Environment
- ENVR 201 (3) Society and Environment
- ENVR 202 (3) The Evolving Earth
- ENVR 203 (3) Knowledge, Ethics and Environment
- ENVR 301 (3) Environmental Research Design
- ENVR 400 (3) Environmental Thought

**Core: Complementary Course – Senior Research Project**

- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENVR 401 (3) Environmental Research
- ENVR 451 (6) Research in Panama (in Panama)

* Only 3 credits will be applied to the program; extra credits will count as electives.

**Domain: Required Course** (3 credits)

**Domain: Complementary Courses** (33 credits)

6 credits chosen from:

- BREE 217 (3) Hydrology and Water Resources (M)
- GEOG 322 (3) Environmental Hydrology
- WILD 205 (3) Principles of Ecology (M)
- BREE 330 (3) Environmental Management
- GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
- AEMA 310 (3) Statistical Methods 1 (or equivalent) (M)
- AGRI 413 (3) Globalization Issues of Change

### 13.8.7 Water Environments and Ecosystems Domain

This Domain is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

To educate students in both the ecological and physical facets of the water environment, this Domain offers two concentrations, with students choosing one or the other.
Water Environments and Ecosystems – Physical

This concentration (60 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Advisor: Professor Peter Yau
E-mail: peter.yau@mcgill.ca
Telephone: (514) 398-3719

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required Courses are offered on both campuses.)

Recommended Corequisite Course for Domain
MATH 222 (3) Calculus 3
or CEGEP Mathematics 201-301 or equivalent

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 301 (3) Environmental Research Design
ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)
AGRI 519 (6) Sustainable Development Plans (in Barbados)
ENVR 401 (3) Environmental Research
ENVR 451 (6) Research in Panama (in Panama)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (9 credits)
ATOC 215 (3) Oceans, Weather and Climate
ATOC 315 (3) Water in the Atmosphere
GEOG 372 (3) Running Water Environments

Domain – Complementary Courses (30 credits)
6 credits chosen from:
WILD 205 (3) Principles of Ecology (M)
or BIOL 308 (3) Principles of Remote Sensing
GEOG 305 (3) Neotropical Environments (in Panama)

12 credits chosen from:
BREE 416 (3) Engineering for Land Development (M)
BREE 506 (3) Advances in Drainage Management (M)
or GEOG 522 (3) Advanced Environmental Hydrology

12 credits chosen from:
AGRI 435 (3) Soil and Water Quality Management (M)
or GEOG 372 (3) Running Water Environments
GEOG 401 (3) Aquatic Entomology (M)

3 credits of statistics or calculus:
AEMA 310 (3) Statistical Methods 1 (or equivalent) (M)
AEMA 202 (3) Intermediate Calculus (M)
MATH 203 (3) Principles of Statistics 1
MATH 222 (3) Calculus 3

3 credits of field courses
GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
or an equivalent aquatic field course

MSE – MAJOR IN ENVIRONMENT – B.SC.(AG.ENV.SC.) AND B.SC.
13.9 Major in Environment – B.Sc.

In addition to the selection of Domains available to students in the Major program in either the Faculty of Science or the Faculty of Agricultural and Environmental Sciences, "Major in Environment - B.Sc.", students in the Faculty of Science program can choose from one of the two Domains limited to Science students only: Atmospheric Environment and Air Quality, or Earth Sciences and Economics.

Refer to section 13.8 "Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc." for the general guidelines and regulations which apply to all Domains in the Major in Environment program.

13.9.1 Atmospheric Environment and Air Quality Domain

This Domain (60 credits including Core) is open only to students in the B.Sc. Major in Environment program in the Faculty of Science.

Adviser: Professor Peter Yau
E-mail: peter.yau@mcgill.ca
Telephone: (514) 398-3719

The rapid expansion of industrialization has been accompanied with a host of environmental problems, many, if not most, involving the atmosphere. Some problems are of a local nature, such as air pollution in large urban centres, while others are global, or at least reach areas far removed from industrial activities.

The emphasis in this Domain is on the mechanisms of atmospheric flow and on atmospheric chemistry. Courses examine how the atmosphere transports pollution, lifting it to great heights into the stratosphere or keeping it trapped near the ground, moving it around the globe or imprisoning it locally, or how it simply cleanses itself of the pollution through rainfall. The Domain also gives students the training required to understand the important chemical reactions taking place within the atmosphere, as well as the knowledge necessary to measure and analyze atmospheric constituents.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
- ENVR 200 (3) The Global Environment
- ENVR 201 (3) Society and Environment
- ENVR 202 (3) The Evolving Earth
- ENVR 203 (3) Knowledge, Ethics and Environment
- ENVR 301 (3) Environmental Research Design
- ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)
- AGRI 519 (6) Sustainable Development Plans (in Barbados)
- ENVR 401 (3) Environmental Research
- ENVR 451 (6) Research in Panama (in Panama)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (18 credits)
- ATOC 214 (3) Introduction: Physics of the Atmosphere
- ATOC 215 (3) Oceans, Weather and Climate
- ATOC 219 (3) Introduction to Atmospheric Chemistry
- or CHEM 219 (3) Introduction to Atmospheric Chemistry
- ATOC 308 (3) Principles of Remote Sensing
- or GEOG 308 (3) Principles of Remote Sensing
- ATOC 315 (3) Water in the Atmosphere
- CHEM 307 (3) Analytical Chemistry of Pollutants

Domain: Complementary Courses (21 credits)
- 6 credits from:
  - CHEM 257D1 (2) Introductory Analytical Chemistry
  - CHEM 257D2 (2) Introductory Analytical Chemistry
  - or FDSC 213 (3) Analytical Chemistry 1 (M)
  - MATH 222 (3) Calculus 3
  - or AEMA 202 (3) Intermediate Calculus (M)
- 3 credits from:
  - MATH 203 (3) Principles of Statistics 1
  - or AEMA 310 (3) Statistical Methods 1 (M)
or equivalent

9 credits of math or physical science (at least 6 credits of which are at the 300 level or above):
- ATOC 309 (3) Weather Radars and Satellites
- ATOC 412 (3) Atmospheric Dynamics
- ATOC 419 (3) Advances in Chemistry of Atmosphere
- or CHEM 419 (3) Advances in Chemistry of Atmosphere
- ATOC 540 (3) Synoptic Meteorology 1
- CHEM 230 (3) Environmental Aspects of Technology
- CHEM 273 (1) Chemical Kinetics
- CHEM 377 (3) Instrumental Analysis 2
- CIVE 225 (4) Environmental Engineering
- COMP 208 (3) Computers in Engineering
- GEOG 505 (3) Global Biogeochemistry
- MATH 223 (3) Linear Algebra
- MATH 315 (3) Ordinary Differential Equations
- or AEMA 305 (3) Differential Equations (M)
- NRSC 333 (3) Physical and Biological Aspects of Pollution (M)
- NRSC 510 (3) Agricultural Micrometeorology (M)
- 3 credits of social science:
  - ANTH 206 (3) Environment and Culture
  - ANTH 418 (3) Environment and Development
  - ECON 225 (3) Economics of the Environment
  - ECON 347 (3) Economics of Climate Change
  - ENVR 465 (3) Environmental and Social Change (in Bay of Fundy)
  - GEOG 302 (3) Environmental Management 1
  - GEOG 380 (3) Adaptive Environmental Management
  - GEOG 404 (3) Environmental Management 2 (in Panama or in Africa)
  - GEOG 498 (3) Humans in Tropical Environments (in Panama)
  - POLI 466 (3) Public Policy Analysis
  - RELG 270 (3) Religious Ethics and the Environment

13.9.2 Earth Sciences and Economics Domain

This Domain (66 credits including Core) is open only to students in the B.Sc. Major in Environment program in the Faculty of Science.

Adviser: Professor Don Baker
E-mail: donb@eps.mcgill.ca
Telephone: (514) 398-7485

The resources necessary for human society are extracted from the Earth, used as raw materials in our factories and refineries, and then returned to the Earth as waste. Geological processes produce resources humans depend on, and they also determine the fate of wastes in the environment. Understanding Earth’s geologic processes provides us with the knowledge to mitigate many of our society’s environmental impacts due to resource extraction and waste disposal. Additionally, economics frequently affects what energy sources power our society and how our wastes are treated.
Earth sciences and economics are essential for our understanding of the many mechanisms, both physical and social, that affect Earth’s environment.

This Domain includes the fundamentals of each discipline. Students learn of minerals, rocks, soils, and waters and how these materials interact with each other and with the atmosphere. Fundamental economic theory and the economic effects of public policy towards resource industries, methods of waste disposal, and the potential effects of global warming on the global economy are also explored.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 34 credits at the 200 level and a minimum of 15 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR 200 (3) The Global Environment
ENVR 201 (3) Society and Environment
ENVR 202 (3) The Evolving Earth
ENVR 203 (3) Knowledge, Ethics and Environment
ENVR 301 (3) Environmental Research Design
ENVR 400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)
AGRI 519 (6) Sustainable Development Plans (in Barbados)
ENVR 401 (3) Environmental Research
ENVR 451 (6) Research in Panama (in Panama)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (22 credits)
ECON 230D1 (3) Microeconomic Theory
ECON 230D2 (3) Microeconomic Theory
ECON 405 (3) Natural Resource Economics
EPSC 210 (3) Introductory Mineralogy
EPSC 212 (4) Introductory Petrology
EPSC 220 (3) Principles of Geochemistry
EPSC 425 (3) Sediments to Sequences

Domain: Complementary Courses (23 credits)
3 credits of statistics from:
AEMA 310 (3) Statistical Methods 1 (M)
or GEOG 202 (3) Statistics and Spatial Analysis
or MATH 203 (3) Principles of Statistics 1 or equivalent
12 credits from List A:
AGEC 333 (3) Resource Economics (M)
BIOL 308 (3) Ecological Dynamics
or WILD 205 (3) Principles of Ecology (M)
CHEE 430 (3) Technology Impact Assessment
or NRSC 437 (3) Assessing Environmental Impact (M)
ECON 326 (3) Ecological Economics
ECON 347 (3) Economics of Climate Change
ECON 416 (3) Topics in Economic Development 2
ECON 525 (3) Project Analysis

8 credits minimum, from List B:
AGRI 435 (3) Soil and Water Quality Management (M)
ANTH 339 (3) Ecological Anthropology
BIOL 305 (3) Animal Diversity
BIOL 553 (3) Neotropical Environments (in Panama)
ECON 305 (3) Industrial Organization
ECON 313 (3) Economic Development 1
ECON 314 (3) Economic Development 2
ECON 408D1 (3) Public Sector Economics
ECON 408D2 (3) Public Sector Economics
ECON 412 (3) Topics in Economic Development 1
EPSC 312 (3) Spectroscopy of Minerals
EPSC 334 (3) Invertebrate Paleontology
EPSC 483D1 (1.5) Independent Studies 2
EPSC 483D2 (1.5) Independent Studies 2
EPSC 519 (3) Isotope Geology
EPSC 542 (3) Chemical Oceanography
EPSC 549 (3) Hydrogeology
EPSC 580 (3) Aqueous Geochemistry
EPSC 590 (3) Applied Geochemistry Seminar
GEOG 302 (3) Environmental Management 1
GEOG 322 (3) Environmental Hydrology
GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)
SOIL 410 (3) Soil Chemistry (M)

13.10 Honours Program in Environment

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Telephone: (514) 398-4306

This Program is open only to students in the B.Sc. Major in Environment, B.Sc.(Ag.Env.Sc.) Major in Environment, B.A. Faculty Program in Environment, and the B.A.&Sc. Faculty Program in Environment.

The Honours Program in Environment offers students the opportunity to undertake a year-long research project in close association with a professor. Honours research provides excellent preparation for graduate studies, but is not required for such studies. The Honours in Environment adds 6 credits of research to the regular Environment program. Since the Honours research is carried out in the final year at the same time as the regular courses, it does not add to the length (duration) of the degree. Students simply have 6 credits less of electives. If, for some reason, students cannot complete the Honours requirements, they may still graduate with the regular Environment program.

To be eligible for Honours, students must satisfy the requirements set by their degree (B.A., B.Sc., B.Sc.(Ag.Env.Sc), or B.A.&Sc.). B.A. students should especially note the requirement of a Minor in a subject other than Environment. In addition they must satisfy the following:

1. Students apply for the Honours program in March of their U2 year. See Peter Barry for details.
2. Applicants must have a minimum Program GPA (GPA of all required and complementary courses for the program in Environment taken at McGill) of 3.3 to enter the Honours program.
3. Students must earn a B grade (3.0) or higher for the Honours Research course (ENVR 495 or ENVR 496 & ENVR 497).
4. Students are required to achieve a minimum overall CGPA of 3.0 at graduation, and a minimum Program GPA of 3.3 to obtain Honours.
5. Arts (B.A.) students must complete a Minor Concentration in a program other than Environment. See section 5.11.5 “Minor Concentrations or Minors” for details.

Note that the Honours Research course number is different for the Honours program and the Honours in Environment taken at McGill.

B.A., B.Sc., B.A.&Sc.
Honours - Required Courses (6 credits)
ENVR 495 D1/N1 (3) Honours Research
ENVR 495 D2/N2 (3) Honours Research

Students in the B.A. or B.Sc. Honours programs complete the Core and Domain courses (54 to 66 credits) according to their chosen Domain as well as the Honours required courses. (Note, courses vary with each Domain.)

Students in the B.A.& Sc. Honours program complete the coursework (54 credits) for the Faculty Program in Environment as well as the Honours required courses.
B.Sc. (Ag.Env.Sc.)

Honours - Required Courses (6 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 496</td>
<td>3</td>
<td>Honours Research Part 1</td>
</tr>
<tr>
<td>ENVR 497</td>
<td>3</td>
<td>Honours Research Part 2</td>
</tr>
</tbody>
</table>

Students in the B.Sc.(Ag.Env.Sc.) Honours program complete the Core and Domain courses (57 to 63 credits) according to their chosen Domain as well as the Honours required courses. Note: courses vary with each Domain.

In addition to completing the Honours Research course, all students must present their results to the MSE at the end of the second semester. They must also give the MSE a complete, clean (after corrections) copy of their thesis.

13.11 Diploma in Environment

Adviser: Mr. Peter Barry, MSE Program Coordinator
E-mail: pete.barry@mcgill.ca
Telephone: (514) 398-4306

The Diploma is designed for students with an undergraduate degree who wish to enrich or reorient their training, supplementing their specialization with additional undergraduate-level coursework. The Diploma requires 30 credits of full-time or part-time studies at McGill; it may be started in either January or September. The Diploma is a one-year program if taken full-time.

Students holding a B.Sc. or a B.A. degree or equivalent in good standing will be permitted to register for the Diploma through the Faculty of Agricultural and Environmental Sciences, the Faculty of Arts, or the Faculty of Science, provided they are otherwise acceptable for admission to the University.

Students must have a grade of C or higher in all courses for the Diploma.

DIPLOMA IN ENVIRONMENT (30 credits)

Required Courses (18 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 200</td>
<td>3</td>
<td>The Global Environment</td>
</tr>
<tr>
<td>ENVR 201</td>
<td>3</td>
<td>Society and Environment</td>
</tr>
<tr>
<td>ENVR 202</td>
<td>3</td>
<td>The Evolving Earth</td>
</tr>
<tr>
<td>ENVR 203</td>
<td>3</td>
<td>Knowledge, Ethics and Environment</td>
</tr>
<tr>
<td>ENVR 301</td>
<td>3</td>
<td>Environmental Research Design</td>
</tr>
<tr>
<td>ENVR 400</td>
<td>3</td>
<td>Environmental Thought</td>
</tr>
</tbody>
</table>

Complementary Courses (12 credits)

3 credits must be taken with the approval of the program adviser in an area outside of the student’s previous degree (e.g., those with a B.A. or equivalent degree must take 3 credits in the natural sciences; those with a B.Sc. or equivalent degree must take 3 credits in the social sciences). A list of suggested courses is available from the program adviser, and on the MSE Website in “Undergraduate Programs: Diploma”.

9 credits must be taken in an area of focus chosen by the student with the approval of the program adviser. At least 6 credits must be taken at the 400 level or higher.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

13.12 Field Studies

13.12.1 African Field Study Semester

The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see section 14.2.1.

13.12.2 Barbados Field Study Semester

The Department of Bioresource Engineering, Faculty of Agricultural and Environmental Sciences, coordinates the 15-credit interdisciplinary Barbados Field Study Semester. For more information, see section 14.2.2 “Barbados Field Study Semester”.

13.12.3 Panama Field Study Semester

The McGill School of Environment coordinates the 15-credit interdisciplinary Panama Field Study Semester. For information, see section 14.3 “Panama Field Study Semester”.
14 Field Studies and Study Abroad Opportunities

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Besides the many academic resources McGill offers on campus, there are also unparalleled opportunities to enrich your educational experience through exchange programs, internships, field study programs and McGill courses taught abroad.

14.1 Study Abroad Options

There are four types of Study Abroad options available:

14.1.1 Bilateral Student Exchanges

Bilateral student exchange agreements are tuition exchange agreements that exist between McGill University and one other institution, which have been reviewed and approved by McGill. McGill University has bilateral agreements in many countries including: Australia, Austria, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, Mexico, the Netherlands, New Zealand, Norway, Russia, Singapore, Spain, Sweden, Switzerland, Thailand, Turkey, the United Kingdom, and the United States of America. Exchange programs can be university-wide or faculty-specific. Faculty-specific agreements are only open to students in the specified faculty.

The full listing of bilateral partners can be found on www.mcgill.ca/studyabroad.

14.1.2 CRÉPUQ Exchanges

The Conférence des recteurs et principaux des universités du Québec has established tuition exchange agreements in which all Quebec university students may participate, regardless of whether or not they are Quebec residents. The listing of CRÉPUQ partners is accessible from www.echanges-etu-dants.crepuq.qc.ca.

14.1.3 Field Studies

McGill offers students a chance to put theory into practice through local, regional, and international field study semesters and individual courses. Field studies provide practical experience and a chance to integrate and apply knowledge gained in the classroom. In many cases, field courses can be counted towards major program requirements. Students should see their adviser for details.

Field Study Semesters are packages of McGill courses aimed at upper year students which focus on the physical and social aspects of the environment. They are offered in various regions around the world in either the Fall or Winter Term. Currently, Field Study Semesters are offered in East Africa (Kenya, Uganda and/or Tanzania), Barbados, and Panama. Enrolment is limited, and application deadlines and costs vary, so students should consult the relevant sections of the Calendar for details. Students who are interested in participating should begin planning their courses well in advance of the Field Study semester, as some of the field courses require prerequisites.

14.1.4 Study Away On Your Own

Students who wish to study as a Visiting student at a university with which McGill does not have a student exchange agreement must consult the Student Affairs Office of their McGill faculty, as well as the Admissions Office of the university to which they are applying regarding application requirements. Students pay tuition to the host institution.

14.2 Field Studies

14.2.1 African Field Study Semester

Website: www.mcgill.ca/africa

The African Field Study Semester (AFSS) is run through McGill’s Canadian Field Study in Africa Program (CFSA).

The AFSS provides one term of integrated field study in East Africa, with emphasis on environmental conservation. Students investigate challenges of sustaining biological diversity and social justice in African environments subject to cultural change, economic development and environmental stress. Cultural and ecological variation is examined in highland, montane, rangeland, desert, riverine, salt and fresh water lake, coastal, and urban settings.

McGill students should note that although the AFSS is not a degree program (such as a Minor or Minor Concentration), its 15 credits constitute a full single-term credit load that can be counted towards certain McGill degrees with the permission of program advisers.
Students from other universities are eligible to apply to the McGill CFSSIA and must also meet the criteria for admission to McGill as a Visiting Student. Please see the AFSS Website for details.

The AFSS comprises 15 credits of field study courses. Two courses (6 credits) in the natural and social sciences provide interdisciplinary academic context for field study. The other 9 credits are taken from course offerings in two thematic areas and Special Topics.

Visit the AFSS Website www.mcgill.ca/africa, or go to www.mcgill.ca (Course Calendars) in July for details of program updates.

Offered: Winter term
Location: East Africa
Enrolment Limit: 38 students
Fees: In addition to the regular McGill fees, students will be required to pay the additional costs associated with delivering the courses in the field. These costs include airfare, local travel, all food and accommodation, special admission fees for parks and museums as well as other field costs. Airfares and currency fluctuation will determine the amount of this charge. The 2006 trip cost $12,550. The actual cost for 2007 will be determined by September 2006.

Quebec residents may be eligible for a financial subsidy from the Ministère de l'Éducation, du Loisir et du Sport (MELS), see section 14.4.3.2 "Quebec Ministère de l'Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents".

Application Deadline: April 30, 2006. Depending on space, there will be a second intake with a deadline date of November 1, 2006.

Application Details: Students must submit a letter of intent, a CV, a copy of their transcript and two reference letters to June Connolly in the Geography Department office, Room 705, Burnside Hall.

Prerequisites: The AFSS is intended for students in their final two years.

AFRICAN FIELD STUDY SEMESTER
(15 credits)
Required Courses (6 credits)
GEOG 416* (3) Africa South of the Sahara
NRSC 300 (3) Natural History: East Africa
Complementary Courses (9 credits)
3-9 credits from thematic areas:
Courses include:
Area A - Biodiversity and conservation in Africa
BIOI 328 (3) Biological Diversity in Africa
NUTR 403* (3) Nutrition in Society
WILD 420* (3) Ornithology
WILD 421* (3) Wildlife Conservation

* Offered on a rotational basis, at least 3 credits annually

Area B - Environment and development in Africa
Courses include:
ANTH 416 (3) Environment/Development Africa
GEOG 404* (3) Environmental Management
ANTH 315 (3) Society/Culture: East Africa

* Offered on a rotational basis, at least 3 credits annually

0-6 credits, special topics
AFRI 480 (3) Special Topics
AFRI 481 (3) Special Topics
ENVR 380 (3) Topics in Environment 1
ENVR 480 (3) Topics in Environment 2
INTD 490 (3) Development Field Research

Students may take Special Topics in the African Studies, the MSE, or in Development Studies, or in their home departments, with permission of their program adviser and an AFSS director.

14.2.2 Barbados Field Study Semester
Website: www.mcgill.ca/mse → Programs

The Barbados Field Study Semester (BFSS) provides one term of integrated field study for students with an interest in global issues related to natural resource use as affected by socio-economic, management, urban and physical constraints. Offered at the Bellairs Research Institute in Barbados, this program challenges students to be more effective environmental decision makers, policy makers, urban planners, managers, and auditors. There is a growing need for professionals with such skills at all levels of government, within NGOs, and in the private sector. The overall goal of the BFSS is to equip future leaders to address the complexity of issues associated with the formulation and implementation of organizational strategies compatible with the societal goal of sustainable use and development of our natural resources, with a focus on water.

The BFSS is intended for senior undergraduate students from across the University and students in the School of Urban Planning. Students must apply to participate in the program. Selection will be based on the student’s academic standing and demonstrated interests and involvement in international issues related to natural resource use.

The semester is not a degree program, but credits can be counted toward certain McGill degrees with the permission of program advisers.

Offered: Fall Term
Location: Bellairs Research Institute in Barbados
Enrolment Limit: 25 students
Fees: In addition to the regular McGill fees, students will be required to pay the additional costs associated with delivering the courses in the field. These costs include airfare, accommodation and most food, as well as other field costs. Airfares and currency fluctuation will determine the exact cost, fees for 2006 are expected to be approximately $7,000 CDN.

Quebec residents may be eligible for a financial subsidy from the Ministère de l'Éducation, du Loisir et du Sport (MELS), see section 14.4.3.2 "Quebec Ministère de l'Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents".

Application Deadline: March 17, 2006
Application Details: Students must submit a letter of intent, a CV and a copy of their transcript to the Department of Bioresource Engineering, c/o susan.gregus@mcgill.ca. Further details are available at www.mcgill.ca/mse

Prerequisites: None

BARBADOS FIELD STUDY SEMESTER
(15 credits)
Required Courses (6 credits)
AGRI 413 (3) Globalization: Issues of Change
URBP 507 (3) Planning and Infrastructure

Complementary Courses (9 credits)
one of the following cross-listed courses:
AGRI 452 (3) Water Resources in Barbados
CIVE 452 (3) Water Resources in Barbados

and one of the following cross-listed project courses:
AGRI 519 (6) Sustainable Development Plans
CIVE 519 (6) Sustainable Development Plans
URBP 519 (6) Sustainable Development Plans
14.3 Panama Field Study Semester

Website: www.mcgill.ca/mse -> Programs

This program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. Hands-on experience is gained through a research project organized around multidisciplinary environmental issues. The nature of these projects will centre on practical environmental problems/questions important for Panama. Students will form a team that will work with Panamanian institutions (NGO, governmental or research).

There is one week of transition and 12 weeks of course attendance in Panama. Field trips will be integrated into each of the courses offered.

Offered: Winter Term

Location: Smithsonian Tropical Research Institute (STRI) in Panama

Enrollment Limit: 25 students

Fees: Students will be required to pay the additional costs associated with delivering the courses in the field. The cost of the program is approximately $4,200 CDN. This amount does not include airfare, tuition, insurance, or food. A $1000 deposit is required and is non-refundable.

Quebec residents may be eligible for a financial subsidy from the Ministère de l'Éducation, du Loisir et du Sport (MELS), see section 14.4.3.2 "Québec Ministère de l'Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents".

Application Deadline: March 15, 2006 for January 2007 (Winter Term of the academic year 2006-07)

Application Details: Students must submit a letter of intent, CV, and copy of their transcript to: Susan Gabe, Biology Undergraduate Office, Stewart Biology Building, Room W4/8. E-mail: susan.gabe@mcgill.ca. Telephone: (514) 398-7045.

Prerequisites: HISP 218 Spanish Language Elementary or equivalent proficiency, and MATH 203 Principles of Statistics 1 or equivalent. A GPA of 3.00 and higher is recommended. The program is aimed at undergraduate students in their final year.

PANAMA FIELD STUDY SEMESTER
(15 credits)

Required Courses (9 credits)
BIOL 553 (3) Neotropical Environments
ENVR 451 (6) Research in Panama

Complementary Courses (6 credits)
One of the following sets:
Offered in Winter 2007 –
GEOG 404 (3) Environmental Management 2
SOCI 565 (3) Social Change in Panama

Offered in Winter 2008 –
AGRI 550 (3) Sustained Tropical Agriculture
GEOG 498 (3) Humans in Tropical Environments

14.4 Exchange Programs

14.4.1 Eligibility

Student exchange programs are open to McGill students of all nationalities. To participate, applicants must be currently registered as full-time, degree-seeking McGill students, meet the criteria of their faculty at McGill, and have a minimum CGPA of 3.0. Applicants must have completed at least one year of full-time study by the start of the exchange. Students can participate in exchanges for one term or for a full academic year (two terms).

The second annual McGill Exchange Fair will be held on Wednesday, October 4, 2006. Please check www.mcgill.ca/studyabroad for up-to-date information on the Exchange Fair.

14.4.2 Applying for an Exchange

Complete application details are found in the Student Exchanges and Study Abroad how-to guide, “Steps to a Successful Exchange”, available on the Web at www.mcgill.ca/studyabroad.

14.4.2.1 Deadlines

The deadline to submit an application to participate in a student exchange for one or two terms of the 2007-2008 academic year is Monday, February 5, 2007. Your Faculty Approval deadline to participate in an exchange is at least five (5) business days prior to this deadline.

Applications are submitted in person at the Student Exchanges and Study Abroad Office.

14.4.2.2 Bilateral or CREPUQ

If a university appears on both the Bilateral and CREPUQ listings of exchange partners, you must apply under the bilateral agreement. Your two exchange destination choices must be from the same type of agreement, either bilateral or CREPUQ.

14.4.3 Awards and Financial Assistance

14.4.3.1 Travel Awards

A number of travel awards are available for eligible candidates. Complete information on available travel awards can be found in the how-to guide, Steps to a Successful Exchange. Questions may be directed to exchaward.arr@mcgill.ca.

14.4.3.2 Québec Ministère de l'Éducation, du Loisir et du Sport (MELS) Travel Awards for Quebec Residents

The Quebec Government has made awards available for Quebec residents (defined by the rules established by the Ministère de l'Éducation, du Loisir et du Sport (MELS)) pursuing an Exchange or Study Abroad Program outside of the province of Quebec.

Undergraduate students must have completed 24 McGill credits with a minimum CGPA of 2.7 prior to the start of their Exchange or Study Abroad Program to be eligible to apply for the Award.

14.4.3.3 Universitas 21 Travel Awards

There will be twenty (20) Universitas 21 Travel Awards available for McGill students who apply and are accepted to participate in a student exchange with one of McGill University’s Universitas 21 partners.

14.4.3.4 McGill Scholarships and Awards

For students who are pursuing an approved program of study, renewable scholarships and awards may be retained for up to one year while on exchange. However, they will not be eligible for McGill’s yearly in-course awards.

14.4.3.5 Financial Assistance

Students participating in an official McGill University exchange program are eligible to apply for government student assistance as a McGill student, but are not eligible for McGill Student Aid. Students who “study away on their own” are not eligible to receive government student loans through McGill because they are not registered at McGill. Students should verify with the institution they will be attending whether or not they will be eligible to receive government student assistance.

14.4.4 Transfer of Credits from Host Institution

Grades received from the host institution do not appear on the McGill transcript nor are they calculated in the McGill CGPA. The McGill transcript includes a notation of participation in an exchange, the number of transfer credits granted by McGill, and where applicable, McGill course exemptions.

The transfer of credits process must be initiated by the student immediately upon return from exchange with the faculty Student
Affairs office, and be completed no later than four months after the return. Before leaving the host institution, students should order two (2) copies of the official transcript for their files, and ensure that the institutions sends an official version of the transcript to the Student Exchanges and Study Abroad Office at McGill.

### 14.4.5 Universitas 21

The Universitas 21 Consortium is an international network of leading research-intensive universities whose objective is to assist members’ plans for internationalisation, particularly in facilitating student exchanges and short-term research visits. McGill University currently has bilateral student exchange agreements with the following institutions within the U21 Consortium: National University of Singapore, Lund University, University of Birmingham, University of Auckland, University of Edinburgh, University of British Columbia, University of Hong Kong, University of Glasgow, University of New South Wales, University of Melbourne, University of Queensland, University of Nottingham, and University of Virginia.

### 14.4.6 The Killam Fellowships Program

McGill University participates in The Killam Fellowships Program which provides exceptional undergraduate students from universities in Canada and the United States with the opportunity to study in the neighbouring country for either one semester for a full academic year. Established in 2002 through a partnership between the Foundation for Educational Exchange between Canada and the United States of America and the American Killam Trusts, the goal of the program is to increase mutual understanding between Canada and the United States through academic exchange.

### 14.4.7 Canadian University Study Abroad Program (CUSAP)

The opportunity for international study is also available to McGill students through the Canadian University Study Abroad Program (CUSAP). CUSAP offers programs of study at Herstmonceux, a 15th-century castle in East Sussex, England, housing the International Study Centre. Classes in CUSAP are offered in a seminar setting, and provide students with an enriched academic experience through daily interaction with other students and instructors. CUSAP is open to both first-year and upper-year students.

### 14.4.8 Further Information and the Student Exchanges and Study Abroad (SESA) Office

Additional details regarding study abroad, including application procedures, application forms, eligibility criteria, travel awards, the CUSAP program are contained in the must-have document, “Steps to a Successful Exchange”, on the Web at www.mcgill.ca/studyabroad, or from the Student Exchanges and Study Abroad (SESA) Office located in: James Administration Building, 2nd Floor 845 Sherbrooke Street West Montreal, Quebec H3A 2T5 Telephone: (514) 398-8342 Fax: (514) 398-8939 E-mail: studentexchanges@mcgill.ca In person: Student Exchanges and Study Abroad Office located in the James Administration Building, 2nd Floor.

### 14.5 Internships and Co-op Programs

For information on Internships and Co-op Programs, see section 3.8.1 “Internships and Co-op Programs”.

### 14.6 Off-Campus Summer Programs

#### 14.6.1 Chinese Summer School

Contact the Department for Chinese Summer School abroad at (514) 398-6742.

#### 14.6.2 McGill Summer Courses in Italy

The Department of Italian Studies at McGill University offers up to 12 credits of courses given at the Centro Linguistico Dante Alighieri in Florence, Italy, during the months of May, June and July, 2006. Location: Florence, Italy Application Deadline: April 7, 2006 Application Details: Students must fill out the application form and speak to either of the program coordinators, Ms. Vanna Fontaito or Dr. Enrica Quaroni, before registering. Applications are available at www.mcgill.ca.

Courses:
- ARTH 367 (3) Italian Renaissance Art 2
- ITAL 206 (6) Beginners’ Italian Intensive
- ITAL 216 (6) Intermediate Italian Intensive
- ITAL 306 (6) Advanced Reading and Composition
- ITAL 307 (3) Topics in Italian Culture
- ITAL 308 (3) Business Italian 1
- ITAL 309 (3) Perspectives on Italy
- MUAR 381 (3) Music in Gothic and Renaissance Culture

#### 14.6.3 Faculty of Engineering

Study of a distinct urban environment and its key buildings; graphic recording and analysis of physical configuration, constructional peculiarities and present use. Excursions to neighbouring sites of special architectural interest.

Professors: Annmarie Adams and Radoslav Zuk

Offered: Section 001 01-May-2006/20-May-2006

Location: Venice, Italy, with excursions to Milan and Rome

Enrolment Limit: 15-18 students

Fees: Tuition fees, travel expenses, compulsory health insurance paid by students

Application Deadline: February 13, 2006

Application Details: Prior to registering, student must contact Mrs. Mary Lanni-Campoli, in the School of Architecture, at (514) 398-6702.

Prerequisite: ARCH 202 or permission of instructor

Course:
- ARCH 379 (3) Summer Course Abroad - The Architecture of Italian Cities - Venice - Urban Form, Institutions and Homes

#### 14.6.4 Desautels Faculty of Management

The following courses are given abroad and cover essentially the same ground as the equivalent courses given in Montreal. They will, however, be heavily influenced by the local business environment. Courses are offered in Mexico and Brazil.

Application Details: For registration and/or advising, please contact the Department at (514) 398-4068.

Courses:
- BUSA 400 (3) Independent Studies in Management
  Topic: Business Simulation
14.7 Off-Campus Courses

14.7.1 Art History & Communication Studies

Urban growth, new religious and political institutions, powerful families, factionalism and civic identity provided new patrons and uses for artwork between 1300-1600. This course compares the function of visual imagery and artistic practices in Florence with developments in other centres in Italy during study abroad. For specific details about the course content, please consult Prof. B. Wilson, Dept. of Art History and Communication.

**Offered:** Section 001 08-May-2006/02-Jun-2006

**Location:** Florence, Italy

**Application Deadline:** April 07, 2006

**Application Details:** Prior to registration, students must contact E. Quaroni or V. Fonsato at (514) 398-3956.

**Course:**

ARTH 367 (3) Italian Renaissance Art 2

14.7.2 Biology

The Faculty of Science offers the following biology courses off-campus.

- BIOL 240 (3) Monteregian Flora
- BIOL 331 (3) Ecology/Behaviour Field Course
- BIOL 334 (3) Applied Tropical Ecology
- BIOL 335 (3) Marine Mammals
- BIOL 573 (3) Vertebrate Palaeontology Field Course

14.7.3 Earth & Planetary Sciences

Two-week field studies (May) in selected branches of the geosciences to examine processes in geology.

- EPSC 231 (3) Field School 1
- EPSC 331 (3) Field School 2
- EPSC 341 (3) Field School 3

14.7.4 East Asian Studies

Contact the Department for Chinese Summer School abroad at 398-6742.

14.7.5 Geography

The Faculty of Science offers the following geography courses off-campus.

- GEOG 290 (1) Local Geographical Excursion
- GEOG 495 (3) Marine Mammals
- GEOG 496 (3) Geographical Excursion
- GEOG 499 (3) Subarctic Field Studies

14.7.6 Italian Studies

The Department of Italian Studies at McGill University offers up to 12 credits of courses given at the Centro Linguistico Dante Alighieri in Florence, Italy.

**Location:** Florence, Italy

**Application Deadline:** April 07, 2006

**Application Details:** Students must fill out the application form and speak to either of the program coordinators, Ms. Vanna Fonsato or Dr. Enrica Quaroni, before registering. Applications are available at www.mcgill.ca/Italian.

**Courses:**

- ITAL 206 (6) Beginners’ Italian Intensive
- ITAL 216 (6) Intermediate Italian Intensive
- ITAL 306 (6) Advanced Reading and Composition
- ITAL 307 (3) Topics in Italian Culture
- ITAL 308 (3) Business Italian 1
- ITAL 309* (3) Perspectives on Italy

* Topic 2006: Florence: Building the Modern Imagination

For specific details on course content, please consult Prof. R. Castro, School of Architecture.

14.7.7 Music

An introduction to European music in late Medieval and Renaissance society: the Crusades, the age of Columbus, the Reformation, Shakespeare’s England. Music in the daily lives of courtiers, clergy and commoners - music as courtly pastime, music for devotion in cathedrals, domestic music in towns and cities. Selected masterworks will be studied.

**Summer 2006:** Music as the language of love in the Italian madrigal. Focus on the Italian madrigal in 16th century Florence, Rome, Ferrara, Mantua and Venice; examination of the Italian influence on the English madrigal and the origins of opera. On site visits. For specific details about the course content, please consult Prof. J. Cumming, Faculty of Music.

**Offered:** Section 001 03-July-2006/28-July-2006

**Location:** Florence, Italy

**Application Deadline:** April 7, 2006

**Application Details:** Students must fill out the application form and speak to either of the program coordinators, Ms. Vanna Fonsato or Dr. Enrica Quaroni, before registering.

**Course:**

MUAR 381 (3) Music in Gothic and Renaissance Culture
University Buildings
Alphabetical Key

177 C5 ADAMS Building
103 C4 ARTS Building
113 A3 BEATTY Hall
124 C4 BIRKS Building
185 B5 BOOKSTORE
102 B5 BRONFMAN Building
236 B4 BROWN Student Services Building
110 C5 BURNSIDE Hall
139 D2 CURRIE Gymnasium
128 A3 DAVIS House
123 C4 DAWSON Hall
122 B4 Chancellor DAY Hall
125 D2 DOUGLAS Hall
169 D2 DUFF Medical Building
223 B3 DUGGAN Annex
127 B3 DUGGAN House
168 B3 EDUCATION Building
129 B5 FACULTY CLUB
197 C4 FERRIER Building
133 D1 GARDNER Hall
231 B4 GELBER Law Library
149 A3 HOSMER House
132 A3 HOSMER Annex
167 B4 HUGESSEN House
112 C4 JAMES Administration Building
112 C4 JAMES Annex
150 C4 LEACOCK Building
119 C5 MAASS Chemistry Building
130 C4 MACDONALD Engineering Building
118 C5 MACDONALD-HARRINGTON Building
170 C5 MACDONALD STEWART Library Building
242 B6 MARTLET House
105 D1 McCONNELL Arena
131 C4 McCONNELL Engineering Building
221 D1 McCONNELL Hall
186 C6 McCORD Museum
155 B3 McINTYRE Medical Building
108 C5 McLennan Library Building
135 B5 McTAVISH, 3430
114 B5 McTAVISH, 3434
104 B5 McTAVISH, 3438
147 B3 MEREDITH Annex
173 B3 Charles MEREDITH House
148 B3 Lady MEREDITH House
116 D1 MOLSON Hall
106 D2 MOLSON Stadium
156 A4 de la MONTAGNE, 3605
159 D2 MONTREAL NEUROLOGICAL INSTITUTE
163 C4 MORRICE Hall
134 D1 Bishop MOUNTAIN Hall
103 C4 MOYSE Hall
245 D5 New MUSIC Building
227 D2 OBSERVATORY
244 D3 PARC, 3625
248 B5 PEEL, 1555 (Les Cours Mont Royal)
143 B5 PEEL, 3437
191 B5 PEEL, 3459
192 B5 PEEL, 3463
140 B5 PEEL, 3465
136 B5 PEEL, 3475
151 B4 PEEL, 3479
213 B4 PEEL, 3483
187 B4 PEEL, 3487
145 B4 PEEL, 3491
138 B4 PEEL, 3495
230 B4 PEEL, 3505
194 B4 PEEL, 3647
137 B4 PEEL, 3661
166 B3 PEEL, 3674
175 B3 PEEL, 3690
117 B3 PEEL, 3715
239 C3 PENFIELD, 740
190 B4 PENFIELD, 1085
165 B5 PETERSON Hall
184 D2 PINE, 515
141 D2 PINE, 517
162 D3 PINE, 546
101 B3 PINE, 1033
196 B3 PINE, 1140
120 D5 POLLACK Hall
158 C5 PULP AND PAPER Research Centre
174 B3 PURVIS Hall
161 A4 RABINOVITCH House
181 C5 REDPATH Hall
178 C5 REDPATH Library Building
179 C4 REDPATH Museum
180 D5 ROYAL VICTORIA COLLEGE Residence
189 C3 RUTHERFORD Physics Building
183 D3 SAINT URBAIN, 3626
201 D6 SHERBROOKE, 550
233 C6 SHERBROOKE, 688
146 B6 SOLIN Hall (Lionel-Groulx Avenue)
111 B4 STEWART Biology Building
154 C3 STRATHCONA Anatomy & Dentistry Building
120 D5 STRATHCONA Music Building
188 B4 THOMSON House
240 C3 TROTTER Information Technology Building
109 C4 UNIVERSITY, 3534
176 C3 UNIVERSITY, 3550
216 D3 UNIVERSITY, 3641
216 D3 UNIVERSITY, 3643
218 D3 UNIVERSITY, 3647
172 B4 UNIVERSITY CENTRE
198 C4 WILSON Hall
229 C3 WONG Building
2006-2007
Undergraduate Admissions Guide

Apply on the web at www.mcgill.ca/applying

Programs in:
- Agricultural and Environmental Sciences (including the School of Dietetics and Human Nutrition)
- Arts (including the School of Social Work)
- Education
- Engineering (including the School of Architecture)
- Management
- Music
- Nursing
- Physical and Occupational Therapy
- Religious Studies
- Science

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1.1 Applying to McGill

Scope of this Guide

These instructions can be used to apply to programs in:

- Agricultural and Environmental Sciences (including the School of Dietetics and Human Nutrition)
- Arts (including the School of Social Work)
- Education
- Engineering (including the School of Architecture)
- Environment
- Management
- Music
- Nursing
- Physical and Occupational Therapy
- Religious Studies
- Science

Faculties, Centres and Students not covered in this Guide

This guide does not cover the faculties of Dentistry, Law, and Medicine and the Centre for Continuing Education. It likewise does not cover students coming to McGill University on exchange or former McGill University students seeking readmission. Please consult the relevant McGill Website below or section 1.1.1 “Important Notice for Current and Former McGill Students” for more information.

www.mcgill.ca/dentistry
www.law.mcgill.ca
www.medicine.mcgill.ca
www.mcgill.ca/conted
www.mcgill.ca/studyabroad
www.mcgill.ca/applying

1.1.1 Important Notice for Current and Former McGill Students

- If you are currently registered in a degree program at McGill University and you will not be graduating in the current year, you should not complete an entirely new admission application if you wish to transfer to a different faculty or degree program. Instead, please contact the faculty you wish to transfer into for more instructions, or visit www.mcgill.ca/student-records/inter-faculty-transfers.
- If you are a former McGill University student and wish to return to complete your degree, and you have not completed a degree at another university, please contact your former faculty for more information about its readmission process.
- If you are registered with the Centre for Continuing Education in the Certificate in Management program and wish to transfer to the B.Com degree, please apply directly to the Faculty of Management.
- All other students can use this Application Guide.
1.2 Application Procedures

Please see “Programs of Study” on page 3 for available programs. McGill’s online application form is available on the Web at www.mcgill.ca/applying. Please see section 1.16 “Step-by-Step Guide to Applying to McGill Online” on page 38 for instructions.

The application for admission is the first step in the process of becoming a student at McGill. Please check the section relevant to your academic background for deadlines and to determine whether you meet the entrance requirements of the program you are applying to. Admission is competitive and depends on the space available; applicants possessing the minimum requirements are not guaranteed acceptance.

Application Fee

A non-refundable application fee of $60*, payable by Visa or MasterCard, is required. Music applicants must pay an additional audition fee of $60. McGill’s highly secured e-payment service minimizes cardholder risk. Your credit card information is passed instantly to the Moneris payment gateway and is not stored at McGill. Moneris handles 80% of all credit card transactions processed in Canada.

McGill University cannot process online applications without a valid credit card. If you cannot pay by credit card, please contact us at admissions@mcgill.ca.

* Unless otherwise specified, all dollar figures quoted in this guide are in Canadian funds.

Tracking the Status of Your Application

A notice acknowledging receipt of your application to McGill University will be sent to you by e-mail. This acknowledgement notice will contain a McGill identification number and a PIN which you can subsequently use to log on to Minerva, McGill’s self-service Web-based administrative system, at www.mcgill.ca/minerva/applicants.

You will be able to check the status of your application, including the receipt of supporting documents, on Minerva.

Fall 2006 Term (begins September 2006)

The majority of students enter McGill University in September. Admission availability in January is limited.

Applications must be submitted on or before the deadlines for admission to the Fall 2006 term given for each applicant pool. Supporting documents may be submitted later, as noted in each category.

• Late applications will not be considered for scholarships.
• Late applications will not be considered for limited enrolment programs, unless written permission to apply late is obtained in advance from the Admissions Office concerned.
• For non-limited enrolment programs, late applications will be considered only as time permits.

Priority is given to applications received on time. McGill University reserves the right to cancel, or transfer to a subsequent term, any application submitted after the deadline dates listed, without prior notice.

Supporting documents should be sent as soon as they are available. If received before the application, they will be kept on file for one year.

Winter 2007 Term (begins January 2007)

Most McGill University undergraduate programs do not admit students in January. To find out what programs will be open for January admission, please visit www.mcgill.ca/applying or call (514) 398-3910 in early October.

Note 1: All programs in the Faculty of Agricultural and Environmental Sciences admit students in January, except for Freshman programs and the Farm Management Technology Program.

Note 2: If you are applying to Music, please visit www.mcgill.ca/music/prospective/undergraduate in early November to determine program availability for January. Although most Music programs are closed in January, some exceptions may apply.

Special Bachelor of Social Work Session (begins May 2007)

This is an intensive 14-month program for students with an approved bachelor’s degree, substantial paid and volunteer work experience relevant to social work, and demonstrable personal suitability for the profession.

Deadline for application and submission of all supporting materials is December 1, 2006.

THIS DEADLINE IS STRICTLY ENFORCED.
1.3 Programs of Study

Faculty of Agricultural and Environmental Sciences

B.Sc. Agricultural and Env. Sciences
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.
All other applicants must choose from the list below.

- Agricultural Economics
  - Agribusiness
  - Agricultural System
  - Natural Resource Economics
- Agricultural Sciences:
  - Agricultural Biotechnology
  - Ecological Agriculture
  - General Option
  - International Agriculture
  - Soil Science
- Animal Biology
- Animal Science
- Applied Zoology
- Botanical Science
  - Ecology Option
  - Molecular Option
- Environmental Biology
- Environment:
  - Biodiversity and Conservation
  - Ecological Determinants of Health
  - Environmetrics
  - Food Production & Environment
  - Land Surface Processes & Environmental Change
  - Renewable Resource Mgmt
  - Water Environment & Ecosystems
  - Microbiology
  - Biotechnology
  - Ecology
  - Environment
  - Plant Science
  - Resource Conservation
  - Wildlife Biology

B.Sc. Agr & Env. Sciences (Internship)
Agricultural Sc Internship:
- Agricultural Biotechnology
- Ecological Agriculture
- General Option
- International Agriculture
- Soil Science
Freshman Program

B.Sc. Food Science
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area. All other applicants should enter Food Science.

- Food Science
  - Food Industry Option
  - Food Chemistry Option
  - Food Science Option

B.Sc. Nutritional Science (Nutrition)
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.
All other applicants choose Nutrition.

B.Sc. Nutritional Science (Dietetics)
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.
All other applicants must choose Dietetics.

Certificate and Diploma Programs

Diploma in Farm Mgt Technology (DEC)
Certificate in Ecological Agriculture
Certificate in Entrepreneurship
Diploma in Environment (Agriculture)
Exchange, Special or Visiting Status

Faculty of Arts (including School of Social Work)

B.A.
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.
All other applicants should enter Undeclared. Applicants who enter Undeclared will select a Major/Subject at the time of registration. For a list of subjects available in the B.A., please visit www.mcgill.ca/arts or consult the University Guide or the Undergraduate Programs Calendar.

B.Social Work

B.Social Work Special
(admission in summer only)

Diploma in Environment (Arts)
Exchange, Special or Visiting Status
Faculties of Arts and Science

B.A. & Sc.
Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.
All other applicants should enter Undeclared. Applicants who enter Undeclared will select a Major/Subject at the time of registration. For a list of subjects, please visit www.mcgill.ca/artscisao/basc.

Faculty of Education

B.Ed. Kindergarten/Elementary

B.Ed. Physical and Health Education

B.Ed. Secondary
Applicants must select a Major/Subject from the list below:

- Secondary English
- Secondary Mathematics
- Secondary Social Sciences*
  - History and Citizenship (Geography)
  - History and Citizenship (Moral Ed. Catholic)
  - History and Citizenship (Moral Ed. Protestant)
  - History and Citizenship (Moral Ed.)
- Secondary Science and Technology
  - Biology
  - Chemistry
  - Physics

*Please note that the concentrations under the Secondary Social Sciences program are currently under review.

An application to this program will be considered incomplete unless a Major/Subject is entered.

B.Sc. Kinesiology
- Applied Kinesiology
- General Kinesiology

B.Ed. Teaching English Sec Lang

B.Ed. Teaching French Sec Lang
TFSL Joint Program with Université de Montréal

B.Ed./B.Mus. Concurrent
(see Schulich School of Music)

B.Ed./B.Sc. Concurrent
(see Faculty of Science)

Exchange, Special or Visiting Status

Faculty of Engineering (including School of Architecture)

B.Eng. Chemical

B.Eng. Civil

B.Eng. Electrical/Computer/BSE

B.Eng. Materials Co–op

B.Eng. Mechanical

B.Eng. Mining Engineering Co–op

B.Sc. Architecture

Desautels Faculty of Management

B.Com. Fac PgmIntl Mgmt
International Management
- American Studies
- Canadian Studies
- East Asian Studies
- Latin Amer & Carib Studies
- Western Euro Studies - France
- Western Euro Studies - Germany
- Western Euro Studies - Italy
- Western Euro Studies - Spain

B.Com. General Management
- Accounting
- Entrepreneurship
- Finance
- Information Systems
- International Business
- Labour Management Relations
- Marketing
- Management Science
- Org Behaviour & Human Res Mgmt
- Operations Management
- Strategic Management (Global)
- Strategic Management (Social)

B.Com. Major
- Accounting
- Economics
- Finance
- Information Systems
-Labour Management Relations
- Marketing
- Mathematics
- Psychology

B.Com. General Mgmt (Evening)
- Accounting
- Information Systems
- Marketing
- Org Behaviour & Human Res Mgmt
Programs of Study

B.Com. Major (Evening)

- Information Systems
- Marketing

Exchange, Special or Visiting Status

Schulich School of Music

B. Mus. / B. Ed.

Music Education:
- Baroque Bassoon
- Baroque Cello
- Baroque Flute
- Baroque Oboe
- Baroque Trumpet
- Baroque Viola
- Baroque Violin
- Bassoon
- Cello
- Clarinet
- Cornetto
- Crumhorn
- Double Bass
- Euphonium
- Flute
- French Horn
- Guitar
- Harp
- Harpsichord
- Jazz Bass
- Jazz Drums
- Jazz Guitar

B.Mus. Composition

Composition:
- Baroque Bassoon
- Baroque Cello
- Baroque Flute
- Baroque Oboe
- Baroque Trumpet
- Baroque Viola
- Baroque Violin
- Bassoon
- Cello
- Clarinet
- Cornetto
- Crumhorn
- Double Bass
- Euphonium
- Flute
- French Horn
- Guitar
- Harp
- Harpsichord
- Jazz Drums
- Jazz Guitar
- Jazz Piano
- Jazz Saxophone
- Jazz Trombone
- Jazz Trumpet
- Jazz Voice
- Lute
- Oboe
- Organ
- Percussion
- Piano
- Recorder
- Sackbut
- Saxophone
- Trombone
- Trumpet
- Tuba
- Viola
- Viola da Gamba
- Voice

B.Mus. Composition Honours

Concentrations: same as listed under Composition

B.Mus. Faculty Program

Music - Faculty Program

Concentrations: same as listed under Composition

B.Mus. History

Concentrations: same as listed under Composition

B.Mus. History Honours

Concentrations: same as listed under Composition

B.Mus. Technology Honours

Concentrations: same as listed under Composition

B.Mus. Theory

Concentrations: same as listed under Composition

B.Mus. Theory Honours

Concentrations: same as listed under Composition

B.Mus./B.Ed. Concurrent (also known as B.Ed./B.Mus. Concurrent)

Concentrations: same as listed under Composition
Programs of Study

**B.Mus. Performance Early Music**
- Baroque Bassoon
- Baroque Cello
- Baroque Flute
- Baroque Oboe
- Baroque Trumpet
- Baroque Viola
- Baroque Violin
- Cornetto

**B.Mus. Performance Instrument**
- Baroque Bassoon
- Baroque Cello
- Baroque Flute
- Baroque Oboe
- Baroque Trumpet
- Baroque Viola
- Baroque Violin
- Bassoon
- Cello
- Clarinet
- Cornetto
- Crumhorn
- Double Bass
- Euphonium
- Flute
- French Horn
- Guitar
  - Harp
  - Harpsichord
  - Jazz Clarinet
  - Lute
  - Oboe
  - Organ
  - Percussion
  - Piano
  - Recorder
  - Sackbut
  - Saxophone
  - Trombone
  - Trumpet
  - Tuba
  - Viola
  - Violin
  - Viola da Gamba

**B.Mus. Performance Jazz**
- Jazz Bass
- Jazz Drums
- Jazz Flute
- Jazz Guitar
- Jazz Piano
  - Jazz Saxophone
  - Jazz Trombone
  - Jazz Trumpet
  - Jazz Vibraphone
  - Jazz Voice

**B.Mus. Performance Voice**

**Artist Diploma**
Same selection as:
- B. Mus. Performance Instrument
- B. Mus. Performance Voice

**Exchange, Special or Visiting Status**

**Licentiate in Music**
Same selection as:
- B. Mus. Performance Instrument
- B. Mus. Performance Jazz
- B. Mus. Performance Voice

**School of Nursing**

**B.Nursing (Integrated Program)**

**B.Sc. Nursing**

**Exchange, Special or Visiting Status**

**School of Physical and Occupational Therapy**

**B.Sc. Occupational Therapy**

**B.Sc. Physical Therapy**

**Special or Visiting Status**

**Faculty of Religious Studies**

**B.Theology**

**Special or Visiting Status**
Faculty of Science

B.Sc.

Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area.

All other applicants must choose from the list below. Applicants who enter Undeclared will select a Major/Subject at the time of registration. For a list of subjects available in the B.Sc. please visit www.mcgill.ca/science or consult the University Guide or the Undergraduate Programs Calendar.

- Anatomy and Cell Biology
- Atmospheric Science
- Atmospheric Science & Physics
- Biochemistry
- Biology
- Chemistry
- Computer Science
- Earth & Planetary Sciences
- Environment
- Geography
- Mathematics
- Math & Computer Science
- Microbiology and Immunology
- Physics
- Physics & Computer Science
- Physics and Geophysics
- Physiology
- Physiology and Mathematics
- Physiology and Physics
- Psychology
- Software Engineering
- Undeclared

B.Sc./B.Ed. Concurrent

Applicants whose highest level of education is high school should enter Freshman in the Major/Subject area. All other applicants must choose from the list below:

- Biology with Chemistry Minor
- Biology with Physics Minor
- Chemistry with Biology Minor
- Chemistry with Physics Minor
- Mathematics
- Physics with Biology Minor
- Physics with Chemistry Minor

Diploma In Environment (Sc)

Diploma In Meteorology

Exchange, Special, or Visiting Status
1.4 General Admission and Documentation Requirements for all Applicants

This information regarding entrance requirements was accurate at the time of publication. For further information and updates, please visit www.mcgill.ca/applying/. The University reserves the right to make changes to admissions policies without prior notice.

McGill University accepts students from a wide variety of academic backgrounds, including Quebec CEGEPs, high schools in other Canadian provinces, the U.S. and internationally, as well as applicants from other universities and colleges.

1.4.1 McGill’s Competitive Admission Process

Your entrance requirements are determined by your educational background and the category of admission requested. Detailed information on additional requirements for specific programs, including Architecture, Education, Music, Nursing (B.N.), Occupational Therapy, Physical Therapy, Religious Studies (B.Th.), and Social Work is provided in this guide.

Admission decisions are based on your academic record, as well as performance in prerequisite courses, depending on the program. All marks are taken into consideration in determining admission, including those for failed or repeated courses. In addition, many programs take other information into consideration in making admission decisions (for example, the audition for Music or the portfolio for Architecture). Generally speaking, extracurricular activities are not significant in the admission decision, although they are an important factor in the awarding of certain entrance scholarships.

Admission to McGill University is competitive and students who present the minimum requirements are not guaranteed acceptance.

Admission decisions are frequently based on official interim academic results available at the time of review. If admitted, you are expected to maintain your level of academic performance through to the completion of your pre-McGill studies. Due to constraints of space and timing, it is not normally possible to consider applicants on the basis of repeated or supplemental course work completed after the normal file review period. Admission is always subject to the availability of places in a particular program.

1.4.2 Proof of Proficiency in English

The language of instruction for most courses at McGill University is English; however, you may make arrangements to write term papers, examinations and theses in English or in French, except in courses where knowledge of the language is one of the objectives of the course.

You must demonstrate an adequate level of English proficiency prior to admission to McGill, regardless of citizenship status or country of origin.

If you answer "yes" to any of the following six statements, you do NOT need to provide proof of English proficiency.

- Have you lived and attended school, for at least five years, in a country where English is the acknowledged primary language?
- Have you completed both Secondary V and a DEC at a French CEGEP in Quebec?
- Have you completed a DEC at an English CEGEP in Quebec, during or later than 2003?
- Have you or will you complete a French Baccalaureate - Option Internationale (British or American section)?
- Have you or will you complete International Baccalaureate English A with a final result of 5 or better?
- Have you or will you complete the British Curriculum A-Level English (other than English as a Second Language) with a final grade of C or better?

If you answered "no" to all of the above, but answer "yes" to either of the following two questions, you may be asked to provide proof of English language proficiency.

- Do you consider English to be your first language?
- Have you been attending school at an accredited institution (in a non-English country) where English is the main language of instruction?

All other applicants must demonstrate proficiency in English, using one of the following five options:

McGill Certificate of Proficiency in English
Certificate Awarded
For further information about the program, contact:
Department of Languages and Translation
Centre for Continuing Education
688 Sherbrooke Street West, Suite 1199
Montreal, Quebec, H3A 3R1 Canada
Tel.: (514) 398-6160
Fax: (514) 398-2650
Website: www.mcgill.ca/conted

IELTS (International English Language Testing System)
A band score of 6.5 or better.
For further information about IELTS, contact:
The British Council
Medlock Street,
Manchester, M15 4AA United Kingdom
Website: www.ielts.org
**MELAB (University of Michigan English Language Test)**

A minimum mark of 85%.

For further information about MELAB, contact:

English Language Institute, Testing and Certification
University of Michigan TCF Building
401 E. Liberty, Suite 350
Ann Arbor, MI 48104 U.S.A.
Tel.: (734) 764-2416
Website: www.lsa.umich.edu/eli/melab.htm

**APIEL (Advanced Placement International English Language)**

A minimum score of 4.

For further information about APIEL, contact:

The College Board
45 Columbus Avenue
New York, NY 10022-6992, U.S.A.
Tel.: (212) 713-8091
Website: www.collegeboard.com/student/testing/ap/about.html.

**TOEFL (Test of English as a Foreign Language)**

The following table lists the minimum acceptable TOEFL scores. Please note that these minima were correct at the time of printing; any changes to these scores can be viewed at www.mcgill.ca/applying/.

<table>
<thead>
<tr>
<th>Undergraduate Program</th>
<th>Computer-based score (CBT)</th>
<th>Paper-based score (PBT)</th>
<th>New Internet-based composite score (iBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (TESL)</td>
<td>250</td>
<td>600</td>
<td>100*</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts, Agricultural and Environmental Sciences (including School of Dietetics and Human Nutrition), Engineering, Science, Architecture, Nursing, Physical and Occupational Therapy, Social Work</td>
<td>233</td>
<td>577</td>
<td>90*</td>
</tr>
<tr>
<td>Music</td>
<td>213</td>
<td>550</td>
<td>79-80</td>
</tr>
</tbody>
</table>

For further information about TOEFL, contact:

TOEFL Services
Educational Testing Services (ETS)
P.O. Box 6151
Princeton, New Jersey, 08541-6151 U.S.A.
Website: www.toefl.org

**General Admission and Documentation Requirements for all Applicants**

1.4.3 Placement Tests in Mathematics and Basic Sciences

If you are applying from outside Quebec and believe you have taken the equivalent of one or more introductory university-level science course (algebra, calculus, biology, chemistry, physics) but do not have acceptable certification to that effect, you may be eligible to take placement tests at McGill. These are formal examinations held on campus during the Supplemental Examination period during the last week of August (see Calendar of Dates). The placement tests are conducted by the Faculty of Science.

For more information, refer to "Newly admitted students, admission placement tests" on the Science Student Affairs Office Website at www.mcgill.ca/artscisao.

Each faculty’s policy will determine whether credit for, and/or exemption from, certain courses will be granted for successful completion of placement tests.

1.4.4 Advanced Standing or Transfer Credits

Unless applying from a Quebec CEGEP, up to 30 credits (up to 24 in Music) of advanced standing might be awarded if you have completed Advanced Placement (AP), Advanced Subsidiary (AS), Advanced Level (A-Level), International Baccalaureate (IB) Higher Level Examinations, as well as the European Baccalaureate, French Baccalaureate, Abitur or Bagrut. If transferring from another university or college, you may be awarded transfer credits for your coursework.

In most cases, advanced standing credit is calculated and assigned only after you have confirmed which program you will enter at McGill University and after official results of prior work have been received at McGill. University work must be supported by Calendar course descriptions. The Admissions Office will initiate the calculation of advanced standing credit following receipt of confirmation and payment of your required deposit. After registration, the Admissions Office, Faculty or School may award further advanced standing credit.

You have the option of declaring or not declaring results of Advanced Placement (AP) Examinations at the time of application. Accordingly, the admission decision may take AP results into consideration. In any event, AP Examination results with a score of 4 or 5 must be declared at the time of initial registration at the University. Each faculty’s policy will determine whether advanced standing credit and/or exemption from certain courses will be granted on the basis of AP results.

1.4.5 Supporting Documentation Requirements

In addition to the application and application fee, you may need to forward other materials in order to be considered for admission to McGill. All supporting materials should be sent to the McGill University mailing addresses listed in section 1.15 “Email, Telephone and Fax Contacts” on page 37 of this guide.

See the section relevant to your academic background for deadlines. It is your responsibility to ensure that all required transcripts and documents are submitted by the applicable deadline to the appropriate admissions office.

In addition to the general admission and documentation requirements, you must fulfill specific admission and documentation requirements according to educational background and the program(s) to which you seek admission.
1.4.5.1 Official Transcripts

Quebec CEGEP students, Ontario high school students with OUAC numbers, and current and former McGill University students are not required to send transcripts by mail. McGill's admitting office obtains these directly.

All other applicants must make arrangements with their high school, college and/or university to send official transcripts to McGill.

Note: To be considered official, transcripts must be forwarded directly from your high school, college and/or university to McGill. Unofficial transcripts submitted by you will not be accepted or used for admission. Additionally, McGill University does not accept electronically scanned transcripts.

Transcripts in languages other than English or French must be sent to McGill, accompanied by an English or French translation prepared by your school. In the event that the school cannot provide a translation, a certified translator should send the translation to McGill.

If you have attended more than one high school, you should ask your previous high school(s) to forward transcripts of your grades directly to McGill, or you may have your current high school forward a certified photocopy of a complete official transcript received from a previous school.

If you are an Advanced Level or International Baccalaureate student, you must arrange for final results to be sent by the appropriate Examination Board to McGill. Advanced Placement (AP) results must be sent directly to McGill University from the College Board. Copies sent by the school will not be accepted.

Important: Transcripts sent to McGill University become the property of the University and will not be returned or forwarded to other institutions.

1.4.5.2 External Test Results

Please note that McGill University receives TOEFL, SAT, ACT and AP test results electronically. Please ensure that the personal information you provide to the examination board matches the information you give to McGill. If there is a discrepancy in personal information, we will not be able to load your electronic results.

For further information or assistance, you may send an e-mail to admissions@mcgill.ca. Please include your McGill ID number and indicate "Test Discrepancy" in the subject line of your e-mail.

1.4.5.3 Letters of Reference or Evaluation

Except for the specific programs noted in section 1.4.6 "Additional Materials Required by Specific Programs" and applicants applying as Mature students, letters of reference are not mandatory. In most cases, an admission decision can be reached on the basis of the transcript.

The University recognizes that a school counsellor or principal may be able to provide insight, which can be helpful when considering an application. If you or your counsellor feel it would be helpful and appropriate to submit a letter of recommendation, you are welcome to do so.

When required, letters of reference or evaluation must be submitted in envelopes sealed and signed across the flap by the author of the letter. Whenever possible, letters should be typed on letterhead stationery.

1.4.5.4 Extenuating Circumstances

If you have checked "Yes" in the Extenuating Circumstances box, you must compose and sign your own detailed letter (maximum two pages) indicating the nature and chronology of the circumstances. This letter must be accompanied by supporting documentation, which may include a medical or death certificate, or a letter from a school counselor, psychologist or social worker, as appropriate. If you are an applicant claiming extenuating circumstances, please be advised that an admission decision may be delayed considerably.

1.4.6 Additional Materials Required by Specific Programs

If applying to the following programs, you must submit letters of reference and/or other supporting materials as outlined below:

- Architecture
- Education
- Music
- Physical Therapy and Occupational Therapy
- Religious Studies (B.Th.)
- Social Work

When required, letters of reference or evaluation must be submitted in sealed envelopes, signed across the flap by the author of the letter. Whenever possible, letters should be typed on letterhead stationery.

1.4.6.1 Architecture

If applying to the School of Architecture, you must submit a portfolio of your work to McGill University by no later than March 15.

Your portfolio must be in 8-1/2" x 11" or A4 format, bound, and submitted in an envelope marked "ARCHITECTURE PORTFOLIO". It must include a minimum of ten (10) good quality photocopies or photographs of your original work, representing your creative and design skills.

Work appropriate to the portfolio might include, but is not limited to: freehand drawings, paintings, sculpture, photography, computer graphics, technical drawings and model-making.

Include work done in a variety of different media.

Do not submit originals, rolled work, photographic slides, audio or video tapes, CDs or DVDs.

Your portfolio should include a detailed list of the contents, indicating the size of each work and the medium used.

If you are sending your portfolio from outside Canada, please indicate that the portfolio has "no commercial value" on the outside packaging. Otherwise, customs clearance charges may delay receipt. Please enclose a self-addressed envelope with sufficient Canadian postage (or international postal reply coupons) if you want your portfolio returned. Portfolios will be returned after September 30.

Note: If you have previously studied in an architecture or design program, you must arrange for the submission of a letter of reference from the director of that program.
1.4.6.2 Education
If applying to the Second Languages programs (English or French), you are required to pass a language proficiency test.

After submitting your application, you should call the Department of Integrated Studies in the Faculty of Education at (514) 398-4527 to make testing arrangements. If you live outside the Montreal area, you may complete the test through correspondence.

Note: The language proficiency test must be completed before an admission decision can be made.

Mature applicants to any Education program, whose applications pass initial review, will be contacted for an interview.

1.4.6.3 Music
- You must arrange to have the necessary evaluation form completed by your music teacher and submitted directly to McGill. The form can be downloaded from www.mcgill.ca/music/prospective/undergraduate/applying.
- You must perform an entrance audition.
- Composition applicants, including those who have indicated Composition as a second program: You must submit two or three samples of your written work.
- Music Education applicants, including those who have indicated Music Education as a second program: You must request that a letter of reference attesting to your suitability for teaching be sent to McGill.

If applying to piano, female voices and/or any jazz instruments, you must submit an audio or video recording (on audio tape, VHS, CD or DVD) for pre-selection by January 15. Following a review of these recordings, if selected, you will be invited to attend a live audition.

Note: No live auditions will be scheduled in piano, female voices and jazz instruments until an audio or video recording has been received and reviewed.

- Music degree and diploma program applicants: You must perform an entrance audition in your principal instrument or in voice. Audition requirements and specific dates for each instrument and for voice can be found at www.mcgill.ca/music/prospective/undergraduate.
- Audition material should be chosen to display your musicianship and technical proficiency to your best advantage. At the time of the audition, you will be required to sit a rudiments/musicianship test. For a description of the test, please visit www.mcgill.ca/music/prospective/undergraduate/exams.

- Auditions for the Bachelor of Music and Licentiate programs are approximately 10-15 minutes long, except for organ.
- Artist Diploma program applicants: You must prepare a recital program of approximately 60-minutes duration. The panel will select the excerpts it wishes to hear.
- The School of Music will provide accompanists free of charge for the audition time only. Rehearsal costs are your responsibility and vary depending on the accompanist. However, you may bring your own accompanist, if you wish, at your own expense.

1.4.6.4 Recorded Auditions
- Live auditions are always preferred. Audio or video recordings (on audio tape, VHS, CD or DVD) are acceptable only when distance prevents you from auditioning in Montreal in person. Due to the inherent limitations of recorded performances, it is very much to your advantage to play a live audition.
- Recordings should be approximately 30 minutes in length, and must include the requirements listed for the instrument or for voice. Recordings must be submitted with a repertoire list.
- In the areas of Jazz, Strings and Voice, video is preferred and, in some cases, required.
- Videos must be submitted on DVD or VHS tape in NTSC (North American) format, recorded in short play mode. DVDs or tapes that cannot be played on North American video players will not be viewed.
- Recordings must be of very good technical quality and should be less than six months old.
- Recordings must be sent to McGill University and received no later than January 15.

1.4.6.4 Occupational Therapy and Physical Therapy
A letter (or letters) must be submitted by August 1 of the entering year attesting to 50 hours of volunteer or paid therapeutic work in a physical therapy or occupational therapy department or equivalent, in a health care facility or other appropriate setting.

If entering Occupational or Physical Therapy, you are strongly encouraged to have a current CPR certification, otherwise you will be required to obtain one by the end of the Fall semester and prior to consideration for a hospital clinical placement.

1.4.6.5 Religious Studies (B.Th.)
If applying to the B.Th. program, you must submit two letters of reference, at least one of which should be from an instructor at an academic institution previously attended.
1.4.6.6 Social Work (both B.S.W. and Special BSW Programs)

It is the policy of the School of Social Work to support diversity. The School encourages applications from a wide variety of people, including members of minority groups and individuals with low income.

If applying to the School of Social Work, you must submit the following documents (preferably typewritten):

- A résumé/description of voluntary and paid work experience, including dates (month and year), occupation and responsibility, name of supervisor and address of the firm or agency.
- A statement (two pages maximum) in which you (1) describe your interest in social work and its development and (2) analyse an important social issue and how you think social work might respond to this issue. Optionally, you may comment on special factor(s) that have negatively affected your academic performance relative to the minimum required for admission.
- Letter(s) of recommendation (on letterhead, if possible):
  - B.S.W. applicants must submit two social work-related confidential letters of recommendation.
  - Special B.S.W. applicants must submit two social work-related confidential letters of recommendation and one academic confidential letter of recommendation.
1.5 Applicants from Quebec CEGEPs

Students admitted on the basis of the CEGEP Diplôme d'études collégiales (DEC) are normally granted 30 credits of advanced standing, reducing a 120-credit requirement to 90 credits or six semesters.

Note: Most programs in Education, B.Eng. (Bioresource), Dietetics, Engineering, Music, Nursing and Physical and Occupational Therapy are longer. For more information about the length of programs at McGill, refer to the University Guide, the University Calendar, or visit www.mcgill.ca.

Note 2: Advanced standing credits for Music applicants vary, depending on the results of placement exams that typically take place in August before term begins.

Quebec high school graduates are not eligible for admission to McGill University directly from Secondary V. To be eligible you must attend and graduate from CEGEP.

Quebec high school graduates who attend one full year of university study outside Quebec may be admissible as Transfer students. Please consult the appropriate McGill University admissions office prior to applying.

1.5.1 Deadlines

<table>
<thead>
<tr>
<th>Application</th>
<th>Deadline</th>
</tr>
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<tbody>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td>Social Work Applicants: additional materials</td>
<td>April 15</td>
</tr>
<tr>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
<tr>
<td>Application to Dentistry, Law or Medicine</td>
<td>Refer to the faculty Websites</td>
</tr>
</tbody>
</table>

1.5.2 Admission Requirements

If you have obtained a Diplôme d'études collégiales (DEC) or you expect to obtain a DEC prior to the start of classes, you are eligible to apply to McGill.

If graduating with a DEC in “Sciences, lettres et arts”, you are eligible for admission to all McGill University undergraduate programs. If you are graduating with a professional CEGEP diploma, you are eligible for admission to certain programs at McGill, including the Bachelor of Nursing and the Bachelor of Nursing Integrated. Applicants with professional DECs are evaluated on a case-by-case basis.

Cote R

McGill University uses the “cote de rendement au collégial” (CRC), commonly known as the Cote R, rather than CEGEP percentage grades in making admission decisions for most programs. The Cote R is a method of comparing and ranking students from CEGEP; it measures how far above or below the class average you place, with adjustments based on the relative strength of the group. Please note that Music does not use the Cote R in its evaluation. Instead, auditions and the academic record determine admisibility.

CEGEP applicants to McGill University must complete the prerequisites outlined below to be eligible for consideration.

Note: If you intend to enrol in a Summer CEGEP course in the semester before university entry, please inform the appropriate McGill University admissions office in writing, no later than June 10.

Please state the name and code of the Summer course and the reasons the course is being taken. Students admitted to McGill University are required to complete their DEC, otherwise admission might be revoked.

Agricultural and Environmental Sciences, School of Dietetics and Human Nutrition

A DEC in an appropriate Science program, and the following prerequisites:

B.Eng.(Bioresource)

- Biology - NYA (OOUK)
- Chemistry - NYA, NYB (OOUU, OOUM)
- Mathematics - NYA, NYB, NYC (OOUU, OOUU, OOOU)
- Physics - NYA, NYB, NYC (OOUU, OOUS, OOUT)

B.Sc.(Ag.Env.Sc.)

- Biology - NYA (OOUK)
- Chemistry - NYA, NYB (OOUU, OOUU)
- Mathematics - NYA, NYB (OOUU, OOUU)
- Physics - NYA, NYB, NYC (OOUU, OOUU, OOUT)

If applying to the B.Sc.(Ag.Env.Sc.) Major in Agricultural Economics only, you will be considered with a DEC in Social Science if it includes Mathematics 103 and 203. An overall Cote R of 24 is required with 24 or better in each of the mathematics prerequisites. If accepted, you will then be required to complete one course each of biology, chemistry, and physics.
Applicants from Quebec CEGEPs

B.Sc.(F.Sc)
- Biology - NYA (00UK)
- Chemistry - NYA, NYB (00UL, 00UM)
- Mathematics - NYA, NYB (00UN, 00UP)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)

B.Sc.(Nutr.Sc.) (Dietetics and Human Nutrition)
- Biology - NYA, General Biology II (00UK, 00XU)
- Chemistry - NYA, NYB, Organic Chemistry I (00UL, 00UM, 00XV)
- Mathematics - NYA, NYB (00UN, 00UP)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)

Architecture
- Chemistry - NYA, NYB (00UL, 00UM)
- Mathematics - NYA, NYB, NYC (00UN, 00UP, 00UQ)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)
- Portfolio by March 15

Arts
- No specific prerequisite courses. However, the following applies:
  - Courses in statistics and biology are recommended for applicants to Psychology.
  - Mathematics - NYA, NYB, NYC (00UN, 00UP) are recommended for applicants to Computer Science or Mathematics.
  - Mathematics - NYA (00UN) and one of Biology, Chemistry or Physics NYA (00UK, 00UL, 00UR) are recommended for applicants to the School of Environment program.

Bachelor of Arts and Science
- Mathematics - NYA, NYB, (00UN, 00UP) (Applicants with Social Science Mathematics - 103, 203 will be considered on a case-by-case basis.)
- Minimum of four of the following:
  - Biology - NYA, General Biology II (00UK, 00XU)
  - Chemistry - NYA, NYB (00UL, 00UM)
  - Physics - NYA, NYB, NYC (00UR, 00US, 00UT)
- Courses in statistics and biology are recommended for applicants to Psychology.
- Mathematics NYC (00UQ) is recommended for applicants to Computer Science or Mathematics.

Education
- No specific prerequisite courses

B.Mus./B.Ed. applicants must also meet Music requirements.

B.Sc./B.Ed. applicants must also meet Science requirements.

Engineering
- Chemistry - NYA, NYB (00UL, 00UM)
- Mathematics - NYA, NYB, NYC (00UN, 00UP, 00UQ)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)

Kinesiology
- Biology - NYA, General Biology II (00UK, 00XU)
- Chemistry - NYA, NYB, Organic Chemistry I (00UL, 00UM, 00XV)
- Mathematics - NYA, NYB (00UN, 00UP)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)

Management
- Mathematics - NYA, NYB, NYC (00UN, 00UP, 00UQ) or 103, 203, 105 (022X, 022Y, 022Z)

Music
- A DEC in Music or equivalent. If you have a DEC in a field other than music, you must have the equivalent music prerequisites. No additional prerequisite courses are required. Audition and academic record determine admissibility. (Music does not use the Cote R).

B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing, B.Sc.(N)
- Biology - NYA, General Biology II (00UK, 00XU)
- Chemistry - NYA, NYB, Organic Chemistry I (00UL, 00UM, 00XV)
- Mathematics - NYA, NYB (00UN, 00UP)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)

Nursing, B.N. (Integrated Program)
- If you are enrolled in the five-year Integrated Nursing Program (180.AO) at Dawson, Heritage, John Abbott, or Vanier, you will be considered for admission to the B.N. Int. If you are from another CEGEP, you will be considered on an individual basis. Eligible CEGEP candidates are required to meet set academic standards in your program in order to gain promotion to the 4th year (i.e., the McGill University segment). For more information on the content, requirements and means of entry into the McGill Integrated Nursing Program, please visit the School of Nursing Website at www.nursing.mcgill.ca, or contact Dr. Marcia Beaulieu, Coordinator, McGill B.N. Program, at (514) 398-3309.

Nursing (B.N.) (for Registered Nurses)
- For information on programs for registered nurses qualified outside Quebec, but holding current OIIQ licensure, or who have graduated with the 180.01 DEC, please contact Dr. Marcia Beaulieu, Coordinator, McGill B.N. program, at (514) 398-3309.

Occupational Therapy, Physical Therapy
- Biology - NYA, General Biology II (00UK, 00XU)
- Chemistry - NYA, NYB, Organic Chemistry I (00UL, 00UM, 00XV)
- Mathematics - NYA, NYB (00UN, 00UP)
- Physics - NYA, NYB, NYC (00UR, 00US, 00UT)
Science
• Biology - NYA (00UK)
• Chemistry - NYA, NYB (00UL, 00UM)
• Mathematics - NYA, NYB, NYC (00UN, 00UP, 00UQ)
• Physics - NYA, NYB, NYC (00UR, 00US, 00UT)
General Biology II (00XU) and Organic Chemistry I (00XV) are recommended for applicants to biological and pre-medical science programs.
B.Sc./B.Ed. applicants must also meet Education requirements.

Social Work
• No specific prerequisite courses

Religious Studies (B.Th.)
Applicants with a CEGEP DEC might be considered. For further information please visit www.mcgill.ca/religiousstudies.

1.5.3 Documentation
If you are a CEGEP student, you are not required to submit official transcripts. However, you must enter your Permanent Code during the application process. Applications from CEGEP students submitted without a valid Permanent Code will not be processed until a valid Permanent Code is provided. McGill University will obtain an official transcript electronically from the Quebec Ministry of Education. If, for any reason, McGill University cannot obtain an electronic copy of your marks, an official copy may be requested from your CEGEP.
1.6 Applicants from Ontario High Schools

1.6.1 Deadlines

| Application | February 1 |
| Submission of supporting documents: | |
| Scholarship applicants | February 5 |
| Non-scholarship applicants: | April 10 |
| Interim grades | |
| Updated grades | May 25 |
| Bachelor of Commerce (part-time-evening) | May 1 |
| Submission of supporting documents: | |
| Non-Canadian citizen/non-permanent resident | June 1 |
| Canadian citizen/permanent resident | July 15 |
| Architecture applicants: portfolio submission | March 15 |
| Application to Music and submission of supporting documentation | January 15 |

1.6.2 Admission Requirements

If you are an applicant from Ontario, you must have completed the Ontario Secondary School Diploma (OSSD) by the time you commence your university studies. McGill University reviews Ontario high school applications for admission based on its own calculation of the "top six" pre-university (4U, 4M, OAC) course average. A minimum of six 4U, and/or 4M (or OAC) courses are required for admission. At least four of the six required courses, as well as all prerequisite courses, must be taken at the 4U (or OAC) level.

All grades on 4U and 4M (or OAC) courses are taken into consideration, including any grades for failed or repeated courses. In addition, depending on the program, certain prerequisite courses are included. The McGill calculated average excludes most applied courses. However, all types of performing arts courses at the 4M level (allowing only a maximum of two) will be eligible for inclusion in the top-six average. This may vary from the calculation used at other institutions.

If you come from a school where the language of instruction is English, then 4U level English (or OAC English) must be included in the six courses. If you come from a school where the language of instruction is French, then 4U level French (or OAC French) must be included in the six courses. English Second Language and French Second Language courses are not accepted as prerequisites.

Every attempt has been made to report accurately on admission requirements in effect at the time of printing. It should be noted that McGill University reserves the right to revise its admission requirements without prior notice.

If you are an Ontario high school student who will graduate before April 2006, who has taken or will take any distance, night or correspondence courses, or who will take Summer school courses in 2006, it is very likely that some of your grades will not show on the electronic transcript we get from OUAC. Therefore, you must arrange for these grades to be sent separately by mail to the appropriate admissions office.

High school students are not eligible for direct admission to Physical Therapy, Occupational Therapy, Religious Studies (B.Th.), or Social Work.

Agricultural and Environmental Sciences, School of Dietetics and Human Nutrition

- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- At least two of: Biology SBI4U (or OAC), Chemistry SCH4U (or OAC) Physics SPH4U (or OAC)
- 4U (or OAC) English or French

Architecture

- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- Chemistry SCH4U (or OAC)
- Physics SPH4U (or OAC)
- 4U (or OAC) English or French
- Portfolio by March 15

Arts

- 4U (or OAC) English or French

Bachelor of Arts and Science

- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- At least one of: Biology SBI4U (or OAC), Chemistry SCH4U (or OAC), Physics SPH4U (or OAC)
- 4U (or OAC) English or French

Education

- 4U (or OAC) English or French

B.Mus./B.Ed. applicants must also meet Music requirements.

B.Sc./B.Ed. applicants must also meet Science requirements.
Applicants from Ontario High Schools

Engineering
- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- Chemistry SCH4U (or OAC)
- Physics SPH4U (or OAC)
- 4U (or OAC) English or French

Kinesiology
- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- At least two of: Biology SBI4U (or OAC), Chemistry SCH4U (or OAC), Physics SPH4U (or OAC)
- 4U (or OAC) English or French

Management
- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- 4U (or OAC) English or French

Music
- 4U (or OAC) English or French
Audition and academic record determine admissibility.
B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing (B.Sc.(N.))
- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- At least two of: Biology SBI4U (or OAC), Chemistry SCH4U (or OAC), Physics SPH4U (or OAC)
- 4U (or OAC) English or French

Science
- Calculus MCB4U (or OAC) or Algebra and Geometry MGA4U (or OAC)
- At least two of: Biology SBI4U (or OAC), Chemistry SCH4U (or OAC), Physics SPH4U (or OAC)
- 4U (or OAC) English or French
B.Sc./B.Ed. applicants must also meet Education requirements.

1.6.3 Documentation
If you are currently studying at an Ontario high school and are registered with the Ontario Universities Application Centre (OUAC), you must provide your correct OUAC number so that McGill University can electronically access your transcripts. Please verify the accuracy of your OUAC number carefully; an incorrect number will delay the admission process. If your number is not available at the time of application, you can submit it at a later date via Minerva.

If, for any reason, your electronic transcripts cannot be obtained from OUAC, the University may require an official copy from your high school.

Warning: If you are an Ontario high school student who will graduate before April 2006, who has taken or will take any distance, night or correspondence courses or who will take Summer school courses in 2006, it is very likely that some of your grades will not show on the electronic transcript we get from OUAC. You are therefore strongly advised to indicate this on your application.

If you are not registered with OUAC, you must arrange to have your school(s) send official transcripts directly to McGill. Transcripts should show interim grades for the current year for courses in progress. Interim grades means one of the following:

<table>
<thead>
<tr>
<th>Terms per year</th>
<th>Interim Grades</th>
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</thead>
<tbody>
<tr>
<td>Two terms</td>
<td>First term</td>
</tr>
<tr>
<td>Three terms</td>
<td>First two terms</td>
</tr>
<tr>
<td>Four terms</td>
<td>First two terms</td>
</tr>
<tr>
<td>Two semesters</td>
<td>First term finals and second</td>
</tr>
<tr>
<td></td>
<td>semester mid-terms</td>
</tr>
</tbody>
</table>

If you are in a combined International Baccalaureate/high school diploma program, please arrange for your estimated IB results to be sent directly from your school to McGill.
1.7 Applicants from Canadian High Schools Outside Quebec and Ontario

1.7.1 Deadlines

<table>
<thead>
<tr>
<th>Deadline</th>
<th>Application</th>
<th>February 1</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Submission of supporting documents:</td>
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<tr>
<td>Scholarhip applicants</td>
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<tr>
<td>Non-scholarship applicants</td>
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<td></td>
</tr>
<tr>
<td>Interim Grades</td>
<td></td>
<td>April 10</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Commerce (part-time-evening)</td>
<td>May 1</td>
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<tr>
<td></td>
<td>Submission of supporting documents:</td>
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<td></td>
</tr>
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<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td></td>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
</tbody>
</table>

1.7.2 Admission Requirements

If you are applying to McGill University from Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, the Northwest Territories, Nova Scotia, Nunavut, Prince Edward Island, Saskatchewan or Yukon, you must have a high school diploma that gives you access to university education in your home province or territory.

Admission to McGill University is based on an average of the results of five academic Grade 12 level courses (regardless of the calendar year in which they were taken), including all the required prerequisites. (For British Columbia students, normally four of the five courses, including all prerequisites, must be provincially examinable or at a higher level. All courses must be academic.) Generally speaking, all marks are taken into consideration in determining admission, including those of failed or repeated courses.

If you come from a school where the language of instruction is English, then Grade 12 English must be included in the academic record. If you come from a school where the language of instruction is French, then Grade 12 French is required. English and French Second Language courses are not accepted as prerequisites.

High school students are not eligible for direct admission to Occupational Therapy, Physical Therapy, Religious Studies (B.Th.) or Social Work.

Agricultural and Environmental Sciences, Dietetics and Human Nutrition

- Grade 12 Mathematics (pre-calculus)
- At least two of Grade 12 Biology, Chemistry or Physics
- Grade 12 English or French

Architecture

- Grade 12 Mathematics (pre-calculus)
- Grade 12 Chemistry
- Grade 12 Physics
- Grade 12 English or French
- Portfolio by March 15

Arts, Education

- Grade 12 English or French

B.Mus./B.Ed. applicants must also meet Music requirements.

B.Sc./B.Ed. applicants must also meet Science requirements.

Bachelor of Arts and Science

- Grade 12 Mathematics (pre-calculus)
- At least one of Grade 12 Biology, Chemistry or Physics
- Grade 12 English or French

Engineering

- Grade 12 Mathematics (pre-calculus)
- Grade 12 Chemistry
- Grade 12 Physics
- Grade 12 English or French

Kinesiology

- Grade 12 Mathematics (pre-calculus)
- At least two of Grade 12 Biology, Chemistry or Physics
- Grade 12 English or French

B.Sc. (Kinesiology) applicants must also meet Education requirements.

Management

- Grade 12 Mathematics (pre-calculus)
- Grade 12 English or French

Music

- Grade 12 English or French

Audition and academic record determine admissibility.

B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing (B.Sc.(N.))

- Grade 12 Mathematics (pre-calculus)
- At least two of Grade 12 Biology, Chemistry or Physics
- Grade 12 English or French

Science

- Grade 12 Mathematics (pre-calculus)
- At least two of Grade 12 Biology, Chemistry or Physics
- Grade 12 English or French

B.Sc./B.Ed. applicants must also meet Education requirements.
1.7.3 Documentation

You must arrange for your school to send an official transcript of your complete high school record to date. Transcripts should show interim grades for the current year for courses in progress. Interim grades means one of the following:

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</tbody>
</table>

If you are in a combined International Baccalaureate/high school diploma program, please arrange for your estimated IB results to be sent directly from your school to McGill.
1.8 Applicants from U.S. High School Programs (in the U.S.A. and other countries)

1.8.1 Deadlines

<table>
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<tr>
<th>Application</th>
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<tr>
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<tr>
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<td>January 20</td>
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<tr>
<td>Non-scholarship applicants</td>
<td>April 30</td>
</tr>
<tr>
<td>Bachelor of Commerce (part-time-evening)</td>
<td>May 1</td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
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<td>January 15</td>
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</tbody>
</table>

1.8.2 Admission Requirements

To be eligible for admission to McGill, you must hold a high school diploma and must have followed an academic program leading to university entrance. Grade 10, 11 and 12 academic results will be considered, but special attention will be paid to results from those courses most relevant to the intended program of study.

McGill University does not require letters of recommendation. However, the University recognizes that a school counsellor or principal might be able to provide helpful insight. For example, have you taken more courses than required to fulfill graduation requirements? Have you followed a more challenging academic program? If you and your counsellor feel it would be helpful and appropriate to submit a letter of recommendation, please do so.

You must have taken the following (unless applying only to Music):

- either the ACT
- the old SAT I plus at least three SAT IIs OR
- the new SAT I plus at least two SAT IIs

See individual faculty requirements for SAT II subjects.

For a list of approximate minimum acceptable scores for most undergraduate programs at McGill, consult the Web at www.mcgill.ca/applying.

It is your responsibility to ensure official test results are sent directly to McGill. McGill’s institutional code for SAT is 0935-00 and, for ACT, 5231.

High school students are not eligible for direct admission to Occupational Therapy, Physical Therapy, Religious Studies (B.Th.), or Social Work.

Agricultural and Environmental Sciences, Dietetics and Human Nutrition

- Pre-calculus (functions)
- At least two of biology, chemistry, or physics
- SAT IIs must include at least one mathematics and one science.

Architecture

- Pre-calculus (functions)
- Chemistry
- Physics
- Portfolio by March 15
- SAT IIs must include one mathematics AND one chemistry or physics.

Arts, Education

- Strong grades in all Grade 10, 11 and 12 English courses
- SAT IIs may be in any subject.

B.Mus./B.Ed. applicants must also meet Music requirements.

B.Sc./B.Ed. applicants must also meet Science requirements.

Bachelor of Arts and Science

- Pre-calculus (functions)
- At least one of biology, chemistry or physics in Grade 11 or 12
- Strong grades in all Grade 10, 11, and 12 English courses
- SAT IIs must include at least one mathematics.

Engineering

- Pre-calculus (functions)
- Chemistry
- Physics
- SAT IIs must include at least one mathematics AND one chemistry or physics.

Kinesiology

- Pre-calculus (functions)
- At least two of biology, chemistry or physics
- SAT IIs must include at least two different subjects from the following list: biology, chemistry, mathematics, physics.

Management

- Pre-calculus (functions)
- SAT IIs must include at least one mathematics.

Music

- No specific prerequisite courses.
- Audition and academic record determine admissibility.

B.Mus./B.Ed. applicants must also meet Education requirements.
Nursing
- Pre-calculus (functions)
- At least two of biology, chemistry or physics
- SAT IIs must include at least two different subjects from the following list: biology, chemistry, mathematics, physics.

Science
- Pre-calculus (functions)
- At least two of biology, chemistry or physics
- SAT IIs must include at least two different subjects from the following list: biology, chemistry, mathematics, physics.

B.Sc./B.Ed. applicants must also meet Education requirements.

1.8.3 Documentation
You must arrange for your school to send to McGill University an official transcript of your complete high school record to date. Transcripts should show interim grades for the current year for courses in progress.

If you are in a combined International Baccalaureate/high school diploma program, please arrange for your estimated IB results to be sent directly from your school to McGill.

SAT I, SAT II, ACT, and Advanced Placement test results must be sent directly by the testing board or ACT reporting services to McGill. Institutional versions of these tests are not acceptable. It is your responsibility to ensure official test results are sent. For SAT and AP, the institutional code at McGill University is 0935-00, and for ACT, 5231.

High School Profile
Most U.S. high schools publish a school profile; i.e., a list documenting important information about the school, including the regional accrediting body (e.g., New England Association of Colleges and Schools), among other things. If your school profile is available, please ask your school to send it to McGill University along with your transcript.
1.9 Applicants from High Schools Outside Canada and the U.S.A.

1.9.1 Deadlines

<table>
<thead>
<tr>
<th>Section</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>January 15</td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Scholarship applicants</td>
<td>January 20</td>
</tr>
<tr>
<td>Non-scholarship applicants</td>
<td>March 15</td>
</tr>
<tr>
<td>Application to Bachelor of Commerce</td>
<td>May 1</td>
</tr>
<tr>
<td>(part-time-evening)</td>
<td></td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>June 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
<tr>
<td>Applications to Dentistry, Law or Medicine</td>
<td>Refer to the faculty Websites</td>
</tr>
</tbody>
</table>

1.9.2 Admission Requirements

The normal basis for admission is completion of the credentials that lead to university admission in your country of study. Consideration is given to the complete high school record with emphasis on grades obtained in courses most relevant to the intended program of study. All grades are taken into consideration, including those from failed or repeated courses.

Advanced Level and Advanced Subsidiary Examinations

The minimum requirements are: three A-Levels with predicted and final grades of B, B, C or better, or two A-level and two AS subjects with grades of B, B, C, or better, or B, C, B, B, or better. However, many programs are more competitive and require higher grades for GCSEs, AS and A-levels. A maximum of 30 credits of advanced standing may be granted for final official AL/AS results.

If completing Upper Form VI, you will be considered on: GCSEs, Form VI grades, AS 1 results (or modular results) and predicted AL results. If you have completed only lower Form VI with AS and have a minimum of five appropriate GCSE examinations with clearly superior marks, you can be considered for admission on an individual basis.

If you are attending a school where it is not the policy to sit for modular examinations in stages and claim AS qualifications at the end of the first year, but rather to continue to sit all examinations at the end of the second year, you must ensure that your school communicates this information clearly to McGill University either by letter or in its school profile. If completed, AS 1 results must be submitted.

Agricultural and Environmental Sciences, Dietetics and Human Nutrition

- Subjects must include: one A-Level subject in mathematics and at least one A-Level subject in biology, chemistry or physics.
- Sciences not taken at the A-Level must be taken at the GCSE level.

Architecture

- At least one Advanced Level must be in mathematics, physics or chemistry.
- Mathematics, physics and chemistry must all have been taken at the GCSE level.
- Portfolio by March 15

Arts, Education

- No specific subject prerequisites

B.Mus./B.Ed. applicants must also meet Music requirements.

B.Sc./B.Ed. applicants must also meet Science requirements.

Bachelor of Arts and Science

- Subjects must normally include Advanced Level mathematics and at least one Advanced Level subject in biology, chemistry or physics.
- Biology, chemistry, mathematics, and physics must all have been taken at the GCSE level.

Engineering

- Subjects must include Advanced level mathematics and at least one Advanced Level in chemistry or physics.
- Mathematics, physics, and chemistry must all have been taken at the GCSE level.
- Biology cannot be used as a prerequisite.

Kinesiology

- Subjects must include one Advanced Level mathematics and at least one Advanced level in biology, chemistry or physics.
- Mathematics, physics, and chemistry must all have been taken at the GCSE level.

Management

- Subjects must include Advanced Level mathematics with a grade of B or better.
Music

- No specific subject prerequisites
- Audition and academic record determine admissibility.
- B.Mus./B.Ed. applicants must also meet Education requirements.

Bachelor of Arts and Science

- Series S
- Minimum of 10/20 in each mathematics, biological and physical sciences course

Education, Social Work

- Series L, ES, or S
- B.Mus./B.Ed. applicants must also meet Music requirements.
- B.Sc./B.Ed. applicants must also meet Science requirements.

Engineering

- Series S
- Minimum of 10/20 in each mathematics and physical sciences course

Kinesiology

- Series S
- Minimum of 10/20 in each mathematics, biological and physical sciences course
- You might be required to complete additional courses in organic chemistry prior to admission.

Management

- Series S
- Minimum of 12/20 in mathematics
- Series ES with a minimum overall average of 13/20 and a minimum of 13/20 in mathematics

Music

- Series L, ES, or S, with a minimum overall average of 12/20
- Audition and academic record determine admissibility.
- B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing

- Series S
- Minimum of 10/20 in each mathematics, biological and physical sciences course

Occupational Therapy, Physical Therapy

- Series S, with a minimum overall average 12/20
- Minimum of 10/20 in each mathematics, biological and physical sciences course
- You might be required to complete additional courses in organic chemistry prior to admission.

Science

- Series S
- Minimum of 10/20 in each mathematics, biological and physical sciences course

French Baccalaureate

- Diploma in “premier groupe” with “mention assez bien” (i.e. 12/20) is the minimum expected for most programs.

Note: Admission is competitive. Applicants who present the minimum requirements are not guaranteed admission.

A maximum of 30 credits advanced standing can be granted for the French Baccalaureate.

Agricultural and Environmental Sciences, Dietetics and Human Nutrition

- Diploma in Series S
- Minimum overall average of 12/20
- Minimum grade of 10 in prerequisite courses

Architecture

- Series S
- Minimum of 11/20 in each mathematics and physical sciences course
- Portfolio by March 15

Arts

- Series L, ES, or S

B.Sc./B.Ed. applicants must also meet Education requirements.
Applicants from High Schools Outside Canada and the U.S.A.

International Baccalaureate Diploma
The International Baccalaureate diploma with grades of 5 or better on all Higher and Standard Level examinations is the expected minimum for most programs. Some programs are more competitive and require higher grades. If you have an overall score equal to or better than 32 points, and have one grade below 5, you may be considered if you have several grades of 6 or better to compensate.

A maximum of 30 credits of advanced standing may be granted for the International Baccalaureate Diploma.

If you complete the IB diploma or certificates concurrently with a regular high school program, you may be considered for admission based on your high school record and subsequently awarded advanced standing based on IB results.

Note: Standard Level math studies is not acceptable for programs where math is a requirement.

Agricultural and Environmental Sciences, Dietetics and Human Nutrition
• Higher or Standard Level Mathematics and normally two of biology, chemistry, or physics

Architecture
• Mathematics, chemistry and physics at Higher or Standard Levels with at least one of them at Higher Level
• Portfolio by March 15

Arts, Education, Social Work
• No specific prerequisite courses
B.Mus./B.Ed. applicants must also meet Music requirements.
B.Sc./B.Ed. applicants must also meet Science requirements.

Bachelor of Arts and Science
• Higher Level Mathematics and at least one of biology, chemistry or physics at Higher or Standard Level

Engineering
• Mathematics, chemistry, and physics at Higher or Standard Levels

Kinesiology
• Mathematics and two of biology, chemistry or physics at Higher or Standard Level

Management
• Mathematics at Higher Level
Applicants with Mathematical Methods will be considered on an individual basis.

Music
• No specific prerequisite courses
Audition and academic record determine admissibility.
B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing
• Mathematics and two of biology, chemistry or physics at Higher or Standard Level.

Occupational Therapy, Physical Therapy
• Biology, chemistry, mathematics, and physics at Higher Level
• Calculus II and one semester of college/university level organic chemistry

Science
• Mathematics and two of biology, chemistry or physics at Higher or Standard Level.
B.Sc./B.Ed. applicants must also meet Education requirements.

Other International Admissions Credentials
McGill University receives applications from more than 120 countries each year. Students who have completed or are completing recognized pre-university diplomas with strong grades in all required courses are eligible to apply to McGill.

Admission is competitive and depends on the space available; applicants with the minimum requirements are not guaranteed acceptance.

The Bologna Declaration, issued following a meeting of the European Ministers of Education in 1999, set into motion a wide-ranging process of educational reform aimed at improving the mobility and employability of graduates in Europe. By the year 2010, every higher education institution in Bologna signatory countries will need to conform with the standards of the declaration. McGill University, like most internationally renowned institutions, is monitoring the Bologna Process with interest and has undertaken ongoing study of the changing face of European academic credentials. During the transition from a varied to a uniform European education system, it is our objective to make admission decisions and (where appropriate) offer advanced standing in the context of the most current information on European reforms.

1.9.3 Documentation
You must arrange for your school to send McGill University an official transcript of your complete high school record to date. Transcripts should show interim grades for the current year for courses in progress.

If you have completed Advanced Subsidiary, Ordinary Levels, GCSE, HKCEE or CSEC, you must arrange for your school to forward a certified photocopy of the certificate(s) to McGill.

If you are completing the International Baccalaureate Diploma program, you must also arrange for estimated IB results to be sent directly by your school to McGill.
### Other International Admissions Credentials

<table>
<thead>
<tr>
<th>Country</th>
<th>Admissions Credentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Baccalaureat</td>
</tr>
<tr>
<td>Argentina</td>
<td>Bachillerato (Universitario)</td>
</tr>
<tr>
<td>Australia</td>
<td>Senior Secondary Certificate of Education (of the Australian States and Territories)</td>
</tr>
<tr>
<td>Austria *</td>
<td>Reifezeugnis/Maturazeugnis</td>
</tr>
<tr>
<td>Bahamas</td>
<td>BGCSE (incl. completion of grades 11 &amp; 12)</td>
</tr>
<tr>
<td>Bahrain</td>
<td>Tawjahiya (General Secondary School Certificate)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Intermediate/Higher Secondary School Certificate, First Division</td>
</tr>
<tr>
<td>Belgium *</td>
<td>Certificat de l’enseignement secondaire supérieur plus Diplôme d’aptitude à accéder à l’enseignement supérieur</td>
</tr>
<tr>
<td>Bolivia</td>
<td>Bachillerato Humanistico</td>
</tr>
<tr>
<td>Brazil</td>
<td>Certificado de Conclusao de 2° Grau</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Diploma za Zavrsheno Sredno Obrazovanie</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Baccalaureat or GCE A’level</td>
</tr>
<tr>
<td>Chile</td>
<td>Licencia de Educacion Media (LEM)</td>
</tr>
<tr>
<td>China (Taiwan)</td>
<td>Senior High School Leaving Certificate</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>Certificate of Graduation from Senior Middle School</td>
</tr>
<tr>
<td>Colombia</td>
<td>Bachillerato</td>
</tr>
<tr>
<td>Congo, Democratic Republic of (formerly Zaire)</td>
<td>Diplôme d’état d’études secondaires du cycle long</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Bachiller en la Enseñanza Media</td>
</tr>
<tr>
<td>Croatia *</td>
<td>Svjedoždbu o Završnom</td>
</tr>
<tr>
<td>Cyprus *</td>
<td>Greek System – Apolytirion, Turkish System – Lisé Bitirme Diplomasi</td>
</tr>
<tr>
<td>Czech Republic *</td>
<td>Vyssvedenci o Maturitni Zkousce</td>
</tr>
<tr>
<td>Denmark *</td>
<td>Studentereksamen</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>Bachillerato en Ciencias y Letras</td>
</tr>
<tr>
<td>Ecuador</td>
<td>Bachillerato Humanidades or Ciencias</td>
</tr>
<tr>
<td>Egypt</td>
<td>Thana Nevada A’ Amma</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Bachillerato General</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Ethiopian General School Leaving Certificate</td>
</tr>
<tr>
<td>Finland *</td>
<td>Yliopilastukitotodistus (Matriculation Cert.)</td>
</tr>
<tr>
<td>France *</td>
<td>Baccalauréat (Series L, ES, S)</td>
</tr>
<tr>
<td>Germany *</td>
<td>Zeugniss der Allgemeinen Hochschulreife (Abitur)</td>
</tr>
<tr>
<td>Ghana</td>
<td>Senior Secondary School Certificate</td>
</tr>
<tr>
<td>Greece *</td>
<td>Apolytirion</td>
</tr>
<tr>
<td>Guatemala</td>
<td>Bachillerato de Ciencias y Letras</td>
</tr>
<tr>
<td>Guyana</td>
<td>CXC+ 2 years (CAPE examinations)</td>
</tr>
<tr>
<td>Haiti</td>
<td>Certificat de fin d’études secondaires classiques, 2ème partie</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Hong Kong (HKALE) Advanced Levels or G.C.E. Advanced Levels</td>
</tr>
<tr>
<td>Hungary *</td>
<td>Erettsge Bizonyítvány (Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>India</td>
<td>Indian School Certificate (ISC), or All India Senior School Certificate Examination (SSC), or Higher Secondary School Certificate, or Intermediate Certificate</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Surat Tanda Tamat Belajar Sekolah Menengah Tingkat Atas (STTB SMA) (Upper Secondary Certificate of Completion)</td>
</tr>
<tr>
<td>Iran</td>
<td>Diplom-Metevaseth (National High School Diploma) + Pre-University Certificate (One preparatory university year)</td>
</tr>
<tr>
<td>Iraq</td>
<td>Baccalauréat (programme under review)</td>
</tr>
<tr>
<td>Ireland</td>
<td>Leaving Certificate(Ardeistimeireacht)</td>
</tr>
<tr>
<td>Israel</td>
<td>Bagrút (Matriculation Certificate)</td>
</tr>
<tr>
<td>Italy *</td>
<td>Diploma di Esame di Stato conclusivo del Corso di Liceo Classico/Liceo Scientifico (formerly Diploma di Maturità)</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>Baccalauréat</td>
</tr>
<tr>
<td>Jamaica/West Indies</td>
<td>CXC + 2 years (CAPE examinations) or GCE A’level</td>
</tr>
<tr>
<td>Japan</td>
<td>Upper Secondary Leaving Certificate</td>
</tr>
<tr>
<td>Jordan</td>
<td>Tawjihii (General Secondary Ed. Cert.)</td>
</tr>
<tr>
<td>Kenya</td>
<td>Kenya Certificate of Secondary Education (KCS/E)</td>
</tr>
<tr>
<td>Korea (South)</td>
<td>High School Diploma</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Shahadat Ai-Thanawiya Ai- A’ama (General Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Lebanese General Secondary Certificate (shahaada thanawiya amma)</td>
</tr>
<tr>
<td>Liberia</td>
<td>West African Examination Council (WAEC) Certificate</td>
</tr>
<tr>
<td>Libya</td>
<td>Secondary Education Certificate (12 years) operation</td>
</tr>
<tr>
<td>Macedonia *</td>
<td>Svideteletvo za zavreno sredno obrazovanje</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Sijl Tinggi Perekolaham Malaysia (STPM)/HigherSchool Certificate of Education, or G.C.E. Advanced Levels</td>
</tr>
<tr>
<td>Mauritius</td>
<td>G.C.E. Advanced Levels</td>
</tr>
<tr>
<td>Mexico</td>
<td>Bachillerato General</td>
</tr>
<tr>
<td>Morocco</td>
<td>Baccalauréat</td>
</tr>
<tr>
<td>Netherlands *</td>
<td>Diploma Voorbereidend Wetenschappelijk Onderwijs (VWO)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>University Entrance Bursaries and Scholarships Qualification Certificate</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>Bachillerato en humanidades, or Ciencias</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Senior School Certificate (SSSC)</td>
</tr>
<tr>
<td>Norway *</td>
<td>Vitnemal fra Videregående Skole (General area of study)</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Intermediate/Higher Secondary School Certificate - (First Division)</td>
</tr>
<tr>
<td>Peru</td>
<td>Certificado de Educacion Secundaria Commun completa</td>
</tr>
<tr>
<td>Philippines</td>
<td>Graduation in General Diploma plus 2 years of university– individual consideration</td>
</tr>
<tr>
<td>Poland *</td>
<td>Swiadectwo Dojrzalosci Liceum Ogólnokształcącego (High School Certificate of Graduation) or Swiadectwo Ukozzenia Liceum Ogólnokształcącego (High School Certificate of Completion)</td>
</tr>
<tr>
<td>Portugal *</td>
<td>Certificado de Habilitações do Ensino Secundário/Diploma de Ensino Secundário,</td>
</tr>
<tr>
<td>Romania *</td>
<td>Diploma de Bacalauréat</td>
</tr>
<tr>
<td>Russia, ex USSR</td>
<td>Attestat o Srednem (Polnom) Obschchem Obrazovani (Certificate of Secondary Complete General Education)</td>
</tr>
<tr>
<td>Scotland *</td>
<td>Advanced Highers (SCQF level 7)</td>
</tr>
</tbody>
</table>
Applicants from High Schools Outside Canada and the U.S.A.

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<thead>
<tr>
<th>Country</th>
<th>Admissions Credentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal</td>
<td>Baccalaureat</td>
</tr>
<tr>
<td>Serbia *</td>
<td>Svedocanstvo o Polozenom Zavrsnom</td>
</tr>
<tr>
<td>Singapore</td>
<td>Singapore/Cambridge G.C.E. Advanced Level</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Vysvedezenie o Maturitnej Skuske (Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>Slovenia *</td>
<td>Maturiteto Sprijevalo (Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>South Africa</td>
<td>Senior Certificates</td>
</tr>
<tr>
<td>Spain *</td>
<td>Titulo de Bachiller (LOGSE), or former Curso de Orientacion Universitaria (COU)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Sri Lanka GCE Advanced Level</td>
</tr>
<tr>
<td>Sweden *</td>
<td>Slutbetyg Från Gymnasieskola</td>
</tr>
<tr>
<td>Switzerland *</td>
<td>Maturitätsszeugnis; Certificate of Maturité (Baccalaureat in Vaud Canton); Attestato di Maturita</td>
</tr>
<tr>
<td>Syria</td>
<td>AL Shahada Al Thanawiya/Baccalauréat (Secondary Leaving Certificate)</td>
</tr>
<tr>
<td>Thailand</td>
<td>Matayom Suksa 6 (Higher Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>Tunisia</td>
<td>Baccalaureat</td>
</tr>
<tr>
<td>Turkey</td>
<td>Devlet Lise Diplomasi (public)/Lise Bitirme Diplomasi (private)</td>
</tr>
<tr>
<td>Uganda</td>
<td>Uganda Advanced Certificate of Education (UACE)</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Tawjiyya (Secondary School Leaving Certificate)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>G.C.E. Advanced Levels</td>
</tr>
<tr>
<td>United States</td>
<td>U.S. High school diploma</td>
</tr>
<tr>
<td>Uruguay</td>
<td>Bachillerato Diversificado de Ensenanza secundaria</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Titulo de Bachiller</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>G.C.E. Advanced Levels/new certificate programme (under review)</td>
</tr>
</tbody>
</table>

* Subject to review under the Bologna Declaration.
1.10 Applicants from Other Universities or Colleges and Second Bachelor Degree Applicants (“Transfers”)

1.10.1 Deadlines

<table>
<thead>
<tr>
<th>Application from university or college outside of Canada</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission of supporting documents</td>
<td>April 30</td>
</tr>
<tr>
<td>Application from university in Canada</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>January 15</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>May 1</td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>June 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Application for Bachelor of Commerce (part-time, evening)</td>
<td>May 1</td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>June 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td>Social Work applicants: additional materials</td>
<td>May 15</td>
</tr>
<tr>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
<tr>
<td>Application to Dentistry, Law or Medicine</td>
<td>Refer to the faculty Websites</td>
</tr>
<tr>
<td>Special BSW (begins in May)</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>December 1</td>
</tr>
<tr>
<td>Submission of supporting documents</td>
<td>December 1</td>
</tr>
</tbody>
</table>

Note: Supporting documents should be sent as soon as they are available. If received before the application, they will be kept on file for one year.

1.10.2 Admission Requirements

The University welcomes applications from well-qualified students who wish to transfer to McGill. Please note that for many programs (including Arts) applications for transfer are often considered exceptionally and on the basis of space available. Admission standards may vary significantly from year to year depending on demand for the program. Transfer applicants are considered on the basis of university/college work and previous studies. You should have well-above average academic records and prerequisites appropriate to the program you wish to pursue at McGill. Particular attention will be paid to results of courses relevant to the proposed program of study.

Note 1: In order to form a basis for admission for a science-based program or to be considered for credit or exemption, science and mathematics courses must have been completed within the last five years.

If you are an accepted transfer student, your advanced standing credit can only be determined after you have confirmed your program at McGill, paid the required deposit, and provided all necessary supporting documents (including detailed course descriptions). In addition to course descriptions of mathematics and science courses, you are asked to specify the names and editions of textbooks used.

Note 2: Quebec high school (Secondary V) graduates are expected to complete a Quebec CEGEP DEC prior to admission to McGill. A Quebec high school graduate who did not proceed to CEGEP but undertook one full year of university study outside Quebec may be admissible as a transfer student. If you fall into this category, you should consult the appropriate McGill University admissions office prior to applying, in order to ensure that you possess a valid basis for admission.

Individuals who have undertaken studies in non-university post-secondary institutions such as technical colleges may not be eligible for admission as transfer students.

Minimum Admission Requirements by Program – Transfer Students

Agricultural and Environmental Sciences, Dietetics and Human Nutrition
- One semester of calculus for science
- One semester each of two of biology, chemistry or physics, each with labs

Architecture, Engineering
- One semester of differential calculus
- One semester of integral calculus
- One semester of linear algebra
- Two semesters of physics (mechanics, electricity and magnetism, waves and optics) with labs
- Two semesters of general chemistry with labs
- Architecture portfolio by March 15

It is possible to be admitted to certain departments in Engineering with a minimum of two semesters of calculus plus two semesters of chemistry or physics. Admission to Architecture and Mechanical Engineering is highly competitive, and therefore you should present all the prerequisites.
Arts, Education, Religious Studies, Social Work
- No specific prerequisite courses
- Special BSW applicants please refer to section section 1.10.3 “Programs for Students with a Previous University Degree”
B.Mus./B.Ed. applicants must also meet Music requirements.
B.Sc./B.Ed. applicants must also meet Science requirements.

Bachelor of Arts and Science
- One semester of differential calculus
- One semester of integral calculus
- Two semesters of biology, chemistry, and/or physics, with labs
If admitted with the above minimum prerequisites, you must complete the remaining science prerequisite course requirements in your program at McGill.

Kinesiology
- One semester of differential calculus
- One semester of integral calculus
- Two semesters of biology, chemistry, and/or physics, with labs
If admitted with the above minimum prerequisites, you must complete the remaining science prerequisite course requirements within the first year of the program.

Management
- One semester of differential calculus
- One semester of integral calculus
- Applicants from Quebec universities must also have a one-semester course in linear algebra.

Music
- No specific prerequisite courses
Audition and academic record determine admissibility.
B.Mus./B.Ed. applicants must also meet Education requirements.

Nursing (B.N.) (for Registered Nurses)
For information on programs for registered nurses qualified outside Quebec, but holding current OIIQ licensure, or who have graduated with the 180.01 DEC, please contact Dr. Marcia Beaulieu, Coordinator, McGill B.N. program, at (514) 398-3309.

Nursing (B.Sc.(N))
- One semester of differential calculus
- One semester of integral calculus
- Two semesters of biology, chemistry and/or physics, with labs
If admitted with the above minimum prerequisites, you must complete the remaining science prerequisite course requirements in your program at McGill.

Occupational Therapy, Physical Therapy
- One semester of differential calculus
- One semester of integral calculus
- Two semesters of biology with labs
- Two semesters of general chemistry with labs
- One semester of organic chemistry with lab
- Two semesters of physics (mechanics, electricity and magnetism, waves and optics) with labs

Science
- One semester of differential calculus
- One semester of integral calculus
- Two semesters of biology, chemistry and/or physics, with labs
If admitted with the above minimum prerequisites, you must complete the remaining science prerequisite course requirements in your program at McGill.
B.Sc./B.Ed. applicants must also meet Education requirements.

1.10.3 Programs for Students with a Previous University Degree
You must hold an appropriate university degree to be eligible for admission to the following programs. (Note to our francophone applicants: the English word “Diploma” has a different meaning than the French “Diplôme”. At McGill, a Diploma is usually a short, specialised program, which follows a Bachelor’s degree.)

Diploma in Environment
The Diploma in Environment is a 30-credit program, two semesters in duration if taken full-time. You must hold a B.Sc. or B.A. degree equivalent to 16 years of schooling, with a minimum CGPA of 2.7 on a 4.0 scale.

Diploma in Meteorology
The Diploma in Meteorology is a 30-credit program, two semesters in duration if taken full-time. You must hold a B.Sc. or B.Eng. degree equivalent to 16 years of schooling, with a good standing.

Special Bachelor of Social Work Degree (May entry only)
This program consists of 48 credits of full-time study completed over a 14-month period. The initial six-week Spring session begins in May and is followed by the September to April academic session, and a second Spring session (April to June) the following year. In some instances, part-time studies can be arranged. You must have: a Bachelor's degree (a DEC plus three years of university or a high school diploma plus four years of university); at least five courses (15 credits) in social sciences; an introductory course in statistics; and appropriate paid and volunteer work experience.
It is the policy of the School of Social Work to support diversity; applications from members of minority groups and persons of low income, which meet the minimum requirements, are welcome.
Quebec law requires applicants seeking admission to provincially recognised professional associations (such as Social Work) to be able to communicate verbally and in writing in French. You should be aware that field placement choices will be limited if you are not able to speak and read French.
Bachelor of Theology

Normally, you must possess a Bachelor's degree, whether or not it contains courses in religion or theology. If you have obtained a CGPA of 2.70 or higher, you will be considered for admission to the 60-credit (two-year) program. If you have a CEGEP DEC, you may also be considered. For further information, please visit www.mcgill.ca/religiousstudies.

1.10.4 Documentation

You must arrange for your college/university to send McGill University an official transcript of your complete record to date. Official transcripts for courses in progress and confirmation of graduation should be sent to McGill University as soon as the results become available.

Unless applying only to Music, you must submit descriptions of graduation requirements and course descriptions for each college/university course taken. Mathematics and science course descriptions must specify the names and editions of textbooks used.

If you have two or more years of university study, you are not required to submit a copy of your high school record. Any results of Advanced Level, Advanced Subsidiary, Advanced Placement, International Baccalaureate examinations must be submitted directly to McGill University by the appropriate examination board(s). If you completed high school and CEGEP, you are not required to submit your high school transcript.

If applying to the Diploma in Environment and the Diploma in Meteorology, you must arrange for official transcripts of all college and/or university studies to be sent by the Registrar of each college and university attended to McGill.

If applying to the Special Bachelor of Social Work, you must arrange for official transcripts of all college and/or university studies to date to be sent to McGill University by the Registrar of each college and university attended. Official transcripts for courses in progress and confirmation of graduation should be sent as soon as results become available and not later than June 30.
1.11 Mature Applicants

1.11.1 Deadlines
Applicants must be Canadian citizens or permanent residents.

<table>
<thead>
<tr>
<th>Application</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission of supporting documents</td>
<td>May 1</td>
</tr>
<tr>
<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td>Social Work applicants: additional materials</td>
<td>May 15</td>
</tr>
<tr>
<td>Bachelor of Commerce (part-time-evening)</td>
<td>May 1</td>
</tr>
<tr>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
<tr>
<td>Application to Dentistry, Law or Medicine</td>
<td>Refer to the faculty Websites</td>
</tr>
</tbody>
</table>

1.11.2 Admission Requirements
You may be considered for admission as a mature student if you meet all the conditions for eligibility outlined below. Many supporting documents are required for Mature Student applications.

Basic Admission Requirements for Mature Students

For All Applicants
- Records of previous studies at high school, college and university. (Official transcripts are required for all recent post-secondary studies and may be requested for previous studies.)

All Other Programs
- Canadian citizenship or Canadian permanent residency
- 23 years of age at time of registration (21 years of age for the Faculty of Management)
- No college or university level studies within the last five years that would constitute a basis for admission. If you have college or university results that are not competitive, you must complete additional course work with strong results at another college or university before applying.
- Two letters of reference
- A personal summary form
- Demonstrated academic potential by completing a minimum number of appropriate courses within the three-year period prior to admission. These courses are taken to fulfill prerequisites for the proposed program. Prerequisites can be fulfilled at either a CEGEP or university.

Music
- No specific prerequisite courses
- An audition
- 21 years of age at time of registration (proof of age is required)
Audition and academic record determine admissibility to any program.

B.Mus./B.Ed. applicants must also meet Education requirements.

Religious Studies
- A qualifying year of designated Religious Studies and Arts courses before being admitted to the B.Th. program
- 23 years of age at time of registration

Additional Admission Requirements by Program for Mature Students

Agricultural and Environmental Sciences, Dietetics and Human Nutrition
A minimum of:
- One course in differential calculus (CEGEP Mathematics NYA or university equivalent)
- Two of the following: biology (CEGEP Biology NYA or university equivalent), chemistry (CEGEP Chemistry NYA or university equivalent), or physics (CEGEP Physics NYA or university equivalent), each with a minimum R score of 24 (or in the case of the university equivalent, a minimum grade of 70%)

Architecture
- Two semesters of differential and integral calculus
- One semester of linear algebra
- Two semesters of physics (mechanics, electricity and magnetism, waves and optics) with labs
- Two semesters of general chemistry with labs
- Portfolio by March 15
- If you have exceptional grades, you may be considered with a minimum of two terms of calculus and any two of the above chemistry and physics courses.
- Prerequisites may be completed at CEGEP or university.

Arts
- Two courses appropriate to the proposed area of study, each with a minimum grade of B

Bachelor of Arts and Science
- Minimum of at least one semester of calculus
- Minimum of one semester of biology, chemistry or physics, with labs
Each of the above courses must have been completed at the CEGEP or university level, with a minimum grade of B.

Education
- Two courses, one in English (not English as a Second Language) and one in the proposed teaching area, each with a minimum grade of B
- Candidates whose applications pass the initial review will be contacted for an interview.

B.Mus./B.Ed. applicants must also meet Music requirements.
B.Sc./B.Ed. applicants must also meet Science requirements.
Mature Applicants

Engineering
- Minimum three courses including: differential calculus, physics (mechanics) with lab and one term of general chemistry with lab, each with 75% or better

Kinesiology
- A minimum of three college or university level courses including one pre-calculus course in functions, and at least two semesters of biology, chemistry or physics, with labs, each with a minimum grade of 75% or better

Management
If you possess a university degree or a CEGEP DEC with competitive results overall and in mathematics course work (completed in the last five years), you should apply as a "university transfer" or "CEGEP" applicant. If you do not have the required mathematics within the last five years, you are advised to complete or refresh the mathematics course work and then apply as a "university transfer" or "CEGEP" applicant.

If you lack the appropriate academic background, or have non-competitive results, and have been out of school for three years and are at least 21 years of age at the time of admission, you must initially complete the coursework outlined below at the McGill Centre for Continuing Education (CCE). Upon successful completion of these requirements, you may apply directly to the Faculty of Management to be evaluated for transfer into the B.Com. Program.

You must have completed the following two courses at the McGill CCE within five years of the date of admission with a minimum average of 70%:
- CMSC 203 Survey of Basic Mathematics I
- CMSC 204 Survey of Basic Mathematics II
  Either or both mathematics courses may be redone once at CCE without penalty, after which time you will be permanently refused. CEGEP Math NYA, NYB, NYC or 201-103, 201-105, 201-203 or university equivalents with minimum "B" average are acceptable in lieu of CMSC 203 and 204.

In addition, you must do a minimum of six (18 credits) of the courses listed below with an average of "B". The following three courses are required:
- MGCR 211 Intro to Financial Accounting
- MGCR 271 Statistics I or MGCR 273
- MGCR 293 Managerial Economics

A minimum of three of the following seven courses are also required:
- MGCR 213 Intro to Management Accounting
- MGCR 222 Organizational Behaviour
- MGCR 272 Statistics II or MGCR 274
- MGCR 331 Information Systems
- MGCR 341 Finance I
- MGCR 352 Marketing Management
- ECON 295 Macroeconomic Policy

You may take up to four more of the above courses (12 credits), to get a "B" average, after which time you are permanently refused.

If you fail one core course, it may be retaken without penalty. If you fail more than one course, all results will be used to calculate an admission average.

Should you take more management courses at CCE than those listed above, all results will be used to calculate the admission average. A minimum of 3.00 is required on the above prerequisites and on the overall average.

Nursing (B.N.) (for Registered Nurses)
For information on programs for registered nurses qualified outside Quebec, but holding current OIIQ licensure, or who have graduated with the 180.01 DEC, please contact Dr. Marcia Beaulieu, Coordinator, McGill B.N. program, at (514) 398-3309.

Nursing (B.Sc.(N))
A minimum of three courses is required:
- One in functions (pre-calculus) (calculus is preferred)
- At least two of general biology, chemistry or physics (all with labs)

Each of the courses must have been completed at the CEGEP or university level, with a minimum university grade of 70% or equivalent.

Occupational Therapy, Physical Therapy
- Two semesters of biology with labs
- Two semesters of general chemistry with labs
- One semester of organic chemistry with lab
- Two semesters (three if CEGEP) of physics (mechanics, electricity and magnetism, waves and optics) with labs
- One semester in each of differential and integral calculus to be completed at CEGEP or university

Science
A minimum of three courses is required:
- One in functions (pre-calculus) (calculus is preferred)
- At least two of general biology, chemistry or physics (all with labs)

Each of the courses must have been completed at the CEGEP or university level, with a minimum university grade of 70% or equivalent.

B.Sc./B.Ed. applicants must also meet Education requirements.

Social Work
- Two courses appropriate to the area of study, each with a minimum grade of B
- Significant paid or volunteer community work experience in fields related to the program
- Recommendations from community social agencies with which you have been affiliated
1.11.3 Documentation

Official transcripts must be sent by your school, college or university directly to McGill.

If applying under the Mature Student category, you must also submit:

- Proof of age
- Proof of Canadian citizenship or permanent resident status

Except for Music and Religious Studies, Mature Student applicants must also submit:

- Two letters of reference
- A narrative description and evaluation of previous educational experiences (maximum five pages)
- A “Statement of Intent”, which indicates particular areas of study interest and preparedness for successful university study
- A full record of employment and personal history, highlighting points relevant to the application
1.12 Special or Visiting Students (non-McGill degree)

1.12.1 Deadlines

<table>
<thead>
<tr>
<th>Application from university or college outside Canada</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>May 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Application from university in Canada</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>May 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 1</td>
</tr>
<tr>
<td>Submission of supporting documents:</td>
<td></td>
</tr>
<tr>
<td>Non-Canadian citizen/non-permanent resident</td>
<td>June 1</td>
</tr>
<tr>
<td>Canadian citizen/permanent resident</td>
<td>July 15</td>
</tr>
<tr>
<td>Architecture applicants: portfolio submission</td>
<td>March 15</td>
</tr>
<tr>
<td>Application to Music and submission of supporting documentation</td>
<td>January 15</td>
</tr>
<tr>
<td>Application and supporting documents for Dentistry, Law or Medicine</td>
<td>Refer to the faculty Websites</td>
</tr>
</tbody>
</table>

Note: Supporting documents should be sent as soon as they are available. If received before the application, they will be kept on file for one year.

1.12.2 Admission Requirements

Successful applicants to McGill University as Special or Visiting Students are generally required to have a minimum overall “B” average. In addition, grades obtained in courses relevant to the proposed program of study will be considered.

The admission of Special or Visiting Students is subject to the availability of places in a particular program. Students who present the minimum requirements are not guaranteed acceptance. Entrance to courses with enrolment limits, or that require permission of the instructor, cannot be guaranteed.

Completion of courses as a Special or Visiting Student at McGill University does not guarantee or improve the chances of entrance into a McGill University degree program in a future year. Normally, special and visiting students remain at McGill University for no more than one semester or two consecutive semesters per academic career.

1.12.3 Admission Requirements for Special Students

To qualify as a Special Student, you must:

- Have received an undergraduate degree, or be in the final year of a course of study, at a recognized college or university leading to an undergraduate degree consisting of 120 credits over eight semesters following completion of high school. If you have received a CEGEP DEC in the Province of Quebec, you must have completed 90 credits (six semesters) in a Quebec university to obtain the required degree.
- Have a plan of study that is acceptable to the faculty you wish to enter. Some faculties stipulate prerequisite course work.

In addition:

- Music applicants do not require a university degree but must have the necessary Music prerequisites for certain courses. Special students in Music are not entitled to instrument or voice lessons and, therefore, are not required to audition.
- The maximum course load is 15 credits per term for a maximum of two terms (with the exception of Architecture where the maximum course load is six credits per term).
- If you wish to hold Special Student status in Engineering or Architecture, you must provide a referral from the Order of Engineers or the Order of Architects, as appropriate.
- To take courses in English or French as a Second Language, you must obtain written permission from the Department and will be permitted entry only if there is space, after degree students have registered. A plan of study cannot consist only of E.S.L. or F.S.L. courses.

1.12.4 Documentation for Special Students

You must arrange for official transcripts of all college/university studies, including courses in progress, to be sent to McGill. Final official transcripts and confirmation of graduation should be sent as soon as the results become available.

You may submit photocopies of Advanced Levels, Advanced Placement Exams, French Baccalaureate, International Baccalaureate and/or high school transcripts to complete your application.

1.12.5 Admission Requirements for Visiting Students

If you are currently registered in a degree program at another university and have completed at least two semesters of study there, you may apply to take courses at McGill University as a Visiting Student. Course credits can be applied toward the program of study at your home university. Admission decisions on visiting applications are final and there is no appeal process.
1.12.6 Documentation for Visiting Students

You must submit a letter of permission from the appropriate officer of your home university, approving the proposed program of study (and, if admitted, you must bring a copy of the letter to your advising session at the first advising session at McGill). Official transcripts of your university studies, including courses in progress, must also be sent to McGill.

You may submit photocopies of A-Levels, Advanced Placement Exams, French Baccalaureate, International Baccalaureate and/or high school transcripts to complete your application.

1.13 Home Schooled Applicants

McGill University will consider applications from home schooled applicants. Each case will be treated on its own merits. As a home schooled candidate, you must send McGill University a description of the home schooling curriculum followed and measures of your academic acquisition in the program, including a comprehensive list of all texts (and editions) studied; a personal statement from you and a separate statement from your home educator explaining the basis of the university application and estimation of your readiness to handle university level subject matter; an additional confidential letter of recommendation from an impartial source indicating your readiness for university level study. In some cases, further information and/or interview(s) with an Admissions Officer, Associate Dean, or Program Director may be required.
1.14 Entrance Scholarships

McGill University has an extensive program of entrance awards to recognize and honour academic excellence. These awards are available to students entering any full-time undergraduate degree program and entering university for the first time.

Value

Entrance scholarships range in value from $3,000 to $10,000 renewable. All scholarships are merit-based and financial need is not considered. McGill University offers two types of entrance scholarships:

- **Basic scholarships**: Eligibility is based solely on academic achievement.
- **Major scholarships**: Eligibility is based on a combination of academic achievement and leadership qualities. Consideration will be given to academic achievement and leadership in school and/or community activities. Please note that leadership constitutes more than simple participation in extracurricular activities.

Eligibility

**First time in university**: To be eligible for consideration for either a basic or major entrance scholarship, you must be entering university for the first time. Transfer, Mature, Diploma, Exchange, Special, and Visiting Students are not eligible.

**Minimum academic requirements**: Competition for basic and major scholarships is intense because of the large number of applications that we receive and the high overall quality of our applicant pool. Please review carefully the minimum academic requirements set out below to determine whether you are eligible to be considered for an entrance scholarship.

Even if you do meet the minimum requirements, you are not guaranteed an entrance scholarship because the number of awards granted and the quality of the applicant pool varies from year to year.

<table>
<thead>
<tr>
<th>Academic Background</th>
<th>MINIMUM academic performance for consideration for a basic or major scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quebec CEGEP</td>
<td>MINIMUM overall cote de rendement au collégial (CRC) of 33</td>
</tr>
<tr>
<td>Canadian High School (outside Quebec and Ontario)</td>
<td>MINIMUM 92% average over last two years of full-time studies, and/or rank in top 5% of class</td>
</tr>
<tr>
<td>Ontario High School</td>
<td>MINIMUM 92% overall average on all level 3, 4, 5 A, U and M courses, and OA courses, and/or rank in top 5% of class</td>
</tr>
<tr>
<td>United States High School</td>
<td>MINIMUM A- average (or equivalent) over last two years of full-time studies, rank in top 5% of class and minimum score of 660 in each SAT or 30 in the ACT</td>
</tr>
<tr>
<td>Overseas High School</td>
<td>MINIMUM A- to A average (or equivalent) over last two years of full-time study and/or rank in top 5% of class</td>
</tr>
</tbody>
</table>

**Application Procedure – Basic Scholarships Valued at $3,000**

If you meet the minimum academic requirements, you may apply for a basic scholarship and will be considered based on academic achievement alone. To apply for a basic entrance scholarship, check off the appropriate box on the web admission application. Send in your supporting documents by the deadlines listed in section 1.14.2 “Supporting Documents and Deadlines” on page 36.

If you apply after the admission deadline, you will not be considered for a scholarship, even if you have been granted permission to submit a late admission application. There are no exceptions to this rule.

**Application Procedure – Major Scholarships Valued at $5,000 and Above**

If you meet the minimum academic requirements and also have significant leadership qualities, you may apply for a major scholarship on the web after your application for admission has been submitted. You will receive an e-mail acknowledgement of your admission application, which will provide you with your McGill ID number as well as a PIN that you can use to log on to Minerva. On Minerva, you can check the status of your admission application and submit your application for a major scholarship.

On Minerva, select the "Apply for a Major Scholarship" link on the "Applicant" menu. You will be prompted to provide the following:

- a factual list of principal interests and activities while in school or CEGEP;
- a list of up to a maximum of six books or major articles read during the past year (exclude selections which were required for school or CEGEP courses), from which you must choose one and explain in a maximum of 200 words why you read it and why it was significant;
- an essay of no more than 500 words explaining what and where you expect to be 20 years from now, and what will have been the role of your education.

Finalists for the scholarships valued at $5,000 or more may be interviewed.

Students who apply for, but do not receive, a major scholarship will automatically be considered for a basic scholarship.
1.14.1 Financial Aid

McGill University offers financial assistance to students from modest-income families who have been accepted for undergraduate studies. You must apply for government student aid to be considered for need-based assistance. You may apply for Entrance Financial Aid through the Financial Aid menu on Minerva.

For more information about our financial aid programs, please visit the Student Aid Website at www.mcgill.ca/studentaid.

1.14.2 Supporting Documents and Deadlines

All required supporting documents must be postmarked no later than the deadlines listed below.

<table>
<thead>
<tr>
<th>Applicants from Quebec CEGEPs</th>
<th>Basic ($3000)</th>
<th>Major ($5000 and above)</th>
<th>Deadline for Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No supporting documents required.</td>
<td>Two letters of reference²</td>
<td>March 5, 2006</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicants from Ontario</th>
<th>Signed statement from your school¹</th>
<th>Signed statement from your school¹</th>
<th>February 5, 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two letters of reference²</td>
<td>Two letters of reference²</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicants from outside Quebec and Ontario</th>
<th>Signed statement from your school¹</th>
<th>Signed statement from your school¹</th>
<th>Canada: February 5, 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two letters of reference²</td>
<td>Two letters of reference²</td>
<td>Outside Canada: January 20, 2006</td>
<td></td>
</tr>
</tbody>
</table>

¹Signed statement from your school indicating the size of your class and your class rank. If your school does not rank students, a statement to that effect from the school should be provided, if possible. All documents should be provided on school letterhead and placed in a sealed envelope, signed across the flap by the sender.

²Two letters of reference, one academic and one activity-related. Letters of reference must be submitted in envelopes sealed and signed across the flap by the author of the letter. It would be appreciated if letters could be typed and, whenever possible, prepared on letterhead stationery.

Please send supporting documents to McGill University at the addresses listed in section 1.15 “Email, Telephone and Fax Contacts” on page 37.

Applicants to Dentistry, Law or Medicine

Please note that the entrance scholarships referred to in this section are for students entering a university for the first time to undertake a full-time undergraduate degree program. University students who are applying for admission to the faculties of Dentistry, Law or Medicine should inquire at the respective faculty’s admissions office regarding available funds.

Applicants to Music

Applicants wishing to be considered for a Music entrance scholarship must also meet the earlier audition deadline. Check the Schulich School of Music Website for relevant deadline dates.
1.15 Email, Telephone and Fax Contacts

Should you need to communicate with McGill University about your application, please use the following e-mail, telephone or fax numbers. Please include your ID number in all communication.

Admissions, Recruitment and Registrar’s Office*
Tel.: (514) 398-3910
Fax: (514) 398-4193
Email: admissions@mcgill.ca
Website: www.mcgill.ca/applying


Agricultural and Environmental Sciences
Tel.: (514) 398-7928
Fax: (514) 398-7968
Email: studentinfo.macdonald@mcgill.ca
Website: www.mcgill.ca/macdonald/studentaffairs

Religious Studies (Bachelor of Theology)
Tel.: (514) 398-3995
Fax: (514) 398-6665
Email: info.relgstud@mcgill.ca
Website: www.mcgill.ca/religiousstudies

Schulich School of Music
Tel.: (514) 398-4546
Fax: (514) 398-8873
Email: undergradadmissions.music@mcgill.ca
Website: www.mcgill.ca/music

Scholarships Office
Tel.: (514) 398-4807
Fax: (514) 398-8343
Email: scholarships@mcgill.ca
Website: www.mcgill.ca/applying/scholarships

Mailing Addresses for Supporting Documents
Please send supporting documents for applications to the Faculties of Agricultural and Environmental Sciences, Arts, Education, Engineering, Management, Music and Science, and the Schools of Architecture, Nursing, Physical and Occupational Therapy, and Social Work to the following addresses:

Mailing Address:
ARR Documentation Centre
McGill University
688 Sherbrooke Street West, Room 1460
Montreal, Quebec H3A 3R1 Canada

In-Person Delivery and Courier Address:
Admissions, Recruitment and Registrar’s Office
McGill University
James Administration Building, Room 205
845 Sherbrooke Street West
Montreal, Quebec H3A 2T5 Canada

Please consult the appropriate Websites or admission guides for instructions on submitting supporting documents to other faculties, including Dentistry, Law and Medicine.
1.16 Step-by-Step Guide to Applying to McGill Online

This year, McGill University is encouraging prospective students to apply online. Applying online is easier, more efficient and more environmentally friendly than using paper forms. It can also speed up the processing of your application. The online application is available at www.mcgill.ca/applying.

If your circumstances make it impossible for you to apply online, please contact us at admissions@mcgill.ca or (514) 398-3910 and we will send you application forms in Adobe PDF format.

About this Guide

This guide provides information to help you complete McGill’s undergraduate online application. It includes values that are acceptable in certain fields, tips and reminders for entering information, and who you can contact for more help.

Before applying

Ensure that you have read the admissions requirements and important information for your program before you complete your application. This information is available at the beginning of this guide and at www.mcgill.ca/applying.

Logging In

The steps below provide information on how to access and log into the online application system.

1. If you are applying to McGill University for the first time (i.e., you are not already a McGill student), go to www.mcgill.ca/applying and click this icon:

2. From the “Applying to McGill” page, click on the following icon:

3. Select English or French.

4. Create or enter your Login ID: If this is your first visit to McGill’s online application, you will need to create a unique Login ID and personal identification number (PIN).
To do this, simply enter them in the appropriate fields and click Continue.

Your Login ID can contain any combination of letters and numbers, but your PIN must be six characters long and have at least one letter and one number. For security reasons, it’s important to pick a PIN that is not easily identifiable. Avoid obvious choices like your name or birth date.

The Login ID and PIN are only used for the application process. For example, they are not used to access information once you have been assigned a McGill ID.

You need to use the same Login ID and PIN every time you log on, otherwise you will need to start a new application. If you've lost your password, you can call 514-398-4474 to reset your PIN.

Logout and save your data

Once you have created your Login ID and PIN, and selected your program, you can log out at any time and your application data will be saved. To return to your application, simply re-enter your Login ID and PIN. For security reasons, you will be automatically logged out if data is not entered within 30 minutes.

Completing the Application

This section provides instructions and tips for entering information into the main screens in the application.

1. Enter your biographical information: Enter your name and other personal information in the appropriate fields. Mandatory fields are marked with an asterisk (*).

When entering your name, ensure that you add correct accents, and that you use upper and lower case spelling, so that your name matches your transcripts and other documents.

Your legal name is the name shown on one or more of the following documents:

- Birth or Baptismal Certificate
- Canadian Immigration Record of Landing (IMM1000)
- Canadian Immigration Student Authorization document
- Canadian or International Passport (a Canadian Citizenship card is also acceptable)
- Certificate of Acceptance of Quebec (CAQ)
- Court order approving a legal change
- Letter from Consulate or Attestation by a Commissioner of Oaths

You must provide your former legal name (for example, your family name before marriage) if it has appeared on previous academic records or other official documents.

2. Apply for Admission: Enter your application choices, using the information below as a guide.

Please fill out this section carefully as you cannot change it later on. McGill's online application system automatically displays program choices based on the application type, term, level of education and citizenship status that you select. If you make a mistake, you will not see the correct program choices, and you will have to complete a new application.

a. Application Type - Select Undergraduate/Professional.
b. **Term** - Select the term that you wish to enter McGill. Typically, this is the next Fall semester.

The following provides a description of each level of education to help you decide which one you should select.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School Diploma</td>
<td>Only select this level if you do not meet McGill's minimum requirements but you qualify as a mature student.</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>Select this option if you have completed or will complete your high school diploma, an International Baccalaureate Diploma or AS/A Level prior to commencing studies at McGill. Do not select High School Diploma if you have completed or will complete a French Baccalaureate, a CEGEP diploma or at least one year of college or university study prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>Technical/Vocational Diploma</td>
<td>Select this option if you have completed or will complete a technical or vocational diploma at the high school level prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>French Baccalaureate</td>
<td>Select this option if you have completed or will complete a French Baccalaureate prior to commencing studies at McGill. This includes applicants from College Stanislas and College Marie de France in Montreal.</td>
</tr>
<tr>
<td>CEGEP Diploma (DEC)</td>
<td>Select this option if you have completed or will complete a Quebec diplôme d’études collégiales (DEC) or a joint IB/DEC prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>College (non-CEGEP) Studies</td>
<td>Select this option if you have completed or will complete at least one year of studies at a community college outside the province of Quebec prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>University (at least one year)</td>
<td>Select this option if you have completed or will complete at least one year of studies at a university (including McGill) prior to commencing your current round of studies at McGill.</td>
</tr>
<tr>
<td>Bachelor's Degree/Equivalent</td>
<td>Select this option if you have completed a Bachelor's Degree or equivalent prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>Master's Degree</td>
<td>Select this option if you have completed a Master's Degree prior to commencing studies at McGill.</td>
</tr>
<tr>
<td>Doctorate</td>
<td>Select this option if you have completed a PhD. prior to commencing studies at McGill.</td>
</tr>
</tbody>
</table>

c. **Level of Education** - Select the highest level of education you will have achieved before starting your program at McGill. Typically, this is high school or CEGEP. See the table below if you require more information on which level to choose.

This means that if you are applying to McGill University while still completing high school, select High School Diploma. If you are applying during the second year of Quebec CEGEP, select CEGEP Diploma (DEC). Do not select the degree you plan to pursue at McGill.

Fields marked with an asterisk (*) are mandatory. When you have completed this section, click CONTINUE to fill out the application. You will not be able to change any information in this section.

Please see the help file for further assistance.

- Application Type: *
- Term: *
- What will be your highest level of education prior to the term you selected above?: *
- Education Category: *
- Are you a Canadian Citizen or Permanent Resident? *

The online application form can accommodate credit card acceptance. Your comments and questions concerning this can be directed to: Admissions and Recruitment, 860 Sherbrooke Street West, Room 204, Montreal, Quebec H3A 2K6, Canada. For further assistance, visit our website at: http://www.mcgill.ca/applying/online/apply.
d. Depending on what you selected above, you might see additional choices about IB and AS/A Levels. Unless you will have completed an IB diploma or certificate, or the AS/A-Levels, select None of the Above.

e. **Education Category** - Select the appropriate type of education from which you received your latest education before coming to McGill. This list will change depending on your previous selections.

f. **Citizenship** - Indicate whether you are a Canadian citizen or a permanent resident of Canada.

3. **Mature Status** - You may be able to apply as a mature student. Different faculties have different definitions for mature student eligibility.

   • Schulich School of Music - 21 years of age at time of registration.

   • Faculty of Religious Studies - 27 years of age at time of registration.

   • Other undergraduate programs - 23 years at time of registration and have not completed college or university level studies within the last five years that would constitute a basis for admission. You must also have completed a minimum number of appropriate courses (prerequisites) within the three-year period prior to admission.

4. **Program Choice Selection** - Select at least one faculty, program and major.

   If your choices do not appear in the pull-down menus, the application deadlines may have passed for the selected term, or the application requirements may not be met.

   • **Music Applicants** - Prospective students applying to some programs in the Schulich School of Music are required to also complete a live audition. More information about auditions is available at www.mcgill.ca/music/prospective/undergraduate/requirements.

   • **Second Program Choice** - After you’ve made your first selection, you can also select a second program choice. In some cases, you may be required to select a second program.

   • **Information messages** may appear with details on what you are required to do. Messages will differ depending on what you have selected.

5. **Address Information** - Enter your contact information.

   Address Line 1, City and Country are required.

   • Enter data using upper case and lower case letters. Do not use the pound sign (#) or the percent sign (%).

   • To enter a state or province for an international address, include it in the City field.

   • Please enter a valid e-mail address, as the University will send important information related to your application to this account, including notifications on tracking the status of your application, missing documents and the admission decision.

6. **Personal Information** - Enter your personal information.

   • **Citizenship** - If you are not a Canadian citizen or permanent resident of Canada, you require permission from the provincial and federal governments to study at McGill. Immigration Quebec must issue a Certificate of Acceptance (CAQ) and Immigration Canada must grant a Student Authorization.
• Quebec Students: Permanent Code - If you are a resident of the province of Quebec with a Permanent Code issued by the Quebec Ministry of Education (MEQ), you must enter it here. **This is not your Medicare card number.** The Permanent Code is found on Quebec high school and CEGEP transcripts, and on transcripts from some Quebec universities. If you do not have a Permanent Code, you will be required to provide your parents’ names so that one can be created for you.

• First Nations Applicants - You may select the checkbox indicating that you are First Nations. Providing this information is optional. It will help us keep you informed of student services, and help us improve our service to students from First Nations and Inuit communities.

7. Employment and Non-Academic Activities - If you have been out of school for more than three months, include details about your employment, volunteer work or other activities.

8. Additional Information: Scholarships - Prior to the scholarship deadline, applicants coming from high schools can indicate if they want to be considered for a basic scholarship. To be considered for a major scholarship, you must apply through Minerva, after you have submitted your application and received your McGill ID. For more scholarship information, please visit www.mcgill.ca/scholarships/entrance.

9. High School History (for some applicants only) - Enter your high school history information. You may not have all of the information when you submit your application.

• OUAC Number (applicants from Ontario high schools) - If you do not have your OUAC number when you submit your McGill University application, leave this field blank (do not enter an incorrect number). When you know the number, you can log on to Minerva (www.mcgill.ca/minerva-students/applicants) and enter it later. If you enter an incorrect number, you can contact Admissions (admissions@mcgill.ca) and request that it be changed.

• High School Record - Search through the pull-down menu of schools, depending on the country and province/state selected. Please do not manually enter your school name if it appears in the list.

10. CEGEP History (applicants from CEGEPs) - If you attended a Quebec CEGEP, enter details about the CEGEP and the type of program that you were in.

11. Education Information - In previous screens, you might have indicated that you attended more than one school. In the Education Level field, you must select the school that corresponds to the degree/diploma/certificate awarded. For example, if you attended two high schools, select the high school from which you received your diploma.

12. Course History - If you have taken or are planning to take any night, distance or summer courses that will not appear on your official transcripts, enter the course details here.
13. **Tests Taken** - If you have taken standardized testing, such as SAT, ACT, Advanced Placement (AP) examinations, or the Test of English as a Foreign Language (TOEFL), enter this information here.

If you have not taken any tests, you must scroll down and select the checkbox marked “I have no tests to report.”

<table>
<thead>
<tr>
<th>TEST SECTION (all applicants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have no tests to report ☑</td>
</tr>
</tbody>
</table>

- **External Test Results** - Please note that McGill University receives TOEFL, SAT, ACT and AP test results electronically. Ensure that the personal information you provide to the examination board matches the information you provide to McGill. If there is a discrepancy in personal information, we will not be able to match your electronic results.

For further information or assistance, e-mail admissions@mcgill.ca. Please include your McGill ID number and indicate “Test Discrepancy” in the subject line of your e-mail.

14. **Music Information Form/Music Audition Form** - Applicants to the Schulich School of Music must enter details about repertoire and studies concerning voice or their instrument of choice.

- Applicants are also asked to submit a Music Evaluation Form to their music teacher for completion. The form is available at www.mcgill.ca/music.
- Applicants to the Bachelor of Music, Licentiate, Artist Diploma programs also need to perform an entrance audition. See the Help file or visit www.mcgill.ca/music for more details on audition.

15. **Confirmation** - From this page, you can view your application summary and confirm that all the information is correct. This gives you a chance to correct anything before submitting it.

To change information, go back to the **Confirmation** page and use the links on the left side of the screen to navigate to the sections that you need to change.

You cannot change your program choice. If you selected the wrong program choice, you must start a new application. However, you can use the same Login ID and PIN to create a new application.

16. **Submitting Your Application** - Once you click Submit, you will be asked to enter payment information (i.e. a credit card number).

The credit card used to pay your application fee does not need to be in your name. For example, if you do not have your own credit card, a relative or guardian’s card will be accepted.

McGill’s highly secured e-payment service minimizes cardholder risk. Your credit card information is passed instantly to the Moneris payment gateway and is not stored at McGill. Moneris handles 80% of all credit card transaction processed in Canada.

### Credit card not accepted?
If your credit card is not accepted, click the **Try Again** button to go back to the payment page. Verify the information, correct it, or enter information from a different card.

17. **Confirmation E-mail** - After your payment has gone through, you should receive an e-mail acknowledgement within 5 business days, confirming that your application has been received. If you did not provide an e-mail address, you will be sent a confirmation by regular mail. If you do not receive this confirmation, you should contact Admissions by e-mail (admissions@mcgill.ca) or phone (514-398-3910). Do not resubmit your application.

### Incorrect information on your application?
If you realize that there is a mistake on your application after you’ve submitted it, contact Admissions by e-mail (admissions@mcgill.ca) or phone (514-398-3910). Do not resubmit your application.
Supporting Documents

When you have submitted your application, don’t forget to send supporting documents. Each program requires different types of supporting documents, such as transcripts and reference letters. The table below provides mailing addresses for supporting documentation for the different programs.

<table>
<thead>
<tr>
<th>Program</th>
<th>Mailing Address for Supporting Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Environmental Sciences (including Dietetics and Human Nutrition, Farm Management Technology)</td>
<td>McGill University ARR Documentation Centre 688 Sherbrooke St. W., Suite 1460 Montreal, Quebec H3A 3R1 Canada</td>
</tr>
<tr>
<td>Arts</td>
<td>To drop off or send documents by courier:</td>
</tr>
<tr>
<td>Dentistry</td>
<td>ARR Service Centre McGill University James Administration Building, Room 205 845 Sherbrooke Street W. Montreal, Quebec H3A 2T5 Canada</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
</tr>
<tr>
<td>Physical and Occupational Therapy</td>
<td></td>
</tr>
<tr>
<td>Social Work</td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>Faculty of Medicine - Admissions Office 3655 Promenade Sir William Osler, Room 602 Montreal, Quebec H3G 1Y6 Canada</td>
</tr>
<tr>
<td>Law</td>
<td>Undergraduate Admissions Office Faculty of Law, McGill University New Chancellor Day Hall, Room 418 3644 Peel Street Montreal, Quebec H3A 1W9 Canada</td>
</tr>
<tr>
<td>Religious Studies (B.Th.)</td>
<td>B. Theology Admissions Faculty of Religious Studies McGill University 3520 University St. Montreal, Quebec H3A 2A7 Canada</td>
</tr>
</tbody>
</table>
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- Course Terminology: C-3
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Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

- Denotes courses taught only in alternate years.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

- Denotes courses taught only in alternate years.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses not available as Education electives.
- Denotes courses with limited enrolment.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

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- BUSA-Business Administration
- FINE-Finance
- INDR-Industrial Relations
- INSY-Information Systems
- MGCR-Management Core
- MGPO-Management Policy
- MGSC-Management Science
- MRKT-Marketing
- ORGB-Organizational Behaviour

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- MUCT-Choral Techniques
- MUEN-Ensemble
- MUGT-General Music Techniques
- MUHL-Music History and Literature
- MUIN-Practical Instrument
- MUIT-Instrumental Techniques
- MUJZ-Jazz Studies
- MUMT-Music Technology
- MUPG-Performance
- MUPP-Performance Practice
- MUSP-Musicianship
- MUSR-Sound Recording
- MUTH-Music Theory and Analysis

### Faculty of Religious Studies, page C-183
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- ATOC-Atmospheric & Oceanic Sciences
- BIOC-Biochemistry
- BIOL-Biology
- BIOT-Biotechnology
- CHEM-Chemistry
- COMP-Computer Science
- EPSC-Earth & Planetary Sciences
- ESYS-Earth System Science
- EXMD-Experimental Medicine
- GEOG-Geography
- MATH-Mathematics & Statistics
- MIMM-Microbiology and Immunology
- NEUR-Neurology and Neurosurgery
- NUTR-Nutrition and Dietetics
- PATH-Pathology
- PHAR-Pharmacology and Therapeutics
- PHYS-Physics
- PSYC-Psychology
- PSYT-Psychiatry
- REDM-Redpath Museum
COURSE INFORMATION, REGULATIONS AND DESCRIPTIONS (Appendix B)

1 Course Information and Regulations

Students are advised to refer also to the General Information and Regulations section of this Calendar, in particular “Registration”, section 3.3 and “Student Records”, section 3.6.

The University reserves the right to make changes without prior notice to the information contained in this publication, including the revision or cancellation of particular courses or programs.

At the time this Calendar went to press, new courses and modifications to some existing courses were under consideration. Students preparing to register are advised to consult Class Schedule on the Web at www.mcgill.ca/courses for the most up-to-date information on courses to be offered in 2006-07.

Not all courses listed are offered every year.

1.1 Course Numbering

Each McGill course is assigned a unique seven-character course “number”.

The first four characters (Subject Code) refer to the unit offering the course.

These codes were implemented in September 2002, replacing the three-number Teaching Unit Codes and their Subject Code equivalents can be found on the Web at www.mcgill.ca/student-records/transcripts.

The three numbers following the Subject Code refer to the course itself, with the first of these indicating the level of the course.

- Courses numbered at the 100, 200, 300, and 400 levels are intended for undergraduate students. In most programs courses at the 300 level and 400 level are normally taken in the student’s last two years.
- Courses at the 500 level are intended for graduate students, but may also be open to qualified senior undergraduate students.
- Courses at the 600 and 700 level are intended for graduate students only.

Two additional characters (D1, D2, N1, N2, J1, J2, J3) at the end of the seven-character course number identifies multi-term courses.

1.2 Multi-term Courses

Most courses at McGill are single term (Fall or Winter or Summer) courses with final grades issued and any credits earned recorded at the end of that term. Single term courses are identified by a seven-character course number.

A unit may, however, decide that the material to be presented cannot be divided into single term courses or it is preferable that the work to be done is carried out over two, or three, terms. Under such circumstances, courses are identified by a two-character extension of the course number.

In some cases, the same course may be offered in various ways: as a single term and/or in one or more multi-term versions. The course content and credit weight is equivalent in all modes, the only difference being the scheduling, and students cannot obtain credit for more than one version.

Courses with numbers ending in D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for the same section of both the D1 and D2 components. When registering for a Fall term D1 course on Minerva, the student will automatically be registered for the Winter term D2 portion. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms, e.g., Fall 2006 and Winter 2007.

Courses with numbers ending in N1 and N2 are taught in two non-consecutive terms (Winter and Fall). Students must register for the same section of both the N1 and N2 components. No credit will be given unless both components (N1 and N2) are successfully completed within a twelve (12) month period.

Courses with numbers ending in J1, J2 and J3 are taught over three consecutive terms. Students must register for the same section of all three components (J1, J2, J3). No credit will be given unless all three components are successfully completed.

IMPORTANT CONDITIONS FOR MULTI-TERM COURSES

1. Students must be registered for each component of the multi-term course. Students must ensure that they are registered in the same section in each term of the multi-term course.

2. Students must successfully complete each component in sequence as set out in the multi-term course. Credit is granted only at the end of the multi-term course; no credit is given for partial completion.

1.3 Course Terminology

Prerequisite: Course A is prerequisite to course B if a satisfactory pass in course A is required for admission to course B.

Corequisite: Course A is corequisite to course B if course A must be taken concurrently with (or may have been taken prior to) course B.

Credits: The credit weight of each course is indicated in parentheses beside the course title. For D1 and D2 courses the credit weight is indicated after the course number. For further information refer to section 3.6.2 “Credit System”.

COURSE NOMENCLATURE IN PROGRAM DESCRIPTIONS:

Required Courses: Courses that must be completed to fulfill the requirements of a major, minor, etc., unless the student receives exemptions. Students have no choices among required courses.

Complementary Courses: A set of alternative courses that can be taken to fulfill the requirements of a major, minor, etc. Students choose a specified number of courses from the set.

Elective Courses: Courses that do not count toward the fulfillment of the requirements of a major, minor, etc. They are often, but need not be, selected from outside a student’s program of study. Some restrictions may apply, but students have the most choice in selecting elective courses. Some faculties also permit students to take elective courses using the satisfactory/unsatisfactory option. Consult your faculty regulations concerning elective courses.

1.4 First-Year Seminars

First-Year Seminars (FYS) are limited-enrolment credit courses offered by the Faculties of Arts and Science to students in their first year of undergraduate study at McGill, i.e., newly admitted students in U0 or U1. Students in any faculty can enrol in an FYS, subject to the conditions and/or restrictions of the program in which they are registered. Students may take only one FYS.

FYS classes are limited to a maximum of 25 students and are designed to provide closer interaction with the professor and better working relations with peers than are available in large introductory courses. The seminars endeavour to teach the latest scholarly developments and expose participants to advanced research methods. Registration is on a first-come, first-served basis.

2006-2007 Undergraduate Programs Calendar, McGill University C-3
GENERAL INFORMATION AND REGULATIONS REGARDING COURSES

For a listing of First-Year Seminars, see Faculty of Arts, section 4.12.1 “First-Year Seminars”, and Faculty of Science, section 11.5.2.1 “Registration for First-Year Seminars”.

1.5 Faculty/School-Specific Information

Agricultural and Environmental Sciences
Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar.

Students should note that there are no supplemental examinations in Agricultural and Environmental Sciences, and that the final examination period timetable for the term is posted before the commencement of classes.

Arts
All Arts courses have limited enrolment.

Term(s) offered (Fall, Winter, Summer) may appear after the course credit weight to indicate when a course would normally be taught.

Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar. Particular notice should be taken of:

section 4.3.5 “Program Requirements”,
section 4.3.6 “Course Requirements”,
section 4.5.2 “Course Registration”

Education
Some courses will be available in the evenings only, through the Centre for Continuing Education, or will be offered during the Summer term.

Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar. Particular notice should be taken of:

section 4.3.5 “Program Requirements”,
section 4.3.6 “Course Requirements”,
section 4.5.2 “Course Registration”

Engineering
Most courses offered by the Faculty of Engineering are limited to Engineering students only. Non-Engineering students should obtain permission from the Associate Dean of their Faculty, and the Faculty Student Adviser in the Faculty of Engineering Student Affairs Office, to register for Engineering courses.

A limited number of School of Architecture (ARCH) courses are open to students not registered in the School. Please refer to individual course descriptions.

The average division of time for a course is indicated in hours in the course listing after the course credit. For example, (3) (3-0-6) indicates a three-credit course consisting of three lecture hours per week, no other contact hours and six hours of personal study per week.

Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar.

Environment, McGill School of
Students in the School’s programs must comply with the regulations and requirements of their faculty of registration (Agricultural and Environmental Sciences, Arts, or Science), as contained in the Faculty’s section of this Calendar.

Management
Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar. Particular notice should be taken of: section 8.3 “B.Com. Program Requirements”, section 8.4 “B.Com. Program Structure” and, especially for students new to the program, section 8.5 “Management Core”.

Music
Students in the Faculty must comply with the regulations and requirements contained in the Faculty section.

Religious Studies
Students in the Faculty must comply with the regulations and requirements contained in the Faculty section.

Science
All Science courses have limited enrolment.

Term(s) offered (Fall, Winter, Summer) may appear after the course credit weight to indicate when a course would normally be taught.

Students in the Faculty must comply with the regulations and requirements contained in the Faculty section of this Calendar. Particular notice should be taken of:

section 11.3.5 “Program Requirements”,
section 11.3.6 “Course Requirements”,
section 11.5.2 “Course Registration”.

1.6 Course Symbols

The symbols listed below may appear in front of courses described in this Calendar. When used, they represent the following information:

★ Denotes courses taught only in alternate years.
♦ Indicates that departmental approval/permission must be obtained by a student prior to registration.
☐ Denotes courses with limited enrolment.

Faculties of Agricultural and Environmental Sciences, Arts and Science symbol:

● Denotes courses not offered in 2006-07.

Faculty of Education symbols:

✝ Denotes courses not available as Education electives.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
✼ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

School of Dietetics and Human Nutrition symbol:

‡ Professional Practice (Stage) in Dietetics involving special prerequisites.

Please consult the Class Schedule on the Web at www.mcgill.ca/minerva for the most up-to-date information about courses that are being offered in a given term.
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\( \uparrow \) Professional Practice (Stage) in Dietetics involving special prerequisites

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Agricultural and Environmental Sciences

AEBI-Biology
Offered by: Natural Resource Sciences, Parasitology, Plant Science

AEBI 120 General Biology.
(3) (Fall) (2 lectures and one 3-hour lab) (Restriction: Not open to students who have passed CEGEP objective 00UK or equivalent (formerly Biology 301)) An introduction to the structure, function and adaptation of plants and animals in the biosphere.

AEBI 202 Cellular Biology.

AEBI 306 Experiments in Biotechnology.
(3) (One lecture and one 5-hour lab.) (Prerequisites: AEBI 202 and CELL 204 or permission of the instructor.) Practical laboratory-based research experience. Techniques in cellular and molecular biology, designing experiments and developing skills in interpretation and communication of experimental results.

AEHM-English
Offered by: Agricultural & Env.Sc.-Dean

AEHM 300 ESL: High Intermediate 1.
(3) (3 hours) (Prerequisite: placement test) (Restrictions: open to full-time, non-anglophone students. Not eligible for ESL courses are: 1. non-anglophone students who, for a period of more than four years, have attended secondary institutions (high school and CEGEP) where the primary language of instruction was English, and 2. students who have taken university-level courses judged to be equivalent to the McGill courses AEHM 300 and ESLN 300; AEHM 301 and ESLN 301. These courses are equivalent and mutually exclusive.) (Students too weak in English for AEHM 300 should inquire about the ESLN 200 and ESLN 201 courses offered on the Downtown Campus by the Faculty of Arts.) Improves proficiency of general writing skills while developing reading, oral and aural skills. Focuses on the structure of the English language and the process required to produce coherent short papers. Emphasis on the English of food, agriculture, and the environment.

AEHM 330 Academic and Scientific Writing.
(3) (3 hours) (Prerequisite: entrance test.) The object of the course is to enable students who have previously mastered the basic elements of written English to produce well-written, well-researched, and well-documented scientific papers for an academic audience.

AEMA-Mathematics
Offered by: Animal Science, Natural Resource Sciences, Parasitology, Plant Science

AEMA 101 Calculus 1.

AEMA 102 Calculus 2.
(4) (3 lectures) (Prerequisite: Calculus 1 or equivalent) Integration, the indefinite and definite integral. Trapezoidal and Simpson's Rule approximations for the integral. Applications to areas between curves, distance, volume, length of a curve, work, area of a surface of revolution, average values, moments, etc. Improper integrals and infinite series.

AEMA 202 Intermediate Calculus.
(3) (Fall) (3 lectures and 1 conference) (Restrictions: Not open to students who have taken MATH 222) Partial differentiation; multiple integrals; vector calculus; infinite series; applications.

AEMA 305 Differential Equations.
(3) (Winter) (Restrictions: Not open to students who have taken AEMA 205 or MATH 315) Techniques for solution of ordinary 1st and 2nd order equations; power series solutions; systems of equations; introduction to partial differential equations; numerical techniques for solutions; applications to biological, chemical and engineering systems.

(3) (Fall) (3 hours of lectures per week) (Prerequisite: WILD 205 (formerly AEBI 205) or permission.) (Corequisite: AEMA 310 or permission.) An introduction to mathematical and graphical tools for use in ecology. Representation and interpretation of data and associated statistics in graphs and tables; theoretical modelling in plant and animal ecology, including difference and differential equation models. Introduction to stability analysis and probability theory. Emphasis is placed on graphical techniques.

AEMA 310 Statistical Methods 1.
(3) (Two 1.5-hour lectures and one 2-hour lab) Measures of central tendency and dispersion; binomial and Poisson distributions; normal, chi-square, Student's t and Fisher-Snedecor F distributions; estimation and hypothesis testing; simple linear regression and correlation; analysis of variance for simple experimental designs.

AEMA 403 Environmetrics Stage.
(3) (Limited enrolment: Registration by application - Deadline December 15; the first seven applications received will have priority) (Prerequisite: Permission of the instructor based on satisfactory completion of the U2 year of the Environmetrics

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Denotes courses not available as Education electives.
Domain in the McGill School of Environment) Summer stage of at least four weeks, including a report. Provides students with professional experience in statistical analyses of environmental data. Can be undertaken at federal or provincial research stations and university research laboratories.

* ✱ AEMA 411 Experimental Designs.
(3) (2 1.5-hour lectures) (Prerequisite: AEMA 310 or equivalent) (Offered in alternate years with AEMA 414) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) General principles of experimental design, split-plot designs, spatial heterogeneity and experimental design, incomplete block designs and unbalanced designs, analysis of repeated measures, multivariate and modified univariate analyses of variance, central composite designs.

✱ AEMA 414 Temporal and Spatial Statistics.
(3) (2 1.5-hour lectures) (Prerequisite: AEMA 310 or equivalent) (Offered in alternate years with AEMA 411) Temporal statistics: analysis in the time domain, Box-Jenkins forecasting methodology, analysis in the frequency domain, periodogram analysis. Spatial statistics: mapping, autocorrelogram analysis, geostatistics. Statistical inference with autocorrelated sample data.

AEPH-Agricultural Physics
Offered by: Natural Resource Sciences
AEPH 112 Introductory Physics 1.
AEPH 114 Introductory Physics 2.
(4) (Winter) (3 lectures and one 2-hour lab) Electric and magnetic properties of matter: electrostatics, electric currents, the link between electric and magnetic phenomena, geometrical optics, interference diffraction.

AGEC-Agricultural Economics
Offered by: Agricultural Economics
AGEC 200 Principles of Microeconomics.
(3) (Fall) (3 lectures) The field of economics as it relates to the activities of individual consumers, firms and organizations. Emphasis is on the application of economic principles and concepts to everyday decision making and to the analysis of current economic issues.
✱ ✱ AGEC 201 Principles of Macroeconomics.
(3) (Winter) (3 lectures) (Prerequisite: AGEC 200 or equivalent) The overall economic system, how it works, and the instruments used to solve social problems. Emphasis will be on decision-making involving the entire economic system and segments of it.
AGEC 230 Agricultural and Food Marketing.
(3) (Winter) (3 lectures) (Prerequisite: AGEC 200 or equivalent) Marketing principles and practices, their relationship to the agriculture-food system, and the economic impact on all segments of this system. Emphasis on the application of marketing principles in problem-solving and in developing marketing and communication skills of the individual.
AGEC 231 Economic Systems of Agriculture.
(3) (Winter) (3 lectures) (Prerequisite: AGEC 200 or equivalent) The structure and organization of Canada's agriculture-food system, the operation, financing, linkages, and functions of its components. Focus to be on management of the various components and the entire system, types of problems confronted now and in the future.

AGEC 242 Management Theories and Practices.
(3) (Fall) (3 lectures) An introduction to contemporary management theories and practices in organizations of the food sector.
AGEC 320 Economics of Agricultural Production.
(3) (Winter) (3 lectures) (Prerequisite: AGEC 200 or equivalent) An intermediate theory course in agricultural economics, dealing with economic concepts as applied to agricultural production and cost functions. Includes theory and application of linear programming as related to production decisions.
AGEC 331 Farm Business Management.
(3) (Fall) (3 lectures) (Prerequisite: AGEC 200 or equivalent) Managing a farm business. Topics include: the decision making process, farm business centre and farm records, farm management and economic concepts, farm planning and budgeting, input management (land, capital, labour and time), tax management (farm organization, estate planning, etc.).
AGEC 333 Resource Economics.
(3) (Fall) (Prerequisites: AGEC 200 or equivalent) The role of resources in the environment, use of resources, and management of economic resources within the firm or organization. Problem-solving, case studies involving private and public decision-making in organizations are utilized.
AGEC 343 Accounting and Cost Control.
(3) (Fall) (3 lectures) An introduction to the basic principles and concepts of responsibility accounting and cost control, analysis and utilization of financial statements and control system data for decision making.
AGEC 344 Entrepreneurial Leadership.
(3) (Fall) (3 lectures) Leadership concepts and theory, with applications in the context of small and medium-sized organizations. An examination of behaviour models and their relationship to various leadership functions, such as how to set objectives, give praise and instructions, mentor, resolve conflicts, and negotiate.
✱ AGEC 350 Agricultural Finance.
(3) (Winter) (3 lectures) (Prerequisite: AGEC 331) The economic study of acquisition and use of capital in agriculture. Topics include: the analysis of financial statements; farm appraisal; investment analysis; risk in financial management; the cost of capital and the role of financial intermediaries serving agriculture; aggregate financing in agriculture.
✱ AGEC 425 Agricultural Econometrics.
(3) (Fall) (3 lectures) (Prerequisites: AEMA 310, AGEC 200 and AGEC 201 or equivalents) Concepts and procedures used in defining and estimating econometric models applied in agriculture. Emphasis on application and estimation of single equation models and solutions to problems such as auto-correlation, hetroscedasticity and multicollinearity. Use of dummy variable technique.
AGEC 430 Agriculture, Food and Resource Policy.
(3) (Winter) (3 lectures) (Prerequisites: AGEC 200 or equivalent) Examination of North American and international agriculture, food and resource policies, policy instruments, programs and their implications. Economic analysis applied to the principles, procedures and objectives of various policy actions affecting agriculture, and the environment.
● AGEC 440 Advanced Agriculture and Food Marketing. (3) (Fall) (3 lectures) (Prerequisites: AGEC 201 or equivalent, and AGEC 320) The course deals with economic organization of agricultural and food marketing including the application of economic concepts to problems and procedures, and their impact on Canadian and North American agriculture. Pricing and marketing of principal agricultural products in Canada is examined.

AGEC 442 Economics of International Agricultural Development. (3) (Winter) (3 lectures) (Prerequisites: AGEC 200 or AGEC 201 or equivalent) The course deals with economic aspects of international development with emphasis on the role of food, agriculture and the resource sector in the economy of developing countries. Topics will include, world food analysis, development project analysis and policies for sustainable development. Development case studies will be used.

AGEC 450 Agriculture Business Management. (3) (Winter) (3 lectures) (Prerequisites: AGEC 230 and AEMA 310) Management of operations in agribusiness firms. The use of computer models to make decisions on output mix, facility location, expansion, inventory management and production and strategy.

AGEC 453 Venture Capital Opportunities. (3) (Winter) (3 lectures) (Prerequisite: AGEC 343) A course for students in non-business programs to assist them to assist in navigating local financial markets and to obtain financing. The course examines financing for new business, expansion, and specific needs such as seasonal fluctuations, working capital, expanding sales, new product development, management buyouts, and succession planning.

AGEC 491 Research Seminar in Agricultural Economics. (3) (Fall) (3 lectures) (Prerequisites: AGEC 201 or equivalent, and AGEC 320) The nature, methods, and objectives of agricultural economics research concerned with the economic problems affecting the agriculture and food system. Emphasis is on problem identification, and the collection, analysis, and presentation of evidence. Students will present one or more seminars on a research project in agricultural economics.

AGEC 492 Special Topics in Agricultural Economics. (3) (Fall, Winter) (Prerequisite: AGEC 201 or equivalent) Students will pursue topics that are not otherwise available in formal courses. An individual course of study will be followed under the supervision of a member of the staff qualified in the appropriate discipline or area.

AGEC 493D1 (1.5), AGEC 493D2 (1.5) Special Topics in Agricultural Economics. (3) (Fall) (Prerequisite: AGEC 491 Research Seminar in Agricultural Economics.) (0.5) Experiences and responsibilities of Agrologists; legal and regulatory issues concerning the development of agriculture through time, relating the cultural diversity of agriculture and agri-food/environment industries.

AGEC 493N1 Project. (1.5) (Fall) (Prerequisite: AGEC 493N2) (No credit will be given for this course unless both AGEC 493N1 and AGEC 493N2 are successfully completed in a twelve month period) Under the supervision of a staff member of the Department of Agricultural Economics. Project topic will concern the economics of agriculture, food, or resource development. An agreement between the students and involved staff members must be reached prior to registration.

AGEC 493N2 Project. (1.5) (Winter) (Students must register for AGEC 493N1) (No credit will be given for this course unless both AGEC 493N1 and AGEC 493N2 are successfully completed in a twelve month period) Under the supervision of a staff member of the Department of Agricultural Economics. Project topic will concern the economics of agriculture, food, or resource development. An agreement between the students and involved staff members must be reached prior to registration.

AGEC 495N1 Project. (1.5) (Winter) (Students must also register for AGEC 495N2) (No credit will be given for this course unless both AGEC 495N1 and AGEC 495N2 are successfully completed in a twelve month period) Under the supervision of a staff member of the Department of Agricultural Economics. Project topic will concern the economics of agriculture, food, or resource development. An agreement between the students and involved staff members must be reached prior to registration.

AGEC 495N2 Project. (1.5) (Fall) (Prerequisite: AGEC 495) (No credit will be given for this course unless both AGEC 495N1 and AGEC 495N2 are successfully completed in a twelve month period) See AGEC 495N1 for course description.

AGEC 495D2 Project. (1.5) (Winter) (Prerequisite: GEOG 216 and GEO 202, or one course in each of microeconomics and macroeconomics, or permission of instructor.) (Not open to students who have taken GEOG 503) Patterns of regional economic growth or decline explained in terms of the competitive behaviour of profit-maximizing firms and utility-maximizing households. Ideas, models and evidence developed in competitive location theory.

AGRI-Agriculture

Offered by: Agricultural Economics, Animal Science, Bioresource Engineering, Food Science & Agr-Chemistry, Natural Resource Sciences, Plant Science

AGRI 195 Freshman Seminar 1. (0.5) (Fall) (Restriction: Freshman students.) Members of the Faculty will present seminars on topical issues about their area of research.

AGRI 196 Freshman Seminar 2. (0.5) (Winter) (Restriction: Freshman students) Member of the Faculty will present seminars on topical issues about their area of research.

AGRI 201D1 (3), AGRI 201D2 (3) Agri-Environment Internship. (Restriction: Not open to students who have taken AGRI 301D1/D2/N1/N2, except for those enrolled in an Internship Program.) (Students must register for both AGRI 201D1 and AGRI 201D2) (No credit will be given for this course unless both AGRI 201D1 and AGRI 201D2 are successfully completed in consecutive terms) Internship on working farms or in other appropriate businesses of the agri-food/environment industries.

AGRI 210 Agro-Ecological History. (3) (3 lectures) Introduction to the environmental consequences of agriculture through time, relating the cultural diversity of agronomic practices to regionally varied ecological processes.

AGRI 220 Professional Practice Seminar 1. (0.5) Experiences and responsibilities of Agrologists; legal and...
ethical aspects of the profession.

AGRI 221 Professional Practice Seminar 2.
(0.5) Experiences and responsibilities of Agrologists; legal and ethical aspects of the profession.

AGRI 301D1 (3), AGRI 301D2 (3) Agrology Internship.
(Restriction: Not open to students who have taken AGRI 201D1/D2, except for those enrolled in an Internship Program.) (Students must register for both AGRI 301D1 and AGRI 301D2.) (No credit will be given for this course unless both AGRI 301D1 and AGRI 301D2 are successfully completed in consecutive terms) Agrology internship in industry, government or related fields.

AGRI 301N1 Agrology Internship.
(3) (Restriction: Not open to students who have taken AGRI 201D1/D2, except for those enrolled in an Internship Program.) (Students must also register for AGRI 301N2) (No credit will be given for this course unless both AGRI 301N1 and AGRI 301N2 are successfully completed in a twelve month period) Agrology internship in industry, government or related fields.

AGRI 301N2 Agrology Internship.
(3) (Restriction: Not open to students who have taken AGRI 201D1/D2, except for those enrolled in an Internship Program.) (Prerequisite: AGRI 301N1) (No credit will be given for this course unless both AGRI 301N1 and AGRI 301N2 are successfully completed in a twelve month period) See AGRI 301N1 for course description.

● AGRI 305 Barbados Agro-Ecosystems.
(3) Complexities affecting sustainable agriculture of a small island nation. Social, economic and physical factors that influence environmental choices. Includes lectures at Macdonald campus and a 12-day stay at Bellairs, Barbados.

AGRI 320 Professional Practice Seminar 3.
(0.5) Experiences and responsibilities of Agrologists; legal and ethical aspects of the profession.

AGRI 321 Professional Practice Seminar 4.
(0.5) Experiences and responsibilities of Agrologists; legal and ethical aspects of the profession.

AGRI 340 Principles of Ecological Agriculture.
(3) (3 lectures and one 2-hour seminar) (Restriction: Not open to students who have taken AGRI 250) Focus on low-input, sustainable, and organic agriculture: the farm as an ecosystem; complex system theory; practical examples of soil management, pest control, integrated crop and livestock production, and marketing systems.

AGRI 341 Ecological Agriculture Systems.
(3) (2 lectures and 1 conference) (Restriction: Not open to students who have taken AGRI 430) An overview and presentation of alternative agricultural production systems including low-input, organic, biodynamic, community supported agriculture, the agroecosystem concept, historical overview, ecological basis, key characteristics and functioning, impact of policies, and the transition process.

AGRI 411 International Agriculture.
(3) (Winter) (3 lectures and 1 conference) A study of the climate, soils and major economic plant and animal species in tropical and sub-tropical regions; cropping and agro-forestry systems; pest and disease problems; soil and water management; environmental, health and nutrition, and economic issues in rural development; energy and technology for developing countries; the role of international aid and development agencies; case studies on various aspects of food and agricultural systems in developing countries will be presented.

AGRI 413 Globalization: Issues of Change.
(3) (Corequisites: Enrollment in full "Barbados Field Study Semester"; AGRI 519 or URBP 519, AGRI 452 or CIVE 452, URBP 507.) Complexity associated with economic and social issues compatible with sustainable development with a focus on water. Political and environmental determinants. Emphasis on the institutional and ecological context of organizations in the field locale in general and specific to Barbados.

AGRI 420 Professional Practice Seminar 5.
(0.5) Experiences and responsibilities of Agrologists; legal and ethical aspects of the profession.

AGRI 421 Professional Practice Seminar 6.
(0.5) Experiences and responsibilities of Agrologists; legal and ethical aspects of the profession.

AGRI 435 Soil and Water Quality Management.
(3) (Fall) (3 lectures and one 3-hour lab) Management of soil and water systems for sustainability. Cause of soil degradation, surface and groundwater contamination by agricultural chemicals and toxic pollutants. Human health and safety concerns. Water-table management. Soil and water conservation techniques will be examined with an emphasis on methods of prediction and best management practices.

AGRI 452 Water Resources in Barbados.
(3) (Corequisites: Enrollment in full "Barbados Field Study Semester"; AGRI 413, AGRI 519 or CIVE 519 or URBP 519, URBP 507.) (Restrictions: Not open to students who have taken CIVE 452.) Physical environment challenges, centered on water, being faced by an island nation. Guest speakers, field study tours and laboratory tests. Private, government and NGO institutional context of conservation strategies, and water quantity and quality analyses for water management specific to Barbados.

AGRI 480 Special Topics 1.
(1)

AGRI 481 Special Topics 2.
(2)

AGRI 482 Special Topics 3.
(3)

AGRI 490 Agri-Food Industry Project.
(3) Interdisciplinary team project in the agri-food industry.

AGRI 491D1 (1.5), AGRI 491D2 (1.5) Co-op Experience.
(Students must register for both AGRI 491D1 and AGRI 491D2.) (No credit will be given for this course unless both AGRI 491D1 and AGRI 491D2 are successfully completed in consecutive terms) A co-op experience program of at least 12 weeks duration. Students will be exposed to the main areas of operation of their employer. The cooperating employer and the Instructor (or designee) will develop an individualized co-op experience for each student. Students will be supervised by staff of their employer who will be in contact with the instructor (or designee). A site visit by the Instructor (or designee), a report by the student's employer and a final written and oral report by the student will form the basis for evaluation.

● AGRI 495 Seminar and Assignment 1.
(1) (Restriction: Not open to students registered in, or who have taken AGRI 495D1, AGRI 495D2, AGRI 495N1 or AGRI 495N2) Preparation, presentation and discussion of reports upon approved agricultural subjects chosen in consultation with staff members involved in the subject concerned.

● AGRI 496 Seminar and Assignment 2.
(1) (Restriction: Not open to students registered in, or who...
have taken AGRI 495D1, AGRI 495D2, AGRI 495N1 or AGRI 495N2) Preparation, presentation and discussion of reports upon approved agricultural subjects chosen in consultation with staff members involved in the subject concerned.

● AGRI 510 Professional Practice. (3) (Restriction: Course restricted to senior undergraduate and graduate students.) The ethical issues that face a professional in the workplace; professional ethics and deontology; professional responsibilities as related to the laws of labour, health, safety and risks to the environment, risk management and communication.

AGRI 519 Sustainable Development Plans. (6) (Corequisites: Enrolment in full "Barbados Field Study Semester"; AGRI 413, AGRI 452 or CIVE 452, URBP 507) (Restrictions: Not open to students who have taken CIVE 519 or URBP 519.) Geared for solving real-world environmental problems related to water at the local, regional and international scale in Barbados. Projects to be designed by instructors in consultation with university, government and NGO partners and to be conducted by teams of 2 to 4 students in collaboration with them.

✱ ● AGRI 550 Sustained Tropical Agriculture. (3) (Prerequisites: HISP 218 or equivalent; MATH 203 or AEMA 310 or equivalent) (Restriction: Restricted Enrolment. Location in Panama. Student must be registered for a full semester of studies in Panama) Contrast theory and practice in defining agricultural environmental "challenges" in the Neotropics. Indigenous and appropriate technological means of mitigation. Soil management and erosion, water scarcity, water over-abundance, and water quality. Explore agro-ecosystem protection via field trips and project designs. Institutional context of conservation strategies, NGO links, and public participation.

ANSC-Animal Science

Offered by: Animal Science

ANSC 234 Biochemistry 2. (3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 211) Metabolism in humans and domestic animals. The chemistry of alimentary digestion, absorption, transport, intermediary metabolism and excretion.

ANSC 250 Principles of Animal Science. (3) (Fall) (3 lectures and one 2-hour lab) Introduction to the scientific principles underlying the livestock and poultry industries. Emphasis will be placed on the breeding, physiology and nutrition of animals raised for the production of food and fibre.

ANSC 251 Comparative Anatomy. (3) (Winter) (3 lectures and one 3-hour lab) Study of the macroscopic anatomy of mammals based on detailed dissection of the dog. Comparison with other domestic species will be emphasized.

ANSC 301 Principles of Animal Breeding. (3) (Winter) (3 lectures and one 2-hour lab) (Prerequisite: AEMA 310 or equivalent) The qualitative and quantitative aspects of genetics as they apply to the economic improvement of domestic mammals and birds. Topics include: animal domestication, animal cytology, Mendelian traits of economic importance, principles of population genetics, statistical tools to describe populations, environmental effects, selection and mating systems.

ANSC 303 Farm Livestock Internship. (2) (Prerequisite: ANSC 250 (or equivalent, or permission).) Practical experience in the day-to-day management of a major livestock species (dairy, swine, poultry, or specific combination) on the Macdonald Campus Farm. Interaction with personnel and training in the operations of a farm-animal enterprise.

ANSC 312 Animal Health and Disease. (3) (Winter) (3 lectures and one 2-hour conference) An introduction to the pathogenesis and control of diseases in farm animals. Immune response and other protective mechanisms. Implications of animal diseases and drug therapy for product safety and public health.

ANSC 322 Mammalian Physiology. (4) (Fall) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 211 and one of the following: ANSC 250 or AEPI 202 or equivalent) A study of the organization, functions and regulation of various organ systems in mammals. The nervous, endocrine, muscular, cardiovascular, respiratory, urinary, digestive and reproductive systems are discussed.

ANSC 324 Animal Reproduction. (3) (Fall) (3 lectures and one 3-hour lab) (Prerequisites: ANSC 250, FDSC 211 and ANSC 323) Reproduction in domestic animals integrated with management techniques to improve reproductive efficiency. Laboratory training includes anatomy, semen collection and evaluation, oestrus detection and control, artificial insemination and embryo transfer.

ANSC 330 Fundamentals of Nutrition. (3) (Fall) (3 lectures) (Prerequisite: FDSC 211, ANSC 234 (ANSC 234 pre-req applies to students in B.Sc. Nutritional Sciences only.) A discussion of the nutrients; water, carbohydrates, lipids, proteins, minerals and vitamins, with particular emphasis on their functions in and essentially for the animal organism.

ANSC 400 Eukaryotic Cells and Viruses. (3) (Winter) (Prerequisite: CELL 204) (Restrictions: Not open to students who have taken PARA 400) The basic principles of molecular biology and the underlying molecular basis for various methodologies in molecular biology are covered. The molecular genetic basis for viral infections and tumorigenesis will be covered as examples of the use of molecular genetic approaches to address biological problems.

ANSC 420 Animal Biotechnology. (3) (Fall) (Prerequisites: AEPI 202, MICR 230) Applications of animal biotechnology in agriculture, biomedicine and environmental preservation, including culture, manipulation and transformation of somatic cells, isolation of stem cells, reproductive biotechnologies, animal cloning by nuclear transplantation, production of transgenic animals, and cell and gene therapies.

ANSC 424 Metabolic Endocrinology. (3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: ANSC 323) A detailed study of the endocrine system and its role in the maintenance of homeostasis in higher vertebrates, including the endocrine regulation of energy balance.

ANSC 433 Animal Nutrition. (3) (Winter) (3 lectures and one 1-hour lab) (Prerequisites: ANSC 250 and ANSC 330) Critical discussion of nutrient utilization by farm animals, an assessment of nutritive value of feeds. Recent developments in nutritional manipulation are discussed.

ANSC 450 Dairy Cattle Production. (3) (Fall) (3 lectures and one 2-hour lab) (Prerequisite: ANSC 324 or equivalent) Dairy cattle production systems. Emphasis will be placed on the breeding, physiology and nutrition of dairy cattle raised for the production of milk and milk products. The qualitative and quantitative aspects of genetics as they apply to the economic improvement of dairy cattle will be emphasized. The selection and mating systems will be discussed. The milk production system will be explored, with particular emphasis on milking and milk quality control. The dairy farm management system will be discussed, including the factors influencing dairy farm profitability. The industrial uses of milk and milk products will be discussed.
ANSC 490N1 Project.  
(1.5) (Students must also register for ANSC 490N2) (No credit will be given for this course unless both ANSC 490N1 and ANSC 490N2 are successfully completed in a twelve month period) A project to be completed under the supervision of a staff member of the Department of Animal Science. An agreement between student and the involved staff member must be reached prior to registration.

ANSC 490N2 Project.  
(1.5) (Prerequisite: ANSC 490N1) (No credit will be given for this course unless both ANSC 490N1 and ANSC 490N2 are successfully completed in a twelve month period) See ANSC 490N1 for course description.

ANSC 495 Seminar 1.  
(1) (Restriction: Not open to students who have taken ANSC 495D1/D2 or ANSC N1/N2.) Preparation, presentation and discussion of critical reviews.

ANSC 496 Seminar 2.  
(1) (Restriction: Not open to students who have taken ANSC 495D1/D2 or ANSC N1/N2.) Preparation, presentation and discussion of critical reviews.

ANSC 504 Population Genetics.  
(3) (Fall) (3 lectures) Considerations of the basic principles of Mendelian genetics dealing with the genetic properties of populations and extension to the simultaneous segregation of genes at many loci, polygenic inheritance and an introduction to quantitative genetics, including mechanisms of transmission, segregation, linkages between genes and the effect of natural and artificial selection.

ANSC 506 Advanced Animal Biotechnology.  
(3) (Prerequisites: AEBI 202, ANSC 400.) New concepts and applications of animal biotechnology in agriculture, biomedicine, environmental preservation.

ANSC 508 Tools in Animal Biotechnology.  
(3) (Fall) (Restriction: Permission of instructor.) Essential laboratory techniques in animal biotechnology: extraction of nucleic acids, PCR technology, gel electrophoresis, construction of gene expression vectors, transformation of bacterial and mammalian cells and monitoring gene expression using reporter genes.

ANSC 551 Carbohydrate and Lipid Metabolism.  
(3) (Winter) (3 lectures) Comparative aspects of nutrition and metabolism of carbohydrate and lipid from the cellular level through the multi-organ of the whole organism. Main topics will include biothermodynamics, calorimetry, cellular metabolism and functions of carbohydrate and lipid, digestion, absorption and utilization of dietary carbohydrate and lipid.

ANSC 552 Protein Metabolism and Nutrition.  
(3) (Fall) (3 lectures) Comparative aspects of nutrition and metabolism of amino acids and proteins from the cellular level on through the multisystem operation of the whole organism. Main topics include cellular metabolism and functions of amino acids and proteins, digestion, absorption and utilization of dietary proteins. Comparison between farm animals and humans.

BINF-Bioinformatics  
Offered by: Plant Science

BINF 511 Bioinformatics for Genomics.  
(3) (Prerequisite: Understanding of cell and molecular biology
(AGRICULTURAL AND ENVIRONMENTAL SCIENCES) BREE-BIORESOURCE ENGINEERING

**BREE-Bioresource Engineering**

Offered by: Bioresource Engineering

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**BREE 103 Linear Algebra.**

(3) (3 lectures and 1 conference) (Restriction: Not open to students who have taken ABEN 103.) Vectors: equality and inequality, geometric representation, polar form, addition and subtraction, unit vectors, dot product, cross product, triple scalar and vector products, use of vectors in 3-D geometry. Matrices: definition, equality and inequality, addition and subtraction, multiplication, null matrix, identity matrix, triangular and diagonal matrices, determinants, matrix inverse, matrix applications.

**BREE 187 Freshman Seminar 1.**

(0.5) (Restrictions: Open to Freshman intending to enrol in B.Eng. Bioresources Engineering Major.) (Not open to students who have taken ABEN 187.) Departmental seminar series.

**BREE 188 Freshman Seminar 2.**

(0.5) (Restrictions: Open to Freshman intending to enrol in B.Eng. Bioresources Engineering Major. Not open to students who have taken ABEN 188.) Departmental seminar series.

**BREE 205 Elements of Bioresource Engineering.**

(3) (Restriction: Not open to students who have taken ABEN 205.) Analytical tools commonly used in bioresource engineering; the role of engineering in agriculture, bioprocessing, food processing, soil, water and the environment.

**BREE 210 Mechanical Analysis & Design.**

(3) (3 lectures and 2 hours lab or problems) (Restriction: Not open to students who have taken ABEN 210.) Non-concurrent force systems; analysis of simple trusses and multifence frames; friction, shearing forces and bending moments in beams and frames; centres of gravity; solution of problems by energy methods.

**BREE 214 Geometrics.**

(3) (2 lectures and one 3-hour lab) (Restriction: Not open to students who have taken ABEN 214.) The engineer’s level and the theodolite are used to perform benchmark circuits, profile levelling, topographic maps and straight line extensions. A total station, computer programs and use of GPS are introduced.

**BREE 216**

(3) (2 lectures and one 2-hour lab) Relation between structure and properties in ceramic and organic materials. Bonding, structures, imperfections. Phase diagrams. Shaping, joining and testing of materials. Heat treatment, work in hardening and annealing of metals, introduction to physical metallurgy and processes. Failure theories.

**BREE 217 Hydrology and Water Resources.**

(3) (3 lectures, one 2 hour lab) (Restriction: Not open to students who have taken ABEN 217.) Measurements and analysis of components of the water cycle. Precipitation, evaporation, infiltration and groundwater. Analysis of hydrologic data. Hydrograph theory. Hydrologic estimations for design of water control projects; flood control and reservoir routing. Integrated watershed management and water conservation. Water management systems for environmental protection.

**BREE 251 Microcomputer Applications.**

(3) (3 lectures and one 2-hour lab) (Restriction: Not open to students who have taken ABEN 251.) A user level computing course oriented toward the use of microcomputers rather than programming. Networks, Windows, FTP, web searching, e-mail, word processing, web pages, spreadsheets, slide shows, and other uses.

**BREE 252 Computing for Engineers.**

(3) (3 lectures and one 2-hour lab) (Restriction: Not open to students who have taken ABEN 252.) A user level computer programming course in Fortran-90 language. The pros and cons of computerization, differences between mainframe and microcomputers, network basics, discussion of the use of Fortran-90 and C languages to solve engineering problems, electronic spreadsheet analysis and the use of other software packages will be studied from an engineering point of view.

**BREE 300 Elements of Agricultural Engineering.**

(3) (Restriction: Not open to students who have taken ABEN 300 or ABEN 300.) Principles of the engineering infrastructure supporting the symbiotic/parasitic agricultural ecosystem. Topics include the thermodynamic, equipment, systems and environmental considerations of land development, cultivation, drainage and irrigation; soil and water quality conservation; plant and animal production environments; food and feed harvesting storage and processing; automation, robotics and information systems.

**BREE 301 Biothermodynamics.**

(3) (3 lectures and one 2-hour lab) (Restriction: Not open to students who have taken ABEN 301.) Classical thermodynamic analysis of pure and simple compressible systems. The course covers the first and second laws of thermodynamics. It deals with basic concepts of thermodynamics and thermochemistry in biological systems.

**BREE 305 Fluid Mechanics.**

(3) (3 lectures and one 2-hour lab or problems) (Prerequisites: BREE 210, AEMA 202) (Restriction: Not open to students who have taken ABEN 305.) Properties of fluids; fluid statics; principles of flow of incompressible and compressible fluids; dimensional analysis boundary layers; conduit and open channel systems; simple applications to turbo machinery.

**BREE 312 Electric Circuits and Machines.**

(3) (3 lectures and one 2-hour lab or problems) (Prerequisite: AEMA 205) (Restriction: Not open to students who have taken ABEN 312.) General circuit laws and d.c. circuits; electromagnetic circuits; inductance and capacitance, natural and forced response of circuits; analysis of single phase and three phase networks; transformers, AC and DC motors/generators.

**BREE 314 Agri-Food Buildings.**

(3) (3 lectures and 2 hour lab) (Restriction: Not open to students who have taken ABEN 314.) Analysis and design of structures to house animals and plants and to process and store animal and plant products. Introduction to environmental control systems and animal waste management.

**BREE 315 Design of Machines.**

(3) (3 lectures, 2 hours problems) (Prerequisite: BREE 341 (formerly ABEN 341)) (Restriction: Not open to students who have taken ABEN 315.) Design of shafting, bearings, gear, belt and chain drives, clutches, brakes, vibrations, fasteners, welded joints, frames. Principles and practices of Engineering Drawing will be adhered to in laboratory submissions.

**BREE 319 Engineering Mathematics.**

(3) (1 lecture, two 2-hour labs) (Prerequisite: BREE 252

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**Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.**

- Denotes courses taught only in alternate years.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
- Denotes courses with limited enrolment.
- Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
(formerly ABEN 252)) (Restriction: Not open to students who have taken ABEN 319.) This is a computer-based course taught via personal computer technology. The objectives of the course are to familiarize students with a number of computer-based mathematical engineering tools and to teach them how to effectively do mathematics with these. Subjects covered are: data conversion; data modelling and curve fitting; 3D graphics; vector and matrix algebra; filtering and filter design. A number of commercial software products will be used; these will be updated as the technology evolves.

★ BREE 322 Organic Waste Management.
(3) (2 lectures and one 2-hour lab) (Restriction: Not open to students who have taken ABEN 322.) An introduction to engineering aspects of handling, storage and treatment of all biological and food industry wastes. Design criteria will be elaborated and related to characteristics of wastes. Physical, chemical and biological treatment systems.

● BREE 323 Properties of Biological Materials.
(3) (2 lectures and one 2-hour lab) (Prerequisite: BREE 341 (formerly ABEN 341)) (Restriction: Not open to students who have taken ABEN 323.) An engineering analysis of the structure, physical attributes, mechanical and rheological properties of biological materials, emphasizing the relationship of these properties to production and processing of agricultural products and food. Mathematical models considering size, shape, volume, surface area, density, quasistatic and dynamic viscoelastic behaviour; non-Newtonian fluid models; optical properties; behaviour of granular materials.

BREE 324 Elements of Food Engineering.
(3) (lectures) (Pre/Co-requisite: FDSC 330) (Restriction: Not open to students in the B.Eng.(Bioresource) program) (Restriction: Not open to students who have taken ABEN 324.) A course in basic food engineering for non-engineering students, covering heat transfer, mass and energy balances, food process unit operations, material transport/steam/refrigeration systems.

BREE 325 Food Process Engineering.
(3) (3 lectures and one 3-hour lab) (Restriction: Not open to students who have taken ABEN 325.) Heat and mass transfer, enthalpy and mass balances, sterilizing, freezing, fluid flow, pipes, steam, refrigeration, pumps and valves.

BREE 327 Bio-Environmental Engineering.
(3) (Restrictions: U2 students and above. Not open to students who have taken ABEN 305.) Introduction to principles of bio-engineering in solving environmental problems related to the domains of water, soil and air; the capability of each domain to absorb, recycle or treat contaminants.

(3) (3 lectures and one 3-hour lab) (Prerequisite: BREE 210 (formerly ABEN 210)) (Restriction: Not open to students who have taken ABEN 341.) Introduction to laws of mechanics, stress, strain, resilience, elastic and plastic properties of materials; bending moment and shear force diagrams; bending and shear stress; deflections; simple, fixed and continuous beams, torsion and helical springs, reinforced concrete beams; columns, bending and direct stress; general case of plane stress; Mohr’s circle.

BREE 412 Machinery Systems Engineering.
(3) (3 lectures and one 3-hour lab) (Restriction: Not open to students who have taken ABEN 412.) Study and analysis of machines for tillage, harvesting, crop processing and handling. Field tests, load studies, design requirements; design of machines and components for agricultural applications.

★ BREE 416 Engineering for Land Development.
(3) (3 lectures and one 2-hour lab or design problems) (Prerequisite: BREE 217 (formerly ABEN 217)) (Restriction: Not open to students who have taken ABEN 416.) The engineering aspects of soil and water conservation, irrigation, water conveyance structures and canals, use of geosynthetics for soil protection, seepage and uplift. Students will produce an integrated development project.

BREE 418 Soil Mechanics and Foundations.
(3) (3 lectures and one 3-hour lab) (Prerequisite: BREE 341 (formerly ABEN 341)) (Restriction: Not open to students who have taken ABEN 418.) The exploration of subsoils, strength theories, granular and cohesive soils, foundation design, settlement calculation, consolidation, slope stability, Atterberg limits, triaxial testing, direct shear testing, compaction, soil freezing, frost heaving.

★ BREE 419 Structural Design.
(3) (3 lectures and one 3-hour lab or design problems) (Prerequisite: BREE 341 (formerly ABEN 341)) (Restriction: Not open to students who have taken ABEN 419.) Structural Design in steel and timber; application of complete design procedures to working stress design; plastic design for ultimate loading.

● BREE 430 GIS for Bioresource Management.
(3) (Prerequisite: BREE 217 (formerly ABEN 217)) (Restrictions: U2 students and above. Not open to students who have taken ABEN 330 or ABEN 430.) Applications of PC-based Geographic Information Systems (GIS) to the presentation and analysis of natural resources information. Spatial data sources and capture, data structure and analysis and modelling will be reviewed with reference to natural resource management and environmental concerns.

BREE 481 Undergraduate Seminar 1.
(0.5) (Restrictions: Not open to students who have taken ABEN 491D/N or ABEN 481.) Attendance and participation in departmental seminars.

BREE 482 Undergraduate Seminar 2.
(0.5) (Restrictions: Not open to students who have taken ABEN 492D/N or ABEN 482.) Attendance and participation in departmental seminars.

BREE 483 Undergraduate Seminar 3.
(0.5) (Restrictions: Not open to students who have taken ABEN 493D/N or ABEN 483.) Attendance and participation in departmental seminars.

BREE 484 Undergraduate Seminar 4.
(0.5) (Restriction: Not open to students who have taken ABEN 484.) Attendance and participation in departmental seminars.

BREE 485 Undergraduate Seminar 5.
(0.5) (Restriction: Not open to students who have taken ABEN 485.) Attendance and participation in departmental seminars.

BREE 486 Undergraduate Seminar 6.
(0.5) (Restriction: Not open to students who have taken ABEN 486.) Attendance and participation in departmental seminars.

BREE 490 Design 1.
(3) (1 lecture) (Prerequisite: BREE 315 (formerly ABEN 315)) (Restriction: Not open to students who have taken ABEN 490.) The student is expected to develop a professional design project proposal with due considerations to executive summary, synthesis, methodology, milestones, budget, etc.

BREE 495 Design 2.
(3) (1 lecture) (Prerequisite: BREE 490 (formerly ABEN 490)) (Restriction: Not open to students who have taken ABEN 490.) The student is expected to implement, physically or virtually, the project proposed in the Design 1 course. The student is expected to present project outcome, in both written and oral form.
and oral forms and learn to be critical about their own work and
those of others.

**BREE 501 Simulation and Modelling.**
(3) (Restrictions: U3 students and above. Not open to students who
have taken ABEN 612 or ABEN 501.) Modelling,
physical and virtual models of linear, chaotic and stochastic
systems, simulation techniques and methods for static and
dynamic models, steady and unsteady state. Examples from various
areas such as machine design, population dynamics, food
processing, biological control, farm management, ecological
system design. Mathematics and computer oriented - students must
be familiar with microcomputer operation.

**BREE 502 Drainage/Irrigation Engineering.**
(3) (Prerequisite: BREE 217 (formerly ABEN 217))
(Restrictions: U3 students and above. Not open to students who
have taken ABEN 611 or ABEN 502.) Benefits and
importance of drainage; types of drainage systems; design and
construction of main, surface and subsurface drainage systems;
drainage materials. Crop water requirements; evapotranspiration
models; design and layout of surface, sprinkler and drip
irrigation systems; pipe hydraulics; pumps.

**BREE 504 Instrumentation and Control.**
(3) (3 lectures and one 2-hour lab) (Prerequisite
(Undergraduate): BREE 312 (formerly ABEN 312) or ECSE
281) (Restriction: Not open to students who have taken ABEN
504.) Principles and operation of instrument systems used
for measurement and control in agricultural processes and
research.

**BREE 506 Advances in Drainage Management.**
(3) (3 weeks intensive course) (Restriction: Not open to students who
have taken ABEN 506.) Land drainage in relation to soils
and crops. Design of regional drainage systems, stability of
ditches, ice problems. Design of subsurface drainage systems.
Theories of flow into drain tubes. Hydraulics of wells. Drainage of
irrigated lands. Water table control.

**BREE 509 Hydrologic Systems and Modelling.**
(3) (3 hours lectures) (Restriction: Not open to students who have
taken ABEN 509.) Use of deterministic and stochastic models
to analyze components of the hydrologic cycle on agricultural
and forested watersheds, floods frequency analysis, hydrograph
analysis, infiltration, runoff, overland flow, flood routing,
erosion and sediment transport. Effects of land-use changes and
farm and recreational water management systems on the hydrologic
regime.

**BREE 512 Soil Cutting and Tillage.**
(3) (2 lectures and one 2-hour lab) (Prerequisite
(Undergraduate): BREE 341 (formerly ABEN 341))
(Restriction: Not open to students who have taken ABEN 512.)
Soil mechanics applied to cutting, tillage and drain
installation tools. Soil cutting forces for two and three
dimensional implements. Soil loosening, inversion, sorting and
manipulation. Selection of traction machines to match soil
cutting and tillage requirements. Depth and grade control
systems. Analysis of drainage machines, wheel trenchers, chain
trenchers and trenchless plows.

**BREE 515 Soil Hydrologic Modelling.**
(3) (3 lectures and one 3-hour lab) (Restriction: Not open to students who
have taken ABEN 515.) A review of computer
simulation models for designing subsurface drainage systems. Use of
CAD systems for designing and drafting drainage plans.

**BREE 518 Bio-Treatment of Wastes.**
(3) (One 3 hour lecture) (Restriction: Not open to students who
have taken ABEN 518.) Special topics concerning control of
pollution agents from the agricultural industry; odour control,
agricultural waste treatment including biological digestion,
floculants, land disposal and sedimentation, pesticide
transport.

**BREE 519 Advanced Food Engineering.**
(3) (3 lectures and one 2-hour lab) (Prerequisites: BREE 325
(formerly ABEN 325) and MECH 426, or permission of
instructor) (Restriction: Not open to students who have taken
ABEN 519.) Advanced topics in food engineering. Concepts of
mathematical modeling and research methods in food
engineering. Topics include heat and mass transfer in food
systems, packaging and distribution of food products, thermal
and non-thermal processing, rheology and kinetics of food
transformations.

**BREE 525 Climate Control for Buildings.**
(3) (3 lectures and one 3-hour lab) (Prerequisite: BREE 301
(formerly ABEN 301)) (Restriction: U3 students or above. Not
open to students who have taken ABEN 525.) The analyses of
heat and water vapour transfer through the structure of
buildings are used to design heating, ventilation and
refrigeration systems. Heat conduction and convection as well as
radiation are included in the analysis of heat transfer.
Ventilation systems are designed for livestock shelters, produce
storages and greenhouses.

**BREE 530 Fermentation Engineering.**
(3) (3 lectures and one 3-hour lab) (Prerequisite
(Undergraduate): BREE 325 (formerly ABEN 325) or
equivalent) (Graduate courses available to senior undergraduates
with permission of the instructor) (Restriction: Not open to
students who have taken ABEN 530.) Advanced topics in food
and fermentation engineering are covered, including brewing,
bioreactor design and control and microbial kinetics.

**BREE 531 Post-Harvest Drying.**
(3) (Restrictions: U3 students or above. Not open to students who
have taken ABEN 621 or ABEN 531.) Heat and moisture
transfer with respect to drying of agricultural commodities;
techniques of enhancement of heat and mass transfer; drying
efficiency and scale-up problems.

**BREE 532 Post-Harvest Storage.**
(3) (Restrictions: Not open to students who have taken ABEN
622 or ABEN 532.) Active, semi-passive and passive
storage systems; environmental control systems; post-harvest
physiology and pathogenicity; quality assessment and control
methodology; economic aspects of long-term storage.

**BTEC-Biotechnology**
Offered by: Parasitology

**BTEC 501 Bioinformatics.**
(3) (2 lectures and 1 tutorial per week) This course introduces
the application of computer software for analysis of biological
sequence information. An emphasis is placed on the biological
theory behind analytical techniques, the algorithms used and
methods of developing a statistical framework for various types of
analysis.

**BTEC 502 Biotechnology Ethics and Society.**
(3) (Restriction: U3 and over.) Examination of particular social
and ethical challenges posed by modern biotechnology such as
benefit sharing, informed consent in the research setting,
access to medical care worldwide, environmental safety and
biodiversity and the ethical challenges posed by patenting life.

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† Professional Practice (Stage) in Dietetics involving special prerequisites
▲ Indicates that departmental approval/permission must be obtained by a
student prior to registration.
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included in the academic concentration.
Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor
of Education students.
CELL - Genetcs
Offered by: Plant Science

CELL 204 Genetics.
(4) (3 lectures, one 3-hour lab, one 1-hour tutorial) The course integrates classical, molecular and population genetics of animals, plants, bacteria and viruses. The aim is to understand the flow of genetic information within a cell, within families and in populations. Emphasis will be placed on problem solving based learning. The laboratory exercises will emphasize the interpretation of genetic experimental data.

✱ ● CELL 500 Techniques Plant Molecular Genetics.
(3) Plant biotechnology, recombinant DNA techniques, transgenic plant generation (genetically modified plants) as well as gene and gene product analysis.

✱CELL 501 Plant Molecular Biology and Genetics.
(3) Photosynthesis, plant development, plant genome mutagenesis and analysis, and plant stress are discussed. Journal articles and reviews on all aspects of plant molecular biology and genetics.

ENTO - Entomology
Offered by: Natural Resource Sciences

ENTO 330 Insect Biology.
(3) (Fall) (2 lectures and one 2-hour lab) (Restriction: Not open to students who have taken NRSC 330) Insect structure and function, development and specialization, ecology, behaviour, diversity, evolution, classification and management.

ENTO 336 Economic Entomology.
(3) (Fall) (Prerequisites: WILD 200 (formerly AEBI 200) or ENTO 330 (formerly NRSC 330) or permission of instructor.) Comparison of the economic impact of insect pests in agricultural crops and forests with the social and economic value of insects. Principles of pest management theory, emphasizing insect monitoring, sampling, and economic decision levels.

ENTO 352 Control of Insect Pests.
(3) (Winter) (Restriction: Not open to students who have previously taken ENTO 452) (3 lectures) Modern concepts of integrated control techniques and principles of insect pest management, with emphasis on biological control (use of predators, parasites and pathogens against pest insects), population monitoring, and manipulation of environmental, behavioral and physiological factors in the pest's way of life. Physical, cultural, and genetic controls and an introduction to the use of non-toxic biochemical controls (attractants, repellents, pheromones, antimitabolites).

✱ ● ENTO 425 Insect Ecology.
(3) (Winter) (Restriction: Not open to students who have previously taken ENTO 452) (3 lectures) Modern concepts of integrated control techniques and principles of insect pest management, with emphasis on biological control (use of predators, parasites and pathogens against pest insects), population monitoring, and manipulation of environmental, behavioral and physiological factors in the pest's way of life. Physical, cultural, and genetic controls and an introduction to the use of non-toxic biochemical controls (attractants, repellents, pheromones, antimitabolites).

✱ ● ENTO 426 Insect Ecology.
(3) (Winter) (Restriction: Not open to students who have previously taken ENTO 452) (3 lectures) Modern concepts of integrated control techniques and principles of insect pest management, with emphasis on biological control (use of predators, parasites and pathogens against pest insects), population monitoring, and manipulation of environmental, behavioral and physiological factors in the pest's way of life. Physical, cultural, and genetic controls and an introduction to the use of non-toxic biochemical controls (attractants, repellents, pheromones, antimitabolites).

✱ ● ENTO 440 Systematic Entomology.
(3) (Winter) (1 lecture, 1 lab and project) (Prerequisite: ENTO 330 (formerly NRSC 330)) Classification of principal orders, suborders and superfamilies of insects; use of keys; collecting methods.

✱ ● ENTO 446 Apiculture.
(3) Theory and practice of beekeeping. Social insects; development of social behaviour; co-evolution of flowering plants and social insects; life and behaviour of honeybees; insect pollination; honey production; properties of honey; practical beekeeping. Demonstrations and written assignments essential.

✱ ● ENTO 515 Parasitoid Behavioural Ecology.
(3) (Winter) (Prerequisite: ENTO 330 (formerly NRSC 330) or equivalent) (Restriction: Not open to students who have taken NRSC 515) The origin and diversity of parasitoid species will be presented. Aspects of behavioural ecology that pertain to host selection, optimal allocation of progeny and sex and host-parasitoid interactions are examined. The importance of these processes is discussed in a biological control perspective.

✱ ● ENTO 520 Insect Physiology.
(3) (Winter) (Prerequisite: Permission of instructor) (Restriction: Not open to students who have taken NRSC 520) Organismal approach to insects, emphasizing the physiology and development, and the physiological relations of insects to their environment.

✱ ● ENTO 535 Aquatic Entomology.
(3) (Winter) Diversity, biology, ecology and recognition of the main groups of aquatic insects.

ENTO 550 Veterinary and Medical Entomology.
(3) (Winter) (Prerequisite: Permission of instructor) (Restriction: Not open to students who have taken NRSC 550) Environmental aspects of veterinary and medical entomology. An advanced course dealing with the biology and ecology of insects and aracnids as aetiologic agents and vectors of disease, and their control. Integrated approaches to problem solving.

FDSC - Food Science
Offered by: Food Science & Agr-Chemistry,

Parasitology

FDSC 110 Inorganic Chemistry.
(4) (Winter) (3 lectures and one 3-hour lab) The course will be a study of the fundamental principles of atomic structure, valence theory and the periodic table.

FDSC 200 Introduction to Food Science.
(3) (Fall) (3 lectures) (This course is scheduled for video-conferencing.) This course enables one to gain an appreciation of the scope of food science as a discipline. Topics include introductions to chemistry, processing, packaging, analysis, microbiology, product development, sensory evaluation and quality control as they relate to food science.

FDSC 211 Biochemistry 1.
(3) (Fall) (3 lectures) (Corequisite: FDSC 230) Biochemistry of carbohydrates, lipids, proteins, nucleic acids; enzymes and coenzymes. Introduction to intermediary metabolism.

FDSC 212 Bioseparation Techniques.
(3) (Fall) (1 lecture, 1 lab) (Prerequisite: FDSC 211 or permission of instructor) Techniques for isolating, purifying and characterizing the major classes of biomolecules; proteins, enzymes, carbohydrates and lipids in agricultural produce are explored. Experimental techniques include the preparation of buffer solutions, salt and solvent fractionations, centrifugation, chromatographic separations, electrophoresis, spectrophotometry, iodometric titrations, and thin layer chromatography.

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FDSC 213 Analytical Chemistry 1.
(3) (Fall) (3 lectures and one 3-hour lab) Theoretical aspects of wet chemical techniques including gravimetric and volumetric analyses, redoximetry, and separation techniques.

FDSC 230 Organic Chemistry.
(4) (Fall) (3 lectures and one 3-hour lab) Atomic and molecular structure, modern concepts of bonding, overview of functional groups, conformational analysis, stereochemistry, mechanisms and reactions of aliphatic compounds.

FDSC 233 Physical Chemistry.
(3) (Winter) (3 lectures) Introduction to kinetic theory, thermodynamics, properties of liquids and solids, chemical equilibrium and the law of mass action, phase rule, properties of solutions, chemical kinetics.

FDSC 251 Food Chemistry 1.
(3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 211) A study of the chemistry and functionality of the major components comprising food systems, such as water, proteins, carbohydrates and lipids. The relationship of these components to food stability will be studied in terms of degradative reactions and processing.

FDSC 300 Principles of Food Analysis.
(3) (Fall) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 251 or permission of instructor.) (Corequisite: FDSC 251 or permission of instructor.) The fundamentals of food analysis are presented with the emphasis on the major components of foods. Topics include: food components, sampling, method selection, official methods, proximate analysis, moisture, protein, fat, ash, fiber, carbohydrates, vitamins and nutraceutical compounds.

FDSC 305 Food Chemistry 2.
(3) (Fall) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 251) A study of the chemistry and functionality of the minor components comprising food systems, such as enzymes, anthocyanins, carotenoids, additives, vitamins and essential oils. The relationship of these components to food stability in terms of degradative reactions and processing.

FDSC 310 Post Harvest Fruit and Vegetable Technology.
(3) (Fall) (3 lectures and one 3-hour lab) The post harvest chemistry and physiology of horticultural crops as they affect quality and marketability, handling methods pre and post harvest, principles and practices in cooling, storage, transportation and packaging.

FDSC 315 Separation Techniques in Food Analysis.
(3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 300 or permission of instructor.) A detailed treatment on the principal chromatographic and electrophoretic techniques that are associated with the analysis of carbohydrate, lipid, protein constituents of food.

FDSC 319 Food Commodities.
(3) (Winter) (2 lectures and one 3-hour lab) (Prerequisite: FDSC 251 or permission of instructor) The relationship between the chemistry of food constituents present in common commodities, such as milk, meat, eggs, cereals, oilseeds etc. and the common processing technologies associated with their transformation into stable food products.

FDSC 330 Food Processing.
(3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 251) The principles and practices of food processing with an emphasis on canning, freezing, and dehydration. A survey of the newer methods of food preservation such as irradiation, reverse osmosis etc.

FDSC 334 Analysis of Food Toxins and Toxicants.
(3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 213 or permission of instructor.) Toxins and toxicant residues in food including heavy metals, persistent organic pollutants (POPS) and microbial toxins are explored from an analytical perspective; new methods and strategies of analysis are emphasized.

FDSC 400 Food Packaging.
(3) (Fall) (3 lectures and one 3-hour lab) (Prerequisite: FDSC 305) An integrated approach to the materials used for the packaging of food products, considering the physical, chemical and functional characteristics of such materials and their utility, relative to the chemistry of the food system they are designed to enclose and preserve.

FDSC 405 Product Development.
(3) (Fall or Winter) (3 lectures and one 3-hour lab) (Pre-/Co-requisite: FDSC 305) The chemical, technological and procedural aspects of product development. An understanding of the role and functionality of food ingredients such as acidulants, phosphates, modified starches, gums, emulsifiers, food additives and other functional components in relation to the formulation of food products.

FDSC 410 Flavour Chemistry.
(3) (Winter) (3 lectures) (Prerequisite: FDSC 305) The chemistry of the flavour constituents of foods, synthesis, modification, extraction and use.

FDSC 425 Principles of Quality Assurance.
(3) (Winter) (3 lectures) (Prerequisite: AEMA 310) The principles and practices required for the development, maintenance and monitoring of systems for food quality and food safety. The concepts and practices of Hazard Analysis Critical Control Point; ISO 9000; Total Quality Management; Statistical Sampling Plans, Statistical Process Control; Tools of Quality; Government Regulations.

FDSC 442 Food Microbiology.
(3) (Fall) (Prerequisite: MICR 230 or permission of instructor) (Restriction: Not open to students who have completed MICR 442.) Topics in Food Microbiology including an overview of the natural flora and microbiological spoilage of food products, methods of control and shelf-life extension, methods of detection and control food-borne pathogens and the use of suitable microorganisms in the production of a variety of food products.

FDSC 490 Research Project 1.
(3) (Fall or Winter) A course designed to give final year undergraduate students research experience.

FDSC 491 Research Project 2.
(3) (Fall or Winter) (Pre-/Co-requisite: FDSC 490.) (Restriction: Registration by Department permission only.) A laboratory research project.

FDSC 495D1 (1.5), FDSC 495D2 (1.5) Food Science Seminar.
(Fall) (2 lectures) (Students must register for both FDSC 495D1 and FDSC 495D2.) (No credit will be given for this course unless both FDSC 495D1 and FDSC 495D2 are successfully completed in consecutive terms) Two 20-minute presentations (1 per term) on an assigned or selected topic. The purpose is to research a subject and present to a peer audience the essence of the subject investigated. Development of presentation and communication skills at a professional level is stressed and rapport with the industry will be established through guest speakers.

FDSC 495N1 Food Science Seminar.
(1.5) (Winter) (Students must also register for FDSC 495N2) (No credit will be given for this course unless both FDSC 495N1 and FDSC 495N2 are successfully completed in a...
twelve month period) Two 20-minute presentations (1 per term) on an assigned or selected topic. The purpose is to research a subject and present to a peer audience the essence of the subject investigated. Development of presentation and communication skills at a professional level is stressed and rapport with the industry will be established through guest speakers.

**FDSC 495N2 Food Science Seminar.**
(1.5) (Fall) (Prerequisite: FDSC 495N1) (No credit will be given for this course unless both FDSC 495N1 and FDSC 495N2 are successfully completed in a twelve month period) See FDSC 495N1 for course description.

**FDSC 500 Food Enzymology.**
(3) (Winter) (3 lectures) (Prerequisite: FDSC 305) (Course offered in odd years. Check with Graduate Advisor.) Enzymes as they pertain to the deteriorative processes, as processing aids and their use as analytical tools in food systems.

**FDSC 510 Food Hydrocolloid Chemistry.**
(3) (Winter) (3 lectures) (Prerequisite: FDSC 319.) (Corequisite: FDSC 305) (Course offered in even years (check with Graduate Advisor)) The concepts of colloid chemistry as it applies to food systems. Components such as proteins, gums, carbohydrates, and emulsions are studied in terms of their chemical and physical properties (i.e., rheology, optical characteristics, etc.) and how they can be used to advantage in food systems.

**FDSC 515 Enzyme Thermodynamics/Kinetics.**
(3) (Winter) (Prerequisites: FDSC 211 and FDSC 233 or instructor's permission) (Course offered in odd years. Check with Graduate advisor.) Selected advanced topics on the biophysical and kinetic aspects of enzymatic reactions, particularly the fundamentals and applications of laws of biothermodynamics, biochemical equilibrium, electrochemistry and biochemical kinetics as related to the enzymatic reactions.

**FDSC 519 Advanced Food Processing.**
(3) (Winter) (3 lectures) (Prerequisite: FDSC 330) (Course offered in even years (check with Graduate Advisor)) Advanced technologies associated with food processing studied in more detail. Topics include food irradiation, reverse osmosis, super critical fluid extraction and extrusion.

**FDSC 520 Biophysical Chemistry of Food.**
(3) (Fall) (3 lectures) (Prerequisite: FDSC 233) (Course offered in even years. Check with Graduate Advisor.) This course will cover recent advances in the application of spectroscopic techniques, including infrared, Raman, near-infrared, circular dichroism, and fluorescence spectroscopy, to the study of biopolymers of relevance to food. Particular emphasis will be placed on the molecular basis of structure-function and structure-functionality relationships.

**FDSC 530 Advanced Analytical Chemistry.**
(3) (Fall) (3 lectures) (Prerequisite: FDSC 213) (Course offered in odd years (check with Graduate Advisor)) Selected instrumental methodologies including advances in automated chromatography, wide band NMR, chemical sensors, and the application of other spectroscopic techniques to the analysis of food constituents.

**FDSC 535 Food Biotechnology.**
(3) (Fall) (3 lectures) (Prerequisite: MICR 230) Developments in biotechnology as it relates to food production and processing concerning traditional food fermentations as well as novel food biotechnology enzymes, ingredients, genetic engineering, plant tissue culture and developments for microbiological and food analysis.

**FDSC 536 Food Traceability.**
(3) (Winter) (Prerequisite: FDSC 425 or by Instructor's permission.) Concepts and processes associated with the identification, tracking and tracing food forward and backward through the food continuum.

**FDSC 537 Nutraceutical Chemistry.**
(3) (Winter) (Prerequisites: FDSC 230, FDSC 233, FDSC 211 or by Instructor's permission.) The origin, classification, mechanism of action and chemical properties of potential and established nutraceutical compounds and their applications in functional foods.

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**MICR-Microbiology**

**MICR 230 Introductory Microbiology.**
(3) (Winter) (3 lectures and one 3-hour lab) The occurrence and importance of microorganisms (especially bacteria) in the biosphere. Principles governing growth, death and metabolic activities of microorganisms. An introduction to the microbiology of soil, water, plants, food, man and animals.

**MICR 300 Microbial Physiology Laboratory.**
(3) (Fall) (Prerequisite: MICR 230.) (Restriction: Not open to students who have taken MICR 200.) Application of microbial techniques relating to physiology, culturing, and characterization of microorganisms. Topics include bacterial growth curves, bacterial metabolic requirements, enzymatic assays.

**MICR 311 Microbiology Seminar 1.**
(1) (Fall and Winter) (Prerequisite: MICR 230.) Introductory seminar on a selected topic in microbiology.

**MICR 331 Microbial Ecology.**
(3) (Winter) (Restriction: Not open to students who have successfully completed NRSC 331) The ecology of microorganisms, primarily bacteria and archaea, and their roles in biogeochemical cycles will be discussed. Microbial interactions with the environment, plants, animals and other microbes emphasizing the underlying genetics and physiology. Diversity, evolution (microbial phylogenetics) and the application of molecular biology in microbial ecology.

**MICR 338 Bacterial Molecular Genetics.**
(3) (Fall) (Prerequisites: FDSC 211 and CELL 204) (Restriction: Not open to students who have successfully completed NRSC 338) Basic bacterial genetics, DNA damage and repair, mutagenesis, gene cloning, mapping and regulation, molecular biology. Laboratory sessions will provide the student with practical experience in the genetic manipulation of microbes and in molecular biology techniques.

**MICR 341 Mechanisms of Pathogenicity.**
(3) (Fall) (3 lectures, one 3-hour lab) (Prerequisite: MICR 230) A study of the means by which bacteria cause disease in animals and humans. Includes response of host to invading bacteria, bacterial attachment and penetration processes, and modes of actions of exotoxins and endotoxins.

**MICR 412 Microbiology Seminar 2.**
(1) (Fall and Winter) (Prerequisite: MICR 311.) Advanced seminar on a selected topic in microbiology.

**MICR 450 Environmental Microbiology.**
(3) (Winter) (Prerequisites: MICR 230, MICR 331 or MICR 338 or permission of instructor.) Focus on microbes in the environment. Topics include extreme environments, polar microorganisms, environmental biotechnology and bioremediation. Emphasis will be on population studies based upon molecular biological methods.

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NRSC-Natural Resource Sciences

Offered by: Natural Resource Sciences

NRSC 201 Introductory Meteorology.
(3) (Fall) (3 lectures) (Restriction: Not open to students who have taken AEPH 201) The atmosphere - its properties (structure and motion), and thermodynamics (stability, dry and moist). Clouds and precipitation. Air masses and fronts. Radiation and the global radiation budget. Interactions between the atmosphere and the biosphere.

NRSC 300 Natural History of East Africa.
(3) (Winter) (Restriction: Limited to students in AFSS) (Corequisite: ANTH 315) Introduction to natural features and ecological interactions involving flora and fauna of East Africa. A science context course taking advantage of the biological opportunities presented by habitats at various locations, examining conservation issues related to these situations.

• NRSC 315 Science of Inland Waters.
(3) (Fall) (2 lectures and one 3-hour lab) (Restriction: Not open to students who have taken ZOOL 315) Nature and history of limnology; divisions of inland waters; properties of fresh water; habitats; zones; nutrient cycles; biota; adaptations; seasonal variation; distributions; pollution; succession and evolution of fresh water environments. Includes field excursions.

NRSC 333 Physical and Biological Aspects of Pollution.
(3) (Fall) (3 lectures) (Restriction: Not open to students who have taken WILD 333) The environmental contaminants which cause pollution; sources; amounts and transport of pollutants in water, air and soil; waste management.

• NRSC 340 Global Perspectives on Food.
(3) (Winter) (Prerequisite: A 200-level course in food science, food resources or dietetics, or permission of instructor) A 200-level course in food science, food resources or dietetics, or permission of instructor.) Issues of community and global change in relation to environment and the production of food. Contrasts between developed and developing countries will highlight impacts of colonialism, political structures, and cultural systems related to gender, class and ethnicity.

NRSC 370 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 371 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 372 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 373 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 374 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 375 Special Topics.
(1) (Fall and Winter) (Restriction: Departmental approval required.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.

NRSC 382 Ecological Monitoring and Analysis.
(3) (Summer) Students use a variety of methods to sample physical, biological and human systems. To analyse and interpret these data to assess ecosystem health. Methods include GIS, population sampling, land use, resource and biodiversity mapping.

NRSC 383 Land Use: Redesign and Planning.
(3) (Summer) (Prerequisite: 24 credits of university training in a field relating to the environment, including one course in statistics, AEMA 310, or equivalent, or permission of instructor) Issues related to the environmental and modern land use, environmental impacts, current structures of governance. Needs assessment, and the redesign of human systems of organization and decision making according to ecological principles. Land use in peri-urban and rural settings, and the use of participatory action research.

NRSC 384 Field Research Project.
(3) (Summer) (Prerequisite: 24 credits of university training in a field relating to the environment, including one course in statistics, AEMA 310, or equivalent, or permission of instructor) Small group field research project.
NRSC 437 Assessing Environmental Impact.
(3) (Winter) (2 lectures) (Restriction: Not open to students who have taken WILD 437) (Restrictions: U2 students and above) Theories and procedures of assessing environmental impact. An examination of the environmental impact of existing programs and projects to examine their accuracy in predicting consequences and attenuating undesirable effects.

NRSC 491 Scientific Communication 1.
(1) (Fall) (Restriction: Not open to students who have taken WILD 491,D.N or AEBI 495D,N.) Synthesis and interpretation of multifaceted subjects and scientific writing. Preparation of scientific documents such as grant proposals and manuscripts. Participation in oral presentations of technical subjects.

NRSC 492 Scientific Communication 2.
(1) (Winter) (Prerequisite: NRSC 491) (Restriction: Not open to students who have taken WILD 491,D.N or AEBI 495D,N.) Advanced synthesis and interpretation of multifaceted subjects and scientific writing. Preparation of scientific documents such as grant proposals and manuscripts. Participation in oral presentations of technical subjects.

NRSC 497 Research Project 1.
(2) (Restriction: Not open to students who have taken NRSC 496 D.N or NRSC 497 D.N) (Prerequisite: NRSC 497) Continuation of the independent research project begun in NRSC 497. Data collection and analysis, testing of hypotheses, discussion of results.

NRSC 498 Research Project 2.
(3) (Fall and Winter) (Restriction: Not open to students who have taken NRSC 496 D.N or NRSC 497 D.N) (Prerequisite: NRSC 497) Independent research project in consultation with a faculty supervisor. Selection of a research problem, formulation of hypotheses and objectives, research design and a comprehensive review of the pertinent literature.

NRSC 510 Agricultural Micrometeorology.
(3) (Fall) (3 lectures) (Restriction: Not open to students who have taken AEPH 510) Interaction between plant communities and the atmosphere. The physical processes governing the transfer of heat, mass and momentum as they relate to research and production in agricultural and environmental systems. Experimental techniques for measuring fluxes of heat, water-vapour, CO₂ and natural and man-made pollutants.

NRSC 512 Water: Ethics, Law and Policy.
(3) (Fall) The various legal expressions of the relationship between humanity and water such as those grounded in markets, between humanity and water such as those grounded in markets, public, private and international law, and intergovernmental institutions relevant to the protection and management of water resources.

NRSC 514 Freshwater Ecosystems.
(3) (Fall) Origin, diversity, structure, function and evolution of freshwater ecosystems; fauna, flora and biotic communities of freshwater habitats; indicator organisms; biotic indices; human impact on freshwater ecosystems.

NRSC 540 Socio-Cultural Issues in Water.
(3) (Winter) (Prerequisite: A 300- or 400-level course in water or permission of instructor) (3-hour seminar) Discussion of current debates and problems related to water, especially in developing countries. Topics include: gender relations and health in the context of cultural and economic systems, and the impacts of new technologies, market structures and population growth.

NUTR-Nutrition and Dietetics
Offered by: Dietetics & Human Nutrition

NUTR 200 Contemporary Nutrition.
(3) (Summer) (Restriction: Not open for credit to students with a biology or chemistry course in their program, or to students registered in the School of Dietetics and Human Nutrition, or to students who take NUTR 207) Provides students without a biology/chemistry background with the fundamental tools to critically assess nutrition related information, to evaluate their own diets, and to implement healthy changes. Emphasis is on current issues and maximizing health and disease prevention at different stages of the lifecycle.

NUTR 207 Nutrition and Health.
(3) (Fall) (3 lectures) (Corequisites: BIOL 401 or FDSC 230) (Restriction: Not open to students who take NUTR 200 or NUTR 307 or who have taken PHGY 311 or BIOC 311) (Restriction: Science students in physical science and psychology programs who wish to take this course should see the Arts and Science Student Affairs Office for permission to register.) Provides students who have a basic biology/chemistry background with the fundamental information on how macronutrients, vitamins and minerals are metabolized in the body, followed by application to evaluate current issues of maximizing health and disease prevention at different stages of the lifecycle.

NUTR 208 Stage in Dietetics 1.
(1) (Winter) (Prerequisites: all Required courses in Term 1 of the Dietetics Major, (Corequisites: All Required courses in Term 2 of the Dietetics Major) (Restriction: Dietetics Major or Special Students (professional credentialing) Introduction to the dietetics profession; principles and policies in food and nutrition essential to entry-level dietetics experiences; practice in dietary interviewing, problem solving and report writing related to Level 1 Professional Practice placements.

NUTR 209 Professional Practice Stage 1B.
(3) Directed, supervised experiences in nutrition services and food service operations management; integration into the professional team.

NUTR 214 Food Fundamentals.
(3) (Fall) (2 lectures and one 4-hour lab) (Prerequisite: FDSC 230 or corequisite with instructor's permission.) (Corequisite FDSC 211.) Study of composition, structure and chemical and physical properties of foods. To understand the scientific principals underlying chemical and physical phenomena that occur during the preparation of food. Laboratory emphasis on developing skills in handling and preparing food, and food assessment by sensory evaluation.

NUTR 217 Application: Food Fundamentals.
(3) (Winter) (2 lectures and one 4-hour lab) (Prerequisite: NUTR 214) A more intensive study of food and complex food mixtures, including their chemical and physical properties. Learning how to control the changes that take place during the preparation of food to obtain palatable, nutritious and safe food. An introduction to culturally determined food habits. Laboratory emphasis on acquiring new knowledge and application to basic food preparation and cooking principles.

NUTR 301 Psychology.
(3) (Fall) (2 lectures and 1 conference) A study of the general characteristics of physical, social, emotional and intellectual development, the psychology of learning, and the growth and

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‡ Professional Practice (Stage) in Dietetics involving special prerequisites
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▲ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
◆ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
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development of personality.

‡ NUTR 310 Stage in Dietetics 2A.
(1) (Winter) (One 2-hour conference/week) Human food intake assessment and evaluation will be practiced including modules on dietary interviewing, nutrition education teaching plans and documentation for the medical record. Practical aspects of health and food service administration will be addressed.

‡ NUTR 311 Stage in Dietetics 2B.
(5) (Summer: 7 weeks) Two interrelated modules of directed experience in normal and clinical nutrition and foodservice management, in health care settings and the private sector.

NUTR 322 Applied Sciences Communication.
(2) (2 lectures, 1 lab) (Prerequisite: Completion of 15 credits in a B.Sc. program) The principles and techniques of communicating applied sciences to individuals and groups in both the professional and public milieu. Effective public speaking and group interaction techniques. Communication materials selection, development, use, and evaluation. Writing for the media. Balancing risk and reason in communicating scientific findings.

NUTR 337 Nutrition Through Life.
(3) (Winter) (3 lectures, 1 conference) (Prerequisite: ANSC 330 or NUTR 307) Emphasis on applied quantitative aspects of human nutrition. Nutrient utilization, evaluation and requirements, as related to dietary standards.

NUTR 344 Clinical Nutrition 1.
(4) (Winter) (Two 2-hour lectures) (Prerequisite: ANSC 323.) (Corequisite: NUTR 337.) Clinical nutrition assessment and dietary modification of pathological conditions including hypertension, lipid disorders and cardiovascular disease, obesity, diverticulosis, cancer, COPD, anorexia nervosa and bulimia.

NUTR 345 Food Service Systems Management.
(2) (Winter) (Prerequisite: NUTR 345) Quantity food planning, costing, and evaluation. Laboratory experience with quantity food production following principles of food sanitation and safety, food quality and cost-evaluation.

NUTR 403 Nutrition in Society.
(3) (Fall) (3 hour conference) (Prerequisite: NUTR 237) Sociocultural and economic influences on food choice and behaviour; health promotion and disease prevention through nutrition, particularly in high risk populations; the interaction of changing environment, food availability and quality as they affect health.

‡ NUTR 409 Stage in Dietetics 3.
(8) (Winter: 10 weeks) Four interrelated modules of directed experience in clinical nutrition, foodservice management, normal nutrition education and community nutrition, in health care settings and the private sector.

● NUTR 420 Toxicology and Health Risks.
(3) (Fall) (3 lectures) (Prerequisite: FDSC 211, BIOL 201 or BIOC 212) (Restriction: This course is not open to students who have taken NUTR 361) Basic principles of toxicology, health effects of exposure to environmental contaminants such as heavy metals, pesticides and radionuclides and ingestion of food toxicants such as food additives and preservatives; natural toxins in plants and marine foods, human health, ecosystem health, safety evaluation, risk assessment, and current Canadian regulations.

NUTR 430 Directed Studies: Dietetics and Nutrition 1.
(3) (Fall and Winter) An individualized course of study in dietetics/human nutrition under the supervision of a staff member with expertise on a topic not otherwise available in a formal course. A written agreement between student and staff member must be made before registration and filed with the Program Coordinator.

NUTR 431 Directed Studies: Dietetics and Nutrition 2.
(3) (Fall or Winter) An individualized course of study in dietetics/human nutrition under the supervision of a staff member with expertise on a topic not otherwise available in a formal course. A written agreement between student and staff member must be made before registration and filed with the Program Coordinator.

NUTR 431D1 (1.5), NUTR 431D2 (1.5) Directed Studies: Dietetics and Nutrition 2.
(Students must register for both NUTR 431D1 and NUTR 431D2.) (No credit will be given for this course unless both NUTR 431D1 and NUTR 431D2 are successfully completed in consecutive terms) (NUTR 431D1 and NUTR 431D2 together are equivalent to NUTR 431) An individualized course of study in dietetics/human nutrition under the supervision of a staff member with expertise on a topic not otherwise available in a formal course. A written agreement between student and staff member must be made before registration and filed with the Program Coordinator.

NUTR 432 Directed Studies: Dietetics and Nutrition 3.
(3) (Fall and Winter) An individualized course of study in dietetics/human nutrition under the supervision of a staff member with expertise on a topic not otherwise available in a formal course. A written agreement between student and staff member must be made before registration and filed with the Program Coordinator.

NUTR 433 Directed Studies: Dietetics and Nutrition 4.
(5) (Fall or Winter or Summer) (Limited enrolment) (Prerequisite: registration in NUTR 409 or equivalent.) (Restriction: students in the Dietetics Major or documentation of requirement for professional registration) An individualized course of study in dietetics/human nutrition not available through other courses in the School. Emphasis will be placed on application of foods and nutrition knowledge, analytic and synthesis skills, and time management. A written agreement between student and instructor must be made before registration. A "C" grade is required to pass the course.

NUTR 436 Nutritional Assessment.
(2) (Winter) (Prerequisite: NUTR 337) (2 lectures) An intense 4-week course focused on resolving clinically based case studies. The objectives: to develop skills in clinical problem solving, learn principles and methods for assessing the nutritional status of patients and to become skilled at interpreting clinical data relevant to assessing nutritional status and prognosis of hospitalized patients.

NUTR 438 Interviewing and Counselling.
(2) (Winter) (Two 2-hour conferences) (Prerequisite: NUTR 344 and NUTR 311) Theories of behaviour change. Techniques and skills as applicable to the dietitian's role as communicator, interviewer, counsellor, educator, motivator and nutrition behaviour change specialist.

NUTR 445 Clinical Nutrition 2.
(5) (Fall) (Two 2.5-hour lectures) (Prerequisite: NUTR 344

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and ANSC 424) Clinical nutrition intervention for gastrointestinal and liver disease, hypermetabolic states, diabetes mellitus, renal disease and inborn errors of metabolism, enteral/parenteral nutrition management.

**NUTR 446 Applied Human Resources.**
(3) (Fall) (3 lectures, 1 conference) (Prerequisite: AGEC 242) The management of people at work. Employee development and the leadership role. The nature of collective bargaining, the role of unions and management.

**NUTR 450 Research Methods: Human Nutrition.**
(3) (Fall) (2 lectures, 3 hours research, 4 hours other) (Prerequisite: NUTR 337; AEMA 310 or BIOL 373) Introduction to methods of clinical, community, international, and laboratory-based nutrition research. Lectures, readings and assignments will cover basic research concepts. Students undertake a computer directed literature search and analysis.

**NUTR 451 Analysis of Nutrition Data.**
(3) (Fall) (Prerequisite: NUTR 337.) (Corequisite: NUTR 450) An applied course in analysis and interpretation of nutrition data sets. Introduction to specialized dietary and anthropometric computer programs. Written and oral presentation of results.

**NUTR 501 Nutrition in Developing Countries.**
(3) (Fall) (2 lectures and one seminar) (Prerequisite: For undergraduate students, consent of instructor required) This course will cover the major nutritional problems in developing countries. The focus will be on nutrition and health and emphasize young children and other vulnerable groups. The role of diet and disease for each major nutritional problem will be discussed.

**NUTR 503 Bioenergetics and the Lifespan.**
(3) (Fall) (Prerequisites: Undergraduate Basic Biochemistry (3 credits), Undergraduate Mammalian Physiology (EDKP 331 or PHGY 202 or PHGY 210 or ANSC 323), Undergraduate Introductory Nutrition (EDKP 392 or NUTR 207 or NUTR 307).) Multidisciplinary approach that integrates principles of bioenergetics with nutrition through the lifespan.

**NUTR 510 Professional Practice - Stage 4.**
(14) (Fall: 16 weeks) (Prerequisite: NUTR 409) (Restriction: Not open to students who have taken NUTR 410) (Restriction: Undergraduate registration is restricted to students in the Dietetics Major, CGPA greater than, or equal to 2.50) Interrelated modules of directed experience in clinical nutrition, foodservice management, nutrition education and community nutrition, in health care setting and in the private sector.

● **NUTR 511 Nutrition and Behaviour.**
(3) (2 lectures and one seminar) (Prerequisite: NUTR 445 for undergraduate students or consent of instructor) Discussion of knowledge in the area of nutrition and behaviour through lectures and critical review of recent literature; to discuss the theories and controversies associated with relevant topics; to understand the limitations of our knowledge. Topics such as diet and brain biochemistry, stress, feeding behaviour and affective disorders will be included.

**NUTR 512 Herbs, Foods and Phytochemicals.**
(3) (3 lectures and a project) (Prerequisite (Undergraduate): FDSC 211 or BIOL 201 or BIQC 212) An overview of the use of herbal medicines and food phytochemicals and the benefits and risks of their consumption. The physiological basis for activity and the assessment of toxicity will be presented. Current practices relating to the regulation, commercialization and promotion of herbs and phytochemicals will be considered.

### PARA-Parasitology
Offered by: Parasitology

**PARA 410 Environment and Infection.**
(3) (2 lectures per week) (Prerequisite: BIOL 111 or AEBI 120 or equivalent) Infectious pathogens of humans and animals and their impact on the global environment are considered. The central tenet is that infectious pathogens are environmental risk factors. The course considers their impact on the human condition and juxtaposes the impact of control and treatment measures and environmental change.

**PARA 438 Immunology.**
(3) (3 lectures per week) (Prerequisite: AEBI 202 or permission of instructor) An in-depth analysis of the principles of cellular and molecular immunology. The emphasis of the course is on host defense against infection and on diseases caused by abnormal immune responses.

**PARA 515 Water, Health and Sanitation.**
(3) The origin and types of water contaminants including live organisms, infectious agents and chemicals of agricultural and industrial origins. Conventional and new technological developments to eliminate water pollutants. Comparisons of water, health and sanitation between industrialized and developing countries.

### PLNT-Plant Science
Offered by: Plant Science

**PLNT 201 Comparative Plant Biology.**
(3) (3 lectures plus 1-hour conference) Comparative study of the ways in which photosynthetic organisms acquire resources, develop and grow, reproduce, and interact with various groups of fungi and herbivores. Comparisons will be made among the following major groups: cyanobacteria, algae, liverworts, mosses, seedless vascular plants, gymnosperms, and angiosperms.

● **PLNT 205 Introductory Plant Pathology.**
(3)

**PLNT 211 Principles of Plant Science.**
(3) (3 lectures and one 2-hour lab) A study of major world crop species with emphasis on their adaptation and distribution in relation to the economic botany of the plants.

**PLNT 215 Agricultural Enterprise Visits.**
(1) (Notes: Grading: Pass/Fail) Field trips will be held Friday afternoons and a few Saturdays.) Examination of selected themes and problems that challenge modern agriculture such as biodiversity, biotechnology, food transformation, and crop and animal production.

**PLNT 221 Introduction to Fungi.**
(1) (Four 4-hour field labs, given during the second 4 weeks of semester) (Second 4 weeks of term only) Field and laboratory survey of local representatives of the major groups of fungi, including edible and poisonous mushrooms. The role of each group in terrestrial and aquatic ecological niches will be studied with respect to saprophytism, parasitism and symbiosis. Economic importance of fungi in medicine and biotechnology will be introduced.

**PLNT 300 Cropping Systems.**
(3) (3 lectures and one 3-hour lab) (Prerequisite: PLNT 211) Application of plant science and soil science to production of agronomic and horticultural crops. Use and sustainability of fertilization, weed control, crop rotation, tillage, drainage and irrigation practices.
PLNT 304 Biology of Fungi.  
(3) (3 lectures and one 3-hour lab) This course describes the various groups of fungi and explores in depth their biology and physiology, their ecological niches and the role in various ecosystems and their benefits and uses in industry and biotechnology.  

PLNT 305 Plant Pathology.  
(3) (3 lectures and one 3-hour lab) The theory and concepts of plant pathology, including the disease cycle, infection, symptoms, resistance, epidemiology and control. The biology and taxonomy of pathogens will be studied, including fungi, bacteria, viruses and nematodes. Techniques of inoculation, isolation of pathogens from diseased plants, disease diagnosis and pathogen identification will be demonstrated.  

PLNT 310 Plant Propagation.  
(3) (3 lectures and one 3-hour lab) Principles and practical aspects of plant propagation are examined. The course consists of two parts. The second deals with sexual propagation; the production, processing storage certification and analysis of seeds. The remaining two-thirds deals with vegetative propagation; cutting, budding, grafting, layering, and tissue culture.  

PLNT 321 Fruit Production.  
(3) (3 credits; 3 lectures and 1 3-hr lab) (Prerequisite: AEBI 201 or PLNT 211.) Botany, physiology and management practices of the major temperate-zone fruit crops. Includes field work, laboratory experimentation and field trips.  

* ★ PLNT 322 Greenhouse Management.  
(3) (3 lectures and one 3-hour lab) Greenhouse design and operation, including environmental regulation, fertilization and pest management. Focus will be on the production of major floricultural and vegetable crops.  

PLNT 331 Field Crops.  
(3) (Restriction: Not open to students who have taken PLNT 333 and/or PLNT 332) (3 lectures and one 3-hour lab period) (Prerequisite: PLNT 211 or PLNT 201) A study of economically important field crops (cereals, forages, oilseeds and crops grown for fibres and other industrial products), historical development, botany, distribution and adaptation, cultural practices and factors that affect the utilization of crop products. Laboratories emphasize morphological study of major field crop species.  

PLNT 341 Horticulture - the Alliums.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of the Alliums. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

* ★ PLNT 342 Horticulture - Cole Crops.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of perennial vegetable crops. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 343 Horticulture - Root Crops.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of root crops. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 344 Horticulture - Salad Crops.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of salad crops. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 345 Horticulture: Solanaceous Crops.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of the solanaceous crops. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 346 Horticulture: Temperate Fruits.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of temperate-zone tree fruits. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 347 Horticulture - Small Fruits.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of small fruit crops. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 348 The Brassicas.  
(1) (Prerequisite: PLNT 211 or PLNT 201 or permission of instructor) An independent study course in CD-ROM format. Modules contain an introductory section on crop establishment and a section dealing with the botany, physiology and management of Brassicas. Students make use of the Internet. Electronic discussion groups are used for tutorials. Grading is through the submission of written assignments.  

PLNT 350 Plant Structure and Function.  
(4) (3 lectures and one 3-hour lab) (Prerequisite: PLNT 211 or PLNT 201) The general anatomy and physiology of vascular plants with emphasis on the cells, tissues, organs and chemical components of plants and the physiological processes associated with their function.  

* ★ PLNT 355 Special Topic: Plant Pathology.  
(2)  

* ★ PLNT 356 Systematic Botany.  
(4)  

PLNT 358 Flowering Plant Diversity.  
(3) (2 lectures, one 3-hour lab, plus a 4-day field week held the week preceding the start of classes) (Prerequisites: PLNT 201 or PLNT 211 or ENVR 202 or permission of instructor) Principles of classification and identification of flowering plants and ferns, with emphasis on 35 major families of flowering plants and the habitats in which they grow.  

PLNT 361 Pest Management and the Environment.  
(3) (3 lectures) Pests, pest impacts on the global food system and strategies for pest management. Pest management methods,
models and programs, and how to reduce pest management impacts on the environment.

- **PLNT 421 Landscape Plant Materials.**
  (3) (2 lectures and one 3-hour lab) (Prerequisites: PLNT 211 or PLNT 201) A study of the major types of woody and herbaceous ornamental plants used in landscaping and how the landscaping industry uses plants to improve the environment. Laboratory includes a specimen collection of landscape plants widely used in Québec.

- **PLNT 424 Cellular Regulation.**
  (3) (Prerequisite: FDSC 211, AEBI 202 or permission of the instructor) An overview of the cellular mechanisms used by prokaryotes and eukaryotes to regulate biosynthetic pathways. Topics covered range from control of gene transcription to the regulation of enzyme activity to the role of signal transduction pathways in the control of metabolic flux through cellular pathways.

- **PLNT 434 Weed Biology and Control.**
  (3) (3 lectures and one 3-hour lab) (Prerequisite: PLNT 211 or PLNT 201) A study of the biology of undesirable vegetation as related to the principles of prevention and physical, biological, managerial and chemical control. Emphasis on the environmental impact of the different methods of weed control.

- **PLNT 450 Special Topics: Plant Science.**
  (2) A course of independent study by the student with the guidance of a professor of recognized competence in the area of the chosen topic.

- **PLNT 451 Special Topics: Plant Science 2.**
  (3) A course of independent study by the student with the guidance of a professor of recognized competence in the area of the chosen topic.

- **PLNT 458 Flowering Plant Systematics.**
  (3) (1 lecture plus one 3-hour lab plus required summer plant collection) (Prerequisite: PLNT 358 or BIOL 358 or permission of instructor) Principles and methods of phylogenetic analysis of flowering plants with emphasis on new classification systems resulting from analysis of DNA sequence data. Laboratory sessions will focus on 40 temperate and tropical families not covered in PLNT 358 as well as on identification techniques for difficult plant families.

- **PLNT 460 Plant Ecology.**
  (3) (3 lectures and one 3-hour lab) (Prerequisite: AEMA 310 or permission of instructor) Plant community ecology with an emphasis on the interaction between patterns and ecological processes and the dynamics, conservation and management of plant populations and communities over a range of temporal and spatial scales.

- **PLNT 489 Project Planning and Proposal.**
  (1) (Restriction: Not open to students who have taken PLNT 490D1, PLNT 490D2, PLNT 490N1 or PLNT 490N2.) Preparation of a literature review and research plan for the project course (PLNT 490).

- **PLNT 490 Research Project.**
  (2) (Prerequisite: PLNT 489) (Restriction: Not open to students who have taken PLNT 490D1, PLNT 490D2, PLNT 490N1 or PLNT 490N2.) Directed study on approved research project requiring both oral and written presentation.

- **PLNT 495 Seminar 1.**
  (1) (Restriction: Not open to students registered in, or who have taken PLNT 495D1, PLNT 495D2, PLNT 495N1 or PLNT 495N2).

- **PLNT 496 Seminar 2.**
  (1)

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**SOIL-SOIL SCIENCE**

- **SOIL 200 Introduction to Earth Science.**
  (3) (Winter) (3 lectures, one 3-hour lab) Introductory concepts of geology and geomorphology will be presented including: rocks and minerals, surface deposits, history and structure of the earth.

- **SOIL 210 Principles of Soil Science.**
  (3) (Fall) (3 lectures and one 3-hour lab) Soil formation: examination of chemical, physical and biological properties of soils, interaction between soils, plants and the environment; function of soils in ecosystems with an emphasis on soil nutrients and fertility, and water quality.

- **SOIL 315 Soil Fertility and Fertilizer Use.**
  (3) (Winter) (3 lectures and one lab) (Prerequisite: SOIL 210 or permission of instructor) Plant nutrients in the soil, influence of soil properties on nutrient absorption and plant growth, use of organic and inorganic fertilizers.

- **SOIL 326 Soil Genesis and Classification.**
  (3) (Fall) (3 lectures and one 3-hour lab) (Prerequisite: SOIL 200 or equivalent) Theories and processes of soil genesis. Canadian classification system and effect of pedogenesis on soil properties.

- **SOIL 331 Soil Physics.**
  (3) (Winter) (3 lectures and one 3-hour lab) Soil structure; fluxes of water, heat, gases and solids in soils; physical properties and plant growth; applications to soil dynamics.

- **SOIL 335 Soil Ecology and Management.**
  (3) (Winter) (3 lectures and one 3-hour lab) (Prerequisites: SOIL 210 and WILD 205) The physical and chemical environmental of soil organisms; survey of soil microflora and fauna; processes and optimal agronomic systems of management consistent with the goals of ecological agriculture.

- **SOIL 410 Soil Chemistry.**
  (3) (Winter) (1 lecture, 1 tutorial, problem sets) (Prerequisite: SOIL 210 or GEOG 305 or permission of instructor) Soil chemical principles are presented in a series of problem sets covering basic concepts as well as applications to environmental and agricultural situations.

- **SOIL 445 Agroenvironmental Fertilizer Use.**
  (3) (Fall) (Prerequisite: SOIL 315) A sustainable, agroenvironmental approach to nutrient management planning at the farm scale, consistent with guidelines and laws governing fertilizer use in Quebec and other jurisdictions.

- **SOIL 521 Soil Microbiology and Biochemistry.**
  (3) (Winter) (Restriction: Not open to students who have taken...

WILD-Resource Development

Offered by: Natural Resource Sciences, Parasitology

WILD 200 Comparative Zoology.
(3) (Fall) (3 lectures and 1 lab) (Restriction: Not open to students who have taken AEBI 200) Animal diversity from an evolutionary/phylogenetic perspective. Classification, biology and evolution of animals; morphology and recognition of animals.

WILD 205 Principles of Ecology.
(3) (Winter) (2 lectures and 1 conference) (Restriction: Not open to students who have taken AEBI 205) The interactions of organisms and the physical environment. Ecological principles will be discussed at the level of the individual, the population and the community.

WILD 212 Evolution and Systematics.
(3) (Fall) (3 lectures, and assignments) (Restriction: Not open to students who have taken ZOOL 312) Evolution by natural selection; Neo-Darwinism and alternatives. Myths and misconceptions in evolution. Species and speciation, patterns in phylogenetic trees. Taxonomic hierarchy, principles of classification. Schools of taxonomy, cladistic methods. Character analysis in phylogenetic systematics. Predictive power of phylogenetic hypotheses; applications of systematics to comparative biology.

WILD 307 Natural History of Vertebrates.
(3) (Fall) (Lectures and modules) (Restriction: Not open to students who have taken ZOOL 307) Review of higher taxonomic groups of vertebrates and prochordates, emphasizing diagnostic characters evolution and distribution.

WILD 311 Ethology.
(3) (Winter) (2 lectures, one 3-hour lab) (Restriction: Not open to students who have taken ZOOL 311) Invertebrate and vertebrate behaviour; innate behaviour, learning, motivation, agonistic behaviour, rhythms, social organization, mating systems and communication.

★ WILD 313 Phylogeny and Zoogeography.
(3) (Winter) (2 lectures, 1 conference and project) (Restriction: Not open to students who have taken ZOOL 313) Patterns of animal diversity in time and space; use of present patterns to reconstruct past events. Major milestones in animal evolution and diversification. Overview of biogeographic realms. Abiotic and biotic events affecting global distribution patterns. Hypothesis testing and analysis in historical biogeography. Applications to ecology, conservation.

WILD 350 Mammalogy.
(3) (Winter) (2 lectures and one 3-hour lab) (Prerequisites: WILD 200 (formerly AEBI 200) and WILD 307 (formerly ZOOL 307)) This course focuses on the evolution, classification, ecology and behaviour of mammals and relations between humans and mammals. Also structure, systematics and identification of local and world mammals, as well as field methods will be emphasized.

WILD 375 Issues: Environmental Sciences.
(3) (Winter) (3 lectures) Principles and trends in global ecology as they pertain to agricultural and natural ecosystems and the impact of environmental change on food production.

★ WILD 382 Fish and Wildlife Propagation.
(3) (Fall) (2 lectures and field trips) (Enrollment limited to 20) An overview of the care and reproduction of wildlife species in captivity for commercial, scientific, conservation, and educational purposes through field trips, lectures, and class discussions.

WILD 401 Fisheries and Wildlife Management.
(4) (Fall) (3 lectures, one 2-hour lab and one week field laboratory prior to fall term) (Prerequisite: PLNT 358) Principles of fisheries and wildlife management are considered and current practices of research and management are discussed.

★ WILD 410 Wildlife Ecology.
(3) (Winter) (3 hours of lectures per week) (Prerequisite: WILD 205 (formerly AEBI 205) or permission.) Ecological processes and theories in animal populations. Interrelationships among biological processes, biotic and abiotic factors, and life history strategies. Topics include population dynamics, optimization strategies, predation, habitat selection, risks and decision making, and social behaviour. Application of problem-solving approach to wildlife ecology through individual and group work.

WILD 415 Conservation Law.
(2) (Fall) (2 lectures) A study of the various federal, provincial and municipal laws affecting wildlife habitat. Topics include: laws to protect wild birds and animals; the regulation of hunting; legal protection of trees and flowers, sanctuaries, reserves, parks; techniques of acquiring and financing desirable land, property owner rights.

WILD 420 Ornithology.
(3) (Fall and Winter) (3 lectures and occasional field trips) (Prerequisite: WILD 307 (formerly ZOOL 307) or permission of instructor) (This course is scheduled for video-conferencing.) Taxonomic relationships and evolution of birds are outlined. Reproduction, migration and population processes of North American birds are examined.

WILD 421 Wildlife Conservation.
(3) (Winter) (3 lectures) (Restriction: Not open to students who have taken NRSC 421.) Study of current controversial issues focusing on wildlife conservation. Topics include: animal rights, exotic species, ecotourism, urban wildlife, multi-use of national parks, harvesting of wildlife, biological controls, and endangered species.

WILD 424 Parasitology.
(3) (Winter) (2 lectures and one 3-hour lab) (Restriction: Not open to students who have taken WILD 424 (formerly ZOOL 424)) Systematics, morphology, biology and ecology of parasitic protozoa, flatworms, roundworms and arthropods with emphasis on economically and medically important species.

★ WILD 475 Desert Ecology.
(3) (Winter) (Field course) (Prerequisites: PLNT 460, WILD 307 (formerly ZOOL 307), WILD 420) (Enrollment limited to 20) This course deals with adaptations to heat and drought. Representative areas of Coastal Bend, Chihuahuan and Sonoran deserts are visited over a two-week period. In the third week, emphasis is on the high desert and historical and cultural aspects of desert life observed in at the Mesa Verde cliff dwellings. A pre-trip analysis of an area to be visited and field notes are the principal bases of evaluation. Students must bear transportation costs.

WOOD-Woodland Resources

Offered by: Natural Resource Sciences

★ WOOD 300 Urban Forests and Trees.
(3) (Fall) (3 lectures and one 3-hour lab) (Prerequisites: PLNT
201 and SOIL 210) The effects of environmental factors such as soil fertility, soil contamination and compaction, extremes of temperature and air pollutants on trees and forests growing in an urban environment, and means to increase their tolerance will be discussed. Emphasis in the laboratory will be on diagnosis and solving of tree problems in urban environments.

WOOD 410 The Forest Ecosystem.
(3) (Fall) (3 lectures and one 3-hour lab) (Prerequisites: PLNT 201 and SOIL 210 or permission of instructor)
Interactions among biotic and abiotic components of forests, and their direct and indirect control of productivity and nutrient cycling in forest ecosystems. The laboratory involves a series of 3-hour field trips to local forests during September and October, followed by analysis of data collected.

WOOD 420 Environmental Issues: Forestry.
(3) (Winter) (3 lectures and one 2-hour tutorial) (Prerequisites: PLNT 201 and SOIL 210 or permission of instructor) The science behind current environmental issues relating to forests including the effects of management on productivity and biodiversity, conservation of old-growth forests and endangered species, pesticide use, and industrial pollution. The role of scientific knowledge, relative to social and economic forces, in forest resource decision-making is discussed.

WOOD 441 Integrated Forest Management.
(3) (Winter) (3 lectures and one 3-hour lab) (Prerequisite: WILD 205 (formerly AEBI 205) or permission of instructor) The study of silviculture and silvics and their application to forest management to sustain the production of wood and other resources such as wildlife, water and landscape in natural forests and rural environments (agroforestry). Acquisition of practical skills in forest survey and computer simulation of forest growth.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

Denotes courses taught only in alternate years.
‡ Professional Practice (Stage) in Dietetics involving special prerequisites
◆ Indicates that departmental approval/permission must be obtained by a student prior to registration.
† Denotes courses not available as Education electives.
❑ Denotes courses with limited enrolment.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
§ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
Faculty of Arts

AFRI-African Studies
Offered by: Arts - Dean's Office

AFRI 480 Special Topics.
(3) (Prerequisite: the completion of all available courses relevant to the topic, and permission of the instructor and Program Coordinator prior to registration) Supervised reading in advanced special topics in African Studies under the direction of a member of staff.

AFRI 481 Special Topics.
(3) (Prerequisite: the completion of all available courses relevant to the topic, and permission of the instructor and Program Coordinator prior to registration) Supervised reading in advanced special topics in African Studies under the direction of a member of staff.

AFRI 598 Research Seminar in African Studies.
(3) (Prerequisite: an introductory course in any of the disciplines studying Africa) (Restriction: Open to final year Program students, and to others by permission of Program Coordinator) An interdisciplinary research seminar on topics of common interest to staff and students of the African Studies Program. As part of their contribution, students will prepare a research paper under the supervision of one or more members of staff.

ANTH-Anthropology
Offered by: Anthropology

ANTH 201 Prehistoric Archaeology.
(3) (Fall) Examination of the origin of cultural behaviour and culture as an adaptive mechanism from the earliest times to the rise of the first civilizations in the Old and New Worlds. The implications of these data concerning the nature of humans and their future development will be considered.

ANTH 202 Comparative Cultures.
(3) (Fall) An introduction to cultures and societies around the world. Aspects of social life, such as generation and gender, family and kinship, economics, politics, and religion, are explored. Different ways of life, such as those centered on hunting and gathering, horticulture, pastoralism, agriculture, urbanism, and industrialism, are illustrated and compared.

ANTH 203 Human Evolution.
(3) (Winter) An examination of evolutionary theory and the fossil and archaeological record for human origins, emphasizing the interaction between physical and cultural evolution. The use of primate behaviour in reconstructing early human behaviour. The origin and meaning of human variation.

ANTH 204 Symbol Systems and Ideologies.
(3) (Winter) Through the analysis of language, symbols and cultural constructions of meaning, this course explores how people in different societies make sense of their world, and the ways in which they organise that knowledge, and how ideologies represent the different interests present in a society.

ANTH 205 Cultures of the World.
(3) An introduction to a variety of cultures through the study of ethnographies, detailed accounts of particular peoples and their psychologies, cultures, and societies. Selected classic and recent monographs will be read for understanding of the groups studied and the authors' perspectives and intellectual backgrounds.

ANTH 206 Environment and Culture.
(3) (Winter) Introduction to ecological anthropology, focusing on social and cultural adaptations to different environments, human impact on the environment, cultural constructions of the environment, management of common resources, and conflict over the use of resources.

ANTH 207 Ethnography Through Film.
(3) This course will investigate and discuss cultural systems, patterns, and differences, and the ways in which they are observed, visually represented, and communicated by anthropologists using film and video. The visual representation of cultures will be critically evaluated by asking questions about perspective, authenticity, ethnographic authority and ethics.

ANTH 208 Evolutionary Anthropology.
(3) (Winter) The basic elements and mechanisms of evolutionary theory; the place of evolutionary theory in anthropology, including social anthropology, archaeology, physical anthropology and anthropological linguistics. Emphasis on the debates in each sub-discipline in which evolutionary theory has played an important role.

ANTH 209 Anthropology of Religion.
(3) (Fall) Nature and function of religion in culture. Systems of belief; the interpretation of ritual. Religion and symbolism. The relation of religion to social organization. Religious change and social movements.

ANTH 212 Anthropology of Development.
(3) (Winter) Processes of developmental change, as they affect small communities in the Third World and in unindustrialized parts of developed countries. Problems of technological change, political integration, population growth, industrialization, urban growth, social services, infrastructure and economic dependency.

ANTH 222 Legal Anthropology.
(3) Exploration of dispute resolutions and means of social cohesion in various societies of the world. Themes: dichotomy between law and custom, local definitions of justice and rights, forms of conflict resolution, access to justice, gender and law, universality of human rights, legal pluralism.

ANTH 227 Medical Anthropology.
(3) (Fall) Beliefs and practices concerning sickness and healing are examined in a variety of Western and non-Western settings. Special attention is given to cultural constructions of the body and to theories of disease causation and healing efficacy. Topics include international health, medical pluralism, transcultural psychiatry, and demography.

ANTH 301 Nomadic Pastoralists.
(3) (Fall) Prerequisite: ANTH 202, or ANTH 205, or ANTH 206, or ANTH 212) Variations in herding systems over a wide range of habitats and involving a variety of species of domestic livestock. Comparative perspectives on the prehistory of pastoral systems, on the ideologies, cultures, and social and economic systems of nomadic pastoralists. Relations with non-pastoralists and the effects of change and development will also be examined.

ANTH 302 New Horizons in Medical Anthropology.
(3) (Prerequisite: ANTH 227) (Restriction: Anthropology program students.) Using recent ethnographies as textual material, this course will cover theoretical and methodological developments in medical anthropology since the early 1990's. Topics include a reconsideration of the relationship between culture and biology, medical pluralism revisited, globalization and health and disease, and social implications of new...
biomedical technologies.

ANTH 303 Ethnography of Postsocialism.
(3) (Fall) (Prerequisites: ANTH 202 and one other 200-level anthropology course or permission of instructor.) Understanding postsocialism through engagement with ethnography that explores how markets interact with political rule, social forms, and the production of cultural values across different geographical and historical. This course focuses primarily on the former Soviet Union, East Germany, and China.

• ANTH 305 Arctic Prehistory.
(3) (Prerequisite: ANTH 201.) (Restriction: Not open to students who have taken ANTH 319.) Comparative study of prehistoric Arctic hunter-gatherer cultures in Northern Canada, Alaska, Greenland and eastern Siberia. Emphasis will be placed on interpretation of cultural continuity and change in the context of contemporary hunter-gatherer theory.

• ANTH 306 Native Peoples’ History in Canada.
(3) (Prerequisites: HIST 202 or HIST 203 or ANTH 202 or ANTH 205 or ANTH 206, or permission of instructor) A survey of the Canadian policies that impinged on native societies from the fur trade to W.W. II, and the native peoples’ responses, looking at their involvement in the fur trade, the emergence of the Métis, types of resistance, economic diversification, development of associations, and cultural distinctiveness.

• ANTH 309 Prehistory of Northern Europe.
(3) (Prerequisite: ANTH 201.) Survey of the prehistory of northern Europe from the end of the last glaciation to the early iron age.

ANTH 311 Primate Behaviour and Ecology.
(3) (Fall) (Prerequisite: ANTH 203 or permission of instructor.) Critical evaluation of theories concerning primate behaviour with emphasis on the importance of ecological factors in framing behaviour, including mating behaviour, parent care, social structures, communication, as well as various forms of social interaction such as dominance, territoriality and aggressive expression.

ANTH 312 Zooarchaeology.
(3) (Fall) (Prerequisites: ANTH 201 and Honours/Major status in Anthropology) A systematic investigation into current methodological and theoretical concerns in archaeological faunal analysis. Topics to be examined include sampling and quantification, butchery, seasonality, subsistence, taphonomy, and paleoecology.

ANTH 313 Early Civilizations.
(3) (Winter) (Prerequisite: ANTH 201 or ANTH 202) Comparison of similarities and differences in the economic, social, political institutions and the religious beliefs and values of the ancient Egyptians, Sumerians, Shang Chinese, Aztecs, Classic Mayas, Inkas, and precolonial Yorubas. Extent to which cross-cultural regularities and historically-specific factors have shaped their development.

• ANTH 314 Psychological Anthropology.
(3) (Prerequisite: ANTH 204 or permission of instructor) (Restriction: Not open to students who have taken ANTH 214) A survey of current theories and methods employed in psychological anthropology. Some areas considered are: cross-cultural studies of socialization and personality development; cultural factors in mental illness; individual adaptations to rapid socio-cultural change.

ANTH 315 Society/Culture: East Africa.
(3) (Winter) (Restriction: Open only to students in the Study in Africa program, a full-term field study program in East Africa) Overview of the history, languages and cultures of the region. Examination of the social institutions, cultural patterns, subsistence practices and environmental settings of major social groups, including hunter-foragers, fishers, pastoralists, agro-pastoralists, and cultivators. Discussion of current theoretical and ethnological issues in the study of culture and social change.

ANTH 319 Inka Archaeology & Ethnohistory.
(3) (Winter) (Prerequisite: ANTH 201 or ANTH 202 or HISP 225 or permission of instructor.) In-depth study of material and symbolic manifestations of power and identity in the Pre-Columbian Inka state, drawing on both archaeological and ethnohistoric sources.

• ANTH 320 Social Evolution.
(3) (Winter) (Prerequisites: ANTH 202, or ANTH 205, or ANTH 206, or ANTH 208, and Honours/Major status in Anthropology, or permission of instructor.) The evolution of human social organization, with a focus on pre-industrial societies (hunter-gatherers, small-scale sedentary societies, complex chiefdoms and small scale states).
gathering cultures in China, Japan, Korea, Mongolia and Eastern Siberia; origins and dispersal of food production; cultural processes leading to the rise of literate civilizations in certain regions of East Asia.

- **ANTH 333 Class and Ethnicity.**
(3) (Prerequisite: ANTH 202, or ANTH 205, or ANTH 206, or ANTH 212, or permission of instructor) Social, economic, political, symbolic and ideological aspects of ethnicity. Development of ethnic groups. Interplay between social class and ethnicity.

- **ANTH 335 Ancient Egyptian Civilization.**
(3) (Winter) (Prerequisite: ANTH 201, or ANTH 202, or permission of instructor) A study of changing ecological, economic, social, political, and religious factors influencing the development of ancient Egyptian civilization from prehistoric times to the early Christian era. The unique characteristics of Egyptian civilization are compared to the structural features common to all early civilizations.

- **ANTH 336 Ethnohistory: North Eastern North America.**
(3) (Prerequisite: HIST 202, or ANTH 206, or ANTH 306, or ANTH 338, or permission of instructor) The historical processes that engulfed Indian societies from the earliest European arrivals. Four eastern regions will be examined: the Maritimes, New England, New France, and James Bay to compare the kinds and variety of societal accommodations and changes made to meet these new challenges during the 17th and 18th centuries.

- **ANTH 337 Mediterranean Society and Culture.**
(3) (Prerequisite: ANTH 202, or ANTH 204, or ANTH 205, or ANTH 206, or ANTH 209, or ANTH 212, or ANTH 227) (Restriction: U2 or U3 standing only) An exploration of Mediterranean ethnography, with special attention to southern Europe. Cultural patterns, such as "honour and shame", social patterns such as "patron/client relations", and current issues, such as "development", shall be explored.

- **ANTH 338 Native Peoples of North America.**
(3) (Fall) (Prerequisite: ANTH 202, or ANTH 204, or ANTH 205, or ANTH 206, or ANTH 209, or ANTH 212, or GEOG 336, or permission of instructor) Ethnographic survey of Native cultures in North America. Conditions arising from European colonization and their social, economic and political impact. Contemporary situation of indigenous peoples.

- **ANTH 339 Ecological Anthropology.**
(3) (Fall) (Prerequisite: ANTH 204, or ANTH 206, or SOCI 328, or GEOG 300 or permission of instructor) Intensive study of theories and cases in ecological anthropology. Theories are examined and tested through comparative case-study analysis. Cultural constructions of "nature" and "environment" are compared and analyzed. Systems of resource management and conflicts over the use of resources are studied in depth.

- **ANTH 340 Middle Eastern Society and Culture.**
(3) (Fall) (Prerequisite: U2 or U3 standing; and ANTH 202, or ANTH 204, or ANTH 205, or ANTH 206, or ANTH 209, or ANTH 212, or ANTH 227, or permission of instructor.) Exploration of daily life, culture and society in the Middle East, through examination of ethnographic accounts.

- **ANTH 341 Women in Cross-cultural Perspective.**
(3) (Prerequisites: ANTH 202 or ANTH 205, or ANTH 209, or ANTH 342, or Women's Studies Minor, or permission of instructor) The comparative study of women in developing society are examined.

- **ANTH 342 Gender, Inequality and the State.**
(3) (Winter) (Prerequisite: ANTH 202, or ANTH 205, or ANTH 206, or ANTH 341, or Women's Studies Minor, or permission of instructor) Comparative study of gender in stratified societies: Asia, the Mid-East, Latin and North America. Economic, political and social manifestations of gender inequality. Oppressive and egalitarian ideologies. State and institutional policies on gender, and male-female strategies. Sexual apartheid and integration.

- **ANTH 344 Quantitative Approaches to Anthropology.**
(3) (Fall) (Prerequisite: ANTH 201 or ANTH 202 or ANTH 205 or permission of instructor.) (Restriction: Limited to students in Anthropology programs.) A non-statistics course designed to understand and critically evaluate quantitatively based arguments encountered in the literature of all branches of Anthropology.

- **ANTH 345 Prehistory of Africa.**
(3) (Winter) (Restriction: Open only to students in the Study of Africa program, a full-term study program in East Africa.) This course will investigate the archaeological evidence for the evolution of culture in Africa from the beginning of the Paleolithic through the Iron Age. The emphasis will be upon changes in economic, social and political organization as reflected in selected archaeological sites.

- **ANTH 348 Early Prehistory: New World.**
(3) (Winter) (Prerequisite: ANTH 201 or ANTH 203, or permission of instructor) Consideration of major issues regarding the initial arrival(s) of human groups in the New World, and their subsequent adaptation to the changing environmental conditions at the end of the Ice Age.

- **ANTH 352 History of Anthropological Theory.**
(3) (Fall) (Prerequisites: one 200-level anthropology course and one other anthropology course at any level) (Restriction: Honours, Joint Honours, Major and Minor students in Anthropology, U2 standing or above) Exploration in the history of anthropological theory; schools, controversies, intellectual history, sociology of knowledge.

- **ANTH 355 Theories of Culture and Society.**
(3) (Winter) (Prerequisites: one 200-level anthropology course and one other anthropology course at any level) (Restriction: Honours, Joint Honours, Major and Minor students in Anthropology, U2 standing or above) Contributions to contemporary anthropological theory; theoretical paradigms and debates; forms of anthropological explanation; the role of theory in the practice of anthropology; concepts of society, culture and structure; cultural evolution and relativity; interpretive anthropology, post-modernism.

- **ANTH 357 Archaeological Methods.**
(3) (Winter) (Prerequisite: ANTH 201 and one other course in archaeology) (Restriction: Honours, Joint Honours and Major students in Anthropology, U2 standing or above) The collection of materials in field investigations and their analysis to yield cultural information. The processes of inference and reconstruction in archaeological interpretation.

- **ANTH 358 The Process of Anthropological Research.**
(3) (Fall) (Prerequisites: one 200-level anthropology course and one other anthropology course at any level) (Restriction: Honours, Joint Honours, Major and Minor students in Anthropology, U2 standing or above) The nature of anthropological research as evidenced in monographs and articles; processes of concept formation and interpretation of...
data; the problem of objectivity.

**ANTH 359 History of Archaeological Theory.**
(3) (Fall) (Prerequisite: ANTH 201 or ANTH 203, and one additional course in archaeology, or permission of instructor) A systematic investigation of the theories that have guided the interpretation of prehistoric archaeological data since the Middle Ages; the relationship between these theories and theoretical developments in the other social sciences.

**ANTH 380 Special Topic.**
(3) (Fall) (Prerequisite: Permission of instructor) Supervised reading in special topics under the direction of a member of the staff.

**ANTH 381 Special Topic.**
(3) (Winter) (Prerequisite: Permission of instructor) Supervised reading in special topics under the direction of a member of the staff.

**ANTH 382 Special Topic.**
(3) (Fall) (Prerequisite: Permission of instructor) Supervised reading in special topics under the direction of a member of the staff.

**ANTH 407 Anthropology of the Body.**
(3) (Fall) (Prerequisite: ANTH 412 Topics: Anthropological Theory.

**ANTH 408 Topics in Ethnography 1.**
(3) (Fall) (Restriction: U3 students in Anthropology or ANTH 412 Topics: Anthropological Theory.

**ANTH 409 Topics in Ethnography 2.**
(3) (Fall) (Prerequisite: One 300-Level Anthropology course) An exploration of selected ethnographic case material. Investigation of a regional literature or survey of significant contributions to ethnography or examination of an ethnological issue.

**ANTH 403 Current Issues in Archaeology.**
(3) (Winter) (Prerequisite: ANTH 357 or preferably ANTH 359, or permission of instructor) Current issues in archaeological interpretation, in particular, those relating to processual and postprocessual archaeology.

**ANTH 405 Topics in Ethnography 2.**
(3) (Fall) (Prerequisite: One 300-Level Anthropology course) An exploration of selected ethnographic case material. Investigation of a regional literature, or survey of significant recent contributions to ethnography, or examination of a current ethnological issue.

**ANTH 407 Anthropology of the Body.**
(3) (Winter) (Prerequisite: ANTH 227 and Honours/Major/Minor status in Anthropology or permission of instructor) This course will survey theoretical approaches used over the past 100 years, and then focus on contemporary debates using case studies. The nature/culture mind/ body, subject/object, self/other dichotomies central to most work of the body will be problematized.

**ANTH 411 Primate Studies & Conservation.**
(3) (Winter) (Prerequisite: One course in Anthropology, Geography or Environmental Studies, Introductory Biology, or permission of the instructor.) (Restriction: Students must have completed at least two full semesters at their home university. Only open to students in the Canadian Field Studies in Africa program.) Critical evaluation of theories in primate behavior, ecology, and conservation that emphasizes direct observations, research design, and developing field methods.

**ANTH 412 Topics: Anthropological Theory.**
(3) (Winter) (Restriction: U3 students in Anthropology and ANTH 355 or permission of instructor) A concentrated examination of selected theoretical literature. A current theoretical issue will be examined, or the work of a major anthropological theorist or school will be explored and assessed.

**ANTH 413 Gender in Archaeology.**
(3) (Fall) (Prerequisite: ANTH 201 or ANTH 331 or ANTH 345 or ANTH 347 or ANTH 348 or permission of instructor) Relationship between the structure of the archaeological discipline and construction of gender roles in past human societies; division of tasks between men and women in subsistence activities, organization of the household and kin groups; and creation of power and prestige in a larger community.

**ANTH 416 Environment/Development: Africa.**
(3) (Winter) (Restriction: Open only to students in the Study in Africa program, a full-term field study program in East Africa) (Prerequisite: One prior course in Anthropology, Geography or Environmental Studies) Study of environmental effects of development in East Africa, especially due to changes in traditional land tenure and resource use across diverse ecosystems. Models, policies and cases of pastoralist, agricultural, fishing, wildlife and tourist development will be examined, across savanna, desert, forest, highland and coastal environments.

**ANTH 418 Environment and Development.**
(3) (Fall) (Prerequisite: ANTH 339, or ANTH 349, or SOCI 328, or GEOG 300, or GEOG 302, or permission of instructor) Advanced study of the environmental crisis in developing and advanced industrial nations, with emphasis on the social and cultural dimensions of natural resource management and environmental change. Each year, the seminar will focus on a particular set of issues, delineated by type of resource, geographic region, or analytical problem.

**ANTH 419 Archaeology of Hunter-Gatherers.**
(3) (Fall) (Prerequisite: ANTH 357 or permission of instructor) A systematic investigation into current theoretical and methodological concerns in hunter-gatherer archaeology. Examples will be drawn from around the world.

**ANTH 420 Lithic Technology and Analysis.**
(3) (Winter) A survey of current literature on the analysis of stone tools and laboratory sessions illustrating how they were produced and used. Topics to be covered include: fracture mechanics; manufacturing techniques; typological systems; experimental replication; identification of tool functions through microscopic analysis of use-wear.

**ANTH 422 Contemporary Latin American Culture & Society.**
(3) (Fall) (Prerequisites: ANTH 355, or ANTH 352, or HISP 226, or permission of the instructor.) (Restriction: U3 students.) Themes central to the culture and society of contemporary Latin America and the Caribbean, including globalization, questions of race and ethnicity, (post)modernity, social movements, constructions of gender and sexuality, and national and diasporic identities.

**ANTH 430 Symbolic Anthropology.**
(3) (Fall) (Prerequisite: ANTH 204, or ANTH 355, or permission of instructor) Advanced topics in the use of symbolic theory within anthropology, including culturology and structuralism; the use of semiotic models of society, the relation of structure to process, culture to praxis, and ideology to society; the relevance of epistemology, phenomenology and linguistic philosophy for the study of socio-cultural phenomena.

**ANTH 431 Problems in East Asian Archaeology.**
(3) (Prerequisite: ANTH 331 or permission of instructor) Critical examination of major issues in East Asian archaeology.
Focus may change from year to year. Possible topics include: origins and evolution of Asian population; processes of plant domestication; development of complex societies based on hunting-gathering-fishing; and rise of civilizations and state formation in China, Japan, and Korea.

ANTH 436 North American Native Peoples.
(3) (Winter) (Prerequisite: ANTH 338, or ANTH 336, or permission of instructor) A detailed examination of selected contemporary problems.

ANTH 438 Topics in Medical Anthropology.
(3) (Fall) (Prerequisite: ANTH 227 or permission of instructor) Conceptions of health and illness and the form and meaning that illness take are reflections of a particular social and cultural context. Examination of the metaphoric use of the body, comparative approaches to healing, and the relationship of healing systems to the political and economic order and to development.

● ANTH 439 Theories of Development.
(3) (Prerequisite: ANTH 212 or permission of instructor) Comparison of alternative theories of development, as applied to two or more major regions of the Third World. The intellectual origins, logical structures and empirical bases of the alternative theories and comparative empirical testing as they apply to specific controversies in development studies. The interpretation of these theories and controversies.

ANTH 440 Cognitive Anthropology.
(3) (Fall) (Prerequisite, two of the following: ANTH 204, ANTH 314, ANTH 352, ANTH 355, or ANTH 430, or permission of instructor.) The problem of knowledge; the nature of perception; the concept of mind; the relation between thought and language. The concept of meaning: communication, interpretation and symbolism. Social aspects of cognition; ideology.

ANTH 443 Medical Anthropological Theory.
(3) (Fall and Winter) (Prerequisites: ANTH 227 and Honours/Major/Minor status in Anthropology or permission of instructor.) This course is intended to provide a comprehensive survey of the literature that constitutes the theoretical and conceptual core of medical anthropology. Emphasis is given to: (1) the ethnographic sources of these ideas, (2) their epistemology, and (3) their methodological implications.

● ANTH 445 Property and Land Tenure.
(3) (Prerequisite: ANTH 212 or ANTH 301 or ANTH 321 or ANTH 322 or ANTH 324 or ANTH 339 or ANTH 349; or permission of instructor. U3 students only) Land tenure systems across major agrarian and environmental settings; cultural constructions of law and customary property rights; private, communal and state property, including parks, reserves, and forests; land reform, villagization, enclosure, privatization and agrarian conflict; debates over development policy; special reference to Africa.

ANTH 461 Research Techniques.
(3) (Winter) (Prerequisite: ANTH 358 or permission of instructor) (Restriction: U3 student only) Field techniques, interviewing, participant observation, projective, and other testing techniques such as genealogies and life histories, problems of field work, rapport, contact, role definition, culture shock, etc.

ANTH 480 Special Topics.
(3) (Fall) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 481 Special Topics.
(3) (Winter) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 482 Special Topics.
(3) (Fall) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 483 Special Topics.
(3) (Winter) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 484 Special Topics.
(3) (Fall) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 485 Special Topics.
(3) (Fall) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 486 Special Topics.
(3) (Winter) (Prerequisite: Completion of all available courses relevant to the topic and consent of the instructor) Supervised reading in advanced special topics under direction of a member of staff.

ANTH 490 Honours Thesis 1.
(6) (Fall) (Prerequisites: U3 Honours status and permission of instructor) Supervised reading and preparation of a research report under the direction of a member of staff.

ANTH 490 Honours Thesis 2.
(6) (Winter) (Prerequisites: U3 Honours status and permission of instructor) Supervised reading and preparation of a research report under the direction of a member of staff.

● ANTH 492 Honours Thesis.
(6) (Prerequisites: U3 Honours status and permission of instructor) Supervised reading and preparation of a research report under the direction of a member of staff.

ANTH 492D1 (3), ANTH 492D2 (3) Honours Thesis.
(Students must register for both ANTH 492D1 and ANTH 492D2.) (No credit will be given for this course unless both ANTH 492D1 and ANTH 492D2 are successfully completed in consecutive terms) (ANTH 492D1 and ANTH 492D2 together are equivalent to ANTH 492) Supervised reading and preparation of a research report under the direction of a member of staff.

ANTH 492N1 Honours Thesis.
(3) (Winter) (Students must also register for ANTH 492N2) (No credit will be given for this course unless both ANTH 492N1 and ANTH 492N2 are successfully completed in a twelve month period) ANTH 492N1 and ANTH 492N2 together are equivalent to ANTH 492) Supervised reading and preparation of a research report under the direction of a member of staff.

ANTH 492N2 Honours Thesis.
(3) (Fall) (Prerequisite: ANTH 492N1) (No credit will be given for this course unless both ANTH 492N1 and ANTH 492N2 are successfully completed in a twelve month period) ANTH 492N1 and ANTH 492N2 together are equivalent to ANTH 492) See ANTH 492N1 for course description.

ANTH 499 Internship: Anthropology.
(3) (Fall and Winter) (Prerequisite: Permission of the departmental Internship Advisor) (Restriction: Open to U2 and U3 students normally after completing 30 credits of a 90 credit

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● Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
▲ Denotes courses not available as Education electives.
❉ Denotes courses not offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
‡ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
degree program or 45 credits of a 69-120 credit program, a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will normally not fulfill program requirements for seminar or 400-level courses.) Internship with an approved host institution or organization.

- **ANTH 500 Chinese Diversity and Diaspora.**
  (3) (Winter) (Restrictions: Reserved for U3 Anthropology undergraduate students or graduate students, any other students by permission of instructor.) (Enrolment Limit: 25 students.) Explores ethnic diversity within mainland China, as well as the diversity of Chinese cultures of diaspora, living outside the mainland, often as minorities subject to other dominant cultures.

- **ANTH 511 Computational Approaches to Prehistory.**
  (3) (Winter) (Prerequisites: ANTH 357 or ANTH 359.) (Restriction: Restricted to U3 and graduate students in the Anthropology Department.) Covers the application of computational methods to archaeological problems and the modeling and simulation of prehistoric populations.

- **ANTH 540 Topics in Anthropological Theory.**
  (3) (Winter) (Restriction: This course is restricted to U3 Honours students in the Anthropology Department or permission of the instructor.) Examination and discussion of topics of current theoretical interest.

- **ANTH 551 Advanced Topics: Archaeological Research.**
  (3) (Fall) Examination and discussion of topics of current theoretical or methodological interest in archaeology. Topics will be announced at the beginning of term.

- **ANTH 555 Advanced Topics in Ethnology.**
  (3) (Restriction: Honours students at the U3 level in the Anthropology Department or with permission of instructor) Examination and discussion of topics of current theoretical or methodological interest in ethnology. Topics will be announced at the beginning of term.

- **ANTH 575 Concepts of Race.**
  (3) (Winter) (Prerequisites: ANTH 201, or ANTH 202, or ANTH 203, and ANTH 352 or ANTH 359.) (Restriction: U3 students and graduate students in Anthropology programs.) Examination of the evolution of the idea of race within anthropology, and the impact which the discipline's debates have had on society.

### ARTEL-Arts Education Technology

**Offered by:** Arts - Dean's Office

- **ARET 150 Arts Educational Technology.**
  (1) (Prerequisites: None.) (Restrictions: Not open to students who have taken ACOM 150. Not open to Science, Management, or Engineering students, or Arts students registered in Computer Science programs, or in Mathematics and Computer Science programs. Credit will not be given for ARET 150 if taken concurrently with or after COMP 100, COMP 102, COMP 202, COMP 203, COMP 208, COMP 250, EDPT 200 or MGCR 331.) An introductory course in information and educational technology (IT/ET) specifically designed to enhance research and information literacy in Arts disciplines. Topics covered include the internet related to Arts disciplines and research; historical, ethical and social issues of IT/ET; use of IT to aid the analysis of data.

### ARLE-Arts Legacy

**Offered by:** Arts - Dean's Office

- **ARLE 101 Ancient Worlds.**
  (6) (Corequisite: ARLE 102.) (Restriction: Freshmen with U0 status.) Study of the ancient worlds, emphasizing social, political, intellectual, scientific and aesthetic innovations in ancient Greek, Roman and Chinese civilizations. Key texts are examined through lectures, seminars and tutorials, complemented by a performance module in literary, artistic, musical and architectural creativity.

- **ARLE 102 Medieval Mediterranean Worlds.**
  (6) (Corequisite: ARLE 101.) (Restriction: Freshmen with U0 status. Freshmen who have passed ARLE 101.) Study of the distinct yet interacting Christian, Judaic and Islamic cultures of the "Middle" Ages. Emphasis on social, political, intellectual, scientific and aesthetic innovations in the worlds surrounding the Mediterranean Sea. Key texts are examined, complemented by a performance module in literary, artistic, musical and architectural creativity.

- **ARLE 103 Early Modern Atlantic Worlds.**
  (6) (Prerequisites: ARLE 101, ARLE 102.) (Corequisite: ARLE 104.) (Restriction: Freshmen with U0 status. Students who have passed ARLE 101 & ARLE 102.) Study of social, political, intellectual, scientific and aesthetic innovations, examining the transatlantic worlds of Early modern Europe and the Americas. Key texts are examined through lectures, seminars and tutorials, complemented by a performance module in literary, artistic, musical and architectural creativity.

- **ARLE 104 Global Modern Worlds.**
  (6) (Prerequisites: ARLE 102, ARLE 102.) (Corequisite: ARLE 103.) (Restriction: Freshmen with U0 status. Freshmen who have passed ARLE 101, ARLE 102 & ARLE 103.) Study of the emergence and multiple forms of modernity, emphasizing social, political, intellectual, scientific and aesthetic innovations in Europe and North America, and the developing world of Africa, Asia and America. Key texts are examined, complemented by a performance module in literary, artistic, musical and architectural creativity.

### ARTH-Art History

**Offered by:** Art History & Communication St

- **ARTH 201 Introduction to Art History 2.**
  (3) (Restriction: Not open to students in Art History programs; or students who have taken ARTH 200 prior to Fall 1991.) An introductory survey of the major figures, monuments and movements in Western painting, sculpture and architecture from the 15th century to the present. The underlying goal of course is to develop the student's awareness of the relation of form to content in a work of art.

- **ARTH 204 Introduction to Medieval Art and Architecture.**
  (3) Surveys the arts from late Antiquity to the fourteenth century in Western Europe. Focuses on the body and space to introduce artistic and architectural concepts, practices, and styles from the late Roman, Byzantine and Carolingian empires to monastic and royal patronage of the French Kings.

- **ARTH 205 Introduction to Modern Art.**
  (3) (Restriction: Not open to students who have taken ARTH 337 or ARTH 338) The course is an introduction to the modern period in art history which begins around 1750. It examines the development in both painting and sculpture and
relates to changes in the social and political climate of the times.

**ARTH 207 Early Modern Art (1400-1700).**
(3) Survey of the visual culture of early modern Europe (1400-1700), including selected works in their historical context and explore the uses of visual forms in the formation of identities across various social spheres and geographical locations.

**ARTH 208 Introductory Seminar in Art History.**
(3) (Restrictions: Students must complete ARTH 208 before ARTH 305. Open to art history students only.) An introduction to the discipline of art history that situates it historically in relation to the humanities and social sciences, with focus on issues of visual literacy, guides the student into "seeing" and "reading" artworks, and gives an overview of the main art historical methods.

**ARTH 209 Introduction to Ancient Art and Architecture.**
(3) Survey of ancient art and architecture: pre-historic Europe, ancient Egypt, Greece and Rome. Focus is on issues of political power, gender, sexuality, race, the formation of individual and group identities, and the relation between the body and social space.

**ARTH 215 Introduction to Chinese Art.**
(3) (Restriction: Not open to students taking or who have taken东亚 215.) Introductory survey of some of the major developments in Chinese art from the Bronze Age to the modern period. Emphasis will be placed on the diversity of artistic traditions in China.

**ARTH 223 Introduction to Italian Renaissance Art.**
(3) Surveys artistic production in Italy from the new urban institutions of the communes to the demise of the Florentine republic (c. 1250-1512). Introduces art historical concepts through an exploration of the uses if visual imagery to forge civic, religious, political, and social identities.

**ARTH 300 Canadian Art to 1914.**
(3) Canadian art from the pre-contact period through the colonial and nation-building centuries until the onset of the First World War. Emphasis will be placed on the diverse cultural influences that have been brought into contact in Canada.

**ARTH 301 Canadian Art 1914 - Present.**
(3) (Restriction: Not open to students who have taken 123-225) Canadian art from early 20th century formulations of national identity through the regional, national, and international movements that define Canadian Modernism, Postmodernism, to new trends emerging in the 21st century.

**ARTH 302 Aspects of Canadian Art.**
(3) (Topics for 2002-03: Street Graffiti and Murals in Montreal) An examination of selected subjects relevant to a specific period of art in Canada.

**ARTH 305 Methods in Art History.**
(3) (Prerequisite: ARTH 208.) (Restriction: Not open to students who have taken ARTH 203.) An introduction to the main methodologies used in the analysis of the work of art: formalism, iconography/iconology, semiotics, structuralism, post-structuralism, deconstruction, psychoanalysis, Marxism, feminism and postcolonialism.

**ARTH 310 Postcolonialism.**
(3) Examines selected art historians who respond to postcolonial theorists and analyse how paintings, sculpture, buildings, and visual culture participated in or resisted European imperialism in the nineteenth and twentieth centuries.

**ARTH 312 Medieval Art.**
(3).

**ARTH 314 The Medieval City.**
(3) Towns and cities in the Middle Ages as architectural entities, their urban planning and development; main building types, profane and ecclesiastical; castle, defence works, town halls, houses, cathedrals, churches and monasteries; the role architecture played in forming a society.

**ARTH 320 Seventeenth Century Art of Court and Church.**
(3) (Restriction: Not open to students who have taken 123-334D) Seventeenth century Italian, Spanish, French, Flemish and British art in connection with aristocratic and courtly interests, monarchical power and the aims of the post-Reformation church.

**ARTH 321 Visual Culture of the Dutch Republic.**
(3) (Restriction: Not open to students who have taken 123-334D) Examination of the functions of visual culture in merchant capitalist society, and the changing status of art, artists and patrons after the Protestant reformation. A wide range of visual imagery (from Rembrandt and Vermeer to popular culture) will be linked with 17th-century economic, historic, religious, colonial, scientific and literary developments.

**ARTH 323 Realism and Impressionism.**
(3) (Restrictions: Students must complete ARTH 208 before ARTH 323.) The course is an investigation into Realism and Impressionism, the principal artistic movements between ca. 1840 - 1880.

**ARTH 324 Sixteenth-Century Art in Italy.**
(3) (Restriction: Not open to students who have taken 123-224) Investigation of the arts during a pivotal century of conflict and an expanding image of the world. In this early modern context of state formation and religious reform, the course focuses on patronage of the Italian courts, the rising status of the artist, and new uses for visual imagery.

**ARTH 325 Visual Culture Renaissance Venice.**
(3) (Prerequisite: one 200-level Art History course recommended, or by permission of the instructor.) Distinctive visual culture in the context of Venice's singular topography and reputation for licentiousness and toleration.

**ARTH 332 Italian Renaissance Architecture.**
(3) The Italian architecture of the 15th and 16th centuries witnessed a revival of architectural forms from Roman antiquity. According to their different social as well as political status, the centres of Italy - Florence, Rome, Venice, Mantua etc. - developed individual approaches in dealing with the reception of classical forms which was to influence the architecture of Europe.

**ARTH 333 Italian Baroque Architecture.**
(3) (Restriction: Not open to students who have taken 123-333D) Italian architecture in the 17th and 18th centuries. While the development of ecclesiastical architecture will form the main focus of this course, palace building and urban planning will also receive their due attention. One additional aspect will be the reception of Italian Baroque Architecture in Central and Western Europe. Architectural design is studied in the context of contemporary painting, sculpture and theories of art.

**ARTH 334 Eighteenth Century European Art.**
(3) A study of European painting and sculpture within the climate of social, economic, philosophical and political change in 18th-century Europe. The focus is on France, Italy, Germany and England from the last days of the Baroque to the Age of Revolution.

**ARTH 335 Art in the Age of Revolution.**
(3) The course deals primarily with European painting from the late 18th to the middle of the 19th century. Emphasis is placed on the relation of art to the political, social and intellectual
A critical examination of the development of "modern" architecture in Europe and North America throughout the 20th century and its roots in the 19th century. Emphasis will be placed on the role the architectural language of modernity as well as tradition played in modern society.

**ARTH 336 Art Now.**
(3) (Prerequisite: One 200-level Art History course or by permission of the instructor.) Recent art practices from the 1980's to the present - installation art, new media arts (video, digital and internet art), recent developments in performance, photography, and painting. Introduces students to the key fields of research of current art: postmodernism, representation, visuality, identity, embodiment, sexuality, memory, (bio)technology, intermedia, and globalization.

**ARTH 337 Modern Painting and Sculpture, Post-Impress to WWI.**
(3) (Restriction: Not open to students who have taken 123-337D) The beginnings of modern art in Europe. Major figures and movements from Cézanne to Picasso are considered.

**ARTH 338 Modern Art and Theory: WWI - WWII.**
(3) (Prerequisite: one 200-level Art History course recommended, or by permission of the instructor.) (Restriction: Not open to students who have taken 123-337D) An examination of the historical avant-garde (dada, soviet constructionism, and surrealism), Duchamp, and abstraction up to Abstract Expressionism. Examines how post-WWI art practices negotiate the intertwining of aesthetics and revolution, art and mass culture, modernism and modernity, imagined and material space, gender and sexuality, horizontality and verticality.

**ARTH 339 Critical Issues - Contemporary Art.**
(3) (Prerequisite: one 200-level Art History course recommended, or by permission of the instructor.) A critical examination of contemporary art from Abstract Expressionism to Pop art, Minimalism, Conceptual art, Land art, and Body art. Focuses on the development and critique of modernism, the dematerialization of art, the blurring of art and popular culture, the artist as shaman, temporality, and aesthetic redefinitions of subjectivity.

**ARTH 340 The Gothic Cathedral.**
(3) (Prerequisite: reading knowledge of French.) An introduction to the Gothic cathedral: architecture, sculpture, and stained glass. Also considered is its genesis, its construction and its historical environment. Although main emphasis will be on French cathedrals of the 12th and 13th centuries, their development in England, Germany and Spain will also be represented.

**ARTH 341 Romanesque Architecture.**
(3) The reception in the Byzantine East and the Latin West between ca 500 and 1200, including the interrelationship between both cultures; its relationship to the architecture of late Antiquity, and the development of building types and their social preconditions in feudalism and monasticism.

**ARTH 343 Northern Renaissance Art.**
(3) Surveys the visual culture of Northern Europe from c.1300-1600. Issues such as the emergence of new forms and genres of art, the changing status of artists, and the rise of the burgher class as patrons of art will be examined in relation to the social, religious, political and economic context.

**ARTH 347 19th Century Architecture.**
(3) The historicism of the 19th century in Europe and North America gives with its reception of several different styles - medieval as well as classical - an important insight into the meaning of architectural form, the creation of an architectural language and its use in a politically and economically rapidly changing society.

**ARTH 348 20th Century Architecture.**
(3) A critical examination of the development of "modern" transformations of the time. Major figures, such as David, Goya, Canova, Friedrich and Delacroix are considered.

**ARTH 351 Vision and Visuality in Art History.**
(3) An interdisciplinary investigation on how works of art construct the visual experience and on how they are received by the viewer.

**ARTH 352 Feminism in Art and Art History.**
(3) A consideration of the impact of feminism on recent art history, focusing on the examination of gender constructions in art and theory.

**ARTH 353 Selected Topics in Art History 1.**
(3) (Fall) Aspects of African-American and Diasporic Art. Study of a special field in the History of Art and Architecture taught by a visiting scholar.

**ARTH 354 Selected Topics Art History 2.**
(3) (Fall) Film, Styles and Movements. Study of a special field in the History of Art and Communications.

**ARTH 356 Modern & Contemporary Chinese Art.**
(3) (Restrictions: Not open to students taking or who have taken EAST 356.) Examination of modern Chinese art and visual culture from the 1920's to the present. Emphasis will be placed on the formation of the artistic avant-garde in the 20th century and its relation to socialist and post-socialist mass culture.

**ARTH 360 Photography and Art.**
(3) The course provides an introduction to the history of photography while considering its relation to major movements in the history of painting from the time of the invention of photography, in 1839, to the present day.

**ARTH 365 Studies in Later Medieval Art.**
(3) (Prerequisite: ARTH 367.) The German architectural tradition as part of McGill's Summer Study in Italy Program. For specific details about the course content, please consult Prof. B. Wilson, Dept. of Art History and Communication.) Urban growth, new religious and political institutions, powerful families, factionalism and civic identity provided new patrons and uses for artworks between 1300-1600. This course compares the function of visual imagery and artistic practices in Florence with developments in other centres in Italy during study abroad. Taught in Florence.

**ARTH 366 Italian Renaissance Art 1.**
(3) (Summer) Must be taken concurrently with ARTH 367.) Renaissance Florence was a centre of developments in painting, sculpture and architecture from 1300-1600. This course examines the production of art and its role within the context of the city's changing social and political history. Study in Florence enables this urban visual culture to be studied on site.

**ARTH 367 Italian Renaissance Art 2.**
(3) (Summer) (This course will be given in Florence, Italy, as part of McGill's Summer Study in Italy Program. For specific details about the course content, please consult Prof. B. Wilson, Dept. of Art History and Communication.) Urban growth, new religious and political institutions, powerful families, factionalism and civic identity provided new patrons and uses for artworks between 1300-1600. This course compares the function of visual imagery and artistic practices in Florence with developments in other centres in Italy during study abroad. Taught in Florence.

**ARTH 379 Studies: Modern Art and Theoretical Problems.**
(3) (Topic for Fall 2003: Quebec Art)

**ARTH 400 Selected Methods in Art History.**
(3) (Prerequisites: ARTH 208, ARTH 305.) (Required for Honours students, students must have completed ARTH 208 and ARTH 305 before taking ARTH 400, or with special permission of the department.) (Restriction: Not open to students who have taken ARTH 500.) Historiography A seminar course dealing with methodological issues in Art History.

**ARTH 406 German Architecture.**
(3) (Prerequisite: At least one 300-level course in architectural history.) (Restriction: Not open to students who have taken ARTH 345.) The German architectural tradition...
from the early Middle Ages to the present, the impact neighbouring countries had on its development, and the influence it exercised on them. The construction of an imperial tradition, and its use (and abuse) by different political systems.

- **ARTH 415 Late Medieval & Renaissance Architecture in Northern Europe.**
  (3) This course is to show the diversity of architectural practice in France, England, Germany and Central Europe from 1400 to 1600, covering ecclesiastical and secular architecture. The stylistic spectrum ranges from late Gothic over the reception of forms of the Italian Renaissance, to the revival of late Gothic forms, reaching its climax around 1600.

- **ARTH 416 English Architecture.**
  (3) (Prerequisite: At least one 300-level course in architectural history.) The history of English architecture from Roman times to the 20th century. The connection to the architectural development on the European continent and the influence of English architecture on the adjoining countries; the impact neighbouring countries had on its development.

- **ARTH 420 Selected Topics in Art and Architecture 1.**
  (3) (Fall) Cultures of Visualization. An advanced study of selected topics in the History of Art and Architecture.

- **ARTH 421 Selected Topics in Art and Architecture 2.**
  (3) (Fall)

- **ARTH 422 Selected Topics in Art and Architecture 3.**
  (3) (Winter) The Body and the Enlightenment

- **ARTH 435 Early Modern Visual Culture.**
  (3) (Prerequisite: one 300-level Art History course recommended, or by permission of the instructor.) Selected topics in early modern visual culture (c. 1500-1750).

- **ARTH 447 Independent Research Course.**
  (3) (Prerequisite: permission of instructor)

- **ARTH 457 Brushwork in Chinese Painting.**
  (3) (Prerequisite: At least one EAST or ARTH course or permission of instructor.) Restriction: Not open to students taking or who have taken EAST 457.) The seminar takes an in-depth look at the function and meaning of the brushwork in traditional Chinese painting. Analysis of paintings will be combined to close readings of theoretical texts in translation.

- **ARTH 473 Studies in 17th and Early 18th Century Art.**
  (3) (Winter)

- **ARTH 474 Studies in Later 18th and 19th Century Art.**
  (3)

- **ARTH 479 Studies: Modern Art and Theoretical Problems.**
  (3)

- **ARTH 490 Museum Internship.**
  (3) The Museum Internship is intended to provide direct exposure to museum collections and practical experience in the museum setting for students interested in museum professions. Individually designed in consultation with the professor in charge of internships and the appropriate personnel at one of the Montreal museums.

- **ARTH 510 The Body and Visual Culture.**
  (3) An examination of modern and contemporary redefinitions of corporeality in art, theory and visual culture. The course focuses on the dissemination of the body in the context of late capitalism and ongoing developments of image, information and biotechnologies. Interdisciplinary perspective establishing a dialogue between art and science.

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**CANS-Canadian Studies**

**Offered by: Inst for the Study of Canada**

- **CANS 200 Introduction to the Study of Canada.**
  (3) (3 lecture hours and 1 conference hour) An overview of approaches to the study of Canada, including economic, political, historical and cultural dimensions.

- **CANS 202 Canadian Cultures: Context and Issues.**
  (3) (Prerequisite: ability to read French) A survey course which traces the history of Canadian cultures from the middle of the 19th century to the present. It surveys the diversity of Canadian cultural identities through literature, drama, art and the mass media. The course features guest lecturers. Some course material will be in French.

- **CANS 300 Topics in Canadian Studies 1.**
  (3) (Prerequisite: CANS 200 or permission of instructor.) Canadian Film and Television taught by Andrea Balthwaite This course will examine Canada's film and television industries. Emphasis will be placed on the development and evolution of Canadian film and television, the way these cultural industries intersect with historical moments and social debates, and the significance of media studies to notions of Canadian identity. An interdisciplinary course on a Canadian Studies topic.

- **CANS 301 Topics in Canadian Studies 2.**
  (3) (Prerequisite: CANS 200 or permission of instructor.) An interdisciplinary course on a Canadian Studies topic.

- **CANS 303 Topics in Canadian Studies 3.**
  (3) (Prerequisite: CANS 200 or permission of instructor) Sports in Canada. This course will focus on the history and sociology of sports in Canada. Sports are a fundamental element of Canadian culture and identity and have an important impact on the national economy. Consequently all levels of government have shown an increasing interest in amateur and professional sports. The course will also look at the place of sports in Canadian history, sports and public policy, the business of sports, the impact of diversity on sports, the role of the media, and sports and fitness. An interdisciplinary course on a Canadian Studies topic.

- **CANS 401 Canadian Studies Seminar 1.**
  (3) (Topic will vary from year to year depending on staff interests.) (Prerequisite: CANS 200 or permission of instructor) Nationalisms in Canada. The course examines the historical processes of Canadian nation-building from the point of view of communications history, on the one hand, and intercultural communication, on the other. The first approach examines issues concerning the emergence and transformation of a Canadian public sphere, while the second examines Canadian history through the lens of intercultural relations within the context of an emergent multinational state. Scholarly representatives for this double focus would include the interesting combination of Harold Innis and Charles Taylor. An interdisciplinary seminar on a Canadian Studies topic.

- **CANS 402 Canadian Studies Seminar 2.**
  (3) (Prerequisite: CANS 200 or permission of instructor.) An interdisciplinary seminar on a Canadian Studies topic.

- **CANS 403 Representing Material Culture.**
  (3) (Restriction: U2 and U3 students.) Studying the Canadian past through media, museums and art gallery exhibitions. This course examines 20th century Canadian public exhibitions featuring documents, photographs, film, fine and decorative arts, and how they may reveal historical truths and/or create myths about Canada's past.
CATH-Catholic Studies

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

CATH 200 Introduction to Catholicism.
(3) (Fall) An interdisciplinary study of the Roman Catholic tradition in its changing contexts. Traces major themes in the Catholic tradition. Emphasis will vary from year to year on spiritual, intellectual, institutional, cultural and historical dimensions.

CATH 310 Catholic Intellectual Traditions.
(3) (Prerequisites: CATH 200, RELG 320, or permission of instructor) This course examines Catholic intellectual perspectives, schools of thought, and major thinkers, with focus on topics such as God, faith and reason, the human person, history, culture and community. Will also examine the interaction between Catholicism and other perspectives and traditions.

CATH 315 Catholicism and Moral Culture.
(3) (Prerequisite: CATH 200, or permission of instructor) A critical examination of theological and philosophical perspectives which inform contemporary Catholic moral thinking. This course explores the interplay of the evolving body of Catholic moral teaching with other developments and debates in ethics.

CATH 320 Scripture and Catholicism.
(3) (Restriction: Not open to those who have taken 190-370A in 2001-02 or CATH 370 in 2002-03.) An inquiry into what constitutes the religious sense, from a Catholic perspective; the relationship between reason, moral certainty and the religious sense; reasonable and unreasonable positions and concrete strategies before the ultimate questions concerning existence; freedom and responsibility, using literature, music and film.

CATH 340 Catholic Social Thought.
(3) (Prerequisite: CATH 200, or permission of instructor) Explores Catholic social and political thought from a comparative perspective. Topics may include the Church-State distinction, subsidiary, the common good, pluralism, the Catholic human rights revolution, natural law and the international order, Christian Democracy and the relationship between Catholicism, liberalism and communitarianism.

CATH 370 Topics in Catholic Studies.
(3) (3)

CATH 404 Canadian Studies Seminar 4.
(3) (Topic will vary from year to year depending on staff interests.) (Prerequisite: CANS 200 or permission of instructor.) An interdisciplinary seminar on a Canadian Studies topic.

CANS 405 Canadian Studies Seminar 5.
(3) (Prerequisite: CANS 200 or permission of instructor.) Canadian Ethnic Studies Seminar. An interdisciplinary seminar focusing on current social sciences research and public policies in areas relating to Canadian ethnic studies. Topics will include ethnic and racial inequalities, prejudice and discrimination, ethnic identities and cultural expressions, the structure and organization of minority groups. Prerequisites: CANS 200 or permission of instructor. Students registering in this course may not register in SOCI 475. An interdisciplinary seminar on a Canadian Studies topic.

CANS 406 Canadian Studies Seminar 6.
(3) (Topic will vary from year to year depending on staff interests.) (Prerequisite: CANS 200 or permission of instructor.) An interdisciplinary seminar on a Canadian Studies topic.

CANS 407 Regions of Canada.
(3) (Prerequisite: CANS 200 or permission of instructor.) Canadian regionalism and its manifestations in literature and the media, as well as in social and public policy, focusing on one region in Canada.

CANS 408 Individual Reading Course.
(3) (Restrictions: Reserved for final-year students enrolled in the Canadian Studies major or minor concentration. Permission must be obtained from the Canadian Studies advisor and from the supervising professor before registration.) Supervised reading on an explicitly multidisciplinary topic under the direction of a professor working in the field of Canadian Studies.

CANS 409 Canadian Studies Seminar 9.
(3) (Prerequisite: CANS 200 or permission of instructor,) An interdisciplinary seminar on a Canadian Studies topic.

CANS 410 Canadian Studies Seminar 10.
(3) (Topic will vary from year to year depending on staff interests.) (Prerequisite: CANS 200 or permission of instructor,) An interdisciplinary seminar on a Canadian Studies topic.

CANS 480 Honours Thesis 1.
(3) (Restriction: Students in the Honours Program in Canadian Studies.) Supervised research for and preparation of the Honours Thesis Proposal.

CANS 481 Honours Thesis 2.
(3) (Prerequisite: CANS 480.) (Restriction: Students in the Honours Program in Canadian Studies.) Supervised writing of Honours thesis.

CANS 492 Joint Honours Thesis.
(3) (Restriction: Open to students in the Joint Honours Program.) Honours thesis research to be carried out under the supervision of a faculty member.

CANS 492D1 (1.5), CANS 492D2 (1.5) Joint Honours Thesis.
(Restriction: Open to students in the Joint Honours Program.) (Students must register for both CANS 492D1 and CANS 492D2.) No credit will be given for this course unless both CANS 492D1 and CANS 492D2 are successfully completed in consecutive terms) (CANS 492D1 and CANS 492D2 together are equivalent to CANS 492) Honours thesis research to be carried out under the supervision of a faculty member.

CANS 501 Professional Development Seminar 1.
(3) (Prerequisite: For undergraduate students CANS 200 or permission of instructor.) (Restriction: Course will be restricted to final year students and graduate students.) An interdisciplinary professional development seminar in Canadian Studies.
CLAS-Classics
Offered by: History

CLAS 200 Greek Civilization: Foundations.
(3)

CLAS 202 Greek Civilization: Classical.
(3) The civilization of the Golden Age of Greece and the formation of the Classical Tradition, with some attention to its transmission to the Romans. Texts will be read in translation.

CLAS 203 Greek Mythology.
(3) A survey of the myths and legends of Ancient Greece.

CLAS 208 Roman Literature and Society.
(3) Life and society in the Roman Empire as reflected in contemporary authors of varying genres (epic, history, philosophy, satire and the novel).

CLAS 210 Introductory Latin 1.
(6) A course for beginners.

CLAS 210D1 (3), CLAS 210D2 (3) Introductory Latin 1.
(Students must register for both CLAS 210D1 and CLAS 210D2.) (No credit will be given for this course unless both CLAS 210D1 and CLAS 210D2 are successfully completed in consecutive terms) (No credit will be given for CLAS 210D1 and CLAS 210D2.) (No credit will be given for this course unless both CLAS 210D1 and CLAS 210D2 are successfully completed in consecutive terms) A course for beginners.

CLAS 212 Introductory Latin 2.
(3) (Winter) (Restriction: Permission of instructor required) A refresher course. Review of grammar and syntax; reading of simple sentences and connected passages.

CLAS 220D1 (3), CLAS 220D2 (3) Introductory Ancient Greek.
(Students must register for both CLAS 220D1 and CLAS 220D2.) (No credit will be given for this course unless both CLAS 220D1 and CLAS 220D2 are successfully completed in consecutive terms) A course for beginners.

CLAS 230D1 (3), CLAS 230D2 (3) Introductory Modern Greek.
(Restriction: Not open to students who have taken CLAS 236, CLAS 237 or CLAS 238.) (Students must register for both CLAS 230D1 and CLAS 230D2.) (No credit will be given for this course unless both CLAS 230D1 and CLAS 230D2 are successfully completed in consecutive terms) A course for beginners.

CLAS 300 Greek Drama and the Theatre.
(3) A study of the Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.

CLAS 309 The Greek and Roman Novel.

CLAS 311 Catullus/Ovid.
(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department)

CLAS 312 Intermediate Latin: Poetry.
(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department) Topic for 2002-03: Selections from Catullus.

CLAS 313 Intermediate Latin: Cicero.
(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department)

(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department)

CLAS 315 Intermediate Latin: Selections.
(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department) Topic for 2002-03: Selections from Caesar, "de Bello Gallico".

CLAS 316 Intermediate Latin: Medieval.
(3) (Prerequisite: CLAS 210 or CLAS 211 or CLAS 212 or permission of the Department) Selection.

(3) (Prerequisite: CLAS 210 or permission of the Department)

CLAS 318 Intermediate Latin: Oratory.
(3) (Prerequisite: CLAS 210 or permission of the Department)

(3) (Prerequisite: CLAS 210 or permission of the Department)

CLAS 320 Intermediate Latin: Medieval.
(3) (Prerequisite: CLAS 210 or permission of the Department)

(3) (Prerequisite: CLAS 220 or permission of the instructor)

CLAS 322 Intermediate Greek: Orators.
(3) (Prerequisite: CLAS 220 or permission of the instructor)

CLAS 323 Intermediate Greek: Homer.
(3) (Prerequisite: CLAS 220 or permission of the instructor) (Selections)

CLAS 324 Intermediate Greek: Poetry.
(3) (Prerequisite: CLAS 220 or permission of the instructor)

CLAS 325 Intermediate Greek: Later Prose.
(3) (Prerequisite: CLAS 220 or permission of the instructor) Topic for 2002-03: Selections from Xenophon's "Anabasis".

CLAS 326 Intermediate Greek: Selections.
(3) (Prerequisite: CLAS 220 or permission of instructor)

CLAS 331 Intermediate Modern Greek Language.
(3) (Prerequisite: CLAS 230 or CLAS 235 or CLAS 237 or permission of the instructor) Competence in the language at the intermediate level through the study of grammar, vocabulary and derivatives. Excerpts in prose and poetry introducing the civilization of modern Greece.

CLAS 332 The Modern Greek Novel.
(3) (Prerequisite: CLAS 220 or permission of instructor) Topic for 2002-03: Modern Greek Essays.

CLAS 333 Modern Greek Poetry.
(3) (Prerequisite: CLAS 230 or permission of the instructor) Selected works of 20th Century Greek poets - Kavafy, Seferis, Elytis, and others.

CLAS 335 Language and Civilization/Modern Greece 2.
(3) (Prerequisites: CLAS 237 or permission of the instructor) A continuation of CLAS 331.

CLAS 370 Women in Greek Drama.
(3) Each of four Greek tragedies (e.g. Oedipus, Antigone, Bacchae, Medea) analyzed along with its modern interpretations. The heroines of fiction as related to real Greek women by comparing myth transformation in tragedy with documentary material.

CLAS 404 Classical Tradition.
(3) (Prerequisite: 3 credits in Classics or related courses; or permission of instructor) Some episodes from the long history of the transmission and reception of the Classics in later times. Students will choose periods or times for special study.

CLAS 411 Advanced Latin: Epic.
(3) (Prerequisites: 9 credits of Intermediate Latin or permission of instructor) The reading of selected texts in Roman Epic Poetry in the original Latin.

CLAS 412 Advanced Latin: Lyric.
(3) (Prerequisites: 9 credits of Intermediate Latin or permission of instructor) The reading of selected texts in Roman Lyric Poetry in the original Latin.

CLAS 413 Advanced Latin: Satire.
(3) (Prerequisite: 9 credits of Intermediate Latin or permission of instructor) The reading of selected texts in Roman Satire Poetry in the original Latin.

CLAS 414 Advanced Latin: History.
(3) (Prerequisite: 9 credits of Intermediate Latin or permission of instructor) The reading of selected texts in Roman History Prose in the original Latin.

CLAS 415 Advanced Latin: Oratory.
(3) (Prerequisite: 9 credits of Intermediate Latin or permission of Education students.)

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* Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites and permission of the Department.
‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.
† Denotes courses not available as Education electives.
❖ Denotes courses with limited enrolment.

(ARTS) CLAS-CLASSICS
of instructor) The reading of selected texts in Roman Oratory Prose in the original Latin.

- CLASS 416 Advanced Latin: Philosophy.
  (3) (Prerequisite: 9 credits of Intermediate Latin or permission of instructor) The reading of selected texts in Roman Philosophy Prose in the original Latin.

- CLASS 421 Advanced Ancient Greek: Epic.
  (3) (Prerequisite: 9 credits of Intermediate Ancient Greek or permission of instructor) The reading of selected texts in Greek Epic Poetry in the original Ancient Greek.

- CLASS 422 Advanced Ancient Greek: Lyric.
  (3) (Prerequisite: 9 credits of Intermediate Ancient Greek or permission of instructor) The reading of selected texts in Greek Lyric Poetry in the original Ancient Greek.

- CLASS 423 Advanced Ancient Greek: Drama.
  (3) (Prerequisite: 9 credits of Intermediate Ancient Greek or permission of instructor) The reading of selected texts in Greek Drama Poetry in the original Ancient Greek.

- CLASS 424 Advanced Greek: History.
  (3) (Prerequisite: 9 credits of Intermediate Ancient Greek or permission of instructor) The reading of selected texts in Greek History Prose in the original Ancient Greek.

- CLASS 425 Advanced Greek: Oratory.
  (3) (Prerequisite: 9 credits of Intermediate Greek or permission of instructor) The reading of selected texts in Greek Oratory Prose in the original Ancient Greek.

- CLASS 426 Advanced Greek: Philosophy.
  (3) (Prerequisite: 9 credits of Intermediate Ancient Greek or permission of instructor) The reading of selected texts in Greek Philosophy Prose in the original Ancient Greek.

- CLASS 449 Seminar: Natural Law.
  (3) (Prerequisite: a relevant course in political or legal philosophy or in ancient history) The origin, development and criticism of theories of natural law in the Greek and Roman thinkers. Attention will be paid to the influence of these theorists on conceptions of natural law in the modern world. Original sources to be read in translation.

CLASS 515D1 (3), CLASS 515D2 (3) Latin Authors.
  (Prerequisite (Undergraduate): 9 credits in Intermediate Latin or equivalent) (Restriction: Honours and Graduate students) (Students must register for both CLASS 515D1 and CLASS 515D2.) (No credit will be given for this course unless both CLASS 515D1 and CLASS 515D2 are successfully completed in consecutive terms) Completion of a Reading List in Latin, with Faculty supervision, to be tested by written examination.

CLASS 525D1 (3), CLASS 525D2 (3) Ancient Greek Authors.
  (Prerequisite (Undergraduate): 9 credits in Intermediate Greek or equivalent) (Restriction: Honours and Graduate students) (Students must register for both CLASS 525D1 and CLASS 525D2.) (No credit will be given for this course unless both CLASS 525D1 and CLASS 525D2 are successfully completed in consecutive terms) Completion of a Reading List in Greek, with Faculty supervision, to be tested by written examination.

EAPR-English for Academic Purposes
Offered by: English & French Language Centre

EAPR 250 Research Essay & Rhetoric.
(3) (3 hours) (Intended for native speakers of English. For students in all years and faculties.) (Entrance test: Short essay first day of class.) (Restrictions: Not open to students who have taken or are taking ESLN 500. Not open to students who have taken EFRIL 250.) Principles and use of academic research and genres, rhetorical strategies, and general editing skills.

EAST-Asian Language & Literature
Offered by: East Asian Studies

EAST 211 Introduction: East Asian Culture: China.
(3) This course provides a critical introduction to central themes in Chinese culture. The course will also examine the changing representations of the Chinese cultural tradition in the West. Readings will include original sources in translation from the fields of literature, philosophy, religion, and cultural history.

EAST 212 Introduction: East Asian Culture: Japan.
(3) An introduction to Japan which presents various aspects of Japanese literature, culture, history, religions, philosophy and society.

EAST 213 Introduction: East Asian Culture: Korea.
(3) This course provides a critical introduction to central themes in Korean culture, including Korean literature, religions, philosophy, and socio-economic formations.

EAST 214 Japanese Animation & New Media.
(3) Animation and new media in Japan, with an emphasis on postwar developments.

EAST 215 Introduction to Chinese Art.
(3) (Restriction: Not open to students taking or who have taken ARTH 215.) Introductory survey of some of the major developments in Chinese art from the Bronze Age to the modern period. Emphasis will be placed on the diversity of artistic traditions in China.

EAST 220 First Level Korean.
(9) (Summer) Introduction to the basic structures of the standard Korean language. The aim of this course is to give students a basic knowledge of the Korean language. Special emphasis is put on handling everyday conversation, reading and writing short texts, and mastering basic grammar rules.

EAST 220D1 (4.5), EAST 220D2 (4.5) First Level Korean.
(Students must register for both EAST 220D1 and EAST 220D2.) (No credit will be given for this course unless both EAST 220D1 and EAST 220D2 are successfully completed in consecutive terms) (EAST 220D1 and EAST 220D2 together are equivalent to EAST 220) Introduction to the basic structures of the standard Korean language. The aim of this course is to give students a basic knowledge of the Korean language. Special emphasis is put on handling everyday conversation, reading and writing short texts, and mastering basic grammar rules.

EAST 230 First Level Chinese.
(9) (Summer) (Requires departmental approval.) Introduction to the basic structures of Mandarin Chinese, Pin-yin romanization and 750 characters for reading and writing. Emphasis on developing aural and oral skills through communication games and interaction activities. Animated films are used as part of teaching materials.

EAST 230D1 (4.5), EAST 230D2 (4.5) First Level Chinese.
(Requires departmental approval.) (Students must register for both EAST 230D1 and EAST 230D2.) (No credit will be given for this course unless both EAST 230D1 and EAST 230D2 are successfully completed in consecutive terms) (EAST 230D1 and EAST 230D2 together are equivalent to EAST 230) Introduction to the basic structures of Mandarin Chinese, Pin-yin romanization and 750 characters for reading and writing. Emphasis on developing aural and oral skills through
communication games and interaction activities. Animated films are used as part of teaching materials.

**EAST 240 First Level Japanese.**
(9) (Summer) (Requires departmental approval.) Introduction to the basic grammar and sentence patterns of the Japanese language in both oral and written forms. In reading and writing skills students will be introduced to katakana, hiragana and kanji.

**EAST 240D1 (4.5), EAST 240D2 (4.5) First Level Japanese.**
(Requires Departmental approval) (Students must register for both EAST 240D1 and EAST 240D2.) (No credit will be given for this course unless both EAST 240D1 and EAST 240D2 are successfully completed in consecutive terms) (EAST 240D1 and EAST 240D2 together are equivalent to EAST 240) Introduction to the basic grammar and sentence patterns of the Japanese language in both oral and written forms. In reading and writing skills students will be introduced to katakana, hiragana and kanji.

**EAST 303 Current Topics: Chinese Studies 1.**
(3) (Fall) (Restriction: Departmental approval required) Consideration of important issues in Chinese Studies. Content of the course will vary from year to year.

**EAST 304 Current Topics: Chinese Studies 2.**
(3) (Winter) (Restriction: Departmental approval required) Consideration of important issues in Chinese Studies. Content of the course will vary from year to year.

**EAST 305 Current Topics: Japanese Studies 1.**
(3) (Fall) (Restriction: Departmental approval required) Consideration of important issues in Japanese studies. The content of the course will vary from year to year.

**EAST 306 Current Topics: Japanese Studies 2.**
(3) (Winter) (Restriction: Departmental approval required) Consideration of important issues in Japanese studies. The content of the course will vary from year to year.

**EAST 307 Topics: Chinese Language and Literature.**
(3) (Fall) (Prerequisite: EAST 211 or permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese literature and/or language. The content of the course may vary from year to year.

**EAST 308 Topics: Chinese Language and Literature.**
(3) (Winter) (Prerequisite: EAST 211 or permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese literature and/or language. The content of the course may vary from year to year.

**EAST 313 Current Topics: Korean Studies 1.**
(3) (Fall) (Restriction: Departmental approval required.) Consideration of important issues in Korean Studies. Content of the course will vary from year to year.

**EAST 314 Current Topics: Korean Studies 2.**
(3) (Winter) (Restriction: Departmental approval required) Consideration of important issues in Korean Studies. Content of the course will vary from year to year.

**EAST 315 Survey: Modern Korean Literature in Translation.**
(3) This course will include modern Korean prose, poetry, and drama and will study major representative works from the 19th century to the present day.

**EAST 320 Second Level Korean.**
(9) (Summer) (Prerequisite: EAST 220 or equivalent) The aim of this course is to give students a fluent speaking ability in daily conversation, advanced grammar knowledge, improved reading and writing skills. Special emphasis is put on the efficient use of grammar, enrichment of vocabulary, and mastering useful expressions encountered in everyday life.

**EAST 320D1 (4.5), EAST 320D2 (4.5) Second Level Korean.**
(Prerequisite: EAST 220 or equivalent) (Students must register for both EAST 320D1 and EAST 320D2.) (No credit will be given for this course unless both EAST 320D1 and EAST 320D2 are successfully completed in consecutive terms) (EAST 320D1 and EAST 320D2 together are equivalent to EAST 320) The aim of this course is to give students a fluent speaking ability in daily conversation, advanced grammar knowledge, improved reading and writing skills. Special emphasis is put on the efficient use of grammar, enrichment of vocabulary, and mastering useful expressions encountered in everyday life.

**EAST 330 Second Level Chinese.**
(9) (Summer) (Prerequisite: Chinese EAST 230 or equivalent or permission of the instructor) The same communicative approach as in EAST 230 is used to develop aural and oral skills on daily topics. In addition to textbooks, Chinese films on videotapes will be incorporated as teaching materials.

**EAST 330D1 (4.5), EAST 330D2 (4.5) Second Level Chinese.**
(Prerequisite: EAST 230 or equivalent or permission of the instructor) (Restriction: Departmental approval required) (Students must register for both EAST 330D1 and EAST 330D2.) (No credit will be given for this course unless both EAST 330D1 and EAST 330D2 are successfully completed in consecutive terms) (EAST 330D1 and EAST 330D2 together are equivalent to EAST 330) The same communicative approach as in EAST 230 is used to develop aural and oral skills on daily topics. In addition to textbooks, Chinese films on videotapes will be incorporated as teaching materials.

**EAST 340 Second Level Japanese.**
(9) (Summer) (Prerequisite: Japanese EAST 240 or equivalent or permission of instructor.) Continuation of the study of oral and written Japanese.

**EAST 340D1 (4.5), EAST 340D2 (4.5) Second Level Japanese.**
(Prerequisite: EAST 240 or equivalent or permission of instructor) (Restriction: Departmental approval required) (Students must register for both EAST 340D1 and EAST 340D2.) (No credit will be given for this course unless both EAST 340D1 and EAST 340D2 are successfully completed in consecutive terms) (EAST 340D1 and EAST 340D2 together are equivalent to EAST 330) Continuation of the study of oral and written Japanese.

**EAST 351 Women in Chinese Literature.**
(3) (Core course for the Women's Studies program) This course will explore the representation of women in discourse and by women in traditional and contemporary China. Poetry, fiction, biography, and other forms of writing in history and philosophy will be analyzed for their role in the cultural construction of the feminine in China.

**EAST 352 Critical Approaches to Chinese Literature.**
(3) (Prerequisite: EAST 211.) This course will examine traditional and/or modern genres of Chinese literature with a focus on different forms of Chinese and Western literary analysis.

**EAST 353 Approaches to Chinese Cinema.**
(3) (Prerequisite: EAST 211.) Development of Chinese film in the 20th century, with an emphasis on both critical approaches to film as well as film history.

**EAST 354 Taoist and Buddhist Apocalypses.**
(3) Visions of the end of the world in Medieval Chinese Buddhist
and Taoist literature will be contrasted with Western apocalyptic materials. The course will trace the development of Buddhism and Taoism in China, focusing on millenarian movements, soteriology, public worship, and ritual.

**EAST 356 Modern & Contemporary Chinese Art.**
(3) (Restriction: Not open to students taking or who have taken ARTH 356.) Examination of modern Chinese art and visual culture from the 1920’s to the present. Emphasis will be placed on the formation of the artistic avant-garde in the 20th century and its relation to socialist and post-socialist mass culture.

**EAST 362 Japanese Cinema.**
(3) This course will study the development of film in Japan during the 20th century with a particular focus on the analysis of film form, genres and history.

**EAST 363 Aesthetics and Politics of Vision Premodern Japan.**
(3) (Prerequisite: EAST 212 or permission of instructor) This course examines cultural production in early and medieval Japan, focusing on calligraphy, painting, picture scrolls, gestures and their relation to textual production. Readings explore various classic texts, taboos against seeing and narrative modes of cognition.

**EAST 364 Mass Culture and Postwar Japan.**
(3) (Prerequisite: Any introductory course in literature or cultural studies, or permission of instructor) This course addresses a number of analytic approaches to mass culture in order to examine the culture industry of post-war Japan. Emphasis on narrative strategy in popular or consumer fiction and on the problems of marginalized writers.

**EAST 370 History of Sexuality in Japan.**
(3) Social and cultural history of sexuality in Japan. Possible topics include pre-modern sexuality and relations to court, religion and anthropology; pre-modern sex and gender relations; modern sexuality and gender identities; sexuality and the rise of science; relation to nationalism; feminism and queer movements.

**EAST 384 Comparative Socioeconomic History Japan and Korea.**
(3) A comparative examination of the social, economic, and political factors that are both cause and consequence of post-war industrial development in Japan and Korea. Some historical context will also be provided.

**EAST 385 Society and Community in Korea.**
(3) This course will analyze topics in colonial and contemporary Korean life with a focus on the social institutions of family, school and workplace.

**EAST 390 The Chinese Family in History.**
(3) (Prerequisite: EAST 211 or HIST 208 or HIST 218 or permission of the instructor.) Exploration of the Chinese family in history both as an institution - in its religious, legal, economic, political aspects - and as a lived reality.

**EAST 420D1 (3), EAST 420D2 (3) Third Level Korean.**
(Prerequisite: EAST 320 or permission of instructor) (Students must register for both EAST 420D1 and EAST 420D2.) (No credit will be given for this course unless both EAST 420D1 and EAST 420D2 are successfully completed in consecutive terms) This course will study the development of the modern Korean novel as a form which both affirms and resists the form of the European novel. Readings explore the particular problems of the Japanese novel in the context of modernization, westernization, and colonialism.

**EAST 393 Japan in Asia.**
(3) (Prerequisite: Any East Asian Studies course above the introductory level, or permission of instructor) This course introduces theories of cultural interaction, interpellation, and

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Denotes courses taught only in alternate years.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

Denotes courses taught only in alternate years.

Denotes courses not available as Education electives.

Denotes courses offered only to Bachelor of Education students.

**EAST 464 Image, Text, Performance.**
(3) (Prerequisite: Any East Asian Studies course above the introductory level, or permission of the instructor) Drawing on theoretical approaches from a variety of media studies, including cinema, performance and performativity, and elsewhere, this course looks at cultural production in premodern and modern Japan. Topics to be addressed range from calligraphy and writing, to theatre, and film.

**EAST 466 Feminism and Japan.**
(3) (Prerequisite: Any East Asian Studies course above the introductory level, or permission of instructor) Seminar dealing with issues relating to gender, the feminine, especially in the context of Japan. The course will draw on a range of theoretical frameworks, and may include the analysis of literature, film, art and popular culture.

**EAST 467 Topics: Japanese Cinema.**
(3) (Prerequisites: EAST 214, EAST 362 or permission of the instructor.) Topics in the study of Japanese cinema.

**EAST 490 Confucius and the Classics.**
(3) (Prerequisite: EAST 211 or HIST 208 or HIST 218 or permission of instructor.) This course will examine the Five Classics and their relation to the figure of Confucius. It will survey various interpretations of Confucius and the Classics and the role these played in various periods of Chinese history.

**EAST 491 Tutorial: East Asian Languages and Literatures.**
(3) (Fall) (Restriction: Departmental approval required) Advanced reading course in language or literature.

**EAST 492 Tutorial: East Asian Languages and Literatures.**
(3) (Winter) (Restriction: Departmental approval required) Advanced reading course in language or literature.

**EAST 493 Special Topics: East Asian Studies 1.**
(3) (Fall) (Prerequisite: Any EAST course at the 300-level or above or permission of instructor) (Restriction: Departmental approval required) Advanced reading course under supervision of instructor on certain aspects of East Asian Studies. Topics will vary from year to year.

**EAST 494 Special Topics: East Asian Studies 2.**
(3) (Winter) (Prerequisite: Any EAST course at the 300-level or above or permission of instructor) (Restriction: Departmental approval required) Advanced reading course under supervision of instructor on certain aspects of East Asian Studies. Topics will vary from year to year.

**EAST 495D1 (1.5), EAST 495D2 (1.5) Joint Honours Thesis: East Asian Studies.**
(Prerequisite: U3 Joint Honours status and permission of instructor) (Restriction: Departmental approval required) (Students must register for both EAST 495D1 and EAST 495D2.) (No credit will be given for this course unless both EAST 495D1 and EAST 495D2 are successfully completed in consecutive terms) Supervised reading and preparation of an Honours thesis under the direction of a member of staff.

**EAST 495N1 Joint Honours Thesis: East Asian Studies.**
(1.5) (Restriction: Departmental approval required) (Students must also register for EAST 495N2) (No credit will be given for this course unless both EAST 495N1 and EAST 495N2 are successfully completed in a twelve month period) Supervised reading and preparation of an Honours thesis under the direction of a member of staff.

**EAST 495N2 Joint Honours Thesis: East Asian Studies.**
(1.5) (Prerequisite: EAST 495N1) (No credit will be given for this course unless both EAST 495N1 and EAST 495N2 are successfully completed in a twelve month period) See EAST 495N1 for course description.

**EAST 498D1 (3), EAST 498D2 (3) Honours Thesis: East Asian Studies.**
(Prerequisite: U3 Honours status and permission of the instructor) (Restriction: Departmental approval required) (Students must register for both EAST 498D1 and EAST 498D2) (No credit will be given for this course unless both EAST 498D1 and EAST 498D2 are successfully completed in consecutive terms) Supervised reading and preparation of an Honours thesis under the direction of a member of staff.

**EAST 498N1 Honours Thesis: East Asian Studies.**
(3) (Restriction: Departmental approval required) (Students must also register for EAST 498N2) (No credit will be given for this course unless both EAST 498N1 and EAST 498N2 are successfully completed in a twelve month period) Supervised reading and preparation of an Honours thesis under the direction of a member of staff.

**EAST 498N2 Honours Thesis: East Asian Studies.**
(3) (Prerequisite: EAST 498N1) (No credit will be given for this course unless both EAST 498N1 and EAST 498N2 are successfully completed in a twelve month period) See EAST 498N1 for course description.

**EAST 499 Internship: East Asian Studies.**
(3) (Restriction: Open to U2 and U3 students with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will not normally fulfill program requirements for seminar or 400-level courses.) Internship with an approved host institution or organization.

**EAST 501 Advanced Topics in Japanese Studies 1.**
(3) (Fall) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese culture and society.

**EAST 502 Advanced Topics in Japanese Studies 2.**
(3) (Winter) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese culture and society.

**EAST 503 Advanced Topics in Chinese Studies 1.**
(3) (Fall) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese culture and society.

**EAST 504 Advanced Topics in Chinese Studies 2.**
(3) (Winter) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese culture and society.

**EAST 515 Seminar: Beyond Orientalism.**
(3) (Prerequisite (Undergraduate): any EAS course at the 300-level or above or permission of instructor) Examines the cultural stakes and ethical implications of applying Western European models of understanding to East Asian societies. Provides background on interdisciplinary debates around "otherness", "cultural appropriation", and "postcolonialism", focusing on their history within East Asian Studies and their impact on that field's methodological assumptions, self-definition, and institutional practices.

**EAST 520D1 (3), EAST 520D2 (3) Fourth Level Korean.**
(Prerequisite: EAST 420 or permission of instructor) (Students must register for both EAST 520D1 and EAST 520D2.) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Korean culture and society.
EAST 500 Fourth Level Chinese.

(6) (Summer) (Prerequisite (Undergraduate): EAST 430 or equivalent) Development of skills required to conduct academic discussions in oral as well as in written forms. Teaching materials include original texts from Chinese newspapers, Chinese literature and videos.

EAST 500D1 (3), EAST 500D2 (3) Fourth Level Chinese.

(Prerequisite (Undergraduate): EAST 430 or equivalent) Students must register for both EAST 500D1 and EAST 500D2. (No credit will be given for this course unless both EAST 500D1 and EAST 500D2 are successfully completed in consecutive terms) The course will offer an introduction to the grammar and syntax of classical Japanese. Readings in well-known writings of pre-modern Japan.

EAST 504 Advanced Reading and Translation in Japanese.

(3) (Prerequisite (Undergraduate): EAST 440 or permission of the instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings of poems in the original.

EAST 507 The Yijing (Book of Changes).

(3) (Prerequisite: Any 300-level or above EAST course or permission of instructor) In-depth examination of the Yijing, known in the West as the Book of Changes. The course will combine a close reading of this pivotal text and its numerous commentaries with a social and cultural analysis of the diverse functions it fulfilled through Chinese history - philosophical, political, religious, aesthetic and cosmological.

EAST 508 Technologies of Self in Early China.

(3) (Prerequisite: Undergraduate) A study of selected topics and aspects of Chinese social structure, military organization, political and ritual codes.

EAST 509 Advanced Topics: Chinese Literature.

(3) (Prerequisite (Undergraduate): one advanced course in EAST or permission of instructor) Consideration of selected topics and aspects of Chinese literature. The content of the course may vary from year to year, ranging from contemporary to modern to pre-modern literature.

EAST 510 Japanese Literary Theory and Practice.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course examines Japanese theories of literary practice and its historical and cultural context.

EAST 511 Advanced Topics: Japanese Poetry.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course explores the major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in well-known writings of pre-modern Japan.

EAST 512 Classical Chinese Poetry Themes and Genres.

(3) (Prerequisite (Undergraduate): EAST 433 or permission of instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings of poems in the original.

EAST 513 Technologies of Self in Early China.

(3) (Prerequisite: Undergraduate) A study of selected topics and aspects of Chinese social structure, military organization, political and ritual codes.

EAST 514 Advanced Topics: Chinese Literature.

(3) (Prerequisite (Undergraduate): one advanced course in EAST or permission of instructor) Consideration of selected topics and aspects of Chinese literature. The content of the course may vary from year to year, ranging from contemporary to modern to pre-modern literature.

EAST 515 Chinese for Business 1.

(3) (Prerequisite: EAST 330 or equivalent or permission of instructor) This course aims to provide advanced students of Chinese with training in the terminology and syntax necessary for business communications. Topics will include many different aspects of business negotiations, such as price negotiation, methods of payment, etc.

EAST 516 Chinese for Business 2.

(3) (Prerequisite: EAST 535 or equivalent or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students’ linguistic competence for business communication, and to provide students with some knowledge on China’s trade policies as well as on different methods of trading with China.

EAST 517D1 (3), EAST 517D2 (3) China Today Through Translation.

(Prerequisite (Undergraduate): students with native or near native proficiency may register directly, other students require permission of instructor) The course will offer an introduction to the grammar and syntax of classical Japanese. Readings in well-known writings of pre-modern Japan.

EAST 518 Classical Chinese Poetry Themes and Genres.

(3) (Prerequisite (Undergraduate): EAST 433 or permission of instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in well-known writings of pre-modern Japan.

EAST 519 Advanced Topics: Japanese Literature.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course examines Japanese theories of literary practice and its historical and cultural context.

EAST 520 Japanese Literary Theory and Practice.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course examines Japanese theories of literary practice and its historical and cultural context.


(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course explores the major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in well-known writings of pre-modern Japan.

EAST 522 Classical Chinese Poetry Themes and Genres.

(3) (Prerequisite (Undergraduate): EAST 433 or permission of instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in well-known writings of pre-modern Japan.

EAST 523 Technologies of Self in Early China.

(3) (Prerequisite: Undergraduate) A study of selected topics and aspects of Chinese social structure, military organization, political and ritual codes.

EAST 524 Advanced Topics: Chinese Literature.

(3) (Prerequisite (Undergraduate): one advanced course in EAST or permission of instructor) Consideration of selected topics and aspects of Chinese literature. The content of the course may vary from year to year, ranging from contemporary to modern to pre-modern literature.

EAST 525 Chinese for Business 1.

(3) (Prerequisite: EAST 330 or equivalent or permission of instructor) This course aims to provide advanced students of Chinese with training in the terminology and syntax necessary for business communications. Topics will include many different aspects of business negotiations, such as price negotiation, methods of payment, etc.

EAST 526 Chinese for Business 2.

(3) (Prerequisite: EAST 535 or equivalent or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students’ linguistic competence for business communication, and to provide students with some knowledge on China’s trade policies as well as on different methods of trading with China.

EAST 527D1 (3), EAST 527D2 (3) China Today Through Translation.

(Prerequisite (Undergraduate): students with native or near native proficiency may register directly, other students require permission of instructor) The course will offer an introduction to the grammar and syntax of classical Japanese. Readings in well-known writings of pre-modern Japan.

EAST 528 Classical Chinese Poetry Themes and Genres.

(3) (Prerequisite (Undergraduate): EAST 433 or permission of instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in well-known writings of pre-modern Japan.

EAST 529 Advanced Topics: Japanese Literature.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course examines Japanese theories of literary practice and its historical and cultural context.

EAST 530 Fourth Level Chinese.

(3) (Prerequisite: EAST 400D1 and EAST 400D2 are successfully completed in consecutive terms) Fourth Level Chinese.

EAST 531 Technologies of Self in Early China.

(3) (Prerequisite: Undergraduate) A study of selected topics and aspects of Chinese social structure, military organization, political and ritual codes.

EAST 532 Advanced Topics: Chinese Literature.

(3) (Prerequisite (Undergraduate): Any course in EAS above the 200-level and at least a year of an Asian Language, or permission of instructor) This course examines Japanese theories of literary practice and its historical and cultural context.

EAST 533 Chinese for Business 1.

(3) (Prerequisite: EAST 330 or equivalent or permission of instructor) This course aims to provide advanced students of Chinese with training in the terminology and syntax necessary for business communications. Topics will include many different aspects of business negotiations, such as price negotiation, methods of payment, etc.

EAST 534 Chinese for Business 2.

(3) (Prerequisite: EAST 535 or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students’ linguistic competence for business communication, and to provide students with some knowledge on China’s trade policies as well as on different methods of trading with China.

EAST 535D1 (3), EAST 535D2 (3) Third Level Chinese.

(Prerequisite (Undergraduate): EAST 430 or equivalent) Development of skills required to conduct academic discussions in oral as well as in written forms. Teaching materials include original texts from Chinese newspapers, Chinese literature and videos.

EAST 536 Chinese for Business 1.

(3) (Prerequisite: EAST 535 or equivalent or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students’ linguistic competence for business communication, and to provide students with some knowledge on China’s trade policies as well as on different methods of trading with China.

EAST 537D1 (3), EAST 537D2 (3) Third Level Chinese.

(Prerequisite (Undergraduate): EAST 430 or equivalent or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students’ linguistic competence for business communication, and to provide students with some knowledge on China’s trade policies as well as on different methods of trading with China.
Consideration of selected topics and aspects of Japanese literature. The content of the course may vary from year to year from contemporary to modern to pre-modern literature.

● EAST 582 Japanese Culture and Society. (3)

● EAST 590 Multiple Narratives of "Orient". (3) (Prerequisite (Undergraduate): A literature course above the introductory level in EAS or permission of instructor) A study of western construction of the "Orient" from the earliest contact to the present. The course will also examine the evolution of Japanese images of the West. A wide range of cultural narratives will be considered including literature, art, historical documents and the media. Readings in translation.

ECON-Economics

Offered by: Economics

ECON 199 FYS: Aspects of Globalization. (3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) A guided discussion of the many and varied aspects of economic globalization.

ECON 205 An Introduction to Political Economy. (3) (Restriction: Not open to students who have taken 154-205D) (Restriction: This course does not count for credit toward the Major or Honours degree in Economics) A critical study of the insights to be gained through economic analysis of a number of problems of broad interest. The focus will be on the application of economics to issues of public policy.

ECON 208 Microeconomic Analysis and Applications. (3) (Restriction: Not open to students who have taken 154-208) (Restriction: Students who have taken or are taking ECON 230 or ECON 250) A university-level introduction to demand and supply, consumer behaviour, production theory, market structures and income distribution theory.

ECON 209 Macroeconomic Analysis and Applications. (3) (Prerequisites: ECON 208 or permission of the instructor) (Restriction: Not open to students who have taken or are taking ECON 330 or ECON 352) A university-level introduction to national income determination, money and banking, inflation, unemployment and economic policy.

ECON 219 Current Economic Problems: Topics. (3) (This course will also be of interest to students outside of Economics) This course will deal with topical issues of importance to the Canadian economy.

ECON 223 Political Economy of Trade Policy. (3) (Prerequisite: ECON 208) The course introduces students to the economics of international trade, what constitutes good trade policy, and how trade policy is devised. The course examines Canadian trade policy since 1945, including the GATT, Auto Pact, the FTA and NAFTA, and concludes with special topics in trade policy.

ECON 225 Economics of the Environment. (3) (Restriction: Not open to students who have taken 154-325 or 154-425) A study of the application of economic theory to questions of environmental policy. Particular attention will be given to the measurement and regulation of pollution, congestion and waste and other environmental aspects of specific economies.

ECON 227 Economic Statistics. (6) (Summer - Session 001 (01-May-2006/27-Jun-2006)) (You may not be able to receive credit for this course and other

statistic courses. Be sure to check the CourseOverlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Distributions, averages, dispersions, sampling, testing, estimation, correlation, regression, index numbers, trends and seasonals.

ECON 227D1 (3), ECON 227D2 (3) Economic Statistics. (Students must register for both ECON 227D1 and ECON

227D2) (No credit will be given for this course unless both ECON 227D1 and ECON 227D2 are successfully completed in consecutive terms) (ECON 227D1 and ECON 227D2 together are equivalent to ECON 227) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the CourseOverlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Distributions, averages, dispersions, sampling, testing, estimation, correlation, regression, index numbers, trends and seasonals.

ECON 230D1 (3), ECON 230D2 (3) Microeconomic Theory. (Students must register for both ECON 230D1 and ECON

230D2) (No credit will be given for this course unless both ECON 230D1 and ECON 230D2 are successfully completed in consecutive terms) The introductory course for Economics Major students in microeconomic theory. In depth and critical presentation of the theory of consumer behaviour, theory of production and cost curves, theory of the firm, theory of distribution, welfare economics and the theory of general equilibrium.

ECON 250D1 (3), ECON 250D2 (3) Introduction to Economic Theory: Honours. (MATH 139 and MATH 141 are corequisites) (Students must register for both ECON 250D1 and ECON 250D2) (No credit will be given for this course unless both ECON 250D1 and ECON 250D2 are successfully completed in consecutive terms) An intermediate level microeconomics course. Includes theory of exchange, theory of consumer behaviour, theory of production and cost curves, theory of the firm, theory of distribution; general equilibrium and welfare economics. The assumptions underlying the traditional neo-classical approach to economic theory will be carefully specified.

ECON 257D1 (3), ECON 257D2 (3) Economic Statistics - Honours. (Corequisites: MATH 141 and MATH 133 and ECON 250) (Restriction: Not open to students who have taken 154-357 or are taking ECON 217 or ECON 227.) (Students must register for both ECON 257D1 and ECON 257D2) (No credit will be given for this course unless both ECON 257D1 and ECON 257D2 are successfully completed in consecutive terms) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the CourseOverlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Stochastic phenomena; probability and frequency distributions, introduction to probability theory. Statistical inference about proportions, means and variances; analysis of variance; nonparametric statistics; index numbers and time series; economic forecasting; regression and correlation analysis; introduction to general linear models, its uses and limitations; uses and misuses of statistics.

ECON 295 Macroeconomic Policy. (3) (Corequisite: MGCR 293) (Restriction: For B.Com. students) (Restriction: Not open to students who have taken or are taking ECON 330 or ECON 352) (Continuing Education: requirement for CMA, CGA, I.C.B., the EA of AACI, and the CRA) (Continuing Education: not open to full-time day students) This applied macroeconomics course
focuses on current and recurrent macroeconomic issues important in understanding the public policy environment in which firms make their decisions. Topics include national accounts; national income determination; economic growth and fluctuations; money, monetary policy and financial markets; international trade and finance.

**ECON 301 Economics of the Arts.**
(3) (Prerequisites: ECON 208 or MSCR 293 or ECON 230D1/ECON 230D2 or ECON 250D1/ECON 250D2) Economic analysis of performing and visual arts, the nature of contracts and of markets in arts. Public policy issues, globalization and trade in cultural goods and services.

**ECON 302 Money and Banking.**
(6) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) Principles of money, banking and central banking covering the nature of money, measurement of money supply, determination of quantity of money; sources of bank funds, uses of bank funds, nature of central banking, monetary policy and the international payments system.

**ECON 302D1 (3), ECON 302D2 (3) Money and Banking.**
(Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) (Students must register for both ECON 302D1 and ECON 302D2.) (No credit will be given for this course unless both ECON 302D1 and ECON 302D2 are successfully completed in consecutive terms) (ECON 302D1 and ECON 302D2 together are equivalent to ECON 302) Principles of money, banking and central banking covering the nature of money, measurement of money supply, determination of quantity of money; sources of bank funds, uses of bank funds, nature of central banking, monetary policy and the international payments system.

**ECON 305 Industrial Organization.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) (Restriction: Not open to students who have taken ECON 305) The course analyzes the structure, conduct, and performance of industries, particularly but not exclusively in Canada. Topics include effects of mergers, barriers to entry, product line and promotion policies, vertical integration, and R & D policies of firms.

**ECON 306D1 (3), ECON 306D2 (3) Labour Economics and Institutions.**
(Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) (Students must register for both ECON 306D1 and ECON 306D2.) (No credit will be given for this course unless both ECON 306D1 and ECON 306D2 are successfully completed in consecutive terms) (ECON 306D1 and ECON 306D2 together are equivalent to ECON 306) Key features of the Canadian labour sector effects and its historical development are described. Economists' ideas about the labour sector are sketched. The labour sector of various public programs, unemployment, and the labour movement are examined. Much attention is given to the status of women in the labour sector.

**ECON 308 Governmental Policy Towards Business.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) (Restriction: Not open to students who have taken 154-305D) Covers the major public and private policies, and trade policies. Includes comparison with policies of other countries, especially the U.S. Readings will include theories economists have developed for such studies.

**ECON 311 United States Economic Development.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) A survey of economic growth and institutional change in the United States. Emphasis will be placed on the use of analytical methods and categories and theories economists have developed for such studies.

**ECON 313 Economic Development 1.**
(3) (Prerequisite: ECON 308 and either ECON 209 or one development course.) (Restriction: Not open to students who have taken 154-313D) Microeconomic theories of economic development and empirical evidence on population, labour, firms, poverty, inequality and environment.

**ECON 314 Economic Development 2.**
(3) (Prerequisite: ECON 313) (Restriction: Not open to students who have taken 154-313D) Macroeconomic development issues, including theories of growth, public finance, debt, currency crises, corruption, structural adjustment, democracy and global economic organization.

**ECON 316 The Underground Economy.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) The origins, structure and operation of the "underground" sectors of modern economies around the world. Topics include the causes of black marketeering in Western economies; international contraband trade in guns and drugs; money laundering through the world financial system.

**ECON 318 The Criminal Economy.**
(3) (Prerequisite: ECON 316.) (Restriction: Departmental approval required) A seminar course focusing on the nature and operation of criminal enterprise in markets for goods, services and factors of production within advanced industrial economies. Topics include the debate over "organized" crime; the structure of the criminal firm; labour racketeering; and crime in the money and capital markets.

**ECON 320 The Quebec Economy.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) A study of the economic development of Quebec and contemporary economic problems in the province. Topics include: economic history since 1900; industrial structure, trade and foreign ownership; unemployment, poverty, and the labour market; government finance and federal-provincial economic relations; independence and the economic program of the Parti Quebecois.

**ECON 326 Ecological Economics.**
(3) (Prerequisites: ECON 208 and ECON 209 or consent of instructor) Macroeconomic and structural aspects of the ecological crisis. A course in which subjects discussed include the conflict between economic growth and the laws of thermodynamics; the search for alternative economic indicators; the fossil fuels crisis; and "green" fiscal policy.

**ECON 329 Economics of Confederation.**
(3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) (Restriction: Not open to students who have taken ECON 429) The course acquaints students with the facts of Canadian regional economic disparities, as well as with the theories that try to explain them and policies that try to reduce them. It also deals with economic theories of federalism and intergovernmental grants within a federal state.

**ECON 330D1 (3), ECON 330D2 (3) Macroeconomic Theory.**
(Prerequisite: ECON 230 or ECON 250) If a student has
already taken 154-200 or 154-203 and 154-204 or ECON 208 and ECON 209. It may be concurrently taken with ECON 230 with the permission of the instructor. Students must register for both ECON 330D1 and ECON 330D2. (No credit will be given for this course unless both ECON 330D1 and ECON 330D2 are successfully completed in consecutive terms.) A review of basic economic concepts and tools with an in-depth and critical presentation of the fundamental areas of macroeconomic theory. Topics include: the determination of output, employment and price level; money and banking and business cycles; stabilization policy; international finance and growth theory.

- **ECON 331 Economic Development: Russia and USSR.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) Introduction to Russian and former Soviet economic development, structure, planning, management and performance. The former Soviet economy, attempted reforms, and the collapse of the U.S.S.R.

- **ECON 334 History of Economic Doctrines.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) The course surveys the development of economics, how the discipline and the thinking of economists evolved, and the significance of some of the analytical tools used.

- **ECON 335 The Japanese Economy.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) The first part of the course covers the economic institutions in, changing structure of, and public policies employed by the Japanese economy. The second part probes the economic "logic" of the Japanese capitalist system, explores its relationship to the ideas of Joseph Schumpeter, and makes comparisons with the American economy.

- **ECON 337 Introductory Econometrics.**
  1. (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) Practical application of quantitative methods in statistical investigations.

- **ECON 340 Ex-Socialist Economies.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) The course examines the structural and institutional changes in economies in transition from central planning to market allocation and evaluates the current experiences of the countries of the former USSR and East-Central Europe.

- **ECON 344 The International Economy 1830-1914.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) Examines the processes of economic growth and industrialization in Europe and their effects on the development of the world economy. Particular emphasis is placed on the economic history of major European nations and their overseas extensions. Topics include technological change, the demographic transition and the gold standard.

- **ECON 345 The International Economy since 1914.**
  (3) (Prerequisites: ECON 208 and ECON 209 or those listed under Prerequisites above) Studies the history of economic adjustments in the 20th century, with particular reference to the internationalized countries. Topics include: the economic impact of WWI, the attempts to revive the international economy in the 1920s, the causes and consequences of the Great Depression of the 1930s, and the economic problems and subsequent economic boom following WWII.

- **ECON 347 Economics of Climate Change.**
  (3) (Prerequisites: ECON 208 and ECON 209) The course focuses on the economic implications of, and problems posed by, predictions of global warming due to anthropogenic emissions of greenhouse gases. Attention is given to economic policies such as carbon taxes and tradable emission permits and to the problems of displacing fossil fuels with new energy technologies.

- **ECON 348 Urban Economics.**
  (3) (Prerequisite: ECON 208.) (Restriction: For U2 or U3 students only.) Economic explanations for the rise of cities; their economic benefits and externalities. Economic challenges to cities in the modern context. Examination of municipal policies and of economic, legal and political constraints on cities.

- **ECON 352D1 (3), ECON 352D2 (3) Macroeconomics-Honours.**
  (Prerequisite: ECON 250D1/ECON 250D2.) (Corequisite: ECON 257D1.) (Students must register for both ECON 352D1 and ECON 352D2.) (No credit will be given for this course unless both ECON 352D1 and ECON 352D2 are successfully completed in consecutive terms) Basic macroeconomic theory, emphasizing the Classical and Keynesian ideas for the short-run determination of output, employment, interest rates and prices in the economy. Elements of international economics, money and banking and growth theory. The structure of the Canadian economy.

- **ECON 399 Internship: Economics.**
  (3) (Restriction: Open to U2 and U3 students with a minimum CGPA of 3.0 and permission of the departmental Internship Advisor. This course will not normally fulfill program requirements for honors, major or minor programs. A letter from a supervisor at the institution must attest to the successful completion of the student's tenure. The topic must fall within the student's program in economics and have the prior approval of a faculty member in the department.) Internship with an approved host institution or organization.

- **ECON 405 Natural Resource Economics.**
  (3) (Prerequisite: ECON 230 or ECON 250) Topics include: Malthusian and Ricardian Scarcity; optimal depletion of renewable and non-renewable resources; exploration, risk and industry structure, and current resources, rent and taxation. Current public policies applied to the resource industries, particularly those of a regulatory nature.

- **ECON 406 Topics in Economic Policy.**
  (3) (Prerequisites: ECON 230 or ECON 250 and one of ECON 227, ECON 257) Selected policy issues are investigated using economic theory. For details on topics covered in the current year, consult the instructor.

- **ECON 408D1 (3), ECON 408D2 (3) Public Sector Economics.**
  (Prerequisite: ECON 230D1/ECON 230D2 or ECON 250D1/ECON 250D2.) (Students must register for both ECON 408D1 and ECON 408D2.) (No credit will be given for this course unless both ECON 408D1 and ECON 408D2 are successfully completed in consecutive terms) A survey of the economists' view of government activity. The theory of public spending and various modes of taxation is emphasized. Canadian institutions are viewed in an analytical perspective.

- **ECON 410 Economic Development: Selected World Area.**
  (3) (Prerequisites: ECON 230 or ECON 250 and one semester of economic development) An advanced course in the economic development of this region with emphasis on the history of adaptation and the interaction of political and economic factors in the analysis of the crisis of the 1980s.

- **ECON 411 Economic Development: A World Area.**
  (3) (Prerequisites: ECON 230 or ECON 250 and one listed under Prerequisites above) The course focuses on the economic implications of, and problems posed by, predictions of global warming due to anthropogenic emissions of greenhouse gases. Attention is given to economic policies such as carbon taxes and tradable emission permits and to the problems of displacing fossil fuels with new energy technologies.
semester of economic development) An advanced course in the economic development of a pre-designated underdeveloped country or a group of countries.

- **ECON 412 Topics in Economic Development 1.**

- **ECON 416 Topics in Economic Development 2.**
  (3) (Prerequisite: ECON 230 or ECON 250 or permission of the instructor) This course gives students a broad overview of the economics of developing countries. The course covers micro and macro topics, with particular emphasis on the economic analysis at the micro level.

- **ECON 420 Topics in Economic Theory.**
  (3) (Prerequisite: ECON 230 or ECON 250) The course discusses selected topics in micro or macroeconomic theory at an advanced level. Possible topics include welfare economics, general equilibrium, theories of firms, consumer behaviour, intertemporal choice, uncertainty, game theory, etc.

- **ECON 423D1 (3), ECON 423D2 (3) International Trade and Finance.**
  (Prerequisite: ECON 230D1/ECON 230D2 or ECON 250D1/ECON 250D2.) (Corequisite: ECON 330D1 or ECON 352D1.) (Students must register for both ECON 423D1 and ECON 423D2.) (No credit will be given for this course unless both ECON 423D1 and ECON 423D2 are successfully completed in consecutive terms) Theoretical and policy approach to the study of international economic relations. Topics examined include: trade theory; tariff theory; trade and growth; balance of payments; adjustment; international monetary system.

- **ECON 426 Labour Economics.**
  (3) (Prerequisite: Economics Majors or Honours students ECON 230 or ECON 250; non-Economics students ECON 306) The determinants of labour supply, demand and the structure of earnings are considered. The economics effects of government policies, such as minimum wage laws, unemployment insurance, welfare and training programs and subsidies to higher education are analyzed. A rigorous theoretical and "hands on" empirical approach is emphasized.

- **ECON 434 Current Economic Problems.**
  (3) (Prerequisite: ECON 230 or ECON 250.) (Corequisite: ECON 330 or ECON 352) A discussion of contemporary economic problems. Topics will reflect economic issues of current interest.

- **ECON 440 Health Economics.**
  (3) (Prerequisites: ECON 208 and ECON 227 or comparable courses or consent of the instructor) The organization and performance of Canada’s health care system are examined from an economist’s perspective. The system is described and its special features analyzed. Much attention is given to the role of government in the system and to financing arrangements for hospital and medical services. Current financial problems are discussed.

- **ECON 447 Economics of Information and Uncertainty.**
  (3) (Prerequisite: ECON 230 or ECON 250) This course considers how uncertainty can be incorporated into the standard model of consumer and producer choice central to explaining or analyzing a number of different economic phenomena. Topics include the information approach to explaining unemployment and problems in controlling health care costs.

- **ECON 450D1 (3), ECON 450D2 (3) Advanced Economic Theory - Honours.**
  (Prerequisites: ECON 250D1/ECON 250D2 and ECON 352D1/ECON 352D2) (Students must register for both ECON 450D1 and ECON 450D2.) (No credit will be given for this course unless both ECON 450D1 and ECON 450D2 are successfully completed in consecutive terms) Selected topics in economic theory from recent periodical and monograph literature.

- **ECON 451 Seminar in Economic History.**
  (3) (Prerequisites: one of ECON 227, ECON 317, ECON 257 or ECON 357 and either ECON 330 or ECON 352) In this course economic theory is explicitly employed to elucidate issues in economic history. The topics will be announced at the beginning of the academic year.

- **ECON 453D1 (3), ECON 453D2 (3) International Economics - Honours.**
  (Prerequisites: ECON 250D1/ECON 250D2 and ECON 352D1/ECON 352D2) (Students must register for both ECON 453D1 and ECON 453D2.) (No credit will be given for this course unless both ECON 453D1 and ECON 453D2 are successfully completed in consecutive terms) The pure theory of trade; Ricardian, Heckscher-Ohlin-Samuelson models; tariff theory and policy; the Canadian balance of payments; balance of payments disequilibrium analysis and policy; the exchange rate; international monetary economics, international policy coordination.

- **ECON 459 Topics in Monetary Economics - Honours.**
  (3) (Prerequisite: ECON 230 or ECON 250, and knowledge of calculus.) (Restriction: For Honours in Economics) (Restriction: Not open to students who have taken ECON 458) (In 2001-02, ECON 459 will be taught jointly with ECON 623) An advanced treatment of selected topics in monetary economics, including the theory and practice of monetary policy.

- **ECON 460 History of Thought 1 - Honours.**
  (3) (Prerequisite: ECON 250.) (Corequisite: ECON 352) The evolution of economic thought prior to the close of the 19th century, as reflected in the writings of prominent economists from the time of Adam Smith to the emergence of marginalism and neoclassical economics.

- **ECON 461 History of Thought 2 - Honours.**
  (3) (Prerequisite: ECON 250.) (Corequisite: ECON 352) The evolution of economic thought in the 20th century, as reflected in the writings of prominent economists on equilibrium, dynamics, games, expectations, econometrics, industrial structure, economic policy and other primary areas of interest.

- **ECON 467D1 (3), ECON 467D2 (3) Econometrics - Honours.**
  (Prerequisites: MATH 222 and ECON 257D1/ECON 257D2 or consent of instructor. MATH 223 is recommended, but not required as a prerequisite.) (Students must register for both ECON 467D1 and ECON 467D2.) (No credit will be given for this course unless both ECON 467D1 and ECON 467D2 are successfully completed in consecutive terms) Special emphasis on statistical tests of economic theories, the construction of econometric models, and problems in estimation methods.

- **ECON 473 Income Distribution.**
  (3) (Prerequisite: ECON 230 or ECON 250. Equivalent of a full year course in statistics as the requirement applicable to Majors and Honours in economics, and calculus 1 and 2) Theory and measurement of income distribution, disparities and poverty. The course examines intertemporal dynamics affecting individuals and socioeconomic groups. The incidence of (costs and benefits from) fiscal and restrictive programmes, inflation and unemployment is evaluated.

- **ECON 480 Research Project.**
  (3) (Restrictions: Open to U3 students only. Students must complete a Research Project Registration Form, have it
countersigned by the professor who has agreed to supervise the research project and submit it to the Departmental Administrative Officer in Leacock 442 prior to registering in this course. A student cannot take this course more than once for credit.) In this course students must undertake a research project under close supervision. They must also do such special reading and research as their advisers direct.

**ECON 481 Research Project.**
(3) Restriction: Open to U3 students only. Students must complete a Research Project Registration Form, have it countersigned by the professor who has agreed to supervise the research project and submit it to the Departmental Administrative Officer in Leacock 442 prior to registering in this course. A student cannot take this course more than once for credit.) In this course students must undertake a research project under close supervision. They must also do such special reading and research as their advisers direct.

**ECON 510 Experimental Economics.**
(3) Prerequisites: ECON 230 or ECON 250 or permission of the instructor.) Restriction: For U3 students.) Experimental methodology, current topics in experimental economics, and market design.

**ECON 525 Project Analysis.**
(3) Restriction: Open to advanced undergraduate students. Prerequisite: ECON 250, ECON 352 or equivalent) A course in cost benefit analysis for graduate and advanced undergraduate students.

**ECON 534 Pension Crisis.**
(3) The consequences of commitments made by governments in the area of old age pensions and the implications of the resulting tax burden. An international perspective will be adopted.

**ECON 546 Game Theory.**
(3) Prerequisite: ECON 230 or ECON 250) Restriction: Open to advanced undergraduate students) This course introduces students to game theory, the branch of the social sciences that focuses on the formal modelling and analysis of human interactions and strategic behaviour. Basic concepts in cooperative and non-cooperative games are applied to economic models.

**ECON 567 Complex and Interactive Systems.**
(3) Prerequisites: ECON 250, ECON 352) Restriction: For Honours and Graduate students in Economics. Permission of the instructor.) Behaviour in open (incomplete) economic systems as they relate to nonlinearities, chaos, adaptiveness, networks, externalities, dynamic competition, computable economics, simulation-driven analogies, disequilibrium dynamics, lock-in phenomena and path dependence, quasi-rationality with uncertainty and fuzzy constraints, evolutionary processes, genetic algorithms, etc.

**ECON 577 Mathematical Economics 1.**
(3) Prerequisites: MATH 133, MATH 139 and MATH 141 or equivalent) A mathematical treatment of basic economic theory.

**ECON 578 Mathematical Economics 2.**
(3) Prerequisite: ECON 577) A mathematical presentation of economic analysis. Difference and differential equations and their applications in economics.

**ENGC-English Communications**
Offered by: Art History & Communication St

**ENGC 200 Communications - Pre-Electronic Age.**
(3) Restriction: Not open to students who have taken ENGL 277) The social and cultural implications of major developments in communications from prehistory to the start of the electronic age. Topics will include the origins of symbolic expression, nonalphabetic versus alphabet writing, the development of printing, and emergence of the telegraph. The orality/literacy developments during this period will also be explored.

**ENGC 210 Communications - Electronic Age.**
(3) Restriction: Not open to students who have taken ENGL 278) The social and cultural implications of major developments in mass communications from the onset of the electronic era to the present. Topics will include the development of, and popular responses to, the telegraph, the telephone, photography and visual media, radio and television broadcasting, including the current debates on new media technologies.

**ENGC 521 Communications in History.**
(3) North American communication studies have undergone five discernible changes in the definition and focus of the field. The major "schools" of thought to be covered are the Chicago and Lazarsfeld heritages, the institutionalization of communication science in the academy, and the post-modern period.

**ENGC 541 Cultural Industries.**
(3) The convergence of computerized technologies and cultural industries and how these have produced entire new forms of cultural expression in film, TV, and the Internet.

**ENGC 560 Communications and Development.**
(3)
status as Sacred Book. The influence of the Bible-as-metatext on the secular literature of the West will be the focus of the discussion.

● ENGL 215 Introduction to Shakespeare.
  (3) A study of a selection of plays, in their intellectual and theatrical context, with an emphasis on the interplay of text and performance.

★ ENGL 225 American Literature 1.
  (3) A study of the literary works of earlier American writers.

★ ● ENGL 226 American Literature 2.
  (3) A study of the literary works of later American writers.

★ ENGL 227 American Literature 3.
  (3) A study of literary works which may be thematic or may deal with a special group of authors.

★ ● ENGL 228 Canadian Literature 1.

★ ENGL 229 Canadian Literature 2.

ENGL 230 Introduction to Theatre Studies.
  (3) (Fall) An introduction to dramatic literature, text analysis, textual and performance theory, and theatre history.

★ ENGL 237 Introduction to Study of a Literary Form.
  (3) An introduction to literary study through a survey of a literary genre, mode, or form.

★ ENGL 238 Comedy.
  (3).

ENGL 269 Introduction to Performance.
  (3) (Winter) (Restriction: Permission of instructor required.) The focus of this course is on the actor as communicator, and on those things (material, physical, and textual) which are inescapably central to the theatrical performance.

ENGL 275 Introduction to Cultural Studies.
  (3) (Fall) (Required of all U1 Cultural Studies students) A survey of cultural studies, its history and subject matter, presenting key interpretive and analytic concepts, the aesthetic and political issues involved in the construction of sign systems, definitions of culture and cultural values conceptualized both as a way of life and as a set of actual practices and products.

ENGL 276 Methods of Cultural Analysis.
  (3) (Winter) (Prerequisite: ENGL 275) A study of basic methodologies found in cultural studies, such as forms of historicism, Marxism, psychoanalysis, philosophical materialism, feminism, gender theory. Topics such as aesthetics and film theory, authorship and spectatorship, modernism and postmodernism will be considered. Examples to be drawn from film, television, popular culture, and traditional literature.

ENGL 279 Introduction to Film as Art.
  (3) An introduction to film aesthetics, with emphasis on narrative, style and genre throughout the history of cinema.

● ENGL 280 Introduction to Film as Mass Medium.
  (3) (Students will be required to pay a screening fee.) An introduction to film's social, historical, and technological contexts, including its relationships to other mass media.

★ ENGL 297 Special Topics of Literary Study.
  (3).

ENGL 301 Earlier 18th Century Novel.
  (3) Study of the English novel to c. 1750.

★ ENGL 302 Restoration and 18th C. English Literature 1.
  (3) A study of the major writers of the late 17th and earlier 18th centuries.

★ ● ENGL 303 Restoration and 18th C. English Literature 2.
  (3) A study of the major writers of the later 18th century.

ENGL 304 Later Eighteenth Century Novel.
  (3)

ENGL 305 Renaissance English Literature 1.
  (3) A study of major non-dramatic works of the earlier Renaissance in England.

★ ENGL 307 Renaissance English Literature 2.
  (3) A study of major non-dramatic works of the later Renaissance in England.

ENGL 308 English Renaissance Drama 1.
  (3) An overview of some major authors and issues in English Renaissance Drama.

ENGL 309 English Renaissance Drama 2.
  (3) (In 2006/2007: Jacobean Theatre History.) An overview of some major authors and issues in English Renaissance Drama.

ENGL 310 Restoration and 18th Century Drama.
  (3) (In 2006/2007: Restoration Comedy.)

ENGL 311 Poetics.
  (3) (Fall) (Restriction: Limited to students in English Major Concentration, Literature Option.) Discussion and application of basic critical tools for analysis of literature. Study of such features of poetry and prose fiction as prosody, diction, voice, tone, imagery, figurative language, point of view, narrative form, and character.

ENGL 314 20th Century Drama.
  (3) A study of selected representative works in modern drama and theatre.

ENGL 315 Shakespeare.
  (3) A study of the major works of Shakespeare.

ENGL 316 Milton.
  (3)

ENGL 317 Theory of English Studies 1.
  (3) (Restriction: Limited to students in English Major and Honours Programs) Philosophical approaches.

ENGL 318 Theory of English Studies 2.
  (3) (Restriction: Limited to students in English Major and Honours Programs) Socio-Historical approaches.

★ ENGL 319 Theory of English Studies 3.
  (3) (Restriction: Limited to students in English Major and Honours Programs) Issues in interpretation: authorship, performance, reception.

★ ENGL 320 Postcolonial Literature.
  (3)

★ ENGL 321 Caribbean Fiction.
  (3)

★ ENGL 322 Theories of the Text.
  (3) (Restriction: Limited to students in English Major and Honours Programs.) A course focussing on textuality (as opposed to, say, intentionality and interpretation) and on how specific effects are made - how texts work and produce meaning, including rhetoric and form.

ENGL 323 20th Century American Poetry.
  (3) (In 2006/2007: American Poetry after 1945.)

★ ENGL 324 20th Century American Prose.
  (3)

★ ENGL 325 Modern American Fiction.
  (3)

ENGL 326 19th Century American Prose.
  (3) (In 2006/2007: Poe, Hawthorne, Melville.) A study of some of the major prose writers of the 19th Century.

★ ENGL 327 Canadian Prose Fiction 1.
  (3) A survey of Canadian prose fiction in English, from 19th century historical romance and realist fiction to the emergence of the modernist novel in the decades following the Second World
ENGL 328 Development of Canadian Poetry 1.
(3) (Restriction: Not open to students who have taken ENGL 311.) A survey of contemporary Canadian prose fiction in English, from modernism to post-modernism and beyond.
(3) A study of representative novelists of the earlier 19th century.
(3) A study of representative novelists of the later 19th century.
ENGL 331 Literature Romantic Period 1.
(3) A study of the major figures of the first generation of romantic writers, focusing on Blake, Wordsworth and Coleridge.
ENGL 331 Literature Romantic Period 2.
(3) A study of the major figures of the second generation of romantic writers, focusing on Byron, Keats and Shelley.
ENGL 333 Development of Canadian Poetry 2.
(3) A survey of Canadian poetry in English from the end of the Second World War to the present.
ENGL 334 Victorian Poetry.
(3) A study of the major Victorian poets.
ENGL 335 The 20th Century Novel 1.
(3) The Novel from the last years of the 19th century to World War II.
ENGL 336 The 20th Century Novel 2.
(3)
ENGL 338 Short Story.
(3)
ENGL 339 Canadian Prose Fiction 2.
ENGL 340 History of the English Language.
(3)
ENGL 342 Introduction to Old English.
(3) (Restriction: Not open to students who have taken ENGL 351.) An introduction to grammar and basic vocabulary in Old English.
ENGL 343 Literature and Science 1.
(3)
ENGL 344 Literature and Science 2.
(3)
ENGL 345 Literature and Society.
(3) An examination of issues relating to literature and its social contexts, such as implications of gender, race, ethnicity.
ENGL 346 Materiality and Sociology of Text.
(3) (Restriction: Limited to students in English Major and Honours Programs.) Writing, printing, distribution, marketing, and placement within canon-institutions; the influence of material forms of production and transmission on the creation and reception of literature, film, and theatre.
ENGL 347 Great Writings of Europe 1.
(3) (In 2006-2007, Virgil and Ovid.) A study of selected texts that significantly enhance understanding of English literature.
ENGL 348 Great Writings of Europe 2.
(3) A study of selected texts that significantly enhance understanding of English literature.
ENGL 349 English Literature and Folklore 1.
(3) A study of representative texts from Beowulf to the late Renaissance period in relation to their background in folk tradition. A focus on the origin and development of folklore motifs.
ENGL 350 Literary Criticism.
(3) (Restriction: Limited to students in the English Major Concentration, Drama and Theatre Option) This course, normally taken in tandem with ENGL 230, examines theories of acting, directing, and design through scene work and practical exercises.
ENGL 351 Middle English.
(3)
ENGL 352 Theories of Difference.
(3) (Restriction: Limited to students in English Major and Honours Programs.) Introduction to a selection of theories that have influenced thinking about difference across the humanities and social sciences, including gender, sexuality, race, class and hierarchical structures, language, religion, ethnicity, and personal identity.
ENGL 353 Interdisciplinary Approaches to Literary Research.
(3) (Priority will be given to English Major/Honours students in second year of program) Examination of interdisciplinary connections between literary criticism and another discipline, such as anthropology, linguistics, history, philosophy or psychology, which has had significant impact on literary study.
ENGL 354 Sexuality and Representation.
(3) (Priority will be given to English Major/Honours students in second year of program) Topics on representations of sexuality with reference to its cultural contexts.
ENGL 355 The Poetics of Performance.
(3) (Fall) (Restriction: Limited to students in the English Major Concentration, Drama and Theatre Option) This course, normally taken in tandem with ENGL 230, examines and tests theories of acting, directing, and design through scene work and practical exercises.
ENGL 356 Middle English.
(3)
ENGL 357 Chaucer - Canterbury Tales.
(3)
ENGL 358 Chaucer - Troilus and Criseyde.
(3)
ENGL 359 The Poetics of the Image.
(3) (Fall) (Restriction: Limited to students in the English Major Concentration, Cultural Studies Option) This course, normally taken in tandem with ENGL 275, examines contemporary debates about the aesthetic dimensions as well as social roles of pictorial, theatrical, cinematic, and other representations, the meanings, effects, and aesthetic significance of which depend on their having visually recognizable features.
ENGL 360 Literary Criticism.
(3) (Prerequisite: at least 3 credits of ENGL 200, ENGL 201, ENGL 202, ENGL 203. Pre-/Co-requisite: ENGL 311. Required for but not restricted to Literature Honours students) Principles of literary criticism.
ENGL 361 Poetry of the 20th Century 1.
(3) A critical survey of major British and North American poetry, c. 1890 - 1940.
ENGL 362 Poetry of the 20th Century 2.
(3) (Prerequisite: ENGL 311) A critical survey of contemporary British and North American poetry, c. 1930 - 1980.
ENGL 364 Creative Writing-Fiction 2.
(3) (Restriction: Permission of instructor required.) Advanced seminar on writing prose fiction; admission subject to application, with writing sample.
ENGL 365 Costuming for the Theatre 1.
(3) (Restriction: Permission of instructor required.) (Restriction: Not open to students enrolled in ENGL 368) Introduction to costume-making for the theatre, covering fabrics, textiles and costume decoration.
ENGL 367 Acting 2.
(3) (Prerequisite: ENGL 269 and permission of instructor.) (Restriction: Not open to students who have taken 110-469D) The actor as analyzer of scripts and characters; textual analysis, practice in character development through improvisations, mask...
ENGL 388 Studies in Popular Culture 1.
(3) (Restriction: Permission of instructor required.)
(Prerequisite: ENGL 275) A study of the interrelationship of cultural studies and aesthetics, focusing on issues like creativity, the artist as communicator, ideas of sense and nonsense, communication as drama, and the transformation of the poetic body in electronic media.

ENGL 389 Studies in Popular Culture 2.
(3) (Restriction: Not open to students enrolled in ENGL 377.)

ENGL 390 Cultural Studies and the Arts.
(3) (Prerequisite: ENGL 275) A study of the interrelationship of cultural studies and aesthetics, focusing on issues like creativity, the artist as communicator, ideas of sense and nonsense, communication as drama, and the transformation of the poetic body in electronic media.

ENGL 391 Special Topics: Cultural Studies 1.
(3) Current issues in cultural studies. Topics will include contemporary debates on high culture and the literary canon, and the question of aesthetic value and aesthetic judgement.

ENGL 392 Special Topics: Cultural Studies 2.
(3) (In 2006/2007: Media Ethics.) Current issues in cultural studies. Topics may include gender and sexuality; modernism and post-modernism; new social movements; social action.

ENGL 393 Canadian Cinema 1.
(3)

ENGL 394 Canadian Cinema 2.
(3)

ENGL 395 Cultural Studies and the Arts.
(3) (In 2006/2007: The African City in Literature Music and Film.)

ENGL 396 Cultural Studies and the Arts.
(3) (In 2006/2007: Inuit Literature and Film.)

ENGL 397 Cultural Studies and the Arts.
(3) (In 2006/2007: Ezra Pound.) Intensive study of a writer important for Modernism, such as James Joyce, T.S. Eliot, Ezra Pound, Gertrude Stein.

ENGL 398 Cultural Studies and the Arts.
(3) (In 2006/2007: Nineteenth Century Realist Fiction.)

ENGL 399 Cultural Studies and the Arts.
(3) (In 2006/2007: Romantic and Victorian Celebrity Culture.)

ENGL 400 Earlier English Renaissance.
(3)

ENGL 401 Studies in the 17th Century.
(3)

ENGL 402 Studies in the 18th Century.
(3) (In 2006/2007: Samuel Johnson.)

ENGL 403 Studies in the 19th Century.
(3) (In 2006/2007: Nineteenth Century Realist Fiction.)

ENGL 404 Studies in the 19th Century Literature 1.
(3)

ENGL 405 Studies in the 19th Century Literature 2.
(3) (In 2006/2007: Romantic and Victorian Celebrity Culture.)

ENGL 406 The 20th Century.
(3) (In 2006/2007: Bodies and Ghosts of Empires.)

ENGL 407 The 20th Century.
(3) (In 2006/2007: Marshall McLuhan.) A study of the relationship between technology, mass media, and culture. Topics may include: the role of media in defining and promoting concepts of the popular; the nature of the image in film, television, and video; cyberspace as metaphor; culture as simulation.

ENGL 408 The 20th Century.
(3)

ENGL 409 Studies in a Canadian Author.
(3) (Prerequisite: previous work in Canadian Literature) Advanced study of a significant author in Canadian literature.

ENGL 410 Theme or Movement Canadian Literature.
(3) (Prerequisite: previous work in Canadian Literature) (In 2006/2007: Klein, Layton, Cohen.) Advanced study of a significant theme or movement in Canadian Literature.

ENGL 411 Studies in Canadian Fiction.
(3) (Prerequisite: Permission of instructor, based on previous work in Canadian fiction) Advanced study of works of Canadian fiction.

ENGL 412 Studies in 20th Century Literature 1.
(3)

ENGL 413 Studies in 20th Century Literature 2.
(3)

ENGL 414 Studies in 20th Century Literature 1.
(3) (In 2006/2007: Shakespeare's World of Words.)

ENGL 415 Studies in 20th Century Literature 2.
(3)

ENGL 416 Studies in Shakespeare.
(3) (In 2006/2007: Shakespeare's World of Words.)

ENGL 417 A Major English Poet.
(3) (In 2006/2007: Spenser.)

ENGL 418 A Major Modernist Writer.
(3) (In 2006/2007: Ezra Pound.) Intensive study of a writer important for Modernism, such as James Joyce, T.S. Eliot, Ezra Pound, Gertrude Stein.

ENGL 419 Studies in 20th Century Literature.
(3) (In 2006/2007: Inuit Literature and Film.)

ENGL 420 African Literature.
(3) (In 2006/2007: The African City in Literature Music and Film.)

ENGL 421 African Literature.
(3) (In 2006/2007: The African City in Literature Music and Film.)

ENGL 422 Studies in 19th Century American Literature.
(3) (In 2006/2007: Classic Prose Works of Late Nineteenth-Century American Literature.)

ENGL 423 Studies in 19th Century Literature.
(3)
ENGL 424 Irish Literature.
(3) (In 2006/2007: James Joyce.)

ENGL 430 Studies in Drama.
(3) (In 2006/2007: Caryl Churchill.)

● ENGL 431 Studies in Drama.
(3)

ENGL 434 Independent Theatre Project.
(3) (This course will allow students to undertake special projects, frequently involving background readings, performances, and essays. This course is normally open only to Major or Honours students in the Department. Permission must be obtained from the Department before registration)

ENGL 437 Studies in Literary Form.
(3) (In 2006/2007: Canadian Long Poem.)

● ENGL 438 Studies in Literary Form.
(3) Study of a specific literary form.

● ENGL 443 Contemporary Women's Fiction.
(3) Study of a theme or author in contemporary women's fiction.

● ENGL 447 Crosscurrents/English Literature and European Literature 1.
(3)

● ENGL 449 Studies in the Gothic.
(3) Study of aspects of the Gothic in a variety of periods and media.

● ENGL 452 Studies in Old English.
(3) (Prerequisite: ENGL 351 or equivalent, or permission of the instructor) Study of an aspect of Old English Literature which presupposes a grounding in the language.

ENGL 458 Theories of Text and Performance 1.
(3) (Prerequisites: ENGL 230 and ENGL 269 or permission of instructor) This course provides an historical perspective on advanced theoretical problems affecting both dramatic texts and theatrical performance up to the 19th Century. The historical periods covered in this course may vary from year to year.

● ENGL 459 Theories of Text and Performance 2.
(3) (Prerequisites: ENGL 230 and ENGL 269 or permission of instructor) This course provides an historical perspective on advanced theoretical problems affecting both dramatic texts and theatrical performance starting from the 19th Century to the present. The historical periods covered in this course may vary from year to year.

● ENGL 464 Creative Writing: Poetry.
(3) (Prerequisite: permission of instructor.)

● ENGL 465D1 (4.5), ENGL 465D2 (4.5) Theatre Laboratory.
(Prerequisites: ENGL 230, ENGL 269 and ENGL 367 or sufficient relevant experience in related drama courses or permission of the instructor.) (Students must register for both ENGL 465D1 and ENGL 465D2.) (No credit will be given for this course unless both ENGL 465D1 and ENGL 465D2 are successfully completed in consecutive terms)

ENGL 466D1 (3), ENGL 466D2 (3) Directing for the Theatre.
(Prerequisites: ENGL 230, ENGL 269 and permission of instructor.) (Students must register for both ENGL 466D1 and ENGL 466D2.) (No credit will be given for this course unless both ENGL 466D1 and ENGL 466D2 are successfully completed in consecutive terms) The direction of a theatrical performance: preparation, casting, rehearsal, and performance are the areas of concentration.

● ENGL 467 History of the Theatre 3.
(3) Advanced study focused on a period or issue in Theatre history.

ENGL 469 Acting 3.
(3) (Prerequisite: ENGL 269 and permission of instructor.)

(Restriction: Not open to students who have taken 110-469D.)
Advanced training in acting involving study of some of the major European and North American acting theories and practices.

● ENGL 473 Advanced Practical Work Theatre 1.
(3) (Restriction: Permission of instructor required)

● ENGL 474 Advanced Practical Work Theatre 2.
(3)

● ENGL 475 Studies: History of Communication 1.
(3)

● ENGL 476 Alternative Approaches to Media 1.
(3) (Workshop course. Departmental permission required) Study of alternative uses of contemporary media with particular emphasis on the forms of independent video and community television and their relationship to mainstream television and film.

ENGL 480 Studies in History of Film 1.
(3) (In 2006/2007: American Film of the 1970s.)

ENGL 481 Studies in History of Film 2.
(3) (Restriction: Permission of instructor required) (In 2006/2007: A Year in Film: 1948.)

ENGL 484 Seminar in the Film.
(3) (Restriction: Permission of instructor required) Indepth study of specific topics related to the film, which vary from year to year.

● ENGL 485 History of the Theatre 5.
(3) A study of history of the theatre during the 19th century.

ENGL 486 History of the Theatre 6.
(3) (In 2006/2007: Canadian Drama.) A study of history of the theatre during the Twentieth century.

● ENGL 487 Special Topics / Communications and Mass Media 1.
(3) An advanced seminar in varying themes in communications for students in their final year of the Cultural Studies program.

● ENGL 488 Special Topics / Communications and Mass Media 2.
(3) (Prerequisite: permission of the instructor) (Restriction: Limited to students in English Major programs.) An advanced seminar in varying themes in communications for students in their final year of the Cultural Studies program.

● ENGL 489 Contemporary Culture and Critical Theory 1.
(3) Intensive study of advanced theoretical topics in the study of contemporary culture. Topics will vary from year to year depending on staff interests.

ENGL 490 Contemporary Culture and Critical Theory 2.
(3) (In 2006/2007: The Body in Cultural Studies.) Intensive study of advanced theoretical topics in the study of contemporary culture. Topics will vary from year to year depending on staff interests.

ENGL 491 Honours Essay.
(6)

ENGL 491D1 (3), ENGL 491D2 (3) Honours Essay.
(Students must register for both ENGL 491D1 and ENGL 491D2.) (No credit will be given for this course unless both ENGL 491D1 and ENGL 491D2 are successfully completed in consecutive terms) (ENGL 491D1 and ENGL 491D2 together are equivalent to ENGL 491)

● ENGL 492 Image and Text 1.
(3) Study of the relationship between verbal and visual aspects of a range of cultural artifacts. Topics may include iconography; illuminated manuscripts; book illustrations; cartoons and caricature.

● ENGL 493 Image and Text 2.
(3) Study of the relationship between verbal and visual aspects of a range of cultural artifacts with particular emphasis on juxtapositions of image and text in contemporary media.

ENGL 495 Individual Reading Course.
(3) (Intended for advanced and/or specialized work based on an

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● Denotes courses taught only in alternate years.
‖ Professional Practice (Stage) in Dietetics involving special prerequisites
● Indicates that departmental approval/permission must be obtained by a student prior to registration.
◆ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
❉ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the Department.) By arrangement with individual instructor. Permission must be obtained from the Department before registration.

ENGL 496 Individual Reading Course. (3) (Intended for advanced and/or specialized work based on an extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the Department.) By arrangement with individual instructor. Permission must be obtained from the Department before registration.

● ENGL 497 Seminar in Cultural Studies. (3).
● ENGL 499 Departmental Seminar. (3) (Restriction: Permission of instructor required)

ENGL 500 Middle English. (3)

● ENGL 501 16th Century. (3)
● ENGL 502 17th Century. (3)

ENGL 503 18th Century. (3) (In 2006/2007: 18th-Century Shakespeare.)
ENGL 504 19th Century. (3) (In 2006/2007: 19th-Century Poetry.)
ENGL 505 20th Century. (3) (In 2006/2007: Collaborative Modernisms.)

● ENGL 516 Shakespeare. (3)

ENGL 525 American Literature. (3) (In 2006/2007: 19th-Century American Writing and City Life.)
ENGL 527 Canadian Literature. (3) (In 2006/2007: Material Construction of Canadian Literature.)

ENGL 529D1 (1.5), ENGL 529D2 (1.5) Interdisciplinary Seminar - North American Studies. (Students must register for both ENGL 529D1 and ENGL 529D2.) (No credit will be given for this course unless both ENGL 529D1 and ENGL 529D2 are successfully completed in consecutive terms) (ENGL 529D1 and ENGL 529D2 together are equivalent to ENGL 529)

ENGL 530 Literary Forms. (3) (In 2006/2007: The Pastoral.)
ENGL 531 Literary Forms. (3) (In 2006/2007: Romantic Narratives.)

● ENGL 533 Literary Movements. (3)
● ENGL 540 Literary Theory 1. (3)
● ENGL 545 Topics in Literature & Society. (3).
● ENGL 553 Old English Literature. (3) (Prerequisite (Undergraduate): ENGL 351)
● ENGL 565 Medieval Drama Workshop. (3).

ENGL 566 Special Studies in Drama 1. (3) (In 2006/2007: Critical Theories of the Body in Drama and Performance Studies.)

● ENGL 568 Topics in the Dramatic Form. (3).
● ENGL 569 Theories of Representation. (3) (Prerequisites: ENGL 458, ENGL 459 and/or permission of instructor) This course will involve intensive work in theoretical approaches to acting, directing, reception, performance, space, dramaturgy, and mise-en-scène.

ENGL 585 Modes of Communication 1. (3) (In 2006/2007: Feminist Textuality.)
ENGL 586 Modes of Communication 2. (3) (In 2006/2007: Film and Feminism.)

● ENGL 587 Theoretical Issues: Study Communications and Culture. (3)

ESLN-English Second Language

Offered by: English&French Language Centre

● ENGL 500 Middle English as a Second Language.

(6) (Summer) (Classroom instruction, and language laboratory - when needed.) (Cours réguliers plus laboratoire de langue au besoin.) Designed to help students whose native tongue is not English and who have difficulty in a) understanding spoken English, b) speaking it, c) reading English text material, or d) writing assignments in English. Emphasis on writing skills in the high-intermediate and advanced sections. Conçu pour venir en aide aux étudiants dont la langue maternelle n'est pas l'anglais et qui ont de la difficulté dans les quatre compétences suivantes : a) compréhension de l'oral ; b) production orale; c) compréhension de l'écrit; ou d) rédaction. Ce cours se donne en salle de classe et au laboratoire de langue (au besoin). Dans les sections des niveaux intermédiaire et avancé, l'accent est mis sur la compétence à l'écrit.

ESLN 200 ESL: Academic English 1. (3) (3 hours) (Prerequisite: Placement test) (Restriction: Not open to students who have taken ESLN 201.) For students who have a basic knowledge of English. Focus is on developing writing skills: sentence structure; formal paragraphs; short essays. Independent learning strategies for vocabulary building, grammar, editing techniques, structuring an oral presentation and improving pronunciation.

● ENGL 299 ESL: Academic English Seminar. (3) (3 hours) (Restriction: Open only to students whose first language is not English and who are newly admitted at McGill (into Year O or Year 1) to a Bachelor program in the following fall. The course is designed to assist these new students integrate into the English language milieu at McGill. Classroom instruction, and language laboratory required: 5 hours per week(approximately) outside class time.) (Restriction: Ce cours s'adresse aux étudiants dont la langue maternelle n'est pas l'anglais et qui sont nouvellement admis (en première année d'université) à McGill à un programme de 1er cycle à l'automne suivant. Il est conçu pour faciliter leur intégration dans le milieu anglophone de McGill. Cours réguliers, et laboratoire de langue obligatoire; 5 heures par semaine en dehors des heures de cours.) With materials from across the curriculum the course prepares students to meet the expectations of the university classroom: note taking and summary of lectures; paraphrase and summary of written and multimedia materials; oral and seminar presentations. Development of critical thinking, reading, writing, listening, and speaking skills and strategies. Au moyen de documents tirés de divers programmes offerts à McGill, ce cours prépare les étudiants aux exigences des cours universitaires : prendre des notes, faire des exposés oraux, résumer (cours magistraux, documents oraux, écrits et multimédias). Développement du raisonnement critique, lectures, écoutes, rédactions, habiletés et stratégies de communication.

ESLN 300 ESL: Academic English 2. (3) (3 hours) (Prerequisite: ESLN 200 or ESLN 201 or

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† Professional Practice (Stage) in Dietetics involving special prerequisites
▲ Indicates that departmental approval/permission must be obtained by a student prior to registration.
❖ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
✦ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
✱ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

2006-2007 Undergraduate Programs Calendar, McGill University
C-53 2006-2007 Undergraduate Programs Calendar, McGill University

FREN 210 Francophonie 1.

(3) (Winter) (Prerequisite: FREN 204 or placement test.)

(3) Préalable: test. Pour les étudiants qui ont suivi le cours FREN 204 ne seront pas admis.)

FREN 221 Civilisation française 1.

(3) Présentation des connaissances de base nécessaires à l'étude de la civilisation française; les grandes lignes de la personnalité physique, politique et culturelle de la France dans l'Europe moderne et contemporaine.

FREN 228 Civilisation québécoise 1.

(3) Étude des différents aspects de la société (économique, politique, social, culturel) de 1760 à 1877. Ce cours s'adresse aussi bien aux étudiants de l'extérieur du Département qu'à ceux du Département désireux de parfaire leur connaissance de la société québécoise.

FREN 231 Linguistique française.

(3) Bref historique de la linguistique française de F. de Saussure à nos jours. Description linguistique du français moderne (éléments de phonologie, de phonétique normative, de lexicologie, de sémantique évolutive et synchronique, de syntaxe et de morphologie).

FREN 239 Stylistique comparée.

(3) (Préalable: test. Pas de préalable ni autorisation départementale pour la section hiver réservée aux étudiants de la Faculté d'éducation. Autorisation départementale requise. Effectifs contingents. Priorité donnée aux étudiants inscrits dans les programmes de traduction.) (Restriction: Les étudiants qui ont suivi le cours FREN 238 ne seront pas admis.)

Initiation aux principes de la traduction par une étude systématique des contrastes entre les structures linguistiques de l'anglais et du français. Une bonne connaissance des deux langues est nécessaire au départ.

FREN 244 Traduction 1.

(3) (Fall) (Préalable: FREN 239 ou test de classement. Autorisation départementale requise. Effectifs contingents) (Les étudiants qui ont suivi le cours 125-345 ne seront pas admis) Exercices portant sur les éléments syntaxiques et lexicaux qui présentent des problèmes de traduction simples mais fréquents. Traduction de textes variés.

FREN 245 Grammaire avancée.

(3) (Fall) (Préalable: test. Pas de préalable ni autorisation départementale pour la section hiver réservée aux étudiants de la Faculté d'éducation. Autorisation départementale requise.)

Cours entièrement consacré à la révision systématique des principales difficultés de la langue française.

FREN 247 Dissertation.

(3) (Winter) (Préalable: test et FREN 245, Autorisation départementale requise) (Restriction: Réservé aux étudiants du Département) Cours consacré à l'apprentissage des genres universitaires; dissertation, compte rendu, résumé etc.

FREN 250 Littérature française avant 1800.

(3) (Fall) (Aucun préalable ni cours conjoint pour les étudiants hors-Département. Cours conjoints: Option Lettres: FREN 252, FREN 395; Option Lettres et traduction: FREN 352) Introduction à la littérature française des origines à la fin du XVIIe siècle.

FREN 251 Littérature française depuis 1800.


FREN 252 Littérature québécoise.

(3) (Fall) (Préalables: Option Lettres: FREN 251, FREN 353, FREN 396; Option Lettres et traduction: FREN
FREN 310 Histoire du cinéma français 1.
(3) Rétrospective du cinéma français depuis ses origines jusqu'à la Deuxième Guerre mondiale.

FREN 311 Histoire du cinéma français 2.
(3) Le cinéma français d'après-guerre.

FREN 312 Francophonie 2.
(3) Les étudiants qui ont suivi le cours 125-368 ne seront pas admis. Origine particulière de la littérature antillaise et africaine. Ce cours portera sur le mouvement de la négritude et sur ses chantres.

FREN 313 Francophonie 3.
(3) Analyse approfondie de l'œuvre d'au moins six écrivains du monde francophone.

FREN 315 Le cinéma québécois.
(3) Étude thématique du cinéma québécois à travers ses principaux films. Les approches seront: poétique, sociologique, psychologique et politique.

FREN 321 Civilisation française 2.
(3) De Richelieu à Versailles, la France à l'époque de son apogée européenne. Évolution politique, sociale et artistique depuis la fin des Guerres de Religion jusqu'à la Révolution.

FREN 324 Civilisation française 5: La France d'aujourd'hui.
(3) (Préalable: FREN 221 ou permission du professeur) (Les étudiants qui ont suivi le 125-220 ne seront pas admis) Histoire politique, sociale, culturelle et économique de la France depuis 1940.

FREN 329 Civilisation québécoise 2.
(3) (Les étudiants qui ont suivi le cours 125-229 ne seront pas admis) Étude de différents aspects de la société québécoise (économique, politique, social, culturel) de 1877 à aujourd'hui.

FREN 334 Méthodes d'analyse des textes littéraires 1.
(3) Ce cours aborde systématiquement les méthodes, notions et modèles théoriques susceptibles de s'appliquer à l'analyse descriptive des textes littéraires de genres et époques divers.

FREN 335 Méthodes d'analyse des textes littéraires 2.
(3) Suite du cours précédent.

FREN 336 La langue française.

FREN 346 Traduction 2.

FREN 347 Terminologie générale.
(3) (Préalable: FREN 346 ou test.) Étude empirique des différents stades dans le travail du terminologue: collection de données, production de fiches terminologiques, recherches ponctuelles et thématiques. Les problèmes terminologiques de la traduction. Étude de problèmes pratiques posés par la terminologie bilingue ou multilingue et ses répercussions dans un domaine particulier des connaissances humaines.

FREN 349 Traduction 3.
(3) (Fall) (Préalable: FREN 346 ou test. Effectifs contingentés. Autorisation départementale requise) (Les étudiants qui ont suivi le cours 125-445 ou 125-446 ne seront pas admis) Cours essentiellement pratique qui a pour but d'étudier les problèmes que pose la traduction dans des domaines divers.

FREN 350 Littérature française du 20e siècle 1.
(3) (Language of instruction is french.) Introduction à la littérature française moderne par une étude de quelques oeuvres parmi les plus marquantes.

FREN 351 Littérature française du 20e siècle 2.
(3) (Language of instruction is french.) Suite du cours précédent.

FREN 352 Lectures 1.
(3) (Fall) (Cours conjoints: Option Lettres: FREN 250, FREN 395; Option Lettres et traduction: FREN 250) (Restrictions: Cours réservé aux étudiants du Département. Autorisation départementale requise.) Littérature française des origines au XVIIIe siècle: lecture d'un choix de textes (30) d'après une liste proposée par le Département.

FREN 353 Lectures 2.
(3) (Winter) (Restriction: Cours réservé aux étudiants du Département.) (Préalables: Option Lettres: FREN 250, FREN 395; Option Lettres et traduction: FREN 250, FREN 395) (Option Lettres: FREN 251, FREN 396; Option Lettres et traduction: FREN 251) Littérature française des XIXe et XXe siècles: lecture d'un choix de textes (30) d'après une liste proposée par le Département.

FREN 355 Le roman de Proust à Camus.
(3) (Language of instruction is french.) Le roman en France depuis le début du XXe siècle jusqu'à la deuxième Guerre Mondeille.

FREN 360 La littérature du 19e siècle 1.
(3) Dans un contexte historique et social, étude du développement d'une sensibilité et d'une thématique nouvelle dans la littérature de la première moitié du 19e siècle. Étude des grandes œuvres et des écrits théoriques majeurs du romantisme.

FREN 362 La littérature du 17e siècle 1.
(3) Trait d'union entre la Renaissance et le classicisme, la littérature de l'âge baroque se caractérise par sa vision à la fois grandiose et tragique de l'homme, «Glorie et rebut de l'Univers». Textes de Descartes, Corneille, Pascal et Molière.

FREN 364 La littérature du 18e siècle 1.
(3) Introduction aux grands courants d'idées du siècle. Évolution de la sensibilité dans le roman et le conte; mouvement philosophique.

FREN 366 Littérature de la Renaissance 1.
(3) La Renaissance des lettres d'après les œuvres les plus représentatives du premier Humanisme français.

FREN 372 Le roman québécois 1.
(3) Étude du roman québécois des origines à 1940.

FREN 374 Lectures 3.
(3) (Fall) (Restriction: Cours réservé aux étudiants du Département.) (Préalables: Option Lettres: FREN 251, FREN 395, FREN 396; Option Lettres et traduction: FREN 251, FREN 395) (Option Lettres: FREN 252, FREN 397; Option Lettres et traduction: FREN 252) Littérature québécoise des origines à nos jours: lecture d'un choix de textes (30) d'après une liste proposée par le Département.

FREN 375 Théâtre québécois.
(3) (Les étudiants qui ont suivi le cours 125-570 ne seront pas admis) Survol de l'activité théâtrale au Canada français depuis les origines. Étude de la production québécoise depuis 1945.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
Cours d'écriture obéissent à des exigences formelles de plus en plus rigoureuses.

**FREN 441** Thème anglais.
(3) (Préalable: FREN 244, 125-345 ou permission du professeur. Autorisation départementale requise. Effectifs contingentés) Traduction de textes généraux du français vers l'anglais.

**FREN 443** Version littéraire.
(3) (Préalable: FREN 431, FREN 446 ou permission du professeur.) (Restriction: Les étudiants qui ont suivi le cours 125-510 ne seront pas admis.) Étude des problèmes pratiques que pose la transposition en français de qualité d'un texte originellement rédigé en anglais littéraire. Traduction de textes et discussion.

**FREN 453** Poésie du 20e siècle.
(3) Les principaux courants de la poésie en France depuis Apollinaire.

**FREN 454** Le théâtre au 20e siècle.
(3) Introduction à la sémiotique théâtrale et étude de pièces contemporaines présentant des analogies avec les mouvements poétiques et artistiques de l'époque, dont le surréalisme, l'existentialisme, le théâtre de l'absurde.

**FREN 455** La littérature médiévale 1.
(3) Initiation au système de la langue médiévale ainsi qu'à la production en langue française des origines au XIIIe siècle. Survol des différents genres littéraires (littérature épique et hagiographique, conte courtois, roman, fabliaux, théâtre) et de textes significatifs.

**FREN 456** La littérature médiévale 2.
(3) Analyse du système de la langue des XIe et XVe siècles (moyen français vs français moderne). Étude de la production littéraire dans son devenir entre les «classiques» du XIIIe siècle et la Renaissance.

**FREN 457** La littérature de la Renaissance 2.
(3) Les étudiants qui ont suivi le cours 125-367 ne seront pas admis) Évolution de la pensée humaniste et guerres de religion, d'après l'étude de textes.

**FREN 458** La littérature du 17e siècle 2.
(3) Les étudiants qui ont suivi le cours 125-363 ne seront pas admis) La littérature de l'époque classique, point culminant d'une longue évolution et habituellement reconnue comme étant la plus pure expression du génie et du goût français.

**FREN 459** La littérature du 18e siècle 2.
(3) Les étudiants qui ont suivi le cours 125-365 ne seront pas admis) Étude des courants d'idées et du développement de la sensibilité en France après 1750.

**FREN 461** Questions de littérature 1.
(3) (Restriction: Cours réservé aux étudiants en Spécialisation du Département.) (Préalables: Options Lettres: FREN 251, FREN 353, FREN 396; Option Lettres et traduction: FREN 251, FREN 353.) Cours à contenu variable: un thème (auteur, genre, période, question, etc.) de littérature ou de civilisation française ou francophone.

**FREN 464D1** (FREN 464D2) (3) Mémoire de spécialisation.
(Fall) (Restriction: Cours réservé aux étudiants en Spécialisation du Département. Autorisation départementale requise.) (Préalables: Options Lettres: FREN 490, FREN 493, FREN 497; Option Lettres et traduction: FREN 490, FREN 493) (Les étudiants doivent s'inscrire aux cours FREN 464D1 et FREN 464D2) (Aucun crédit ne sera accordé pour ce cours à moins de réussir les deux cours FREN 464D1 et FREN 464D2 suivis en séquence) Travail sur un sujet spécialisé de critique littéraire, de théorie, de...
traduction ou de création.

FREN 470 Poésie québécoise.
(3) Évolution de la poésie et des idées poétiques au Québec du XIXe siècle à nos jours: l'Ecole de Québec, l'Ecole de Montréal, la querelle de «l'exotisme», les courants modernistes, la «poésie du pays», la «nouvelle écriture». Étude de quelques textes marquants.

● FREN 472 Questions de littérature 2.
(3) (Préalables: Options Lettres: FREN 251, FREN 353, FREN 396; Option Lettres et traduction: FREN 251, FREN 353.) (Restriction: Cours réservé aux étudiants en Spécialisation du Département.) Cours à contenu variable: un thème (auteur, genre, période, question, etc.) de littérature ou de civilisation québécoise.

● FREN 480 Roman québécois 3.

FREN 481 Littérature et antiquité.
(3) Le cours vise à préciser la fortune en France aux XVIIe et XVIIIe siècles de quelques grands auteurs grecs et latins de l'Antiquité, en suivant l'évolution historique des interprétations. Initiation au maniement des bons dictionnaires et des ouvrages de références.

FREN 482 La littérature du 19e siècle 2.
(3) (Restrictions: Permission du professeur. Les étudiants qui ont suivi le cours 125-361 ne seront pas admis.) Étude de l'évolution de la littérature à partir de 1850, et notamment de la fiction romanesque dans le contexte du développement de la modernité et de l'esthétique réaliste.

● FREN 483 Le roman depuis Sartre.
(3) (Les étudiants qui ont suivi le cours 125-358 ne seront pas admis) Le roman d'après-guerre. Techniques de composition; relations entre l'univers imaginaire des romanciers et leur époque.

● FREN 484 La littérature du 19e siècle 3.
(3) (Restrictions: Permission du professeur. Les étudiants qui ont suivi le cours 125-356 ne seront pas admis.) Étude, à travers tout le 19e siècle, de thèmes ou de questions d'esthétique parmi les plus importants dans le développement de la littérature moderne.

● FREN 486 L'institution littéraire.
(3) Introduction à la nouvelle histoire littéraire, ce cours explore les conditions socioculturelles qui rendent possibles le «champ littéraire» et la littérature dans une société. Le processus d'institutionnalisation inclut l'étude de la production de la littérature, sa diffusion, sa consommation, sa réception et ses formes de consécration.

● FREN 487 L'essai québécois.
(3) Étude du genre et de sa spécificité en regard de la littérature personnelle et du pamphlet. Analyse des aspects formels de l'essai et du contenu traité comme trajectoire de l'histoire des idées de 1840 à nos jours.

FREN 490 Critique et théorie.

● FREN 491 Séminaire de littérature française 1.
(3) (Restriction: Réservé aux étudiants inscrits en U2 et U3) Cours à contenu variable. En 1998-99: Analyse des plus anciens textes français, en prose et en vers, d'inspiration canadienne.

FREN 493 Lectures 4.
(3) (Fall) (Restriction: Cours réservé aux étudiants du Département.) (Préalables: Options Lettres: FREN 374, FREN 252, FREN 397; FREN 490, FREN 497; Option Lettres et traduction: FREN 374, FREN 252, FREN 490.) Théories littéraires contemporaines: lecture d'un choix de titres (15) d'après une liste proposée par le Département.

FREN 494 Séminaire: Traduction spécialisée.
(3) (Préalable: FREN 431, 125-446 ou permission du professeur) Ce séminaire a pour but d'approfondir les connaissances dans une perspective d'exercice pratique de la traduction. Il ne s'agit pas de former les étudiants dans une langue de spécialité quelconque, mais plutôt de faciliter la compréhension de textes portant sur les différentes disciplines ou faisant intervenir les notions propres à celles-ci.

FREN 497 Travaux pratiques 4.
(3) (Winter) (Restriction: Cours réservé aux étudiants du Département de l'Option Lettres.) (Préalables: FREN 374, FREN 252, FREN 397. Cours conjoints: FREN 490) Analyse descriptive des textes littéraires selon les méthodes, notions et modèles théoriques.

FREN 498 Questions de littérature 3.
(3) (Restriction: Cours réservé aux étudiants en Spécialisation du Département) (Préalables: Options Lettres: FREN 251, FREN 353, FREN 396; Option Lettres et traduction: FREN 251, FREN 353.) Cours à contenu variable: un thème de théorie ou de critique.

FREN 499 Questions de littérature 4.
(3) (Restriction: Cours réservé aux étudiants en Spécialisation du Département.) (Cours à contenu variable: un thème de création littéraire) (Préalables: Options Lettres: FREN 251, FREN 353, FREN 396; Option Lettres et traduction: FREN 251, FREN 353.)

FREN 550 Lectures guidées 1.
(3) (Fall) (Restriction: Réservé aux étudiants du Département) Lectures personnelles ayant pour but de permettre à l'étudiant de combler une lacune ou de satisfaire un intérêt personnel. Admission sur autorisation spéciale.

FREN 551 Lectures guidées 2.
(3) (Winter) Identique au précédent.

FREN 599 Stage en milieu de travail.
(3) (Ouvert aux étudiants de U3 avec une moyenne de 3,3 pour l'ensemble du programme, dans un programme de Spécialisation ou de Concentration majeure du Département; les trois crédits comptent parmi les crédits libres ("electives"); permission du comité des études requise. Pour les étudiants de M.A. ou de Ph.D., permission du comité des études de 2e et 3e cycles; à noter que ces crédits ne peuvent pas compter comme crédits de programme de M.A. ou de Ph.D. Une description complète des exigences et des modalités du stage sera affichée sur le site web du Département. Ces exigences sont les suivantes: présentation par l'étudiant d'un Projet de stage précisant quelle sera l'institution hôte et en quoi consistera le stage; présentation par l'étudiant d'un compte rendu de son stage approuvé par un superviseur de l'institution hôte; et rédaction d'un travail académique sur un sujet relié au stage.) Stage en milieu de travail dans une institution ou organisation approuvée.
FRSL-French as a Second Language

Offered by: English & French Language Centre

● FRSL 101 Beginners' French.
(6) (Summer) (Language laboratory and oral practice with a French monitor) (Prerequisite: Placement test) (Restriction: Not open to students who have taken FRSL 201 or FRSL 205) A comprehensive introduction to basic vocabulary, grammatical structures and speech patterns of written and oral French for students in any degree program having no previous knowledge of French. Learning to communicate at a functional level in a French social milieu, short essays, cultural readings, mandatory lab practice and conversation class.

FRSL 101D1 (3), FRSL 101D2 (3) Beginners' French.
(3 hours, plus language laboratory and oral practice with a French monitor) (Prerequisite: Placement test) (Restriction: Not open to students who have taken FRSL 201 or FRSL 205) (Students must register for both FRSL 101D1 and FRSL 101D2 together are equivalent to FRSL 101) A comprehensive introduction to basic vocabulary, grammatical structures and speech patterns of written and oral French for students in any degree program having no previous knowledge of French. Learning to communicate at a functional level in a French social milieu, short essays, cultural readings, mandatory lab practice and conversation class.

FRSL 105 Intensive Beginners' French.
(6) (Fall) (6 hours, plus language laboratory and oral practice with a French monitor) (Prerequisite: Placement test) (Restriction: Not open to students who have taken FRSL 201 or FRSL 205 or FRSL 101) A comprehensive introduction to basic vocabulary, grammatical structures and speech patterns of written and oral French for students in any degree program having no previous knowledge of French. Learning to communicate at a functional level in a French social milieu, short essays, cultural readings, mandatory lab practice and conversation class.

FRSL 206 Elementary French.
(3) (Fall) (3 hours, plus language laboratory) (Prerequisite: Placement test) Equivalent to the first half of 127-207D. Only with special permission of the Department.

● FRSL 207 Elementary French.
(6) (Summer) (Language laboratory) (Prerequisite: Placement test) (Restriction: Not open to students who have taken Grade 12 or 13 French in Canada, or equivalent) Review and further training in basic structures, with emphasis on oral expression and listening comprehension. Awareness of French culture developed through audio-visual material and selected readings.

FRSL 207D1 (3), FRSL 207D2 (3) Elementary French.
(3 hours, plus language laboratory) (Prerequisite: Placement test) (Restriction: Not open to students who have taken Grade 12 or 13 French in Canada, or equivalent) (Students must register for both FRSL 207D1 and FRSL 207D2 together are equivalent to FRSL 207) Review and further training in basic structures, with emphasis on oral expression and listening comprehension. Awareness of French culture developed through audio-visual material and selected readings.

FRSL 208 Intensive Elementary French.
(6) (6 hours, plus language laboratory) (Prerequisite: Placement test) (Restriction: Not open to students who have taken Grade 12 or 13 French in Canada, or equivalent or FRSL 207) Review and further training in basic structures, with emphasis on oral expression and listening comprehension.

● FRSL 211 Oral and Written French 1.
(6) (Summer) (Language laboratory) (Prerequisite: Placement test) Open to students in any degree program having an elementary knowledge of French and to those who have completed FRSL 207 (Restriction: Not open to students from Quebec) Language lab attendance required. Grammar review, comprehension, vocabulary development, selected readings and group discussions.

FRSL 211D1 (3), FRSL 211D2 (3) Oral and Written French 1.
(3) (Summer) (Language laboratory) (Prerequisite: Placement test) Equivalent to the first half of FRSL 211. Only with special permission of the Department.

FRSL 215 Oral and Written French 1 - Intensive.
(6) (Fall) (6 hours, plus language laboratory) (Prerequisite: Placement test) Open to students in any degree program having an elementary knowledge of French and to those who have completed FRSL 207 (Restriction: Not open to students from Quebec) Language lab attendance required. Grammar review, comprehension, vocabulary development, selected readings and group discussions.

FRSL 216 Découvrons Montréal en français.
(3) (Winter) (3 hours, plus language laboratory) (Prerequisite: Placement test) Equivalent to the first half of FRSL 211. Only with special permission of the Department.

FRSL 208 Intensive Elementary French.
(6) (6 hours, plus language laboratory) (Prerequisite: Placement test) (Restriction: Not open to students who have taken Grade 12 or 13 French in Canada, or equivalent or FRSL 207) Review and further training in basic structures, with emphasis on oral expression and listening comprehension.

● FRSL 211 Oral and Written French 1.
(6) (Summer) (Language laboratory) (Prerequisite: Placement test) Open to students in any degree program having an elementary knowledge of French and to those who have completed FRSL 207 (Restriction: Not open to students from Quebec) Language lab attendance required. Grammar review, comprehension, vocabulary development, selected readings and group discussions.

FRSL 211D1 (3), FRSL 211D2 (3) Oral and Written French 1.
(3) (Summer) (Language laboratory) (Prerequisite: Placement test) Equivalent to the first half of FRSL 211. Only with special permission of the Department.

FRSL 215 Oral and Written French 1 - Intensive.
(6) (Fall) (6 hours, plus language laboratory) (Prerequisite: Placement test) Open to students in any degree program having an elementary knowledge of French and to those who have completed FRSL 207 (Restriction: Not open to students from Quebec) Language lab attendance required. Grammar review, comprehension, vocabulary development, selected readings and group discussions.

FRSL 216 Découvrons Montréal en français.
(3) (Winter) (3 hours, plus language laboratory) (Prerequisite: Placement test) Equivalent to the first half of FRSL 211. Only with special permission of the Department.

FRSL 302 Listening Comprehension and Oral Expression 1.
(3) (Fall) (3 hours, plus language laboratory) (Prerequisite: Placement test) For students who have reached a good standard in grammar and written French but who have difficulty in understanding spoken French and therefore cannot communicate effectively) Focus on oral discrimination, global comprehension and corrective phonetics.

FRSL 303 Listening Comprehension and Oral Expression 2.
(3) (Winter) (3 hours, plus language laboratory) (Prerequisite: Placement test. Continuation of course FRSL 302) Emphasis will be on the development of oral communication skills, laboratory exercises, vocabulary building, discussions.

● FRSL 321 Oral and Written French 2.
(6) (Summer) (Prerequisite: Placement test) For those having taken FRSL 211 or equivalent) Oral work involving discussion and exposés, cultural and literary readings, grammar review. Methodological component integrated in classwork and developed.
FRSL 321D1 (3), FRSL 321D2 (3) Oral and Written French 2.
(3 hours) (Prerequisite: Placement test. For those having taken FRSL 211 or equivalent) (Students must register for both FRSL 321D1 and FRSL 321D2.) (No credit will be given for this course unless both FRSL 321D1 and FRSL 321D2 are successfully completed in consecutive terms) (FRSL 321D1 and FRSL 321D2 together are equivalent to FRSL 321) Oral work involving discussion and exposés, cultural and literary readings, grammar review. Methodological component integrated in classwork and developed in frequent workshop sessions.

FRSL 322 Oral and Written French 2.
(3) (Fall) (3 hours) Equivalent to the first half of FRSL 321. Only with special permission of the Department.

FRSL 325 Oral and Written French 2 - Intensive.
(6) (Winter) (Prerequisite: Placement test. Priority to students who have taken FRSL 215) The program of FRSL 321 will be covered in one semester.

FRSL 326 Découvrons le Québec en français.
(3) (Fall) (Prerequisite: Placement test. Priority given to Freshman students) (Course co-listed with Québec Studies.) An introduction to the history and culture of Québec.

FRSL 332 Intermediate French: Grammar.
(3) (Fall) (Prerequisite: Placement test. For those who have attained relative fluency but lack accuracy in speaking and writing) Grammar review, using both a theoretical and a practical approach. Reading materials, in addition to their cultural interest, are selected to illustrate grammatical usage, provide models of writing techniques and aid in vocabulary development.

FRSL 333 Intermediate French: Grammar.
(3) (Winter) (Prerequisite: FRSL 332 or Placement test) Second part of FRSL 332.

FRSL 407 Compréhension et expression orales.
(3) (Fall) (3 hours per semester) (Préparable: test de classement) S'adresse aux étudiants qui ont déjà une bonne maîtrise du français écrit: identification des niveaux de langue et prononciation du français familier; amélioration de la compréhension auditive par l’écoute d’une variété de documents audio-visuels du Québec et d’ailleurs.

FRSL 408 Français oral: Textes et expressions.
(3) (3 heures par semaine) (Préparable: test de classement) Suite du cours FRSL 407. Cours de perfectionnement de l’expression orale et écrite: amélioration de la production orale (intonation, débit, spontanéité); enrichissement du vocabulaire idiomatique relié à des fonctions socio-culturelles de la langue par le biais de textes oraux (jeux de rôles, discussions, simulations) et d’un journal.

FRSL 431 Français fonctionnel avancé.
(6) (Summer) (Préparable: test de classement) (Les étudiants qui ont suivi le cours FRSL 400, FRSL 402 ou FRSL 432 ne seront pas admis) Destiné aux étudiants de niveau avancé qui veulent approfondir leurs connaissances lexicales, syntaxiques et culturelles afin de pouvoir exprimer avec clarté leurs opinions sur une variété de sujets. Par l’étude de journaux, revues et textes littéraires, les étudiants se familiariseront avec la réalité québécoise contemporaine.

FRSL 431D1 (3), FRSL 431D2 (3) Français fonctionnel avancé.
(3 heures par semaine) (Préparable: test de classement) (Les étudiants qui ont suivi le cours FRSL 400, FRSL 402 ou FRSL 432 ne seront pas admis) (Students must register for both FRSL 431D1 and FRSL 431D2.) (No credit will be given for this course unless both FRSL 431D1 and FRSL 431D2 are successfully completed in consecutive terms) (FRSL 431D1 and FRSL 431D2 together are equivalent to FRSL 431) Destiné aux étudiants de niveau avancé qui veulent approfondir leurs connaissances lexicales, syntaxiques et culturelles afin de pouvoir exprimer avec clarté leurs opinions sur une variété de sujets. Par l’étude de journaux, revues et textes littéraires, les étudiants se familiariseront avec la réalité québécoise contemporaine.

FRSL 432 Français fonctionnel.
(3) (Fall) (3 heures par semaine) (Préparable: test de classement) Première moitié du programme du cours FRSL 431. Seulement avec la permission spéciale du département.

FRSL 445 Français fonctionnel, écrit 1.
(3) (Fall) (3 heures par semaine) (Préparable: test de classement) Destiné aux étudiants dont le français oral est d’un niveau fonctionnel, mais dont le français écrit est nettement inférieur. Travaux écrits hebdomadaires, analyse de textes divers, exercices et tests en classe. But: corriger l’orthographe, la grammaire et les anglicismes, enrichir le vocabulaire, améliorer l’expression écrite.

FRSL 446 Français fonctionnel, écrit 2.
(3) (Winter) (3 heures par semaine) (Préparable: test de classement) Prépare aux cours du Département de langue et littérature françaises. Même format que le cours FRSL 445, à un niveau plus avancé! Rédactions de types variés. But: améliorer le style, développer les compétences telles que l’organisation et la présentation d’arguments ou l’identification des registres de langue.

FRSL 449 Le Français des médias.
(3) (3 heures par semaine) (Préparable: test de classement) Cours de perfectionnement mettant l’accent sur l’enrichissement de la langue à l’oral comme à l’écrit. Analyse d’émissions de télévision ou de radio et lecture d’articles de journaux ou de revues. Activités variées portant sur des sujets d’actualité (reportages, débats, etc.) qui reflètent la société et la culture du Québec d’aujourd’hui.

FRSL 455 Grammaire et création.
(3) (3 heures par semaine) (Préparable: test de classement) Perspective analytique et approche inductive et visuelle se combinent pour permettre une meilleure maîtrise du code grammatical. L’étude de textes de niveau soutenu met en relief la richesse des ressources lexicales et stylistiques du français et rend accessible la création littéraire aux étudiants non francophones.

GERM-German

Offered by: German Studies

GERM 197 FYS: Images of Otherness.
(3) (Fall) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) (Given in English) Topic: Images of Otherness: Madness and Literature. The seminar examines images and narratives of the foreign, alien, and uncanny Other in major works of German literature, film, music, and art from Romanticism to the present. Works discussed include Wagner’s Lohengrin, expressionist art, and texts by authors such as ETA Hoffmann, Kleist, Freud, Nietzsche, Kafka, and Thomas Mann.

GERM 200 German Language, Intensive Beginners’.
(6) (Fall) (6 hours, plus 1 hour laboratory) An intensive language course designed to develop communicative skills; covers the first level (GERM 202D1/GERM 202D2) in one term.
Required for program students.

- **GERM 202 German Language, Beginners**.
  - (6) (Summer) (3 hours, plus 1 hour laboratory) A comprehensive first level course designed to develop communicative skills.

- **GERM 202D1 (3), GERM 202D2 (3) German Language, Beginners**.
  - (Fall, Winter) (Students must register for both GERM 202D1 and GERM 202D2.) (No credit will be given for this course unless both GERM 202D1 and GERM 202D2 are successfully completed in consecutive terms) A comprehensive first level course designed to develop communicative skills.

- **GERM 202D1 (3), GERM 202D2 (3) German for Reading**.
  - (Restriction: Not open to students who have taken or are taking beginning level courses.) (Students must also register for GERM 203D1) (No credit will be given for this course unless both GERM 203D1 and GERM 203D2 are successfully completed in consecutive terms) Reading German.

- **GERM 259 Individual and Society in German Literature 1**.
  - (3) (Fall) (Given in English) This course provides an overview of the history of German literature and culture from the Middle Ages to Goethe through a study of representative texts in English translation.

- **GERM 260 Individual and Society in German Literature 2**.
  - (3) (Winter) (Given in English) This course provides a continuation of the overview of the history of German literature and culture from Goethe to the present through a study of representative texts in English translation.

- **GERM 300 German Language Intensive Intermediate**.
  - (6) (Winter) (6 hours, plus 1 hour laboratory) (Prerequisite: GERM 200 or GERM 202, 202D1/D2 or equivalent, or permission of Department.) (Required for program students) Continuation of GERM 200; covers the second level (GERM 307D1/GERM 307D2) in one term.

- **GERM 307D1 (3), GERM 307D2 (3) German Language - Intermediate**.
  - (Fall, Winter) (Prerequisite: GERM 200 or GERM 202, 202D1/D2, or equivalent, or permission of Department.) (Students must register for both GERM 307D1 and GERM 307D2.) (No credit will be given for this course unless both GERM 307D1 and GERM 307D2 are successfully completed in consecutive terms) Review of grammar, further development of basic skills; literary and cultural readings.

- **GERM 325 German Language - Intensive Advanced**.
  - (6) (Fall or Winter) (6 hours) (Prerequisite: GERM 300 or GERM 307D1/D2, or equivalent, or permission of Department.) (Required for program students.) This course aims at developing post-intermediate proficiency in listening, speaking, reading, and writing skills, with emphasis on oral and written expression. Special attention is given to word formation and to the proper choice of grammatical structures, vocabulary, and phraseology.

- **GERM 330 Landeskunde**.
  - (3) (Winter) (Given in German) (Prerequisite: GERM 325 or equivalent, or permission of Department.) Introduction to images of modern Germany, perceptions and conceptions of Germany since the Second World War.

- **GERM 331 Germany after Reunification**.
  - (3) (Winter) (Given in German) (Prerequisite: GERM 325 or equivalent, or permission of the Department) The events which led to the fall of the Berlin Wall, the reunification of Germany in 1990 and the changing cultural, social, political and economic landscape of the ‘New Germany’. Highlighting issues of cultural and social politics, texts discussed include historical, literary and film material.

- **GERM 336 German Grammar Review**.
  - (3) (Winter) (Given in German) This advanced-level course offers a comprehensive review of basic German grammar. The course can be taken concurrently with a language course at the third level.

- **GERM 341 Essay Writing**.
  - (3) (Fall) (Given in German) (Prerequisite: GERM 325 or equivalent, or permission of Department) This course is designed to further develop the writing skills of students having attained the 325-level. The rhetorical strategies of writing will be studied and analyzed with different text genres: letters, curriculum vitae, summaries, book reviews, expository and argumentative essays, minutes, feature stories, term papers, etc. Particular attention will be paid to argumentation, vocabulary, and style.

- **GERM 342 Translation**.
  - (3) (Fall) (Given in German) (Prerequisite: GERM 325 or equivalent, or permission of Department) An introductory course, emphasizing practice more than theory. It covers mainly written translation (from German into English), i.e. reading and writing, and teaches to analyze, and to manipulate, grammatical/syntactical structures and to get a sense of semantic accuracy. The course is designed to familiarize students with basic technical terminology and to enable them to observe, analyze and produce accurate and appropriate translations. Vocabulary building is not a main issue.

- **GERM 345 Business German 1**.
  - (3) (Fall) (Given in German) (Prerequisite: GERM 325 or equivalent, or permission of the Department) This course introduces students to the terminology and syntax of Business German in contrast with English to ensure a sound basis for business communication.

- **GERM 346 Business German 2**.
  - (3) (Winter) (Given in German) (Prerequisite: GERM 345 or equivalent, or permission of the Department) This course is designed to develop oral and written skills for competence in German for business communication as well as cross-cultural awareness by discussing current materials from various sources.

- **GERM 352 German Literature - 19th Century 3**.
  - (3)

- **GERM 353 19th Century Literary Topics**.
  - (3) (Winter) (Given in German) (Prerequisite: GERM 325, or equivalent, or permission of the Department) Varying topics of 19th century literature.

- **GERM 354 Literary Approach to Song**.
  - (3) (Fall) (Prerequisite(s): No official prerequisite, but students should have GERM 307D1/D2 or equivalent.) (Given in English) Examination of the original cultural/historical background of texts and their settings by composers such as Schubert, Schumann, Wagner, Mahler and the New Vienna School.

- **GERM 355 Nietzsche and Wagner**.
  - (3) (Winter) (Given in English) This course examines the relationship between the philosopher Friedrich Nietzsche and the composer Richard Wagner. It explores their intellectual kinship, their view of art, music, and philosophy in the context of Nietzsche’s critique of modernity and decadence and analyzes the Third Reich's and Hollywood's appropriation of Nietzsche and Wagner.

- **GERM 358 Franz Kafka**.
  - (3) (Fall) (Given in English) This course will look at the works on Franz Kafka, a “classic” modernist author, in three characteristic genres: the story, the novel, and the short prose piece. A selection of Kafka’s letters and diary entries as well as critical approaches to his work will also be studied.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GERM 359</td>
<td>Bertolt Brecht.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) This course provides an overview of Brecht's development as a dramatist and as a theorist,</td>
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<td>advocate and practitioner of a new form of theater. Attention will also be given to Brecht as a poet and to film</td>
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<td>versions of Brecht's works.</td>
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<tr>
<td>GERM 360</td>
<td>German Literature 1890 to 1918.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) The course deals with various genres of literature and</td>
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<td>forms of culture associated with Naturalism and Expressionism from the turn of the century to the Weimar Republic.</td>
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<td>Writers studied may include: Hauptmann, Wedekind, Schnitzler, Heinrich Mann, Sternheim, Kaiser, Thomas Mann, Kaefka,</td>
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<td>Rosaluxemburg.</td>
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<tr>
<td>GERM 361</td>
<td>German Literature 1918 to 1945.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) The course deals with the culture, literature and society of</td>
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<td>the Weimar Republic and the period of the Third Reich and the Holocaust. Writers studied will include: Brecht,</td>
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<td>Seghers, Fleissner, Kastner, Tucholsky, Benn, Kolmar, and Lasker-Schüler.</td>
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<tr>
<td>GERM 362</td>
<td>20th Century Literature Topics.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) Introduction to selected topics and genres in twentieth</td>
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<td>century literature and culture.</td>
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<tr>
<td>GERM 363</td>
<td>German Postwar Literature.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) The course deals with the literature and culture of the</td>
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<td>Federal Republic of Germany, the former German Democratic Republic and unified Germany since 1945. It treats major</td>
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<td>authors and trends. Topics addressed include issues of nationalism and gender, multiculturalism, and other concerns of</td>
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<td>contemporary German society.</td>
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<td>GERM 364</td>
<td>German Culture: Gender and Society.</td>
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<td>(3) (Fall)</td>
<td>(Given in English) In connection with notions of identity, nationhood, political change, and cultural difference,</td>
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<td>this course investigates concepts and issues of gender in contemporary German Society. The readings include critical</td>
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<td>essays and literary texts by writers, scholars, philosophers, journalists, politicians, and political activists.</td>
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<td>GERM 365</td>
<td>Media Studies in German.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in English) Topic: Writing Machines: The Language of Media from Manuscript to Hyperertext.</td>
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<tr>
<td>GERM 366</td>
<td>Postwar German Literature/Film.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in English) The course is a study of postwar German literature and film, focusing on the cinematic representation</td>
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<td>of literary texts. The emphasis is on the representation of German history in both media, on historical memory and</td>
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<td>gender relations.</td>
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<td>GERM 367</td>
<td>Topics in German Thought.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in English) A variety of issues significant to the development of German cultural and intellectual life.</td>
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<tr>
<td>GERM 371</td>
<td>Cultural Change and Evolution of German.</td>
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<tr>
<td>(3) (Given</td>
<td>(In English) Main topics in the evolution of the German language from Charlemagne to the present: language and the</td>
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<td>Christianization of the Germanic tribes, courtly literature and the knights, Luther's translation of the Bible and the</td>
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<td>printing press, modern literature since the 18th century and Goethe.</td>
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<tr>
<td>GERM 380</td>
<td>18th Century German Literature.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in German) (Restriction: Not open to students who have taken GERM 380 and/or GERM 381) (Prerequisite: Germ 325</td>
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<td></td>
<td>or equivalent) An introduction to German literature of the 18th century: Enlightenment and Sturm und Drang. The</td>
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<td>course will follow a socio-historical approach, i.e. it will attempt to delineate some of the relations that exist</td>
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<td>between the texts and their social, political, and cultural context.</td>
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<td>GERM 382</td>
<td>Faust in European Literature.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in English.) The Faust theme is as old as Christianity. The course traces its development from pre-Faust</td>
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<td>legends and the Chapbook through Christopher Marlowe's Dr. Faust and Goethe's Faust to recent works.</td>
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<td>GERM 397</td>
<td>Individual Reading Course.</td>
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<tr>
<td>(3) (Fall)</td>
<td>Given solely at the discretion of the instructor.</td>
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<tr>
<td>GERM 398</td>
<td>Individual Reading Course.</td>
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<tr>
<td>(3) (Winter)</td>
<td>Given solely at the discretion of the instructor.</td>
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<tr>
<td>GERM 400</td>
<td>Interdisciplinary Seminar: Contemporary German Studies.</td>
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<tr>
<td>(3) (Winter)</td>
<td>(Given in English) An interdisciplinary, team-taught seminar, for third-year students on a single topic or theme.</td>
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<td>Topics may vary from year to year.</td>
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<td>GERM 412</td>
<td>Heroes, Lovers and Crusaders.</td>
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<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) For the most part, the works of Goethe and Schiller</td>
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<td>are discussed.</td>
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<td>GERM 451</td>
<td>German Romanticism.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) This course deals with German literary texts of the</td>
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<td>Romantic period, studied in their literary, historical, cultural and sociological context. References will be made to</td>
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<td>the other arts, in particular to music. Writers studied will include:</td>
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<td>Hoffmann, Eichendorff, Novalis, Hoffmann, Kleist, and Tieck.</td>
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<td>GERM 455</td>
<td>Women of the Romantic Era.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent.) (Course is given in German for advanced undergraduate program</td>
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<td>students.) This course places at its centre the life-worlds, biographies, and forms of self-expression by German women</td>
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<td>of the Romantic Era.</td>
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<td>GERM 497</td>
<td>Individual Reading Course.</td>
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<tr>
<td>(3) (Fall)</td>
<td>Given solely at the discretion of the instructor.</td>
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<tr>
<td>GERM 498</td>
<td>Individual Reading Course.</td>
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<tr>
<td>(3) (Winter)</td>
<td>Given solely at the discretion of the instructor.</td>
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<tr>
<td>GERM 499</td>
<td>Internship: German Studies.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in German) (Prerequisite: Germ 325 or equivalent) This seminar course will acquaint students with the</td>
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<td>German courtly literature of the 12th and 13th century, its concepts, concerns and its sociology. The knightly</td>
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<td>romances of Hartmann von Aue (Erec), Wolfram von Eschenbach (Parzival), Gottfried von Straßburg (Tristan), and the</td>
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<td>heroic epic (Nibelungenlied) will be read and discussed in class, Hartmann's Erec in the original MZH language as well</td>
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<td>as in translation, to give students a basic acquaintance with the Middle High German literary language. Writers</td>
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<td>studied will include: Hartmann von Aue, Gottfried von Straßburg, Wolfram von Eschenbach.</td>
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<tr>
<td>GERM 561</td>
<td>German Literature: Baroque.</td>
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<tr>
<td>(3) (Fall)</td>
<td>(Given in English) (Prerequisite: Germ 325 or equivalent) Introduction to selected topics and genres in twentieth</td>
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<td>century literature and culture.</td>
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Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
HISP-Hispanic Studies

**HISP 202D1 (3), HISP 202D2 (3) Portuguese Language: Beginners'.** (Fall) (4 hours weekly, including laboratory) (Restriction: Departmental approval required) (Restriction: beginners only) (Students must register for both HISP 202D1 and HISP 202D2.) (No credit will be given for this course unless both HISP 202D1 and HISP 202D2 are successfully completed in consecutive terms) A comprehensive first-year course in speaking, reading and writing. Selected readings in Portuguese and Brazilian literature.

**HISP 204D1 (3), HISP 204D2 (3) Portuguese Language: Intermediate.** (Fall, Winter) (Prerequisite: HISP 202D1/HISP 202D2 or equivalent) (Restriction: Departmental approval required) (Students must register for both HISP 204D1 and HISP 204D2.) (No credit will be given for this course unless both HISP 204D1 and HISP 204D2 are successfully completed in consecutive terms) Review of grammar. Practice in speaking and writing. Composition. Selected readings in Portuguese and Brazilian literature.

**HISP 210 Spanish Language: Beginners'.** (6) (Summer) (Restriction: Not open to students who have taken HISP 218 or equivalent) A comprehensive first-level course focusing on all oral and written skills. An introduction to the fundamentals of Spanish grammar and syntax and to Hispanic culture.

**HISP 210D1 (3), HISP 210D2 (3) Spanish Language: Beginners'.** (Fall, Winter) (4 hours weekly, including laboratory) (Restriction: Not open to students who have taken HISP 218 or equivalent. Preference will be given to students in their first year of university study. Students in or entering U3 may not pre-register for this course but will be admitted, as space allows, during the Fall registration period.) (Students must register for both HISP 210D1 and HISP 210D2.) (No credit will be given for this course unless both HISP 210D1 and HISP 210D2 are successfully completed in consecutive terms) From the origins to the Golden Age through a study of representative works.

**HISP 218 Spanish Language Intensive - Elementary.** (6) (Fall and Winter) (7 hours weekly, including laboratory) (Restriction: Not open to students who have taken HISP 210 or 210D1/D2 or equivalent.) (Preference will be given to students in their first year of university study. Students in or entering U3 may not pre-register for this course but will be admitted, as space allows, during the Fall registration period) A comprehensive first-level course focusing on all oral and written skills. An introduction to the fundamentals of Spanish grammar and syntax and to Hispanic culture.

**HISP 219 Spanish Language Intensive - Intermediate.** (6) (Fall or Winter) (7 hours weekly, including laboratory) (Prerequisite: HISP 210 or 210D1/D2 or HISP 218 or equivalent.) (Restriction: Departmental approval required) (Preference will be given to students in their first year of university study) (Restriction: Not open to students who have taken HISP 220D1/HISP 220D2 or equivalent) A thorough review of Spanish grammar with emphasis upon current usage. Enrichment of all language skills, with a goal of proficiency in written and oral communication, through readings in the literature and civilization of Spain and Spanish America.

**HISP 220D1 (3), HISP 220D2 (3) Spanish Language: Intermediate.** (Fall, Winter) (Restriction: Not open to students who have taken HISP 219 or equivalent) A comprehensive first-year course in speaking, reading and writing. Selected readings in Portuguese and Brazilian literature.

**HISP 225 Hispanic Civilization 1.** (3) (Fall) (Taught in English) A survey of historical and cultural elements which constitute the background of the Hispanic world up to the 18th century; a survey of the pre-Columbian indigenous civilizations (Aztec, Maya and Inca) and the conquest of America.

**HISP 226 Hispanic Civilization 2.** (3) (Winter) (Taught in English) A survey of the constitution of the ideological and political structures of the Spanish Empire in both Europe and America until the Wars of Independence; a survey of the culture and history of the Hispanic people from the early 19th Century to the present.

**HISP 241 Survey of Spanish Literature 1.** (3) (Fall) (Taught in Spanish) (Prerequisite: successful completion of HISP 220D1/D2, HISP 219 or equivalent) From the origins to the Golden Age through a study of representative works.

**HISP 242 Survey of Spanish Literature 2.** (3) (Winter) (Prerequisite: successful completion of HISP 219 or CEGEP course 607-401) (Corequisite HISP 220D1/D2, or equivalent) (Taught in Spanish) From the Golden Age to the modern period through a study of representative works.

**HISP 243 Survey of Spanish-American Literature 1.** (3) (Fall) (Taught in Spanish) (Prerequisite: successful completion of HISP 220D1/HISP 220D2, HISP 219 or equivalent) From the Colonial period to Modernism through a study of representative works.

**HISP 244 Survey of Spanish-American Literature 2.** (3) (Winter) (Taught in Spanish) (Prerequisite: HISP 220D1/HISP 220D2, HISP 219 or equivalent) From Modernism to the present through a study of representative works.

**HISP 301 Hispanic Literature - English Translation 1.** (3) (Winter) A special topic in Spanish literature will be studied in English translation.

**HISP 321 Spanish Literature - 18th Century.** (3) (Winter) A critical study of neo-classical drama and poetry; satirical prose; Jovellanos, Iriarte, Moratín and others.

**HISP 324 20th Century Drama.** (3) (Fall) Satirical drama and theatre of social protest. Literatura comprometida. García Lorca and Casona; Buero Vallejo, Sastre, Olmo, Muñiz, Arrabal and others.

**HISP 325 Spanish Novel of the 19th Century.** (3) (Restriction: Not open to students who have taken HISP...
(ARTS) HISP-HISPANIC STUDIES

325) The Romantic, Realist and Naturalist novel in Spain, with special emphasis on the development of the Spanish novel in relation to contemporary trends in other European countries.

- **HISP 326 Spanish Romanticism.**
  (3) (Winter) The aesthetic and historical development of Romanticism, with special emphasis on lyric poetry and drama.

- **HISP 327 Literature of Ideas: Spain.**
  (3) (Fall) Critical reading and discussion of works of outstanding thinkers as a key to understanding the development of social forces and institutions.

- **HISP 328 Literature of Ideas: Spanish America.**
  (3) (Fall) Critical reading and discussion of works of outstanding thinkers as a key to understanding the cultural development of a continent.

- **HISP 332 Spanish-American Literature of 19th Century.**
  (3) (Winter) An intensive study of representative authors from the period of Independence to the advent of Modernism.

- **HISP 333 Spanish-American Drama.**
  (3) (Fall) A study of the outstanding works of the theatre from the colonial period to the present, including pre-Columbian works.

- **HISP 350 The Generation of 1898.**
  (3) (Fall) (Restriction: Not open to students who have taken HISP 349 or HISP 350 prior to January 2005.) An examination of the cultural background of genre developments in prose, fiction, drama, and poetry by representative authors of the Generation of 1898 in Spain.

- **HISP 351 Spanish-American Novel 1.**

- **HISP 352 Spanish-American Novel 2.**
  (3) (Fall) Critical reading and discussion of contemporary Spanish-American fiction writers.

- **HISP 356 Spanish-American Short Story.**
  (3) (Fall) Study of style, tendencies and types as reflected in the evolution of this genre, and seen against the background of a developing continent.

- **HISP 358 Women Writers Fiction Spanish-America.**
  (3) (Winter) Social movements and literary tendencies, as reflected in the novels and short stories of representative authors of the 19th and 20th centuries, such as Gómez de Avellaneda, Matto de Turner, Brunet, Bombal, Levinson, and others.

- **HISP 423 Modern Lyric Poetry.**
  (3) (Fall) Poets in exile and counter movements in 20th century Spain: García Lorca, Alberti, Salinas, Aleixandre, Cernuda and Hernández.

- **HISP 424 Spanish Novel since Civil War.**
  (3) (Cela and Tremendismo. Women novelists. Writers in exile: Goytisolo and others.

- **HISP 432 Literature of Ideas: Spain.**
  (3) (Fall) Selected topics in the historiography, literature and culture of Spanish America prior to Independence.

- **HISP 438 Topics: Spanish Literature.**
  (3) (Prerequisite: the prerequisite for all courses taught in Spanish and numbered at the 300-level and above is completion of any Survey of Literature (HISP 241, HISP 242, HISP 243, HISP 244) or permission of the instructor.) (Note: All Hispanic Studies courses, including HISP 210D1/D2 and HISP 202D1/D2 after the first few weeks, are given in Spanish or Portuguese, with the exception of HISP 225 and HISP 226, which are given in English.) Specific topics of interest in Spanish literature.

- **HISP 439 Topics: Spanish-American Literature.**
  (3) (Fall and Winter) (Prerequisite: the prerequisite for all courses taught in Spanish and numbered at the 300-level and above is completion of any Survey of Literature (HISP 241, HISP 242, HISP 243, HISP 244) or permission of the instructor.) (Note: All Hispanic Studies courses, including HISP 210D1/D2 and HISP 202D1/D2 after the first few weeks, are given in Spanish or Portuguese, with the exception of HISP 225 and HISP 226, which are given in English.) Specific topics of interest in Spanish-American literature.

- **HISP 442 Modernismo.**
  (3) (Fall) A study of the Modernist School of Spanish American authors.

- **HISP 442N1 Modernismo.**
  (1.5) (Students must also register for HISP 442N2) (No credit will be given for this course unless both HISP 442N1 and HISP 442N2 are successfully completed in the same calendar year) (HISP 442N1 and HISP 442N2 together are equivalent to HISP 442) See HISP 442 for course description.

- **HISP 442N2 Modernismo.**
  (1.5) (Prerequisite: HISP 442N1) (No credit will be given for this course unless both HISP 442N1 and HISP 442N2 are successfully completed in the same calendar year) (HISP 442N1 and HISP 442N2 together are equivalent to HISP 442) See HISP 442 for course description.

- **HISP 451D1 (3), HISP 451D2 (3) Cervantes.**
  (Fall, Winter) (Students must register for both HISP 451D1 and HISP 451D2 together are successfully completed in consecutive terms) A study of the complete Don Quijote, the Novelas ejemplares, the Entremeses and other theatrical works. Some account of outstanding critical works on Cervantes.

- **HISP 453 20th Century Spanish-American Poetry.**
  (3) (Fall) A study of representative trends and authors (Dario, Marti, Huidobro, Mistral, Vallego, Neruda, Paz).

- **HISP 454 Major Figures: Spanish Literature.**
  (3) (Prerequisite: the prerequisite for all courses taught in Spanish and numbered at the 300-level and above is completion of any Survey of Literature (HISP 241, HISP 242, HISP 243, HISP 244) or permission of the instructor.) (Note: All Hispanic Studies courses, including HISP 210D1/D2 and HISP 202D1/D2 after the first few weeks, are given in Spanish or Portuguese, with the exception of HISP 225 and HISP 226, which are given in English.) Specific figures of interest in Spanish literature.

- **HISP 455 Major Figures: Spanish-American Literature.**
  (3) (Winter) (Prerequisite: the prerequisite for all courses taught in Spanish and numbered at the 300-level and above is completion of any Survey of Literature (HISP 241, HISP 242, HISP 243, HISP 244) or permission of the instructor.) (Note: All Hispanic Studies courses, including HISP 210D1/D2 and HISP 202D1/D2 after the first few weeks, are given in Spanish or Portuguese, with the exception of HISP 225 and HISP 226, which are given in English.) 2006-07: Gabriel Garcia Marquez. Specific figures of interest...
in Spanish-American literature.

**HISP 458 Golden Age Literature: Renaissance.**
(3) (Fall) (Restriction: Not open to students who have taken HISP 421, 458 or 460 prior to September 2004.) A comprehensive examination of the poetry, prose and drama of the Renaissance in Spain through representative authors.

**HISP 460 Golden Age Literature: Baroque.**
(3) (Fall) (Given in alternate years) (Restriction: Not open to students who have taken HISP 421, 458 or 460 prior to September 2004.) A comprehensive examination of the poetry, prose and drama of the Baroque period in Spain through representative authors.

**HISP 470 Tutorial.**
(3) (Fall)

**HISP 471 Tutorial.**
(3) (Winter)

**HISP 490 Honours Thesis.**
(6) (Winter) (Restriction: Reserved for Honours and Joint Honours students who will present their honours thesis on a theme in Hispanic Studies written under the direction of a member of staff during their final year of study).

**HISP 490D1 (3), HISP 490D2 (3) Honours Thesis.**
(Fall and Winter) (Students must register for both HISP 490D1 and HISP 490D2.) (No credit will be given for this course unless both HISP 490D1 and HISP 490D2 are successfully completed in consecutive terms) (HISP 490D1 and HISP 490D2 together are equivalent to HISP 490)

**HISP 499 Internship: Hispanic Studies.**
(3) (Fall or Winter) (Prerequisite: Permission of the departmental Internship Advisor.) (Restriction: Open to U2 and U3 students after completing 30 credits of a 90 credit degree program or 45 credit program, a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will normally not fulfill program requirements for seminar or 400- level courses. Spanish language proficiency required.) Internship with an approved host institution or organization.

**HISP 501 History of the Spanish Language.**
(3) (Prerequisite: Permission of the instructor) The development of Spanish from its beginnings to the Modern Period, including usage in Spanish America and Judeo-Spanish.

**HISP 505 Seminar in Hispanic Studies.**
(3) (Winter) 2006-07: Literature, Sexuality and Gender. A team-taught seminar examining major issues in Hispanic letters that transcend national literatures and historical periods. Although the specific topics will vary, each will address broad questions of a diachronic nature, thereby permitting an understanding of literary schools and movements, genres or ideologies present throughout the Hispanic world.

**HIST-History**

**HIST 194 FYS: Jewish Concepts of Others.**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25.) (For first year students only.) A survey, using translated primary and selected secondary sources, of the ways in which Jews represented Christians from late antiquity to the present. Legal, liturgical, literary and other sources are examined with the focus on the Medieval and Early Modern periods.

**HIST 195 FYS: Sources of World History.**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) (Restriction: For first year students only) An introduction to the constitutive intellectual traditions of world history.

**HIST 196 FYS: Weather/Climate/History.**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) (Restriction: For first year students only.) (Restriction: Not open to students who have taken ATOC 199.) The impact of weather and climate on agriculture, disease, demography, economic cycles and history. Methods to establish linkage between weather, climate and history.

**HIST 197 FYS: Race in Latin America.**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) This seminar explores what it meant to be native, black, or white in Latin America from the colonial period to the present. It explores how conceptualizations of race and ethnicity shaped colonialism, social organisation, opportunities for mobility, visions of nationhood, and social movements.

**HIST 198 FYS: Nation Building and Nationalism**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) An introduction to some of the major theories of nationalism; an exploration of the many varieties of nationalism and forms of nation-building; a particular focus on the historical background to three case studies of current interest: Yugoslavia, Ireland and Israel.

**HIST 199 FYS: Medieval Women and Men.**
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) This course examines the life choices available to women and men of the Middle Ages: how opportunities and restrictions of medieval society affected personal autonomy, careers, and relations between the sexes. Topics include: sexuality, religious life, marriage, work. Emphasis on learning techniques for reading and writing about primary sources (in translation).

**HIST 200 Introduction to African History.**
(3) (Restriction: Not open to students who have taken 101-200D) This course stresses the interactions of the peoples of Africa with each other and with the worlds of Europe and Islam from the Iron Age to the European Conquest in 1880.

**HIST 201 Modern African History.**
(3) (Restriction: Not open to students who have taken 101-200D) While covering the general political history of Africa in the twentieth century, this course also explores such themes as health and disease, gender, and urbanization.

**HIST 202 Survey: Canada to 1867.**
(3) (Fall) A survey of the development of Canada, from the pre-Columbian explorations until the Confederation period. Social, economic and political history will be examined in a general way.

**HIST 203 Survey: Canada since 1867.**
(3) (Fall) A survey of the development of Canada from Confederation to
the present day. Social, economic and political history will be examined in a general way.

- **HIST 204 History of Great Britain to 1688.**
  (3) A survey of the development of Britain from the Middle Ages to the Glorious Revolution. Emphasis on political changes, seen in relation to the economic, social and intellectual background.

- **HIST 205 Ancient Greek History.**
  (3) A survey of Ancient Greek History from the origins to the Roman Conquest. The Roman continuation of this course is HIST 209.

- **HIST 206 Africa and the Indian Ocean World.**
  (3) Examines the rise and development of an Indian Ocean World and the global economy from the first millennium C.E. and Africa’s role within it.

- **HIST 207 Jewish History: 400 B.C.E. to 1000.**
  (3) Restrictions: Not open to students who have taken JWST 216
  An overview of Jewish history from the period of Ezra and Nehemiah to the death of Hai Gaon, c. 1035. Focus on the experience of the Jews in Hellenistic and Islamic civilizations. Topics include Jewish sects, rabbinic literature in its various genres, the Karaites, and the rise of the Gaonate.

- **HIST 208 Introduction to East Asian History.**
  (3) Restrictions: Not open to students who have taken 101-208D
  An introduction to the history of East Asian civilization from earliest times to 1600, with emphasis on China and Japan, including social, intellectual, and economic developments as well as political history.

- **HIST 209 Ancient Roman History.**
  (3) A survey of Roman history.

- **HIST 211 American History to 1865.**
  (3) Fall Introduction to the history of colonial North America and the United States up to the Civil War, in their Atlantic context.

- **HIST 212 Science and Medicine in Canada.**
  (3) The social and intellectual history of science and medicine in Canada, from early exploration, through the rise of learned societies, universities and professional organizations, to the present age of big science and biotechnology.

- **HIST 213 World History, 1300-2000.**
  (3) A thematic and comparative approach to world history, beginning with the rise of the Mongols in the thirteenth century, and ending with globalization in the late twentieth century. Trade diasporas, technology, disease and imperialism are the major themes addressed.

- **HIST 214 Introduction to European History.**
  (3) Restrictions: Not open to students who have taken 101-215D
  The course covers European History from the Ancient Greeks to the first part of the seventeenth century. The object of the course is two-fold, to provide students with: 1) a number of essential canons of pre-modern history; 2) hands-on experience in the reading, interpretation and writing of history.

- **HIST 215 Modern European History.**
  (3) Restrictions: Not open to students who have taken 101-215D
  A social, economic, political and cultural survey of European History from the early seventeenth century to the present.

- **HIST 216 History of Russia to 1801.**
  (3) A survey of Russian history, from the origin of the Slavs to the establishment of the Kievan State, the coming of the Mongols, the emergence of Muscovy, and the rise of the Russian Empire.

- **HIST 217 A Survey of Spanish History.**
  (3) This course provides an overview of the history of Spain from Medieval times to the present day. Special attention will be devoted to the Reconquest; to the rise and decline of Spain as a major power in the 16th and 17th centuries; and Spain in the 20th century and Franco.

- **HIST 218 Modern East Asian History.**
  (3) (Winter) An introduction to the history of China and Japan from the seventeenth century to the present, including modernization, nationalism, and the interaction of the two countries.

- **HIST 219 Jewish History: 1000-2000.**
  (3) The Jewish experience from the rise of the European centres to the present.

- **HIST 221 United States since 1865.**
  (3) (Winter) Examines the defining moments and movements in the U.S. since Reconstruction, including populism, progressivism, the World Wars, the New Deal, the Cold War, the sixties and its consequences. Emphasis on political, social and ideological transformations that ensued.

- **HIST 224 Britain Since 1688.**
  (3) (Prerequisites: HIST 204 or consent of instructor) A survey of the development of Britain from the Glorious Revolution to the present day. Emphasis on political, social, economic and intellectual change against a background of Britain’s evolving imperial and world role.

- **HIST 225 History of France to 1789.**
  (3) Survey of French society from the fall of the Roman Empire to the outbreak of the French Revolution. Emphasis on the construction of the French state in the medieval period, religious conflicts of the 16th century, and the economic structures under absolutism, intellectual and economic changes in the 18th century.

- **HIST 226 Eastern Europe in 20th Century.**
  (3) Introductory survey of the region’s history from the twilight of imperialism in the 1890s to the post-Communist 1990s. Consideration will be given to Russia and the Soviet Union, the Balkans, Austria-Hungary and its successors; the impacts of two World Wars, communism, nationalism, and fascism; and the revolutions of 1989/91.

- **HIST 234 German History to 1648.**
  (3) Restrictions: Not open to students who have taken 101-235D
  The development of the German states from the beginning of the Middle Ages, papal-imperial world-power rivalry, the Reformation, and the Thirty Year War.

- **HIST 235 German History since 1648.**
  (3) Restrictions: Not open to students who have taken 101-235D
  The decline of the mediaeval empire. Austro-Prussian rivalry, the industrial revolution, the modern German state, the two world wars, and Germany’s division and reunification.

- **HIST 236 Russia from 1801 to 1991.**
  (3) The Jewish experience from the rise of the European centres to the present.

- **HIST 237 Russian History since 1801.**
  (3) Not open to students who took HIST 349 prior to Winter 2006. (Note: Also available to first-year medical students in their options program.) The natural history of health and disease and the development of the healing arts, from antiquity to the beginning of modern times. The rise of "western" medicine. Health and healing as gradually evolving aspects of society and culture.

- **HIST 238 History and the Environment.**
  (3) Sketch of the history of the material aspects of human interaction with the rest of nature. Included will be a historian's view of the social, technical, and ecological implications of the great variety of activities devised by our
species. Though global in outlook, this course will emphasize the relevant historiography of France, England and North America.

**HIST 300 Nationalisms in Canada.**
(3) (Prerequisite: HIST 203 or permission of instructor.) (Restriction: Not open to students who took CANS 300 (106-300A) before September 2002. Not open to students taking CANS 301 in 2005-06.) An historical explanation of the Canadian experience of nationalism from the Patriotes to the First Nation, with reference to politics, economics, iconography, ideology and multicultural experience.

**HIST 301 U.S. Presidential Campaigning.**
(3) (Prerequisite: any course in U.S. history or consent of instructor) The history of presidential campaigning in the U.S. will be considered against the backdrop of party change, technological development and the growth of American democracy.

**HIST 302 International Relations History 1: 1750-1950.**
(3) (Prerequisite: one course in post-1800 History or permission of instructor.) The history of international relations during the era of the four global wars, the expansion of the West in world affairs, the changes in the balance of power in Europe, the rise and fall of the colonial empires, and the ascendency of the flank powers, Russia and the United States.

**HIST 303 History of Quebec.**
(3) (Prerequisite: HIST 202/HIST 203) (The ability to read French is helpful but not mandatory) Covering Quebec history from New France to contemporary times, this course will include themes like ethnic relations, citizenship, gender and material culture. It is of particular interest to students in Education who foresee teaching about Quebec.

**HIST 304 International Relations History 2: Cold War.**
(3) (Prerequisite: HIST 302 or HIST 215 or a 20th C. history course or permission of instructor.) The history of the Cold War. Special attention will be paid to the different viewpoints and experiences of the Cold War participants by studying the historiography and archival materials released in the Eastern Block and Western World.

**HIST 305 War and Society 1.**
(3) (Prerequisite: one general course in European history) (Restriction: Not open to students who have taken 101-305D. Not open to U0 students) War in Roman, Carolingian, and feudal society. The sequel to this course is HIST 317.

**HIST 306 East Central Europe Since 1944.**
(3) (Prerequisite: HIST 226) The motives and methods of the Soviet take-over of East Central Europe from 1944. The introduction of Stalinist models (collectivization, industrialization, purges, etc.) and their effectiveness; Yugoslavia's defection; de-Stalinization; the rebellions of 1956 in Poland and Hungary; the Dubcek experiment; COMECON and other institutions; the background to contemporary events in Poland.

**HIST 307 Jews in Poland.**
(3) (Prerequisite: any course in Jewish history or East European History) (Restriction: Not open to students who have taken 101-307D) Analyses of primary sources (in translation) related to the social, economic and institutional history of the Jews in Poland and their place in the East European Jewish community. Topics include: the Jews during "The Flood" (1648 - 1667), the communal crisis of the late 17th century, the Frankist movement, and Hasidism.

**HIST 308 Formation of Chinese Tradition.**
(3) (Restriction: Not open to students who have taken 101-308D) An examination of the multiple sources of the Chinese imperial system from the period of the neolithic culture interaction sphere to the fall of the Han dynasty in 220 C.E. Special attention is paid to socio-economic developments as well as to the evolution of philosophy, ideology, and social practice. The sequel to this course is HIST 358.

**HIST 309 History of Latin America to 1825.**
(3) (Fall) The social, cultural, and economic aspects of Latin America and the Caribbean in the colonial period. Topics include: pre-Columbian and hispanic cultures in conflict, plantation empires, and the transition to independence. The sequel to this course is HIST 360.

**HIST 310 Knowledge and Atlantic Empire.**
(3) (Prerequisites: HIST 211 or permission of instructor.) The role of knowledge in British colonization and imperialism in the early modern Atlantic world. Explores the notion of an "information order" (and its problems) by examining the policies of knowledge from England and Ireland to British America, and ultimately the early United States and British India.

**HIST 311 Theodore Roosevelt and Progressive Era.**
(3) (Prerequisite: any course in U.S. history or consent of instructor) The origins, life and decline of American Progressivism (1890 - 1920) against a background of rapid industrial growth, imperialism, war and "normalcy". Emphasis on the philosophy and ambitions of Theodore Roosevelt, Progressivism's political goals in cities and states, its historiography and its legacy.

**HIST 312 East-Central Europe: 1453-1740.**
(3) Developments from the fall of Constantinople to the accession of Maria Theresa; the Ottoman impact; the Renaissance in Hungary and Poland; the emergence of the Hapsburg Empire; the Reformation and Counter-Reformation; the Thirty Years' War; the imposition of serfdom; the decline of Poland-Lithuania and the collapse of the Ottoman system. East Central Europe as a frontier region between Catholicism, Orthodoxy and Islam.

**HIST 313 East-Central Europe: 1740-1914.**
(3) History of the Austro-Hungarian Empire, Poland and the Balkans from the Age of Enlightenment to the outbreak of WW II. Special consideration will be given to the implications of serfdom and emancipation; the Romantic movement and rise of nationalism; modernization and the struggle to maintain stability.

**HIST 314 Tudor England.**
(3) (Prerequisite: HIST 204 or permission of instructor) A study of British society, politics, and thought from the end of the Middle Ages to the 17th century. Topics include: the developments of the Tudor state; the Reformation, and England's interaction with other European powers. The sequel to this course is HIST 394.

**HIST 315 Themes in World History.**
(3) (Prerequisite: HIST 213 or Permission of Instructor.) Historical phenomena that transcend the boundaries of nation-status and contributed to the long-term development of globalization.

**HIST 316 Russia: Revolutions 1905 and 1917.**
(3) (Prerequisite: A course in Russian, Soviet or European history) Reform and Revolutions: acomparison of the collapse of the Soviet Union in 1991 and of the Tsarist Empire and Provisional Government in 1917, with some discussion of the reforms that anticipated each cataclysm.

**HIST 317 War and Society 2.**
(3) (Prerequisite: one general course in European history or HIST 305) (Restriction: Not open to students who have taken 101-305D. Not open to U0 students) The rise of permanent armies...
and navies, military institutions of Eastern Europe; Warfare from Wallenstein to Napoleon; emergence of the national army in Russia; the Western military tradition after Clausewitz, total War in the twentieth century.

HIST 318 History of Japan 1. (3) (Restriction: Not open to students who have taken 101-318D or 101-293A) A survey of Japanese history and culture from earliest times to the 17th century, this course aims to provide students with a broad understanding of important themes in Japanese history.

- HIST 319 The Scientific Revolution. (3) (Prerequisite: a 200-level course in early modern history, or a survey course in philosophy, or permission of the instructor) The shift from the medieval to the modern view of man's place in the universe that took place between Copernicus and Newton and its intellectual and social implications.

HIST 320 European Thought and Culture 1. (3) (Prerequisite: HIST 214 or HIST 215) (Restriction: Not open to students who have taken 101-320D) The cultural and intellectual history of Europe from the late Middle Ages to the 18th century traces the origins of the modern sense of self in popular culture and in the texts of Erasmus, Luther, Calvin, Descartes, Pascal, Voltaire and Rousseau.

- HIST 321 European Thought and Culture 2. (3) (Prerequisite: HIST 320 or consent of the instructor) An examination of the origins of the modern sense of self in popular culture and in the texts of Goethe, Comte, Marx and Engels, Nietzsche, Dostoevsky.

- HIST 322 America: African Presence since 1939. (3) (Prerequisite: HIST 202 and HIST 203 or consent of instructor) An examination of Canada's relationship with the United States in the modern era. Emphasis will be placed upon diplomatic, military, cultural, and economic facets of this relationship.

HIST 323 History and Sexuality 1. (3) Antiquity to Early Modern Europe. The cultural meanings and social institutions that create the historical context for sexual behaviours. Possible topics include: Greek homosocial and homosexual culture; sex and citizenship: wives and concubines in the ancient world; Christianity and aestheticism; misogyny and gender in Medieval Europe; adultery and lineage.

- HIST 324 History and Sexuality 2. (3) (Prerequisite: HIST 214 and HIST 215) A study of the cultural and intellectual history of Europe from the French Revolution to the present which traces the origins of the modern sense of self in popular culture and in the texts of Erasmus, Luther, Calvin, Descartes, Pascal, Voltaire and Rousseau.

- HIST 326 Russia from 1905 to Present. (3) (Prerequisite: one 200-level course in History or political theory) 20th Century Russia, with particular attention to the rise and fall of the Soviet regime, Gorbachev's Perestroika, and the problems and accomplishments of post-Soviet society under Yeltsin and Putin.

- HIST 327 Jews in the Orbit of Islam. (3) (Prerequisite: HIST 207 and HIST 237 or consent of instructor) Overview of the history of the Jews in the Islamic world from 622 to the present. Emphasis on the classical period (to 1250), and on institutional and cultural themes. Comparative perspectives on the experience of Jews and other minorities under Islam.

- HIST 328 China in Revolution 1: 1840-1921. (3) (Prerequisite: One previous course in Chinese or Asian history or permission of instructor) An examination of political, economic and social developments in China in the 19th century, a period when internal crises and Western imperialism wrought cataclysmic changes. Topics include the Opium War, the Taiping Rebellion, the Boxers, and the Republican Revolution. The sequel to this course is HIST 338.

- HIST 329 Eastern Europe: 4th Century - 1453. (3) (Prerequisite: One European History course or consent of instructor) The Byzantine Empire; the Slavic and Turkic migrations; the emergence of Poland, Bohemia, Hungary and Kievan Rus'; Christianization and paganism, Orthodoxy and heresy; the impact of the Mongol invasions; the decline of Byzantium; the Ottoman conquest of the Balkans.

- HIST 331 F.D. Roosevelt and the New Deal. (3) (Prerequisite: HIST 211 and HIST 221 or consent of instructor) The era of Franklin Roosevelt (1933 - 1945) with particular emphasis upon roots, goals, methods and the historiography of the New Deal. Political leadership, both domestic and foreign, will also be stressed.

- HIST 332 Constitutional History: Canada - 1867. (3) (Prerequisite: one course in Canadian history or consent of instructor) A survey course of the development of constitutional arrangement in Canada from the Royal Proclamation of 1763 until Confederation.

- HIST 333 History of New France: Part 1. (3) (Prerequisite: HIST 202 or consent of instructor) The development of the French Empire in North America, with particular emphasis on French-Native encounters arising through missions, trade, and military alliances.

- HIST 334 History of New France: Part 2. (3) (Prerequisite: HIST 202 or consent of instructor) Social and cultural history of France's ancien régime settlement colonies in North America. Topics include the links between the absolutist colonial state and society; family history; the Church, gender, and popular religion.

- HIST 336 France, 1789 to 1914. (3) (Prerequisite: HIST 214 and HIST 215) A study of the history of France from the Revolution to World War I.

- HIST 337 Japanese Intellectual History 1. (3) (Restriction: Not open to students who have taken 101-337D) An overview of the history of Japanese thought and mentality from earliest times to 1700. By examining not only texts of representative thinkers but also other (especially literary) materials, it aims at elucidating changing and continuing characteristics of the Japanese intellectual history. The sequel to this course is HIST 338.

- HIST 338 China in Revolution 2: 1921-1997. (3) (Prerequisite: one previous course in Chinese or Asian history or permission of instructor) The history of China from the establishment of the Chinese Communist Party to the present. Contents: origins and development of the Chinese Communist movement; the War of Resistance against Japan; The People's Republic, the Cultural Revolution, Deng era reforms.

- HIST 339 Arab-Israeli Conflict. (3) (Restriction: Open to U2 or U3 students only or permission of instructor.) The political, military, and diplomatic history...
of the Arab-Israeli conflict, with a focus on a number of historiographical debates over specific issues, such as the 1948 and 1967 wars, and the failures of the various peace initiatives.

- **HIST 341 The New Nation: U.S. 1800-1850.** (3) (Prerequisite: any course in U.S. history or consent of instructor) How did Americans create a viable country with legitimate institutions out of a collection of independent states? What was the impact of industrialization on this new nation? This course will also examine Jeffersonianism, Jacksonianism, American slavery, and reform movements.

- **HIST 342 Canada: External Relations since 1867.** (3) (Prerequisite: HIST 202 and HIST 203) This course will examine the historical development of Canadian external relations before WW II. Particular emphasis will be placed on Canadian-American relations, Canadian-Imperial relations, the growth of Canadian diplomatic autonomy and participation in the League of Nations.

- **HIST 343 Women in Post-Confederation Canada.** (3) (Prerequisite: HIST 203) This course examines women's contribution to the economic and social development of Canada as well as changes in the image and status of women. Special emphasis will be on the relationship between women's roles in the private sphere and the public domain.

- **HIST 344 Police Institutions.** (3) (Prerequisite: One course in British, Canadian or American history) The origins of law enforcement from Saxon juries through Norman justices of the peace, to Scotland Yard and the London Metropolitan police. Focus on the Royal Irish Constabulary and its influence on the growth of rural police in Commonwealth countries.

**HIST 345 History of Italian Renaissance.** (3) (Prerequisite: HIST 214 or consent of instructor) An introduction to the economy, society, politics and intellectual developments in Italy from approximately 1300 to the early 16th century.

- **HIST 346 France, 1914 to the Present.** (3) (Prerequisite: HIST 214 and HIST 215 or written consent of instructor) A study of the history of France from World War I to the present.

- **HIST 347 History and Sexuality 2.** (3) 1700 to the present, with a particular focus on Europe and North America. Possible topics include: patterns of fertility and sexual practice; prostitution; religion and sexuality; the medical and legal construction of sexualities; the rise of sexology; gay liberation movements; queer politics.

- **HIST 348 China: Science-Medicine-Technology.** (3) (Prerequisite: HIST 208 or HIST 218 or permission of instructor) An introduction to traditional Chinese ideas about human beings and their relationship with heaven and earth. Special emphasis on the history of medicine and the body, alchemy, geomancy and divination techniques, agriculture and sericulture, astronomy, and engineering and their relation to changing social and cultural formations.

- **HIST 350 Science and the Enlightenment.** (3) (Prerequisite: HIST 215 or permission of instructor.) Explores the relationship between the natural sciences and the eighteenth-century Enlightenment. Examination of works in post-Newtonian science as well as their broader cultural meaning, the history of material practices, the origins of social science, and the role of geography and international context beyond Western Europe.

- **HIST 351 Themes in U.S. History since 1865.** (3) (Prerequisite: any course in U.S. history or consent of instructor) Aspects of American history from the gilded Age through the Cold War era.

- **HIST 352 Japanese Intellectual History 2.** (3) (Prerequisite: one previous course in East Asian history, including Japanese history and Chinese history, or permission of instructor) (Restriction: Not open to students who have taken 101-337D) An overview of the history of Japanese thought and mentality from 1700 to the present. By examining not only texts of representative thinkers but also other (especially literary) materials, it aims at elucidating changing and continuing characteristics of the Japanese intellectual history.

- **HIST 353 History of Montreal.** (3) (Prerequisite: HIST 202 or HIST 203 or permission of the instructor.) The history of Montreal from its beginnings to the present day. Montreal's economic, social, cultural, and political role within the French and British empires, North America, Canada, and Quebec; the city's linguistic and ethnic diversity.

- **HIST 354 Germany 1830-1890: Unification.** (3) (Prerequisites: HIST 234 or HIST 235 or a European survey course or permission of the instructor.) (Restrictions: Not open to students who have taken HIST 355D1/D2) German political, constitutional and social history 1830-1890: Revolution to unification; Bismarck's wars, social policy, and alliance system to the beginning of the reign of Wilhelm II.

- **HIST 355 Germany 1890-1918: Imperialism.** (3) (Prerequisite: HIST 234 and HIST 235 or a European survey course or consent of the instructor) (Restriction: Not open to students who have taken HIST 355D1/D2) German political, constitutional and social history 1890-1918; fin-de-siècle; imperialism; alliances and commitments; crises; the First World War.

- **HIST 356 Medieval Science and Medicine.** (3) (Winter) (Prerequisite: HIST 380 or HIST 349 or permission of instructor) This course examines the changing roles of knowledge about the human body and about the natural world in the medieval Latin West (ca. 300 - ca. 1500 A.D.), through readings and discussions of primary and secondary texts.

- **HIST 357 Religion and Canadian Society in Historical Perspective.** (3) (Prerequisite: HIST 202 and HIST 203) (Restriction: Not open to students who have taken 101-469) This course explores religious history of French and English Canada. The growth of various denominations, popular religion, Church/State relations, sectarian education, Protestant and Catholic cultures, missions among the Natives, forces of secularization. A reading knowledge of French is recommended.

- **HIST 358 Medieval to Early Modern China.** (3) (Prerequisite: HIST 208 or permission of instructor) (Restriction: Not open to students who have taken 101-308D) This course explores religious history of China and English Canada. The growth of various denominations, popular religion, Church/State relations, sectarian education, Protestant and Catholic cultures, missions among the Natives, forces of secularization. A reading knowledge of French is recommended.

- **HIST 359 History of Japan 2.** (3) (Restriction: Not open to students who have taken 101-294B or 101-318B) A survey of Japanese history and culture from the 17th century to the present, this course aims to provide students with a broad understanding of important themes in Japanese Civilisation.

- **HIST 360 Latin America since 1825.** (3) (Summer - Section 001 (02-Jun-2005/30-Jun-2005)) Themes
in the political, economic, and social development of Latin America since the wars of independence. Emphasis on the domestic history of the region, with some attention to relations with the United States and Europe.

**HIST 361 The Canadian West to 1905.**
(3) (Prerequisite: HIST 202 and HIST 203) The development of what is now the Canadian West from the 17th century to the entry of Saskatchewan and Manitoba into confederation. Topics include: culture contact between native and European, the fur trade, entry of the West into Confederation and its evolution from colonial to provincial status.

**HIST 362 The Canadian West since 1905.**
(3) (Prerequisite: HIST 203 or consent of instructor) An examination of significant themes in the history of British Columbia and the Prairie Provinces since 1905. Topics include immigration, economic development, regional protest movements and class conflict within the West itself.

**HIST 363 Canada 1870-1914.**
(3) (Prerequisite: HIST 202 and HIST 203 or permission of instructor) This course will examine social, economic, political and cultural aspects of Canadian society between 1870 and 1914. Topics covered will include: the Boer War, European settlement of the West, provincial rights, the national policy, social reform movements, industrialization, immigration and the rise of cities.

**HIST 364 Canada 1914-1945.**
(3) (Prerequisite: HIST 202 and HIST 203 or permission of instructor) This course will examine Canada and Canadian society between 1914 and 1945. It will focus on the social, political, economic and cultural impact of the two World Wars and the economic crisis of the 1930s. Among the topics will be: Canadian external relations, political and social protest, popular culture, demographic changes and prohibition.

**HIST 365 17th - 18th C. Western Europe.**
(3) (Prerequisite: HIST 214 or consent of instructor) (Restriction: Not open to students who have taken 101-325D) A comparative analysis of the major states of Western Europe: Absolutism and its alternatives; religious and scientific thought; classical and enlightenment cultures; international and colonial rivalries. Special attention will be placed on social and economic changes between the 1630s and the late 18th century.

**HIST 366 History of Roman Law.**
(3) (Prerequisite: HIST 209 or HIST 214 or 3 credits in law or politics, or permission of the instructor) (Restriction: Not open to students who have taken 114-343) A survey of private law in Ancient Rome in the classical period, which deals with the major concepts and rules of the law of Persons, Property and Succession, Contracts and Delicts, with attention to their context in Roman society.

**HIST 367 Canada since 1945.**
(3) (Prerequisite: HIST 202, HIST 203) Elements of Canada's political, social, economic, and cultural history since World War II. Topics will include: constitutional questions, gender and class issues, the role of the state, regionalism, consumer society, the Quiet Revolution, and nationalism in Canada.

**HIST 368 Greek History: Classical.**
(3) (Prerequisite: HIST 205 or permission of instructor) The course deals with the Classical period of Greek history, from the end of the Persian Wars to the death of Alexander the Great (479 - 323 B.C.).

**HIST 369 Greek History: Archaic.**
(3) (Prerequisite: HIST 205 or HIST 214 or permission of instructor) The course deals with the period from so-called Greek Renaissance of the 8th Century B.C. to the end of the Persian wars (479 B.C.).

**HIST 370 Canadian Party Politics 1867-2000.**
(3) (Prerequisite: HIST 203 or consent of the instructor) An examination of how politics evolved in Canada's parliamentary system from campaigns to media management, including party struggles, ideology, the role of leadership and the growing role of the state.

**HIST 371 Race/Ethnicity: U.S. since 1800.**
(3) (Prerequisite: any course in U.S. history or consent of instructor) The influence of race and ethnicity on the United States during the 19th and 20th centuries. Topics will include: racism, segregation and disfranchisement; African American culture; immigration and nativism; Native Americans and Mexican Americans in the West; protest efforts and attempts to achieve a pluralistic society.

**HIST 372 The Low Countries: 14th - 17th Century.**
(3) (Prerequisite: HIST 214 or consent of the instructor) This course will study the Low Countries from their unification under the Valois Dukes of Burgundy until Holland's "Golden Age" in the 17th century. Topics include: relations with France and England during the Valois period; the Burgundian court; the Reformation; the Dutch Revolt; Dutch economy and culture.

**HIST 373 Canadian Labour History.**
(3) (Prerequisite: HIST 203 or equivalent or consent of instructor) (Restriction: Not open to students who have taken HIST 353) This course explores themes in labour and working class history in Canada.

**HIST 374 West Africa since 1800.**
(3) (Prerequisite: HIST 200 and HIST 201 or permission of instructor) The history of the slave trade and its abolition to the current structural crisis affecting the region. Emphasis is placed on ideologies, labour and gender relations, and on the struggle to build civic society.

**HIST 375 History of the Early Roman Empire.**
(3) (Prerequisite: HIST 209 or HIST 214 or permission of instructor) Topics in the history of the Roman Empire from Augustus to Marcus Aurelius.

**HIST 376 History of the Later Roman Empire.**
(3) (Prerequisite: HIST 209 or HIST 214 or permission of instructor) Topics in the history of the Roman Empire from Marcus Aurelius to Justinian.

**HIST 377 The United States, 1940-1965.**
(3) (Prerequisite: any course in U.S. history or consent of instructor) Major events in politics and international affairs, culture and society, and the economy in the U.S. during and after World War II. Topics include: The War and American society; the first years of the Cold War; economic prosperity and social change; the civil rights movement; Vietnam to 1965.

**HIST 378 The Late Antique Roman World.**
(3) (Prerequisite: HIST 209 or permission of instructor) A survey of the process by which the late Roman Empire divided into three chief cultural, religious, and political entities (Byzantine, Germanic and Islamic) between the fifth and eighth centuries.

**HIST 379 Classical Greek Democracy.**
(3) (Prerequisite: HIST 205 or HIST 214 or any course in politics or permission of instructor) The institutions and practice of democracy in classical Athens, with the reflections
of some contemporary writers (e.g. Aristophanes, Plato, Demosthenes).

**HIST 380 Western Europe: The Middle Ages.**
(3) (Restriction: Not open to students who have taken 101-380D) History of Western Europe from the later Roman Empire through the 15th century: sub-roman and Carolingian civilization, feudal monarchy; the Church and the laity; domestic life and social institutions; cultural developments.

- **HIST 381 Colonial Africa: Health/Disease.**
  (3) (Prerequisite: HIST 200 and HIST 201 or HIST 349 or permission of the instructor) A study of the impact of disease on African societies over the last three centuries. Topics include: the efforts of Africans to control their ecology, and to maintain their own medical traditions; the larger African responses to Western bio-medicine, and the relationship of disease to nutrition, demography, and public health.

**HIST 382 History of South Africa.**
(3) (Prerequisite: HIST 200 and HIST 201) History of South Africa from precolonial times to the present. Topics include: precolonial societies; British and Dutch colonialism; slavery in colonial South Africa; the Zulu kingdom; mining capitalism; the Boer War; Afrikaner nationalism; apartheid; the anti-apartheid struggle; music, religion, and art; challenges of the post-apartheid state.

**HIST 383 Eighteenth-Century Britain.**
(3) (Prerequisite: HIST 215 or permission of instructor.) (Restriction: Not open to students who have taken HIST 383 and HIST 384 prior to 2005.) Cultural, intellectual, political, economic and social history of Britain and Ireland in the eighteenth century; the era of the creation of the United Kingdom and the rise of a great commercial and imperial power.

- **HIST 384 Nineteenth-Century Britain.**
  (3) (Prerequisite: HIST 215 or permission of instructor) (Restriction: Not open to students who have taken HIST 384 prior to 2005.) Cultural, intellectual, political, economic and social history of Britain and Ireland in an era of unprecedented economic and cultural change as the United Kingdom became the world's first industrial nation and leading imperial power.

- **HIST 386 Twentieth-Century Britain.**
  (3) (Prerequisite: HIST 215 or permission of instructor) (Restriction: Not open to students who have taken HIST 385 and HIST 386 prior to 2003.) From a range of perspectives, including cultural, political, social, political, economic and social history, this course examines Britain from the height of its power, through two world wars, the building of a welfare state, the dissolution of Empire and entry into Europe, to the start of the 21st century: consensus, decolonisation, immigration, culture and society, Northern Ireland, Scottish and Welsh nationalism, Thatcherism, the European Union.

**HIST 387 The First World War.**
(3) A world-wide political, social, economic, cultural and military survey, from the origins of the Great War to the Treaty of Versailles.

**HIST 388 The Second World War.**
(3) A world-wide political, social, economic, cultural and military survey, from the Treaty of Versailles to the first years of the Cold War.

- **HIST 389 Renaissance and Reformation France.**
  (3) (Prerequisite: HIST 214 or HIST 225 or permission of instructor) (Restriction: Not open to students who have taken 101-425D) A history of France from the end of the Hundred Year's War to the end of the Thirty Year's War. A reading knowledge of French is recommended.

- **HIST 390 France in the Ancien Régime.**
  (3) (Prerequisite: HIST 214 or HIST 225 or permission of instructor) (Restriction: Not open to students who have taken 101-425D) The history of France from the end of the Thirty Year's War to the eve of the French Revolution. A reading knowledge of French is recommended.

- **HIST 391 History of the Roman Republic.**
  (3) (Prerequisite: HIST 209 or HIST 214 or permission of instructor) (Restriction: Not open to students who have taken 101-451) Topics in Roman Republican History, with emphasis on the period from the Gracchi to Augustus.

- **HIST 392 The United States since 1965.**
  (3) (Prerequisite: any course in U.S. history or consent of the instructor) Major events in politics and international affairs, culture and society, and economy in the U.S. since 1965. Topics include: social and political upheaval 1965 - 1975; Vietnam to 1975; conservative politics; Nixon and Watergate; economic change in the 1970s and 1980s; presidential leadership from Carter on.

- **HIST 393 Civil War and Reconstruction.**
  (3) (Prerequisite: any course in U.S. history or permission of instructor) (Restriction: Not open to students who have taken 101-431) The causes of the American Civil War; the social, economic, political and military forces that shaped the conflict, attempts to restructure race relations, Southern and American societies after the war.

**HIST 394 Stuart Britain and Ireland.**
(3) (Prerequisite: HIST 204 or HIST 214 or permission of instructor) A study of Britain and Ireland during the seventeenth and early eighteenth centuries; topics include the nature of early British society, the outbreak of the civil wars of the 1640s, the Restoration of the monarchy, and the changes in political ideas over the period.

- **HIST 395 Canadian Military Experience.**
  (3) (Prerequisite: CANS 200 or HIST 203 or permission of instructor.) (Restriction: Not open to students who have taken 106-406) Canada's military experience since European contact. The course explores social, economic, technological and political themes as well as more traditional themes of military history.

**HIST 396 Disease in Africa Since 1960.**
(3) (Prerequisite: HIST 200 and HIST 201 or HIST 349 or permission of the instructor) This course examines the negatives and positives of African health since independence: the rise of new pathogens, especially HIV/AIDS, and the revitalization of old ones, such as drug resistant tuberculosis and malaria. Also examined are the growth of health infrastructure, and international successes such as the eradication of smallpox.

- **HIST 397 Canada: Ethnicity, Migration.**
  (3) (Prerequisite: HIST 202 and HIST 203 or permission of the instructor) (Restriction: Not open to students who have taken HIST 423) Immigration, ethnicity and race in Canada in the nineteenth and twentieth centuries. Topics will include the migration process, government policy and legislation, urban and rural migration, acculturation, nativism and multiculturalism.

- **HIST 398 Topics in Italian History.**
  (3) (Prerequisite: HIST 214) Topic 06-07: Machiavelli and his times

- **HIST 399 History and Historical Methods.**
  (3) (Prerequisite: 6 credits of History) The nature and functions of history; changing conceptions of time and of the past; techniques historians use to find and appraise evidence;
methods of reconstructing the past. Emphasis will be given not only to documentary sources but also to the range of techniques used by historians to find and appraise evidence.

• HIST 399D1 (1.5), HIST 399D2 (1.5) History and Historical Methods. (Students must register for both HIST 399D1 and HIST 399D2.) No credit will be given for this course unless both HIST 399D1 and HIST 399D2 are successfully completed in consecutive terms. (HIST 399D1 and HIST 399D2 together are equivalent to HIST 399) The nature and functions of history; changing conceptions of time and of the past; techniques historians use to find and appraise evidence; methods of reconstructing the past. Emphasis will be given not only to documentary sources but also to the range of techniques used by historians to find and appraise evidence.

• HIST 401 Topics: Medieval Culture and Society. (3) (Prerequisite: HIST 214 or HIST 380 or consent of instructor) Selected topics in the intellectual and cultural history of the Middle Ages. Emphasis on modern critical approaches to medieval culture, including literature, the supernatural, religious experience.

• HIST 403 History of Quebec Institutions. (3) (Prerequisite: HIST 203 or consent of instructor) Analysis of institutional structures in Quebec with emphasis on the 19th century. Particular attention will be given to legal and property institutions in transition.

• HIST 404 Greek History: Hellenistic Period. (3) (Restriction: Not open to students who have taken 114-401) A study of the political, social, and economic history of the Greek world from the time of Alexander to the Roman Conquest.

• HIST 405 European Cultural History 1. (3) (Prerequisite: HIST 214 and HIST 215, or a course in European intellectual history or consent of the instructor) A survey of 19th century French and European cultural/intellectual history. The sequel to this course is HIST 415.

• HIST 406 Petrine and Catherinian Russia. (3) (Prerequisite: A prior course in Russian or European history) The transformation of Russian society by Peter the Great and the problems and achievements of Russia's Golden Age under the enlightened despotism of Catherine II and of her son.

• HIST 407 Topics in Ancient History. (3) (Prerequisite: 3 credits in ancient history or permission of instructor.) (Restriction: Not open to Honours students in History.) An in-depth look at various topics in ancient history.

• HIST 408 Colonialism and Native Peoples. (3) (Prerequisite: HIST 202) (Restriction: Not open to students who have taken 101-580D) The nature and consequences of encounters between American native peoples and Europeans.

• HIST 412 Women and Gender in Modern Britain. (3) (Prerequisite: HIST 215 or a course in British history or permission of instructor) Women and gender in modern Britain (1850 on). Topics include early feminist political agitation, including the suffrage movement; working-class women; changing notions of gender, sexuality and women's role; women and empire.

• HIST 413 Independent Reading. (3) (Prerequisite: Written permission) (Restriction: Open to History Major Concentration students only. Students may register in this course only once) Exceptionally, and under the direction of a member of staff, advanced and highly qualified students who have an extensive background in the proposed area of study, may pursue this independent study.

• HIST 414 Canadian Cultural History. (3) (Prerequisite: HIST 202 or HIST 203 or permission of the instructor.) A cultural history of Canada, with culture defined in both the anthropological sense as comprising an entire way of life, material, intellectual and spiritual- and in the familiar sense of embodying the life of the intellect and the arts.

• HIST 415 European Cultural History 2. (3) (Prerequisite: HIST 214 and HIST 215 or a course in European intellectual history or written consent of instructor) A survey of 20th century French and European cultural/intellectual history.

• HIST 417 The Celtic Fringe. (3) (Prerequisite: At least one course in Modern British History) Social, economic, political and cultural topics in the modern history of Wales, Scotland and Ireland.

• HIST 418 Topics: Atlantic World. (3) (Prerequisites: any two of the following: HIST 200, HIST 202, HIST 211, HIST 214, HIST 309 or permission of instructor.) (Restriction: Enrollment limit 25.) Exploration of a specific theme in Atlantic history, 1500 to 1850.

• HIST 419 Central America. (3) (Prerequisite: HIST 309, HIST 360 or permission of instructor) (Restriction: Not open to students who have taken 101-419D) The study of historical roots of the regional crisis of the 1980s, with particular attention to Nicaragua, El Salvador and Guatemala.

• HIST 421 Topics in Early Modern Europe. (3) (Prerequisite: a course in Early Modern Europe) Topic 06-07: The European Reformations of the 16th century Varying subjects of topical interest regarding early-modern Europe. Topic for 2002-03: Perspectives on Science: Imagination and Imagination.

• HIST 422 Roman Greece. (3) (Prerequisite: 6 credits of Ancient Greek History or permission of instructor) (Restriction: Not open to students who have taken 114-402) Social, cultural and political institutions in Greece under the Roman Empire. Since many of our major literary sources for the earlier history of Greece lived under this regime, their views of the past will have been coloured by their own experience and the values of their contemporaries.

• HIST 423 Topics: Migration and Ethnicity. (3) (Prerequisite: HIST 397 or permission of instructor) The study of various topics and themes in the area of migration, ethnicity and race in Canada. Topics vary from year to year.

• HIST 425 European Food History. (3) (Prerequisite: HIST 215 or permission of instructor.) A history of food and drink in European history. Topics include: feasts and famines; the introduction of new foods and drinks from Asia and the Americas; table manners and the origins of the restaurant.

• HIST 426 Topics: British Cultural History. (3) (Prerequisite: HIST 215 or a course in British history or permission of instructor) Selected topics in intellectual and cultural history of Britain and Ireland, focusing on discussion of primary texts. Topic for 2002-03: The history of sexuality in modern Britain (including some comparative examples), with a particular focus on gay and lesbian/queer history.

• HIST 427 The Hasidic Movement. (3) (Prerequisite: HIST 307 or a course in East-European history or consent of instructor) A historical examination of the history of the Hasidic Movement from its beginnings in 18th-century Poland to the present. Although emphasis will be placed on the social history of the movement, doctrinal developments will be examined as well.
HIST 429 Topics: Canadian Family History.
(3) (Prerequisite: HIST 202 or HIST 203 or permission of instructor) This course will examine themes in the history of the Canadian family from 1850. Historical study reveals the family as a diverse, changing, social institution. Marriage, childhood, sexuality, and the state will come under examination and the Canadian experience will be compared to that of the U.S. Topic for 2002-03: Regulating Sexuality, Reproduction and the Family.

HIST 431 Topics in U.S. History.
(3) (Prerequisite: By permission of instructor.) Topic 06-07: Progressivism Topic 06-07: Modern American Right Various topics in United States history.

HIST 432 The Atlantic Provinces.
(3) (Prerequisite: HIST 202 and HIST 203 or consent of the instructor) Themes and topics in the history of the Canadian Atlantic Provinces from the European settlement to Present.

HIST 433 British Queer History.
(3) (Prerequisites: HIST 215 or a course in British History or permission of instructor.) (Restrictions: Not open to students who have taken HIST 426 in 2002-09.) An investigation of the changing historical construction of “deviant” and “normal” sexualities in Britain since 1700, and how queer women and men discovered ways of surviving and perhaps even flourishing in the face of persecution and hostility from the state, the churches and the medical profession.

HIST 434 British North America 1760-1867.
(3) (Prerequisite: An introductory course in history or consent or instructor) This course will study the social-cultural and political development of British North American colonies.

HIST 435D1 (3), HIST 435D2 (3) Germany in the 20th Century.
(Prerequisite: HIST 234 and HIST 235 or a European survey course or consent of instructor) (Students must register for both HIST 435D1 and HIST 435D2.) (No credit will be given for this course unless both HIST 435D1 and HIST 435D2 are successfully completed in consecutive terms) First World War: national and international aspects; Weimar: economic crisis, and nationalism; rise of Hitler; structure of the National Socialist state; blue-print for World Power; Second World War: attempts to overthrow Hitler; the revolt of conscience; defeat; the Cold War and German unity; the post-War era.

HIST 436 Topics: European History.
(3) (Prerequisite: Permission of instructor.) Topic 06-07: Social, political and military issues 1918-1933 Topic 06-07: German Resistance to Hitler An in-depth look at particular aspects of European history.

HIST 437 French Revolution Historiography.
(3) (Prerequisite: Any history course covering Western European history from 1750 to 1815, or consent of the instructor) The course focusses on the debates among historians of the French Revolution. Students will participate in small discussion groups dealing with samples of historical writing on the subject and prepare a major historiographical essay. A reading knowledge of French is helpful but not essential.

HIST 438 The Vietnam Wars 1945-1975.
(3) (Prerequisite: one course in 20th Century history or permission of instructor.) The history of the Vietnam Wars stands at the intersection of classical diplomatic-military history and multi-national, social history. The viewpoints of all participants in the conflict will be considered.

HIST 439 History of Women in China.
(3) (Prerequisite: a previous course in Chinese history) This course examines the changing roles of women in traditional and modern China. Topics include political, social, and legal status, sexuality and medicine, religion and culture.

HIST 440 Fiction and History.
(3) (Prerequisite: 6 credits at the 300 level in either history or literature) This course examines why and how books are classified as fiction or history. Topics include: social expectations and uses of literature; evidence and verification; the author as authority. Readings include history and fiction from various historical periods, and relevant scholarship.

HIST 441 Topics: Culture and Ritual in China.
(3) (Prerequisite: HIST 208 and HIST 218 and permission of instructor) An examination of selected aspects of the cultural and intellectual life of China. Topics vary from year to year, but include the history of popular religion, Chinese science and medicine, the esoteric arts including divination practices, law, and the influence of ideas in the production of Chinese culture.

HIST 442 Asian Diaspora: Chinese Overseas.
(3) (Prerequisite: One previous course in Chinese or Asian history or permission of instructor) The contexts and causes of Chinese emigration; historical patterns of migration; Overseas Chinese communities on five continents, with emphasis on Southeast Asia and North America; alienation and identity in Chinatown; relations between the Overseas Chinese and China.

HIST 443 China in the Modern World.
(3) (Prerequisite: HIST 328 or HIST 338 or permission of the instructor) An examination of the various trajectories of China, in the context of its immediate periphery and of the world, in the last fifty years; topics will include the history of Hong Kong, Taiwan, and Chinese Central Asia, and China's encounter with the Soviet Union (Russia), Japan, Korea, and Vietnam.

HIST 444 Late Imperial China.
(3) (Prerequisite: HIST 208 or HIST 218) An introduction to the social and economic history of Late Imperial China, focusing on the Ming and early to mid Qing Dynasties (1368 - 1800), and current interpretations thereof. Was this a discrete period in Chinese history? If so, why.

HIST 447 The Natural History of America.
(3) (Prerequisites: HIST 211 or permission of the instructor.) Exmination of the ways in which interpretations of the natural world in the Americas were constructed by European travellers, colonial settlers and others. Emphasis primarily on natural histories of colonial British America, but coverage includes comparison across national and regional boundaries within the early modern Atlantic world.

HIST 449 Medicine in the Ancient World.
(3) (Prerequisite: HIST 349 or an introductory course in Ancient Greek or Roman history) (Restriction: Not open to students who have taken HIST 452 and HIST 453) The evolution of ideas about the human body, disease, and therapeutics, and the diverse practices of medicine in Graeco-Roman antiquity (ca 800BC - ca 600CE), with particular attention given to their social, political, cultural and religious context.

HIST 450 Russian Intellectual History 1825-1917.
(3) (Prerequisite: HIST 236 or a course in European intellectual history, or consent of instructor) Sequel to HIST 446, from the year of the Decembrist insurrection to the Bolshevik Revolution. Discussion of the Russian influence on European and American intellectuals in the 19th century.

HIST 457 Topics in Medical History.
(3) (Prerequisite: HIST 349 or HIST 356 or permission of
instructor) Topic 06-07: History of Modern Psychiatry This course explores different topics in medical history. Topics to be explored include the role of medicine from ancient to modern times.

HIST 458 Modern Medicine: Seminar. (3) (Restriction: Not open to students who have taken 101-459D) The emergence of scientific medicine, medical professionalization, the development of public health and the process of medical specialization since 1700.

HIST 459 Modern Medicine: Research. (3) (Prerequisite: HIST 458) (Restriction: Not open to students who have taken 101-459D) (Priority given to students in Honours History and students registered for the Minor in Social Studies of Medicine.) Supervised design, research, writing, and discussion of a major research paper on a theme in the history of modern medicine since 1700.

● HIST 460 Milton in Myth and History. (3) (Prerequisite: a 200-level course on modern English or European history or literature, or permission of instructor) The great poet-revolutionary as construed or caricatured by contemporaries, and posthumous fans and foes such as Voltaire, Dr Johnson, the Romantics, Whigs, Unitarians, Victorian feminists, Marxists, Bolsheviks, and ex-Marxists.

HIST 461D1 (3), HIST 461D2 (3) Topics in Modern U.S. History. (Prerequisite: any course in American History or consent of instructor) (Students must register for both HIST 461D1 and HIST 461D2.) (No credit will be given for this course unless both HIST 461D1 and HIST 461D2 are successfully completed in consecutive terms)

● HIST 462D1 (3), HIST 462D2 (3) Topics: Canadian Conservatism. (Prerequisite: HIST 202 and HIST 203. Reading knowledge of French is required) (Students must register for both HIST 462D1 and HIST 462D2.) (No credit will be given for this course unless both HIST 462D1 and HIST 462D2 are successfully completed in consecutive terms) A critical examination of political, intellectual and institutional manifestations of conservatism in Canada from New France to Reform Party.

HIST 463D1 (3), HIST 463D2 (3) Topics: History of Women in Canada. (Prerequisite: HIST 203 or consent of instructor) (Restriction: Not open to students who have taken HIST 493) (Students must register for both HIST 463D1 and HIST 463D2) (No credit will be given for this course unless both HIST 463D1 and HIST 463D2 are successfully completed in consecutive terms) Topic 06-07: Women in the City A research seminar on the history of women in Canada since Confederation. Students will get familiar with primary sources and are expected to produce a major research paper in the second term.

HIST 464D1 (3), HIST 464D2 (3) Topics: Latin American History. (Prerequisite: HIST 203 or consent of instructor) (Restriction: Not open to students who have taken 101-419D) (Students must register for both HIST 464D1 and HIST 464D2) (No credit will be given for this course unless both HIST 464D1 and HIST 464D2 are successfully completed in consecutive terms) Seminar counts as part of the North American concentration for Honours students.

● HIST 465D1 (3), HIST 465D2 (3) Seminar: Italian Renaissance. (Prerequisite: HIST 214 or consent of instructor) (Students must register for both HIST 465D1 and HIST 465D2) (No credit will be given for this course unless both HIST 465D1 and HIST 465D2 are successfully completed in consecutive terms)

● HIST 466 Seminar: Medieval Medicine. (3) Models of the body, disease and medical intervention current in western Europe between 400 and 1500 AD will be examined through analysis of primary sources in translation, and modern historical scholarship. The sequel to this course is HIST 496.

HIST 467 Indian Ocean World Slave Trade. (3) (Prerequisites: HIST 200 or HIST 206 or HIST 213 or permission of instructor.) The origins, structure and impact of the Indian Ocean World slave trade from early times to the present day. Enslavement, the trading structure, slave functions, reactions to slavery, emancipation and 'slave' diaspora. Comparisons will be made to the Atlantic slave system.

● HIST 468D1 (3), HIST 468D2 (3) Topics: 19th Century U.S. History. (Prerequisite: any course in U.S. history or permission of instructor) (Students must register for both HIST 468D1 and HIST 468D2) (No credit will be given for this course unless both HIST 468D1 and HIST 468D2 are successfully completed in consecutive terms) This Honours seminar will explore some of the major historiographical issues in 19th century U.S. history, including Jacksonian democracy, women and domesticity, the nature of slavery, the causes and consequences of Civil War. Particular themes will vary from year to year.

● HIST 469D1 (3), HIST 469D2 (3) Topics in Canadian Religious History. (Prerequisite: HIST 202 and HIST 203, plus HIST 357. A reading knowledge of French is highly recommended) (Students must register for both HIST 469D1 and HIST 469D2) (No credit will be given for this course unless both HIST 469D1 and HIST 469D2 are successfully completed in consecutive terms)

● HIST 470D1 (3), HIST 470D2 (3) Topics: Historical Interpretation. (Students must register for both HIST 470D1 and HIST 470D2) (No credit will be given for this course unless both HIST 470D1 and HIST 470D2 are successfully completed in consecutive terms)

HIST 476D1 (3), HIST 476D2 (3) Seminar: Topics in Russian History. (Students must register for both HIST 476D1 and HIST 476D2) (No credit will be given for this course unless both HIST 476D1 and HIST 476D2 are successfully completed in consecutive terms)

HIST 477D1 (3), HIST 477D2 (3) Seminar in Jewish History. (Students must register for both HIST 477D1 and HIST 477D2) (No credit will be given for this course unless both HIST 477D1 and HIST 477D2 are successfully completed in consecutive terms)

● HIST 478 Pre-modern Chinese Law and Society. (3) (Prerequisite: Any 300-level course in Chinese history or permission of the instructor.) The history of Chinese law and society from early pre-imperial to late imperial times. Themes include the philosophical basis of Chinese law; development of different forms of legislation; practice of pre-modern law; law and social and political change; military law; legal cases translated from primary sources.

● HIST 480D1 (3), HIST 480D2 (3) Capitalism and Empire: European Domination. (Students must register for both HIST 480D1 and HIST 480D2) (No credit will be given for this course unless both HIST 480D1 and HIST 480D2 are successfully completed in consecutive terms)

● HIST 483D1 (3), HIST 483D2 (3) History of Montreal. (Prerequisite: HIST 202 and HIST 203 and other courses}
on French Canada or consent of instructor) (Students must register for both HIST 483D1 and HIST 483D2.) (No credit will be given for this course unless both HIST 483D1 and HIST 483D2 are successfully completed in consecutive terms) HIST 485D1 (3), HIST 485D2 (3) Seminar in Japanese History. (Prerequisite: HIST 208 or HIST 218 or consent of instructor) (Students must register for both HIST 485D1 and HIST 485D2.) (No credit will be given for this course unless both HIST 485D1 and HIST 485D2 are successfully completed in consecutive terms) Topic 06-07: Cultural Contact between Japan and the Western World Particular attention will be paid to Japanese responses to the impact of Western culture from the sixteenth century, and to aspects of Japanese intellectual history.

• HIST 486D1 (3), HIST 486D2 (3) Topics: African Social History. (Prerequisite: HIST 200 or consent of instructor) (Students must register for both HIST 486D1 and HIST 486D2.) (No credit will be given for this course unless both HIST 486D1 and HIST 486D2 are successfully completed in consecutive terms)

• HIST 490D1 (3), HIST 490D2 (3) Honours Tutorial 1. (Students must register for both HIST 490D1 and HIST 490D2.) (No credit will be given for this course unless both HIST 490D1 and HIST 490D2 are successfully completed in consecutive terms)

• HIST 491D1 (3), HIST 491D2 (3) Honours Tutorial 2. (Students must register for both HIST 491D1 and HIST 491D2.) (No credit will be given for this course unless both HIST 491D1 and HIST 491D2 are successfully completed in consecutive terms)

• HIST 493D1 (3), HIST 493D2 (3) Topics: Canadian Social History. (Students must register for both HIST 493D1 and HIST 493D2.) (No credit will be given for this course unless both HIST 493D1 and HIST 493D2 are successfully completed in consecutive terms)

• HIST 496 Research: Medieval Medicine. (3) (Restriction: Open only to students who have taken HIST 466) Supervised design, research, writing, and discussion of a theme in the history of western European medicine, 400 - 1500 AD.

HIST 497D1 (3), HIST 497D2 (3) Topics in Chinese History. (Prerequisite: HIST 208 and HIST 218 and a 300-level course in Chinese History or permission of instructor) (Students must register for both HIST 497D1 and HIST 497D2.) (No credit will be given for this course unless both HIST 497D1 and HIST 497D2 are successfully completed in consecutive terms) Topic 06-07: The Republican Era (1912-1949) in Chinese History A research seminar on aspects of Chinese history from early time to the present, with emphasis on social history.

• HIST 498D1 (3), HIST 498D2 (3) Seminar in Eastern Europe. (Prerequisite: a course in European history or permission of instructor) (Students must register for both HIST 498D1 and HIST 498D2.) (No credit will be given for this course unless both HIST 498D1 and HIST 498D2 are successfully completed in consecutive terms) Particular attention will be paid to problems confronting the contemporary historian.

HIST 499 Internship: History. (3) (Prerequisite: Permission of the departmental Internship Advisor.) (Restriction: Open to U2 and U3 students with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor.) Internship with an approved host institution or organization.

HIST 530 U.S. Foreign Relations. (3) (Prerequisite: one course in U.S. history or permission of instructor.) (Restriction: Enrollment limit 25.) The history and historiography, approaches and interpretations, of American foreign relations from the pre-Revolutionary era to the present.

HIST 550 Roman History: Seminar. (3) (Fall) (Prerequisite (Undergraduate): HIST 209 or permission of instructor.) (Restriction: Honours students or advanced undergraduates who have permission of the instructor. Also open to graduate students.) Various topics in Roman history.

HIST 551 Roman History: Research. (3) (Winter) (Prerequisite: HIST 550) (Restriction: Honours students or advanced undergraduates who have permission of the instructor. Also open to graduate students.) This research seminar students who have taken the Roman History Seminar (HIST 550), will undertake supervised design, research, discussion and writing of a research paper on a theme in Roman history.

• HIST 552 International Relations: Seminar. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Graduate students and Honours students or advanced students who have permission of the instructor.) Readings on and discussion of a theme in the history of international relations.

• HIST 553 International Relations: Research. (3) (Prerequisite: HIST 552) (Restrictions: Open only to students who have taken HIST 552 in the previous semester.) Supervised design of, research for and writing of a substantial paper on a theme in the history of international relations.

HIST 556 Colonial America: Seminar 1. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Honours students or advanced undergraduates who have permission of the instructor. Not open to students who have taken HIST 481D1/D2.) Topic 06-07: Sugar, Slaves and Science - The Caribbean in the British Atlantic World Readings in and discussion of a theme in the history of Colonial America. Topics will change from year to year.

HIST 557 Colonial America: Seminar 2. (3) (Prerequisite: HIST 556) (Restrictions: Open only to students who have taken HIST 556 in the previous semester. Not open to students who have taken HIST 481D1/D2.) Topic 06-07: Sugar, Slaves and Science - The Caribbean in the British Atlantic World Supervised design, research and writing of a substantial research paper on a theme in the history of Colonial America.

HIST 560 World History: Seminar. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Graduate students and Honours students or advanced students who have permission of the instructor.) Topic 06-07: World Pandemics of Bubonic Plague and Cholera since 1817 Readings on and discussion of a theme in world history.

HIST 561 World History: Research. (3) (Prerequisite: HIST 560) (Restrictions: Open only to students who have taken HIST 560 in the previous semester.) Topic 06-07: World Pandemics of Bubonic Plague and Cholera since 1817 Supervised design of, research for and writing of a substantial paper on a theme in world history.

• HIST 565 Modern Britain: Seminar 1. (3) (Prerequisite: Permission of the instructor.) (Restrictions: Honours students or advanced undergraduates. Not open to
students who have taken HIST 484D1/D2 and/or HIST 634D1/D2. Readings in and discussion of a theme in Modern British history.

- HIST 566 Modern Britain: Seminar 2. (3) (Prerequisite: HIST 565) (Restrictions: Not open to students who have taken HIST 484D1/D2 and/or HIST 634D1/D2) Supervised design, research and writing of a substantial research paper on a theme in modern British history.

- HIST 579 The Arts of Healing in China. (3) (Prerequisite (Undergraduate): At least two courses at the 300-level or above in East Asian history or permission of instructor) An historical perspective on the diverse arts of healing in China focusing on Key formations such as popular traditions, the emergence of classical medicine, the creation of Traditional Chinese medicine in modern China. Emphasis on healing as part of social, historical, intellectual, and cultural processes.

- HIST 580D1 (3), HIST 580D2 (3) European and Native-American Encounters. (Prerequisite (Undergraduate): Permission of instructor. Priority is given to Graduate students) (Students must register for both HIST 580D1 and HIST 580D2.) (No credit will be given for this course unless both HIST 580D1 and HIST 580D2 are successfully completed in consecutive terms) This seminar will examine European and Native encounters throughout the Americas, from the late 15th century to the mid-nineteenth century. The aim is to introduce students to key primary sources related to contact, and to the methods used to interpret them.

- HIST 581 The Art of War in China. (3) (Prerequisite (Undergraduate): at least two 300-level or above courses in East Asian history, or permission of instructor) A study of the historical development of military theory and practice from earliest times to 1911 from a variety of perspectives, technological, scientific, social, and cultural.

HIST 582 European Intellectual History. (3) (Prerequisite (Undergraduate): a previous course in European History or permission of instructor) Topic 06-07: The History of autobiography A study of selected topics in 20th century French and European intellectual and cultural history and popular culture.

- HIST 585 Theory for Historical Studies. (3) (Prerequisite (Undergraduate): permission of instructor) Approaches to the interpretation and understanding of historical evidence which are outside the traditional historical discipline - reading of central texts in, for example, psychoanalytic theory, gender theory, or literary criticism and exercises in the use of these theories for historical research.

HIST 590 Topics: The British Empire. (3) (Prerequisite (Undergraduate): permission of instructor) Topics in the history of British formal and informal imperialism and the colonial encounter from the eighteenth to the twentieth centuries.

HIST 594D1 (3), HIST 594D2 (3) Topics: Tudor and Stuart England. (Prerequisite: any university course in British history or consent of instructor) (Students must register for both HIST 594D1 and HIST 594D2) (No credit will be given for this course unless both HIST 594D1 and HIST 594D2 are successfully completed in consecutive terms) Topic 06-07: Early Modern Media and Politics Topics will vary from year to year and may cover any aspect of early modern British history. Topics for the class presentation and seminar paper (also discussed in class) are assigned to each student according to student interest and availability of sources.

HIST 595D1 (3), HIST 595D2 (3) Seminar: Early Modern Western Europe. (Prerequisite (Undergraduate): permission of instructor) (Students must register for both HIST 595D1 and HIST 595D2) (No credit will be given for this course unless both HIST 595D1 and HIST 595D2 are successfully completed in consecutive terms) Topic 06-07: Knowledge in the French Atlantic World - 1550-1800 This course is intended to offer advanced analytical and research training in a selected theme in western European history during the period from the Italian Renaissance to the French Revolution.

HMST-Humanistic Studies

- HMST 296 Western Humanistic Tradition 1. (3) (Restriction: students registering in Humanistic Studies.) (Restriction: Not open to students who have taken HMST 200.) Implicit and explicit responses in selected texts (philosophical, literary, theological, historical) in the western tradition from 750 BCE to 1600 to the question, “What is it to be human?”

- HMST 297 Western Humanistic Tradition 2. (3) (Prerequisite: HMST 296.) (Restriction: students registering in Humanistic Studies.) (Restriction: Not open to students who have taken HMST 200.) Implicit and explicit responses in selected texts (philosophical, literary, theological, historical) in the western tradition from 1600 to the present to the question, “What is it to be human?”

HPSC-Hist & Phil of Science

- HPSC 300 Independent Studies: History and Philosophy of Science. (3) (Restriction: Permission of Director and History & Philosophy of Science Committee) Offered by special arrangement between students in Arts or Science and a professor in either a Science or a Social Science Department. The purpose is to enable a student to undertake for credit the study of a special topic in the History or the Philosophy of Science.

- HPSC 500 Interdisciplinary Seminar: History & Philosophy of Science. (3) (Restriction: Permission of Instructor) At least one topic will be chosen from each of the four major areas: the mathematical, the physical, the biological, the social sciences.

HSEL-Health Science Electives

- HSEL 308 Issues in Women's Health. (3) (Fall) (Prerequisite: Introductory Psychology or Sociology or permission of the instructor) (Complementary course for the Women's Studies and Social Studies of Medicine Concentrations) Exploration of a wide range of topics on the health of women. Topics include use of health care system, poverty, roles, immigration, body image, lesbian health, and violence against women. Additional topics vary by year. A Health Science elective open to students in the Faculties of Arts, Science, and Medicine.

- HSEL 309 Women's Reproductive Health. (3) (Winter) (Prerequisite: Introductory Psychology or Sociology or permission of the instructor) (Restriction: not open for
INTD-International Development
Offered by: Arts - Dean's Office

INTD 200 Introduction to International Development.
(3) An interdisciplinary introduction to the field of International Development Studies focusing on the theory and practice of development. It examines various approaches to international development, including past and present relationships between developed and underdeveloped societies, and pays particular attention to power and resource distribution globally and within nations.

INTD 490 Development Field Research.
(3) (Prerequisite: completion of ECON 313 and 3 credits of IDS Group A Complementary Courses) (Restriction: Open only to students enrolled in International Development Studies Concentrations with prior approval of IDS program advisor and project supervisor) Supervised reading, field work and research project in international development. Requirements consist of previously approved project proposal, field component (usually carried out during the summer), and research report based on field work to be completed upon return.

INTD 491 Research Project.
(3) (Restriction: Open only to U3 Honours and Joint Honours students.) Supervised reading and preparation of a research project under the direction of a member of staff.

INTD 492 Honours Thesis.
(6) (Restriction: Open only to U3 Honours and Joint Honours students.) (Restriction: Permission of an appropriate supervising instructor and program adviser required.) Supervised reading and preparation of a research report under the direction of a member of staff.

INTD 492D1, INTD 492D2 Honours Thesis.
(3) (Students must register for both INTD 492D1 and INTD 492D2.) (No credit will be given for this course unless both INTD 492D1 and INTD 492D2 are successfully completed in a twelve month period) (INTD 492D1 and INTD 492D2 together are equivalent to INTD 492) Supervised reading and preparation of a research report under the direction of a member of staff.

INTD 492N1 Honours Thesis.
(3) (Students must also register for INTD 492N2) (No credit will be given for this course unless both INTD 492N1 and INTD 492N2 are successfully completed in a twelve month period) (INTD 492N1 and INTD 492N2 together are equivalent to INTD 492) Supervised reading and preparation of a research report under the direction of a member of staff.

INTD 492N2 Honours Thesis.
(3) (Prerequisite: INTD 492N1) (No credit will be given for this course unless both INTD 492N1 and INTD 492N2 are successfully completed in a twelve month period) (INTD 492N1 and INTD 492N2 together are equivalent to INTD 492) See INTD 492N1 for course description.

INTD 497 Research Seminar on International Development.
(3) (Restriction: Open only to students in final year of an IDS Concentration) An interdisciplinary research seminar on topics of common interest to staff and students of the International Development Studies programs. See http://www.mcgill.ca/ids/courseinfo/intd497

INTD 499 Internship: International Development Studies.
(3) (Restriction: Open to U2 and U3 students with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will not normally fulfill program requirements for seminar or 400-level courses. A letter from a supervisor at the institution must attest to successful completion of the student's tenure.) Internship with an approved host institution or organization.

ISLA-Islamic Studies
Offered by: Islamic Studies

ISLA 350 From Tribe to Dynasty.
(3) (Restriction: Not open to U0 or U1 students.) The political and intellectual developments shaping Arab and Persian societies from the rise of Islam in the 7th century until the early mid 8th century, including the major social changes, political revolts, religious schisms, and the consolidation of lasting cultural institutions.

ISLA 380 Islamic Philosophy and Theology.
(3) (Note: Reading and discussion in English.) (Restriction: Not open to U0 or U1 students.) A survey of the most important philosophers and theologians in Islamic intellectual history, with a focus on the theories they articulated and the movements they engendered. The impact of European thought on 19th and 20th century Islamic intellectual history is also examined.

ISLA 385 Poetics & Politics in Arabic Literature.
(3) (Note: Reading and discussion in English.) (Restriction: Not open to U0 or U1 students.) Major issues in classical and modern Arabic literature; how poetics and politics interact in classical and modern, popular folktales and high literature, novels and poetry. The politics of translation from Arabic into English.

ISLA 410 History: Middle-East 1798-1918.
(3) (Fall) (3 hours) A study of the Middle East from Napoleon's invasion of Egypt to the end of WW I. Emphasis will be on the emergence of nationalisms in the context of European imperialism; political, social, and economic transformation; religion and ideology; and changing patterns of alliances.

ISLA 411 History: Middle-East 1918-1945.
(3) (Fall) (3 hours) The impact of WW I on Middle Eastern society and politics; the British and French mandates; the growth of nationalisms, revolutions and the formation of national states; WW II and the clash of political interests within the region.

ISLA 501 The Qur'an: Text and History.
(3) A study of the Qur'an's teachings, structures, style, and history in the light of classical and modern scholarship.

ISLA 505 Islam: Origin and Early Development.
(3) (3 hours) (Fall) The Qur'an, Hadith, the Shari'a and their major themes. The early development of law, theology and Sufism. The development and formation of an Islamic "orthodoxy", the development and nature of competing interpretations of Islam during the Classical Period. Topics: God, revelation, prophecy, the community and the individual and the meaning of history.

ISLA 506 Islam: Later Developments.
(3) (3 hours) How the basic elements of Islam have been understood in the course of later Islamic history up to the present day. The nature and development of Shi'ism, Sufi...
brotherhoods, major intellectual trends, Islam in a world of nation states, diaspora. The challenges of modernity and the contemporary world.

- **ISLA 510D1 (3), ISLA 510D2 (3) History: Islamic Civilization - Classical.** (Fall and Winter) (3 hours) (Students must register for both ISLA 510D1 and ISLA 510D2.) (No credit will be given for this course unless both ISLA 510D1 and ISLA 510D2 are successfully completed in consecutive terms) The origins of the early Islamic state in Arabia and the Umawi Caliphate. The growth of an Islamic civilization, and the "Abbasi Empire" until the Seljuk period. The rise of the Fatimis. The Caliphate of Cordoba.

- **ISLA 511D1 (3), ISLA 511D2 (3) History: Islamic Civilization - Mediaeval Era.** (Fall and Winter) (3 hours) (Prerequisite: ISLA 511D1 and ISLA 511D2 are successfully completed in consecutive terms) The Seljuks, and the medieval synthesis. The Moors in Spain and North Africa. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, Turkish and Indian Empires until 1700.

- **ISLA 521D1 (4.5), ISLA 521D2 (4.5) Introductory Arabic.** (Fall and Winter) (5 lecture hours and laboratory) (Students must register for both ISLA 521D1 and ISLA 521D2.) (No credit will be given for this course unless both ISLA 521D1 and ISLA 521D2 are successfully completed in consecutive terms) Modern Standard Literary Arabic (non-spoken).

- **ISLA 522 Lower Intermediate Arabic.** (6) (3 hours and laboratory) (Prerequisite: ISLA 521 or equivalent)

- **ISLA 522D1 (3), ISLA 522D2 (3) Lower Intermediate Arabic.** (Fall) (3 hours and laboratory) (Prerequisite: ISLA 521 or equivalent) (Students must register for both ISLA 522D1 and ISLA 522D2.) (No credit will be given for this course unless both ISLA 522D1 and ISLA 522D2 are successfully completed in consecutive terms) Introduction to the making of contemporary Italy. Visual material and selected readings will be used in describing patterns and written structures. Conversation and composition.

- **ISLA 533D1 (3), ISLA 533D2 (3) History: Islamic Civilization - Classical.** (Fall and Winter) (3 hours) (Students must register for both ISLA 533D1 and ISLA 533D2.) (No credit will be given for this course unless both ISLA 533D1 and ISLA 533D2 are successfully completed in consecutive terms) The origins of the early Islamic state in Arabia and the Umawi Caliphate. The growth of an Islamic civilization, and the "Abbasi Empire" until the Seljuk period. The rise of the Fatimis. The Caliphate of Cordoba.

- **ISLA 551D1 (3), ISLA 551D2 (3) Introductory Urdu.** (Fall and Winter) (3 hours) (Students must register for both ISLA 551D1 and ISLA 551D2.) (No credit will be given for this course unless both ISLA 551D1 and ISLA 551D2 are successfully completed in consecutive terms) Introduction to the basic grammatical structures and vocabulary of the Urdu language, including drills in pronunciation and sentence structures.

- **ISLA 552D1 (3), ISLA 552D2 (3) Intermediate Urdu.** (Fall and Winter) (3 hours) (Prerequisite: ISLA 551 or equivalent) (Students must register for both ISLA 552D1 and ISLA 552D2.) (No credit will be given for this course unless both ISLA 552D1 and ISLA 552D2 are successfully completed in consecutive terms) Assuming a knowledge of basic grammar and vocabulary, this course continues with the study of more complex grammatical structures. Reading and composition exercises in Urdu script are designed to give intermediate competency in the language.

- **ISLA 553 Advanced Urdu 1.**

- **ISLA 554 Advanced Urdu 2.**

- **ISLA 555 Special Topics 1.**

**ITAL-Italian**

**Offered by:** Italian Studies

- **ITAL 199 FYS: Italy’s Literature in Context.** (3) (Fall or Winter) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) (Given in English) The purpose of this seminar is to re-visit, problematically, the commonsense notion that literature "reflects" reality (or society). Classics of twentieth-century Italian writing shall be analyzed as the response of that nation’s literary imagination to the contradictions of its turbulent political and social history.

- **ITAL 205D1 (3), ITAL 205D2 (3) Italian for Beginners’.** (Fall, Winter) (3 hours and laboratory) (Students must register for both ITAL 205D1 and ITAL 205D2.) (No credit will be given for this course unless both ITAL 205D1 and ITAL 205D2 are successfully completed in consecutive terms) Grammar, reading, dictation. Intensive practice in speech patterns and written structures. Conversation and composition. Visual material and selected readings will be used in describing the making of contemporary Italy.

- **ITAL 206 Beginners’ Italian Intensive.** (6) (Fall or Winter) (6 hours and 1 hour laboratory)
McGill’s Summer Study in Italy program. It focuses on the terminology, idiomatic expressions and syntax of Italian business language. Topics, such as workplace in Italy, credit institutions, chamber of commerce and its role, industrial associations, will be used to help develop and improve written and oral communication skills as they relate to the business world.

• ITAL 309 Perspectives on Italy.
(3) Course is given in Florence, Italy, as part of McGill’s Summer Study in Italy program. A study of various topics relating to the perception of Italy, the country, its people and their culture as seen by foreign and/or Italian writers. Course to be taught in English.

ITAL 311 Twentieth Century Texts.
(3) (Winter) A selection of narrative and theatrical works by 20th century authors, illustrating different facets of this century’s social and literary experience.

ITAL 320 Manzoni: Novel and Nationhood.
(3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) An analysis of the historical novel “I promessi sposi”, by Alessandro Manzoni: its political, social and intellectual role in the evolution of Italy towards nationhood (Risorgimento).

• ITAL 325 Masterpieces of Italian Literature 1.
(3) (Fall) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) A survey of Italian literature focused on the Middle Ages and the Renaissance. Interdisciplinary approach.

• ITAL 326 Masterpieces of Italian Literature 2.
(3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) A survey of Italian literature from Renaissance to the 20th century. Interdisciplinary approach.

ITAL 327 A Literary Map of Italy.
(3) (Winter) (Prerequisite: ITAL 215 or 216.) An introduction to Italian literary and cultural history. Sicily, Florence, Rome, Naples, Venice and Milan, studied as centres of cultural innovation at critical moments from the late Middle Ages to the Enlightenment.

ITAL 328 Contemporary Italy.
(3) (Fall) (Prerequisite: ITAL 215 or 216.) A cultural studies approach to contemporary Italian society. Focus on distinctive traits of Italian popular culture through literature, film, television and other media.

ITAL 330 Commedia Dell’Arte.
(3) (Fall) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Playhouses, actors, stage techniques, masks and scenarios of the “Commedia dell’Arte”.

• ITAL 341 The Art of Essay Writing.
(3) (Winter) (Prerequisites: ITAL 300 or permission of the Department) Word formation in the Italian language. Syntactic and stylistic aspects of texts by Italian essayists.

ITAL 355 Dante and the Middle Ages.
(3) (Fall) (Given in English) An introduction to the work of Dante Alighieri, a pillar of medieval European literature. The times in which he lived, the institutions and cultural shifts of that era, the influence exercised by Dante’s work, as well as how it has been perceived in our time.

ITAL 356 Medieval Discourses on Love.
(3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Medieval ideas, attitudes and behaviour surrounding love as represented in literature: readings will include excerpts from early Italian love lyrics, Dante’s Vita Nuova, Petrarch’s Canzoniere, Boccaccio’s Decameron.
• ITAL 360 Contemporary Italian Prose.
  (3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Italian novelists, playwrights, diarists, and essayists from 1945 to the present.

• ITAL 361 Italian Prose after 1945.
  (3) (Winter) (Given in English) Major prose works of Italian literature as they reflect the reactions of writers to the social, cultural and political dilemmas facing Italian society in the second half of the 20th century.

• ITAL 363 Gender, Literature and Society.
  (3) (Winter) (Given in English) (Course for the Women's Studies Concentrations) Questions of gender identity and literary representation as they emerge from women's texts or from comparisons of women's and men's texts, in relation to specific social and historical conditions. May focus on any time period in Italian history, from medieval to contemporary.

ITAL 365 The Italian Renaissance.
  (3) (Winter) (Given in English) A presentation of the main ideas and literary masterpieces of the Italian Renaissance (13th-17thC), in the context of Italy's social, political, religious and cultural climate. Reading and discussion of selected literary texts and visual material.

• ITAL 368 Literature of the Renaissance.
  (3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Reading and discussion of selected literary texts (Poliziano, Lorenzo, Alberti, Sannazzaro, Castiglione among others) will provide an opportunity to become familiar with the social and political conditions of literary production, the ideas and debates about language and literature, and the literary genres which emerged during the Renaissance.

• ITAL 370 Italian Poetry and Music.
  (3) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) A study of the texts of Italian madrigals, canzoni, motetti and libretti in relation to their musical setting from the Renaissance to the 19th century. Emphasis on the transformation of literary texts for their adaptation to music, and on the language of Italian Opera. No specialized knowledge of music is required.

ITAL 375 Cinema and Society in Modern Italy.
  (3) (Fall) (Given in English) A survey of the most important trends in post-war Italian cinema seen in the context of the rapidly and dramatically evolving society of modern Italy.

• ITAL 376 Medieval Romance in Italy.
  (3) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) An overview of the Italian popular tradition, poetic and narrative, and of critical approaches to it, including Propp's Morphology of the Fairy Tale. The relationship between the Italian semi-popular medieval romance ("cantare") and popular tales.

ITAL 380 Neorealism: Roots and Development.
  (3) (Fall) (Prerequisite: ITAL 215D1/ITAL 215D2) Focus on pivotal narrative and cinematic works that illustrate the evolution of Italian realism from the late 19th century naturalism to post-WWII neorealism.

• ITAL 383 Women's Writing since 1880.
  (3) (Prerequisite: any 300 level course given in Italian or permission of the Department) (Course for the Women's Studies Concentrations) A study of Italian women writers and their search for literary identity.

• ITAL 385 Italian Futurist Movement.
  (3) (Given in English) Futurism is essentially a multidisciplinary movement. Using textual and visual material, its various manifestations - in literature, "paraliterature", painting, photography, theatre, film, sculpture, architecture, music, dance and performance - will be examined from a double perspective: the futurist theory/practice relationships on the one hand and, on the other, the multiple links between Italian futurism, the "historical" avant-garde outside Italy and the neo-avant garde movements of the 60s and 70s.

• ITAL 395 Interdisciplinary Seminar.
  (3) (Winter).

• ITAL 400 Modern Italian Literature.
  (3) (Winter) A study of representative works of major Italian authors from the fin-de-siècle to WW II.

• ITAL 410 Pirandello.
  (3) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Selected readings from Pirandello's essays, short stories, novels and plays in the light of his ideological rejection of the literature and society of his time.

ITAL 415 Italian Poetry 20th Century.
  (3) (Prerequisite: permission of the Department) An overview of the major poets and poetic movements of the 20th century, from the major turn-of-the-century poets to the new directions of the contemporary avant-garde. Poets and movements emphasized may vary from year to year.

ITAL 416 The Twentieth Century.
  (3) (Given in English.) Topics in twentieth-century Italian literary and cultural history. The focus may be on a movement, a theme, a genre, a specific writer, or a specific period.

• ITAL 420 Leopardi and Italian Romanticism.
  (3) (Fall) (Prerequisite: ITAL 215, ITAL 216, or equivalent) The major early 19th century poets in the context of Italian and European Romanticism.

ITAL 435 Ariosto’s “Orlando Furioso”.
  (3) (Fall) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) Ariosto’s chivalresque poem in the context of the Italian Renaissance.

• ITAL 436 Tasso’s “Gerusalemme Liberata”.
  (3) (Winter) (Prerequisite: ITAL 215D1/ITAL 215D2) A study of Tasso’s poem in the context of the Counter Reformation.

ITAL 444 Individual Reading Course.
  (3) (Fall) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) In exceptional circumstances, this course may be used to meet special interests of students or to assist them in meeting the standard requirements of the Department.

ITAL 461 Dante: “The Divine Comedy”.
  (3) (Prerequisite: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent) The structure and intellectual background of the Divine Comedy; a reading and interpretation of the poem; a discussion of the main trends in contemporary Dante scholarship.

• ITAL 464 Machiavelli.
  (3) (Given in English) Machiavelli, the political thinker and man of letters. A portrait of Machiavelli as political strategist, playwright and observer of his times. Reading of The Prince as well as selected plays, letters and other writings.

ITAL 470 Honours Thesis.
  (3) (Fall or Winter) (Restriction: Compulsory for Honours and Joint Honours students.)

ITAL 477 Italian Cinema and Video.
  (3) (Winter) (Restriction: Not open to students who have taken ITAL 377) Different Italian film maker or videomaker every year, presenting a selection of his/her significant works. Discussions will include script analysis, interviews, articles and books by the director in focus, in addition to theoretical and critical statements by scholars. Established and new
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• Denotes courses taught only in alternate years.
 ‡ Professional Practice (Stage) in Dietetics involving special prerequisites
 ▲ Indicates that departmental approval/permission must be obtained by a student prior to registration.
 † Denotes courses not available as Education electives.
 ❁ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

notices.

ITAL 499 Internship: Italian Studies.
(3) (Fall or Winter) (Prerequisite: Permission of the departmental Internship Advisor.) (Restriction: Open to U2 and U3 students after completing 30 credits of a 90 credit degree program or 45 credits of a 69-120 credit program, a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will not normally fulfill program requirements for seminar or 400-level courses.) Internship with an approved host institution or organization.

● ITAL 530 17th-18th Century Culture.
(3)
● ITAL 542 History of Italian Language.
(3) (Fall) (Prerequisite for Undergraduate students: permission of the Department.) A historical survey of the intense debate on the problem of literary language in Italy, from Dante to the present time, as caused by the variance between spoken and literary languages; followed by an in-depth examination of the theoretical and literary texts of one particular period.

● ITAL 551 Boccaccio and the Italian Novella.
(3) (Fall) (Prerequisites for Undergraduate students: ITAL 215D1/ITAL 215D2, ITAL 216, or equivalent.) A study of Boccaccio’s “Decamerion” and of Italian narrative prose up to the 16th century.

ITAL 560 Topics in 19th & 20th Century Literature.
(3) (Winter) (Prerequisite for Undergraduate students: permission of the Department.) Exploration of individual authors, genres, and literary or cultural movements that have marked Italian culture in the 19th and 20th century.

ITAL 563 13th-16th Century Literature.
(3) (Fall) (Prerequisite for Undergraduate students: permission of the Department) Topics in the literature of the 13th to the 16th Centuries.

JWST-Jewish Studies

Offered by: Jewish Studies

JWST 199 FYS: Images - Jewish Identities.
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum enrolment 25) Topic 2006-07:Anti-Semitism and other forms of racism, 1789-1939:an introduction using theoretical and literary texts of one particular period.

JWST 200 Hebrew Language (Intensive).
(12) (Restriction: Not open to students who have taken JWST 220 or JWST 320) (Normally offered in the summer.) Intensive language course, covering the first three levels in one year rather than the usual two.

JWST 201 Jewish Law.
(3) The nature and history of Jewish law; literary and legal sources; selections in English from the Mishnah and Talmud, as well as selected post-Talmudic Texts, on such subjects as Contracts, Torts, Public Law and Family Law.

JWST 206 Introduction to Yiddish Literature.
(3) (Readings in English) A survey of modern Yiddish literature from its beginnings in the 1880s to the present. Particular attention will be paid to representative themes, forms, and literary techniques. Emphasis will be put on relations between literary texts and historical and literary contexts.

JWST 211 Jewish Studies 1: Biblical Period.
(3) (All texts will be read in English) The history, literature and beliefs of Judaism's formative period. Both Biblical and non-Biblical materials will be studied. The Bible in the context of cognate literatures of the Ancient Near East; non-Biblical documents will be analysed for their bearing on the Jewish tradition.

● JWST 216 Jewish Studies 2: 400 BCE - 1000.
(3) (All texts and discussions will be in English) (Restrictions: Not open to students who have taken HIST 207) The history, literature and intellectual developments in Judaism during late antiquity. Special emphasis will be placed on rabbinic literature e.g. Babylonian Talmud, Palestinian Talmud, the midrashim both as literary works and for the light they shed on the events and ideologies of the period.

(3) (All texts will be read in English) The Jewish experience from the rise of the European centres to the present.

JWST 220D1 (3), JWST 220D2 (3) Introductory Hebrew.
(Student must register for both JWST 220D1 and JWST 220D2.) (No credit will be given for this course unless both JWST 220D1 and JWST 220D2 are successfully completed in consecutive terms)

● JWST 225 Literature and Society.
(3) (All texts will be read in English) A panoramic analysis of Israeli society through poetry, fiction, essays, interviews and testimonial narratives reflecting the country’s historical, ideological and ethnic complexity. In English translation, we will read Oz, Amichai, Habibi, Har-Even and Yehoshua, as well as new authors from divergent ethnic, religious and ideological positions.

● JWST 226 Contemporary Israeli Fiction.
(3) Study of selected themes in literary works by Israeli authors.

JWST 240 The Holocaust.
(3) (Restriction: Not open to students who have taken JWST 252 “The Holocaust”) Consideration of the history of the Holocaust and the literary, theological and cultural responses to the destruction of European Jewry.

● JWST 252 Interdisciplinary Lectures.
(3)

● JWST 254 The Jewish Holy Days.
(3) An exploration of the Jewish holy days. Emphasis is placed on their historical development, philosophical messages, and ritual forms.

● JWST 261 History of Jewish Philosophy & Thought.
(3) An introduction to Jewish philosophy and thought from the Hellenic period (Philo) to the beginning of the modern era (Spinoza) focusing on topics such as prophecy and philosophy, God and the world; the Law as a canons of ethical rules and as a political constitution. survey the treatment of such issues by Jewish thinkers from Philo to Maimonides.

● JWST 280 Introductory Yiddish.
(6) (Summer) Introduction to basic structures of standard Yiddish. Intensive practice in speech and written structures. Emphasis on grammar, reading and writing. Selected readings to introduce Yiddish culture.

JWST 280D1 (3), JWST 280D2 (3) Introductory Yiddish.
(Students must register for both JWST 280D1 and JWST 280D2.) (No credit will be given for this course unless both JWST 280D1 and JWST 280D2 are successfully completed in consecutive terms)
JWST 300 Charisma and Social Change.
(3) An introduction to charismatic phenomena in politics, religion and the media, and interpretation of them, from the ancient prophets to the modern period. Particular attention will be given to charisma as a general force for social change and also the lives of individuals such as Lenin, Krishnamurti and Chaplin.

JWST 301 Hebrew Empire and Crisis.
(3) (All texts will be read in English) An introduction to the sociology of Hebrew literature from the Bible to the present day, and its distinguishing literary-historical features in the context of world civilization. The course will also examine the various empires in which Hebrew was created, and their cultures.

JWST 303 The Soviet Jewish Experience.
(3) (Readings in English) Sovietization both fueled the modernization of Russian Jewry and contributed to its eventual suppression. This experience will be examined from two perspectives: history and literature. The interrelationship between culture and politics and the effects of ideology and censorship on literature will be discussed.

JWST 305 American Jewish History / Colonial Era to WWI.
(3) The interaction of Jewish and American historical traditions in forging the American Jewish experience. The themes of acculturation, immigration and political behavior will be treated.

JWST 306 The American Jewish Community.
(3) Issues affecting American Jewry in the post-World War I era until today and the American Jewish community's responses to those issues. Special emphasis on understanding the community responses and reactions to developments in both the American society and in the Jewish world.

JWST 309 Jews in Film.
(3) An introduction to the portrayal of Jews in film from the 1920s to the present. Films to be studied will usually be based on literary texts in English, which will form part of the required study. Films in languages other than English will be subtitled.

JWST 310 Believers, Heretics and Critics.
(3) Issues in the development of Biblical interpretation based on classical Jewish thought, heretical Jewish doctrines and contemporary Biblical criticism.

JWST 314 Denominations in North American Judaism.
(3) A survey of Reform, Reconstructionist, Conservative and Orthodox Judaism in North America. Emphasis is placed on the ideology forwarded by the movements since their inception.

JWST 315 Modern Liberal Jewish Thought.
(3) The work of Mordecai Kaplan, followed by a study of several contemporary authors following feminism, mystical and postmodernist tendencies.

JWST 316 Social and Ethical Issues Jewish Law 1.
(3) A brief introduction to the nature and history of Jewish law. Topics include: redemption of hostages; abortion; death and dying.

JWST 320D1 (3), JWST 320D2 (3) Intermediate Hebrew. (Students must register for both JWST 320D1 and JWST 320D2.) (No credit will be given for this course unless both JWST 320D1 and JWST 320D2 are successfully completed in consecutive terms) (JWST 320D1 and JWST 320D2 together are equivalent to JWST 320)

JWST 321 Bible Interpretation/Medieval Ashkenaz.
(3) (Prerequisite: Knowledge of Hebrew) An introduction to Jewish interpretation of the Bible in the Middle Ages. Readings from the Hebrew Bible and the commentaries of Rashi, Rashbam, the Tosafists, etc.

JWST 322 Bible Interpretation/Sefardic Tradition.
(3) (Prerequisite: Knowledge of Hebrew) Readings from the Hebrew Bible and the commentaries of Ibn Ezra, Nachmanides, Abravanel, etc.

JWST 323 The Hebrew Liturgy.
(3) (Fall) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 324 The Israeli Novel.
(3) (Winter) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 325 Israeli Literature in Translation.
(3) Survey of contemporary Israeli fiction that reflects Israel's cultural, political, and historical concerns. Authors may include Yehoshua, Oz, Shabtai, Shalev and others.

JWST 327 A Book of the Bible.
(3) (Fall) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 328 A Book of the Bible.
(3) (Winter) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 329 A Book of the Bible.
(3) (Fall) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 330 A Book of the Bible.
(3) (Winter) (Prerequisite: Knowledge of Hebrew) One book of the Bible will be studied in its entirety in Hebrew. Emphasis on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text.

JWST 331 Bible Interpretation/Medieval Ashkenaz.
(3) (Prerequisite: Knowledge of Hebrew) Recommended: JWST 331 Readings from the Hebrew Bible and the commentaries of Ibn Ezra, Nachmanides, Abravanel, etc.

JWST 332 Bible Interpretation/Sefardic Tradition.
(3) (Prerequisite: Knowledge of Hebrew) The structure, contents, foci and ideological assumptions of Jewish prayer. Texts will reflect the different approaches to prayer in Biblical, rabbinc, medieval and modern periods, with emphasis on the evolution of the classical Hebrew prayer book (Siddur) and the Passover Hagadah.

JWST 333 Jewish Philosophy and Thought 1.
(3) (Fall) Focuses on either a period, a current of thought or the work of a thinker in the history of Jewish thought from Antiquity to the Middle Ages, paying particular attention to the relationship of Jewish thinkers to intellectual trends in their respective cultural contexts. Contemporary Muslim and Christian theologians and philosophers.

JWST 334 Jewish Philosophy and Thought 2.
(3) (Winter) Focuses on either a period, a current of thought or the work of a thinker in the history of Jewish thought from the Middle Ages to Modern Times, paying particular attention to the relationship of Jewish thinkers to intellectual trends in their respective cultural contexts. Themes and concerns of Jewish

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Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
Denotes courses not available as Education electives.
Denotes courses with limited enrolment.
Denotes courses not offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
JWST 340D1 (3), JWST 340D2 (3) Advanced Hebrew.
(Prerequisite: JWST 200 or JWST 320 or permission of the Hebrew Language Coordinator) (Students must register for both JWST 340D1 and JWST 340D2.) (No credit will be given for this course unless both JWST 340D1 and JWST 340D2 are successfully completed in consecutive terms)

JWST 345 Introduction to Rabbinic Literature.
(3) (All readings in English) Topic for 2006-07: The course will focus on rabbinic narratives describing incidents from the lives of the Rabbis. An introduction to the study of Rabbinic texts.

JWST 346 Modern Jewish Studies.
(3) (Requires Departmental approval) Topics in Jewish Studies. Semesters will be devoted to specific issues and periods of the Jewish Experience since 1500 and the literature produced by Jews during this period.

JWST 347 Modern Jewish Studies.
(3) (Requires Departmental approval) Topics in Jewish Studies. Semesters will be devoted to specific issues and periods of the Jewish Experience since 1500 and the literature produced by Jews during this period.

JWST 348 Modern Jewish Studies.
(3) Topics in Jewish Studies. Semesters will be devoted to specific issues and periods of the Jewish Experience since 1500 and the literature produced by Jews during this period.

JWST 349 Modern Jewish Studies.
(3) Topic for 2006-07: History of Jewish Humor; Humor of Jewish History, 1827-1967: an introduction to Jewish humor in its historical context, using literature and film. Topics in Jewish Studies. Semesters will be devoted to specific issues and periods of the Jewish Experience since 1500 and the literature produced by Jews during this period.

JWST 351 Studies in Modern Jewish Literature.
(3) (All texts will be read in English) Topic for 2006-07: To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 352 Studies in Modern Jewish Literature.
(3) (All texts will be read in English) Topic for 2006-07: To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 353 The Yiddish Canon.
(3) (Prerequisite: Any literature course) This course will focus on the Classical Period (1860 - 1915) in Yiddish literature. We will be reading landmark texts in English translation.

JWST 354 Jewish Labour Movement/Eastern Europe.
(3) The development of the Jewish labor and socialist movement in Eastern Europe from the last quarter of the 19th century to the Bolshevik Revolution.

JWST 355 Jewish Labour Movement/North America.
(3) The development of the Jewish labor and socialist movement in North America from the last quarter of the 19th century to WW I.

JWST 356 Topics in Jewish Philosophy 1.
(3) (All texts in English)

JWST 357 Jewish Labour Movement/North America.
(3) (All texts in English) Topic for 2006-07: The development of the Jewish labor and socialist movement in Eastern Europe from the last quarter of the 19th century to the Bolshevik Revolution.

JWST 358 Topics in Jewish Philosophy 2.
(3) (All texts in English)

JWST 359 Studies in Hebrew Language and Literature.
(3) (Fall) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 360 Studies in Hebrew Language and Literature.
(3) (Winter) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 361 Studies in Hebrew Language and Literature.
(3) (Fall) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 362 Studies in Hebrew Language and Literature.
(3) (Winter) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 363 Modern Jewish Ideologies.
(3) (Recommended: JWST 365) An examination of the development of the Zionist idea, the most influential expression of modern Jewish nationalism, which led to the creation of the Jewish state. The transformation of elements of traditional Jewish messianism into a modern political ideology. Hibbat Zion, Political Zionism, Cultural and Synthetic Zionism will be discussed.

JWST 364 History of Zionism.
(3) (Recommended: JWST 365) An examination of the development of the Zionist idea, the most influential expression of modern Jewish nationalism, which led to the creation of the Jewish state. The transformation of elements of traditional Jewish messianism into a modern political ideology. Hibbat Zion, Political Zionism, Cultural and Synthetic Zionism will be discussed.

JWST 365 Modern Jewish Ideologies.
(3) The rise and development of the various ideologies which attempt to define the Jews in historical, national and socio-cultural terms will be analyzed within the context of modern European nationalism. Selected texts of the Jewish Enlightenment, Science of Judaism, Peretz Smolenskin, Leon Pinsker, Simon Dubnow, Chaim Zhitlowsky and Ahad Ha-Am.

JWST 366 History of Zionism.
(3) (Recommended: JWST 365) An examination of the development of the Zionist idea, the most influential expression of modern Jewish nationalism, which led to the creation of the Jewish state. The transformation of elements of traditional Jewish messianism into a modern political ideology. Hibbat Zion, Political Zionism, Cultural and Synthetic Zionism will be discussed.

JWST 367 Studies in Hebrew Language and Literature.
(3) (Fall) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 368 Studies in Hebrew Language and Literature.
(3) (Winter) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 369 Studies in Hebrew Language and Literature.
(3) (Fall) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 370 Studies in Hebrew Language and Literature.
(3) (Winter) To expand knowledge of grammar, and vocabulary and idioms in order to enhance reading comprehension and facility in writing and speaking. Of value to those interested in all aspects of Hebrew literature, classical and modern.

JWST 371D1 (3), JWST 371D2 (3) Jews and the Modern City.
(3) Jews and the Modern City. (Students must register for both JWST 371D1 and JWST 371D2.) (No credit will be given for this course unless both JWST 371D1 and JWST 371D2 are successfully completed in consecutive terms) In the forefront of the development of modern society in Europe and North America, the Jews have shown a distinct preference for the metropolis. The influence of Vienna and New York on the socio-cultural development of the Jews and on the Jewish contribution to general culture. The contributions of Schnitzler, Freud, Herzl and the New York intellectuals.

JWST 371D2 (3), JWST 371D2 (3) Jews and the Modern City.
(3) Jews and the Modern City. (Students must register for both JWST 371D1 and JWST 371D2.) (No credit will be given for this course unless both JWST 371D1 and JWST 371D2 are successfully completed in consecutive terms) In the forefront of the development of modern society in Europe and North America, the Jews have shown a distinct preference for the metropolis. The influence of Vienna and New York on the socio-cultural development of the Jews and on the Jewish contribution to general culture. The contributions of Schnitzler, Freud, Herzl and the New York intellectuals.

JWST 372 Talmudic Law 1: Bava Kamma.
(3) An introduction to Bava Kamma, in particular to Talmudic dialectic and interpretation; Talmudic law of torts; damages committed by one's self or one's property; negligence and absolute liability.

JWST 373 Talmudic Law 2: Bava Metzia.
(3) An introduction to Bava Metzia. Talmudic texts covering a wide range of subjects.

JWST 374 Talmudic Law 3: Bava Metzia.
(3) (Recommended: JWST 374) Advanced study of Bava Metzia. Of value to those interested in all aspects of Talmudic text criticism.

JWST 375 Talmudic Law 4: Bava Metzia.
(3) (Recommended: JWST 375) Advanced study of Bava Metzia. Of value to those interested in all aspects of Talmudic text criticism.

JWST 380D1 (3), JWST 380D2 (3) Intermediate Yiddish.
(Prerequisite: JWST 280 or permission of instructor) (Students must register for both JWST 380D1 and JWST 380D2.) (No credit will be given for this course unless both JWST 380D1 and JWST 380D2 are successfully completed in consecutive terms) Intermediate level of study of structures of Yiddish. Emphasis on reading, composition and conversation. Selected readings and visual materials to expand knowledge of Yiddish culture.

JWST 381 Holocaust Literature.
(3) (Restricted: Not open to students who have taken this topic)

JWST 382 Holocaust Literature.
(3) (Restricted: Not open to students who have taken this topic)

JWST 383 Holocaust Literature.
(3) (Restricted: Not open to students who have taken this topic)
under JWST 381) Readings from Holocaust literature in English translation. Writers include Primo Levi, Aharon Appelfeld, Elie Wiesel, Dan Pagis, Paul Celan, Nelly Sachs, U.Z. Greenberg and others.

**JWST 387 Modern Jewish Authors.**
3 (Topic for 2006-07: This course will look at the ways in which the changing climate in America has shaped the literary dialogue between Blacks and Jews. We will look at short stories, novels and examine the intertwining of America with Jewish and African American culture from the early decades of the 20th century to the present. Introduction to representative novels written in America by Jews from the 1950s to the present. Issues of Jewish identity, ethnicity will inform our discussions. Focus on contemporary Jewish authors; consideration of the ways in which the complexities of American life are re-scripted in these novels.)

**JWST 403 Contemporary Hebrew Literature.**
3 (Prerequisite: Proficiency in Hebrew.) Israeli literature in its original language with emphasis on in-depth literary analysis. Texts read in Hebrew; assignments may be written in English.

**JWST 404 Literary Response to Loss/Separation.**
3 (Prerequisite: Some prior related university course at 300 level or higher, e.g. literature, psychology or social work. Permission of instructor required) (All texts in English) Discussion of loss in Jewish literature, particularly in Holocaust writings, and in various themes, in memories, dreams or in mysticism, for example. A basic introduction to clinical studies on grief will serve as background.

**JWST 411 Topics: Modern Hebrew Literature 1881-1948.**
3 (Prerequisite: Knowledge of advanced Hebrew essential) Reading of Hebrew prose and poetry written mostly in Eastern Europe, prior to and after the Russian revolution, and in Palestine during the mandate (1917 - 1948). Discussion of writers such as Mendele Mocher Sforim, Bialik, Agnon, Shlonsky and Shamir will focus on the striking emergence of modern Hebrew as a vehicle for secular art.

**JWST 412 Topics: Modern Hebrew Literature 2.**
3 (Prerequisite: Knowledge of advanced Hebrew essential) Readings from Israeli prose and poetry illustrating some of the main concerns of the literature: the struggle for survival, the holocaust, the tension between the collective and the individual, the decline of orthodox Judaism and of Zionist ideology, the conflicts between the religious and the secular, Oriental and occidental, Jew and Arab.

**JWST 438 Survey of Hebrew Literature 1.**
3 (Prerequisite: Advanced Hebrew or equivalent)

**JWST 439 Survey of Hebrew Literature 2.**
3 (Prerequisite: Advanced Hebrew or equivalent)

**JWST 445 The Poetry of Nationalism.**
3 (An introduction to the work of various modern ‘national poets’ - i.e. poets closely linked to national movements who expressed (or constructed) a particular national identity and whose work has lasting artistic value. These will include Mickiewicz of Poland, Tagore of India, Yeats of Ireland, and Bialik of pre-state Israel.)

**JWST 456 Studies in the Hebrew Bible.**
3 (Fall) (Requires Departmental approval) Supervised independent research in Hebrew scripture and its interpretation.

**JWST 457 Studies in the Hebrew Bible.**
3 (Winter) (Requires Departmental approval) Supervised independent research in Hebrew scripture and its interpretation.

**JWST 474 Maimonides' Mishneh Torah.**
3 (Study of the Moses Maimonides’ Mishneh Torah, including subjects as idolatry, repentance, and sacrifices, to torts, contracts, and public law.)

**JWST 475 The Responsa Literature.**
3 (The responsa, the judicial opinions of leaning rabbinic scholars from the medieval period to the present time. Particularly, the interaction between law and social, economic, political or cultural change.)

**JWST 480 Advanced Yiddish 1.**
3 (Fall) (Prerequisite: JWST 380 or permission of the instructor) (Restriction: Not open to students who have taken JWST 480D1 and JWST 480D2) This course is aimed at developing advanced proficiency in Yiddish language skills.

**JWST 481 Advanced Yiddish 2.**
3 (Winter) (Prerequisite: JWST 380D1 and JWST 380D2; or permission of the instructor.) (Restriction: Not open to students who have taken JWST 480D1 and JWST 480D2) This course is aimed at introducing the study of literary texts in Yiddish.

**JWST 485 Tutorial in Yiddish Literature.**
3

**JWST 486 Tutorial in Yiddish Literature.**
3

**JWST 487 Tutorial in Yiddish Literature.**
3

**JWST 488 Tutorial in Yiddish Literature.**
3

**JWST 491 Honours Thesis 1.**
3 (Restriction: Open only to Honours and Joint Honours students.) A tutorial for the preparation of an Honours Thesis.

**JWST 492 Honours Thesis 2.**
3 (Restriction: Open only to Honours and Joint Honours Students.) A tutorial for the preparation of an Honours Thesis.

**JWST 499 Internship: Jewish Studies.**
3 (Restriction: Open to U2 and U3 students pursuing a Majors or Honours program in Jewish Studies with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. This course will not normally fulfill program requirements for seminar or 400-level courses. A letter from a supervisor at the institution must attest to successful completion of the student’s tenure.) Internship with an approved host institution or organization.

**JWST 502 Contemporary Hebrew Literature.**
3 (Prerequisite: JWST 340 or permission of instructor) (Knowledge of Hebrew required) Close reading of selected texts representative of Israeli Hebrew literature. Attention will be paid to stylistic and thematic innovations and in narrative.

**JWST 510 Jewish Bible Interpretation 1.**
3 (Restriction: Not open to students who have taken JWST 512) The issues, approaches, and texts of Jewish Bible interpretation between the Biblical and talmudic eras: Bible interpretation in the Bible; in Greco-Roman Jewish literature; in the Mishnah, Toseftha, Targumim, and Talmudim; early Samaritan interpretation, Bible interpretation in ancient synagogue art, and in the massoretic literature.

**JWST 511 Jewish Bible Interpretation 2.**
3 (Restriction: Not open to students who have taken JWST 512) The issues, problems, approaches, and texts of Jewish Bible interpretation in medieval, renaissance, early modern, and modern times. Interpretation in the Geonic, Ashkenazi, Sefardic, North African, Italian, European, Yemenite, North American and Israeli centres of Jewish Learning.

**JWST 523 Ancient Bible Interpretation.**
3 (Advanced level work in one aspect of Jewish Bible

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- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
interpretation in ancient times.

**JWST 530 Topics in Yiddish Literature.**
(3) Supervised research in Yiddish literature. Work will focus on one genre, literary school or author.

**JWST 531 Topics in Yiddish Literature.**
(3) Supervised research in Yiddish literature. Work will focus on one genre, literary school or author.

**JWST 534 Nachmanides as Parshan.**
(3) Close readings in one or more texts of early rabbinic Bible interpretation: Ashkenazi and Sephardi exegeses, commentators, philologists, philosophers and jurists.

**JWST 540 Biblical Interpretation 1.**
(3) Close reading of medieval rabbinic biblical interpretation: Ashkenazi and Sephardi exegetes, commentators, philologists, philosophers and jurists.

**JWST 548 Medieval Parshanut.**
(3) Topic for 2006-07: Kabbalah. An examination of the interplay between Kabbalah and biblical interpretation in pre-Zoharic Jewish mysticism. The philosophical background and roots of Kabbalah will also be explored. Advanced level work in one aspect of Jewish Bible interpretation in medieval times.

**JWST 550 The Bible in Hebrew Literature.**
(3) (Readings in Hebrew) Biblical themes, issues, and characters as they emerge from a comparison of Scripture and various Hebrew essays, poems, plays, short stories and novels of the 18th, 19th, and 20th centuries.

**JWST 551 20th Century Parshanut.**
(3) (Fall and Winter) (No prerequisite) General interest course; open to all students.

**JWST 552 Judaism and Poverty.**
(3) (Prerequisite: One course in Jewish Studies, Sociology or Social Work.) An introduction to the subject of poverty in Jewish literature and its influence on religions such as Christianity and Islam, and on modern, secular ideologies, especially socialism, and creative literature.

**JWST 554 Modern Jewish Biblical Scholarship.**
(3) The past two centuries have witnessed the active participation of many Jewish writers in the academic enterprise of Bible scholarship. This course will explore the writings of a selection of European, American, and Israeli writers and the roles they have played in archaeological, philological, historical, literary and other critical endeavors.

**JWST 560 Topics in Yiddish Literature.**
(3) Supervised research in Modern Jewish history.

**JWST 561 Aramaic Language.**
(3) The text of the Hebrew Bible as it evolved between antiquity and the most recent printed edition. Attention will be given to the accurate reconstruction of the Bible from primary and secondary witnesses: Greek and Aramic translations, Dead Sea Scrolls, and ancient quotations, and the Massoretic notes and lists.

**JWST 565 Topics in Parshanut.**
(3) Advanced level work in one aspect of Jewish Bible Interpretation that cuts across all periods of Jewish Bible interpretation.

**JWST 567 Jewish Family Law.**
(3) Study of the complex interaction between Jewish law and both Canadian and American law in the area of marriage and divorce.

**JWST 568 Tutorial in Jewish Literature.**
(3) (Requires Departmental approval) (Restriction: Not open to students who have taken JWST 506) Biblical interpretation in the Guide of the Perplexed and related writings.

**JWST 574 Nachmanides as Parshan.**
(3) The interpretive issues and procedures of Nachmanides. Torah commentary examined in the context of rabbinic and kabbalistic Bible interpretation.

**ARTS (ARTS) LING-LINGUISTICS**

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Denotes courses taught only in alternate years.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.

Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
LING 201 Introduction to Linguistics.  
(3) (Fall and Winter) (No prerequisite.) (Note: This course is a prerequisite for all other courses in Linguistics except LING 200, LING 301 and LING 350) Primarily for students intending to take further courses in linguistics. Topics include: phonetics, phonology, morphology, syntax, and semantics. Students will be introduced to techniques of linguistic analysis.

LING 230 Phonetics.  
(3) (Winter) (Prerequisite: LING 201.) (Restriction: Not open to students who have taken LING 250.) Intensive training in the identification and production of speech sounds. Phonemic analysis. The investigation of how sounds function within a system.

LING 301 Structure of English.  
(3) (Winter) (Prerequisite: LING 200 or LING 201) (Students who have taken LING 371 are strongly encouraged not to take LING 301) A linguistic investigation of the grammar of Modern English, focusing on the structural characteristics of English sentence types, words and sounds.

LING 320 Sociolinguistics 1.  
(3) (Winter) (Prerequisite: LING 201.) (Restriction: Not open to students who have taken LING 325.) A survey of language in its social context. The main focus will be on the influence of social factors like age, gender, social class and speech style on linguistic variation and change. Contact amongst languages (e.g. in Montreal) and the birth and death of languages will also be discussed.

LING 331 Phonology 1.  
(3) (Fall) (Prerequisite: LING 230.) (Restriction: Not open to students who have taken LING 351.) Introduction to phonological theory and analysis.

LING 350 Linguistic Aspects of Bilingualism.  
(3) (Winter) (Prerequisite: LING 200 or LING 201) Linguistic competence and performance in bilinguals: the organization of the bilingual's grammar. Syntactic constraints on code mixing: How many grammars are involved? Unidirectional and bidirectional grammatical interference. Structural distance between genetically related and unrelated languages and its effect on the organization of the bilingual's grammar.

LING 355 Language Acquisition 1.  
(3) (Fall) (Prerequisite: LING 201.) (Restriction: Not open to students who have taken LING 321.) A critical study of the application of linguistic theory and description to first and second language learning. Topics include: the acquisition of sounds, syntax and word meanings; acquisition strategies; properties of the input; theories of first and second language acquisition.

LING 370 Introduction to Semantics.  
(3) (Winter) (Prerequisite: PHIL 210) Introduction to the rudiments of semantics, focusing on those aspects of meaning that are invariant across contexts and the ways in which the meaning of a complex expression is determined by the meanings of its constituents.

LING 371 Syntax 1.  
(3) (Winter) (Prerequisite: LING 201.) (Restriction: Not open to students who have taken LING 360.) Introduction to the study of generative syntax of natural languages, emphasizing basic concepts and formalism: phrase structure rules, transformations, and conditions on rules.

LING 390 Neuroscience of Language.  
(3) (Prerequisite: An introductory course in Linguistics, Psychology or Neuroscience at the 200 level or above.) The neurobiological study of the human language faculty. Theoretical and experimental approaches to neurolinguistics, focusing on linguistic capacity in the healthy and damaged brain.

LING 410 Structure of a Specific Language.  
(3) (Winter) (Prerequisite: LING 230, LING 331, and LING 371, or permission of instructor) Application and refinement of analytical methods in phonology, morphology, and syntax to phenomena from a specific language. One focus will be the identification of empirical generalizations which form the basis for the development of the theory. The language of study will vary from year to year.

LING 415 Field Methods of Linguistics.  
(3) (Winter) (Prerequisites: LING 230, LING 331 and LING 371.) (Restriction: Not open to students who have taken LING 411.) Elaboration, recording and analysis of linguistic data under simulated field conditions; consideration of typical problems confronting the field analyst, preparation of a descriptive statement.

LING 419 Linguistic Theory 1.  
(3) (Fall) (Prerequisite: two of LING 331, LING 370, LING 371, LING 440.) (Restriction: Not open to students who have taken LING 491.) This course looks at the nature and structure of linguistic theory.

LING 425 Historical Linguistics.  
(3) (Fall) (Prerequisite: LING 230.) (Restriction: Not open to students who have taken LING 400.) An examination of how languages change over time and the methods that allow us to study linguistic history. Topics include: types of language change (sound change, analogy, etc.) linguistic reconstruction, the origins of modern languages.

LING 440 Morphology.  
(3) (Fall) (Prerequisite: LING 230 or LING 371, preferably both.) An introduction to the study of the internal structure of words. Topics will include the different ways words are formed in languages, how sound changes take place within words, how words are used in sentences.

LING 450 Linguistic Theory and Processing.  
(3) (Prerequisite: LING 371 (Syntax 1)) Relationship between linguistic theory and theories of language processing, focusing on the following: the nature of the competence-performance distinction; how processing theories inform research in theoretical linguistics; the evidence for psychological reality of theoretical constructs, such as empty categories.

LING 451 Acquisition of Phonology.  
(3) (Prerequisite: LING 331; a course in language acquisition highly recommended.) Exploration of the development of prosodic and segmental structure in children, with an emphasis on current theoretically-informed work in this area.

LING 455 Second Language Syntax.  
(3) (Prerequisite: LING 301 or LING 371.) The nature of the linguistic knowledge acquired by second language learners, focussing on description and explanation of second language syntax and morphology.

LING 480D1 (3), LING 480D2 (3) Honours Thesis.  
(Requirement: Not open to students who have taken LING 482.) (Students must register for both LING 480D1 and LING 480D2.) (No credit will be given for this course unless both LING 480D1 and LING 480D2 are successfully completed in consecutive terms) (LING 480D1 and LING 480D2 together are equivalent to LING 480.) Honours thesis.

LING 480N1 (3) (Students must also register for LING 480N2.) (No credit...
will be given for this course unless both LING 480N1 and LING 480N2 are successfully completed in the same calendar year.) Honours thesis.  

**LING 480N2**  
(3) See LING 480N1 for course description.  

**LING 481D1 (1.5), LING 481D2 (1.5) Joint Honours Thesis.** (Students must register for both LING 481D1 and LING 481D2.) (No credit will be given for this course unless both LING 481D1 and LING 481D2 are successfully completed in consecutive terms).  

**LING 483 Preseminar 1.**  
(3) (Fall or Winter) (Restriction: Permission of instructor.) Intensive study of a selected field or topic.  

**LING 484 Preseminar 2.**  
(3) (Fall or Winter) (Restriction: Permission of instructor.) Intensive study of a selected field or topic.  

**LING 488 Independent Study 1.**  
(3) (Fall or Winter) (Restriction: Permission of instructor.) Independent study of a selected field or topic.  

**LING 489 Independent Study 2.**  
(3) (Fall or Winter) (Restriction: Permission of instructor.) Independent study of a selected field or topic.  

**LING 520 Sociolinguistics 2.**  
(3) (Fall) (Prerequisite: LING 320 or permission of instructor.) A seminar on variationist "micro-sociolinguistics", including a survey of the most important primary literature on sociolinguistic variation and introduction to sociolinguistic fieldwork.  

**LING 521 Dialectology.**  
(3) (Fall) (Prerequisite: LING 230 and LING 320) An introduction to the theory and methods of dialectology (the study of regional variation in language) with an emphasis on connections with linguistic theory. Students will also acquire a practical knowledge of major differences among dialects of English, and will gain hands-on experience in the planning, implementation and analysis of a dialect survey.  

**LING 525 Topics in Historical Linguistics.**  
(3) (Fall) (Restriction: Not open to students who have taken LING 541.) (Prerequisites: LING 371, LING 425 and LING 571, which can be taken concurrently, or permission of the instructor.) Investigation of language change in terms of the implications for a theory of grammar and its relationship to language acquisition; review of some recent research in the area of morphological and syntactic change.  

**LING 531 Phonology.**  
(3) (Winter) (Restriction: Not open to students who have taken LING 530.) (Prerequisites: LING 331 and permission of instructor.) Exploration of current issues in phonology.  

**LING 555 Language Acquisition 2.**  
(3) (Winter) (Prerequisites: LING 355 and LING 371 and permission of instructor) A detailed overview of recent experimental work on first language acquisition of syntax within the principles and parameters framework, concentrating on both theoretical and methodological issues.  

**LING 560 Formal Methods in Linguistics.**  
(3) (Fall) (Prerequisite: LING 370 and permission of instructor) (Restriction: Not open to students who have taken MATH 240.) This course presents the formal methods used in the study of language (namely, the theories of sets, relations, functions, partial orders, and lattices, as well as the principle of mathematical induction).  

**LING 565 Pragmatics.**  
(3) (Winter) (Prerequisites: LING 370 and PHIL 210 or permission of the instructor) Study of the relationship between language and its contexts of use. Topics to be examined include deictis, presupposition and implicature.  

**LING 571 Syntax 2.**  
(3) (Fall) (Prerequisite: LING 371) This course extends and refines the theory of grammar developed in LING 371, while introducing some primary literature and developments (in certain modules of the grammar such as phrase structure, wh-movement, and binding).  

**LING 590 Language Acquisition and Breakdown.**  
(3) (Prerequisites: LING 371 and either LING 355 or LING 390) Theoretical and experimental perspectives on an imperfect language faculty, in the context of current linguistic theory and state-of-the-art experimental methods and techniques. Comparison of linguistic abilities of normally developing children, children with language disorders (e.g., SLI), and adults with disrupted linguistic abilities (e.g., aphasic patients).  

**MEST-Middle East Studies**  
Offered by: Arts - Dean's Office  

**MEST 496 Independent Reading and Office.**  
(3)  

**MUAR-Music-Arts Faculty**  
Offered by: Theory  

**MUAR 201 Basic Materials: Western Music.**  
(3) (3 hours) A combination of elementary theory and ear training (sightsinging and aural recognition), and basic piano skills. Topics include: notation of pitch and rhythm, intervals, scales and modes, concept of key, triads and seventh chords, introductory melody and accompaniment writing.  

**MUAR 202 Basic Materials: Western Music 2.**  
(3) (3 hours) (Prerequisite: MUAR 201 or permission of instructor) Integrated course in music theory with creative applications of acquired skills. Analysis and writing: concepts of melodic organization, elementary harmonic progressions, two-part contrapuntal techniques, fundamental formal procedures, examination of popular song and jazz. Development of individual skills: intermediate sightsinging, aural recognition, keyboard techniques, small group performance in class.  

**MUAR 211 The Art of Listening.**  
(3) (3 hours) An introduction to the major forms and styles in Western music from the baroque to the present, with emphasis on guided listening in the classroom. The ability to read music is not a prerequisite.  

**MUAR 260 Basic Materials of Jazz.**  
(3) Study of contemporary and traditional jazz improvisation. Exploration of harmonic framework of music from the jazz repertoire (melody, voice leading, traditional jazz writing). Characteristic sounds of predominant scales and modes and their potential uses. Common song forms and their harmonic devices.  

**MUAR 374 Special Topics in Music.**  
(3) (3 hours) A course whose topics will correspond to special historical events and their associated musical, political, and cultural contexts.  

**MUAR 381 Music in Gothic and Renaissance Culture.**  
(3) In introduction to European music in late Medieval and Renaissance society: the Crusades, the age of Columbus, the
Reformation, Shakespeare, England. Music in the daily lives of courtiers, clergy and commoners - music as courtly pastime, music for devotion in cathedrals, domestic music in towns and cities. Selected masterworks will be studied.

- **MUAR 384 Romanticism and the Piano.**
  (3) (Prerequisite: MUAR 201 or MUAR 211 or permission of instructor) A survey of nineteenth-century European piano music: the piano virtuoso as cult figure, the social functions of the piano, women and the piano, and developing Romantic sensibilities as expressed in piano music throughout the century. Repertoire may include works by Beethoven, Chopin, Liszt, and Rachmaninoff, among others.

- **MUAR 385 Music of the Avant-Garde.**
  (3) (Prerequisite: MUAR 201 or MUAR 211) An historical overview of two major genres in the current concert repertoire: baroque foundations, the Viennese achievement, Beethoven’s influence, visionaries and nationalists after 1850, cross-currents in the twentieth century.

- **MUAR 389 The Opera.**
  (3) (Prerequisite: MUAR 201 or MUAR 211) A survey of opera from c.1600 to the present. Opera as ritual, opera as spectacle, opera as catharsis, opera as business, opera and its literary models. The continuing relevance of the operatic experience today.

- **MUAR 392 Popular Music after 1945.**
  (3) (Prerequisite: MUAR 201 or MUAR 211 or permission of instructor) An historical survey of major artists, genres, and styles in the most widespread traditions of postwar commercial music. The course will include practice in techniques of listening, discussion of the shaping institutions of commercial music, and consideration of the interaction of musical style and culture.

- **MUAR 393 Introduction to Jazz.**
  (3) (Prerequisite: MUAR 201 or MUAR 211) A survey of development of jazz from its late 19th-century origins in America to the present day, with an introduction to musical concepts relevant to the genre and consideration of sociocultural issues.

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**NAST-North American Studies**

Offered by: Arts - Dean’s Office

**NAST 471 Topics in North American Studies 1.**
(3) (See Adviser)

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**PHIL-Philosophy**

**PHIL 200 Introduction to Philosophy 1.**
(3) (Philosophy students may use either PHIL 200 or PHIL 201 towards their program requirements, but not both. Students may, however, take both for credit (using the second as an elective), as the content in PHIL 201 does not overlap with PHIL 200) A course treating some of the central problems of philosophy: the mind-body problem, freedom, scepticism and certainty, fate, time, and the existence of God.

**PHIL 201 Introduction to Philosophy 2.**
(3) (Philosophy students may use either PHIL 200 or PHIL 201 towards their program requirements, but not both. Students may, however, take both for credit (using the second as an elective), as the content in PHIL 201 does not overlap with PHIL 200) An introduction to some of the major problems of philosophy. This course does not duplicate PHIL 200.

**PHIL 210 Introduction to Deductive Logic 1.**
(3) (Restriction: Not open to students who are taking or have taken MATH 318) An introduction to propositional and predicate logic; formalization of arguments, truth tables, systems of deduction, elementary metastructures, and related topics.

**PHIL 220 Introduction to History and Philosophy of Science 1.**
(3) A survey of the rise of the scientific outlook from the ancient Greeks to the Scientific Revolution in the Seventeenth Century.

**PHIL 221 Introduction to History and Philosophy of Science 2.**
(3) A survey of the development of modern science since the Eighteenth Century.

**PHIL 230 Introduction to Moral Philosophy 1.**
(3) A survey of a number of historically important and influential theories. Philosophers to be discussed may include Aristotle, Hume, Kant, Bentham, Mill, and Moore.

**PHIL 237 Contemporary Moral Issues.**
(3) An introductory discussion of central ethical questions (the value of persons, or the relationship of rights and utilities, for example) through the investigation of currently disputed social and political issues. Specific issues to be discussed may include pornography and censorship, affirmative action, civil disobedience, punishment, abortion, and euthanasia.

**PHIL 240 Political Philosophy 1.**
(3) An introduction to contemporary philosophy of politics by concentrating on a number of contested concepts, such as freedom, justice and equality, in contemporary political philosophy and practice.

**PHIL 242 Introduction to Feminist Theory.**
(3) An introduction to feminist theory as political theory. Emphasis is placed on the plurality of analyses and proposals that constitute contemporary feminist thought. Some of the following are considered: liberal feminism, Marxist feminism, radical feminism, postmodern feminism, francophone feminism, and the contributions to feminist theory by women of colour and lesbians.

**PHIL 301 Philosophical Fundamentals.**
(3) (Prerequisites: two previous courses in philosophy, one of which must be PHIL 210 or written consent of the Department) (Restriction: Open only to and required of Philosophy Honours and Joint Honours students) An intensive study of basic philosophical skills; reading, writing, analysis, and argumentation.

**PHIL 304 Chomsky.**
(3) Philosophical aspects of Chomsky’s contribution to psychology, linguistic theory, theories of human nature, and to politics.

**PHIL 306 Philosophy of Mind.**
(3) A survey of major positions of the mind-body problem, focusing on such questions as: Do we have minds and bodies? Can minds affect bodies? Is mind identical to body? If so, in what sense “identical”? Can physical bodies be conscious.

**PHIL 310 Intermediate Logic.**
(3) (Prerequisite: PHIL 210 or equivalent) A second course

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† Professional Practice (Stage) in Dietetics involving special prerequisites
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in Logic. NB. The course will be technical in nature, and some mathematical aptitude is essential. The emphasis is on the expressive properties of standard logical systems, including implications for the philosophy of mathematics. We will study the Completeness of First-Order Logic, then the 'limitative' theorems of Tarski and Gödel.

**PHIL 332 Philosophy of Religion 1.**
(3)

**PHIL 334 Ethics 1.**
(3) (Prerequisite: one of PHIL 230, PHIL 237, PHIL 242, or written permission of the instructor) A course focusing on such central questions of ethical theory as: Why be moral? Are moral judgments subjective? On what is morality based? What is the nature of the good.

● **PHIL 336 Aesthetics.**
(3) An introduction to issues central to aesthetic theory; the nature of aesthetic judgment, perception of the aesthetic object, the nature of the art object.

● **PHIL 340 Philosophy of the Social Sciences 1.**
(3) An introduction to foundational issues in the social sciences and to the broader implications of these issues for both philosophy and science. Topics to be discussed may include methodology in natural and social science, objectivity in the social sciences, and cultural relativism.

**PHIL 341 Philosophy of Science 1.**
(3) A discussion of philosophical problems as they arise in the context of scientific practice and enquiry. Such issues as the philosophical presuppositions of the physical and social sciences, the nature of scientific method and its epistemological implications will be addressed.

**PHIL 343 Biomedical Ethics.**
(3) An investigation of ethical issues as they arise in the practice of medicine (informed consent, e.g.) or in the application of medical technology (in vitro fertilization, euthanasia, e.g.)

**PHIL 345 Greek Political Theory.**
(3) (Restriction: Not open to students who have taken POLI 333) An examination of the ethical and political theories of ancient Greece, especially those of Plato and Aristotle.

**PHIL 348 Philosophy of Law 1.**
(3) (Restriction: This course is intended for students with a non-professional interest in law, as well as for those considering law as a profession) A discussion of the nature of justice and law, and of the relationship between them.

● **PHIL 350 History and Philosophy of Ancient Science.**
(3) Topics in ancient pure mathematics (geometry and number theory), “mixed mathematics” (astronomy, music theory, optics, mechanics), and/or natural science (including medicine), studied with a view to philosophical issues raised by the content of ancient science and/or by the logic of scientific argument.

● **PHIL 353 The Presocratic Philosophers.**
(3) An examination of the surviving fragments of the presocratic philosophers and schools of philosophy, as well as later reports of their views.

**PHIL 354 Plato.**
(3) An examination of some of the philosophical problems (those in logic, epistemology, metaphysics, and ethics, e.g.) found in a selection of Plato’s dialogues.

**PHIL 355 Aristotle.**
(3) An examination of selected works by Aristotle. The course considers issues in moral philosophy as well as those found in the logical treatises, the Physics and Metaphysics, and in the philosophy of mind.

● **PHIL 356 Early Medieval Philosophy.**
(3) An examination of selected works in the Christian, Islamic and Jewish traditions. Topics in moral and political philosophy, logic and metaphysics, philosophical psychology and epistemology, philosophy of science, and philosophical theology may be discussed.

● **PHIL 357 Late Medieval and Renaissance Philosophy.**
(3) A discussion of the works of selected philosophers from the late Middle Ages and Renaissance. Topics for discussion may include God’s knowledge of future contingents, issues in medieval logic, political and moral issues, and philosophical theology.

**PHIL 360 17th Century Philosophy.**
(3) An examination of the work of such seventeenth-century philosophers as Descartes, Hobbes, Gassendi, Malebranche, Leibniz, and the Cambridge Platonists.

**PHIL 361 18th Century Philosophy.**
(3) A survey of eighteenth century philosophy, especially British philosophy. Attention is given to fundamental metaphysical, epistemological, and moral issues as reflected in the work of such philosophers as Locke, Shaftesbury, Berkeley, Hutcheson, Butler, Hume and Reid.

**PHIL 366 18th and Early 19th Century German Philosophy.**
(3) (Prerequisite: PHIL 360 or PHIL 361 is recommended) An examination of the works of such philosophers as Kant, Fichte, Jacobi, Schelling, and Hegel.

**PHIL 367 19th Century Philosophy.**
(3) (Prerequisite: A previous course in philosophy is recommended) An examination of the works of such 19th century philosophers as Mach, Helmholtz, Dedekind, Frege, Marx, Kierkegaard, Schopenhauer, Nietzsche, Mill and Bradley.

**PHIL 370 Problems in Analytic Philosophy.**
(3) An introduction to the central questions in the analytic tradition, through the works of important early figures in that tradition. Philosophers to be discussed may include: Frege, Russell, Wittgenstein, Ramsey, Carnap and the "logical positivists".

**PHIL 375 Existentialism.**
(3) (Prerequisite: one course in philosophy) This course will examine the nature of existentialist thought as represented in various philosophical and literary texts. Particular themes to be examined include freedom, alienation, responsibility and choice, and the nature of self.

**PHIL 397 Tutorial.**
(3) (Restriction: Open to second year Full Honours students in Philosophy and to other students, with consent of the Department)

**PHIL 398 Tutorials.**
(3) (Restriction: Open to second year Full Honours students in Philosophy and to other students, with consent of the Department)

**PHIL 410 Advanced Topics in Logic 1.**
(3) (Prerequisite: PHIL 310 or equivalent) A course focusing on central results in logic that are of philosophical significance.

**PHIL 411 Topics in Philosophy of Logic and Mathematics.**
(3) (Prerequisites: PHIL 210 or the equivalent, and one intermediate course in philosophy) A course focusing on some philosophical issue (e.g., the nature of numbers or the relation of truth to provability) as it arises in the study of mathematics and logic.

**PHIL 415 Philosophy of Language.**
(3) (Prerequisites: PHIL 210 or equivalent and one

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PHIL 419 Epistemology.
(3) (Prerequisite: PHIL 210 or equivalent and one intermediate course in philosophy) A discussion of central topics in the theory of knowledge. The questions addressed in the course may include: What is knowledge? Do we have any knowledge? What is the relation between knowledge and belief? When is belief justified? Is all knowledge conscious knowledge.

PHIL 421 Metaphysics.
(3) (Prerequisite: PHIL 210 or equivalent and one intermediate course in philosophy) An examination of central questions in metaphysics in their historical and contemporary forms. Topics may be chosen from such issues as: personal identity, the nature of space and time, the nature of events and properties, possible worlds, and the problem of realism.

PHIL 422 Philosophy of Religion 2.
(3) Open to third year Joint Honours students in Philosophy, and to students in Philosophy, and to students in the Faculty of Education who have taken POLI 351 (or an equivalent). An examination of some of the major post-Aristotelian schools of philosophy. Texts from the Peripatetic, Stoic, Epicurean, Sceptical, Platonic, and medical traditions may be considered. Topics in logic, ethics, physics, epistemology, and metaphysics will be addressed.

PHIL 453 Ancient Metaphysics and Natural Philosophy.
(3) An examination of central themes of ancient metaphysics and/or natural philosophy as treated by two or more contrasting philosophers or philosophical traditions - probably including Plato and/or Aristotle, and possibly some Hellenistic or post-Hellenistic schools.

PHIL 454 Ancient Moral Theory.
(3) An examination of central themes of ancient moral theory as treated by two or more contrasting philosophers or philosophical traditions - probably including Plato and/or Aristotle, and possibly some Hellenistic or post-Hellenistic schools.

PHIL 460 Major Philosophers 2.
(3) An examination of central themes of ancient moral theory as treated by two or more contrasting philosophers or philosophical traditions - probably including Plato and/or Aristotle, and possibly some Hellenistic or post-Hellenistic schools.

PHIL 470 Topics in Contemporary Analytic Philosophy.
(3) (Prerequisite: PHIL 370, PHIL 415 or written permission of instructor) An advanced discussion of issues in the history of philosophy.

PHIL 474 Phenomenology.
(3) (Prerequisite: one intermediate course in philosophy) A study of phenomenology from a historical and thematic perspective. The course will typically involve the study of central thinkers such as Husserl, Heidegger, or Merleau-Ponty, with an examination of the nature and development of the phenomenological movement.

PHIL 475 Topics in Contemporary European Philosophy.
(3) (Prerequisite: one intermediate course in philosophy) Advanced discussion of issues in the history of philosophy.

PHIL 480 Topics in the History of Philosophy.
(3) (Prerequisite: one intermediate course in philosophy) Advanced discussion of one or more themes addressed in seminars or courses on the history of philosophy.

PHIL 481 Topics in Philosophy.
(3) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

PHIL 497N1 Tutorial.
(1.5) (Students must also register for PHIL 497N2) (No credit will be given for this course unless both PHIL 497N1 and PHIL 497N2 are successfully completed in a twelve month period) (PHIL 497N1 and PHIL 497N2 together are equivalent to PHIL 497) Open to third year Full Honours students in Philosophy, and to students in Philosophy, and to Department.

PHIL 497N2 Tutorial.
(1.5) (Prerequisite: PHIL 497N1) (No credit will be given for this course unless both PHIL 497N1 and PHIL 497N2 are successfully completed in a twelve month period) (PHIL 497N1 and PHIL 497N2 together are equivalent to PHIL 497) See PHIL 497N1 for course description.

PHIL 498 Tutorials.
(3) Open to third year Joint Honours students in Philosophy, and...
to other students, with consent of the Department.

- **PHIL 498N1 Tutorials.**
  (1.5) (Students must also register for PHIL 498N2) (No credit will be given for this course unless both PHIL 498N1 and PHIL 498N2 are successfully completed in a twelve month period) (PHIL 498N1 and PHIL 498N2 together are equivalent to PHIL 498) Open to third year Joint Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 498N2 Tutorials.**
  (1.5) (Prerequisite: PHIL 498N1) (No credit will be given for this course unless both PHIL 498N1 and PHIL 498N2 are successfully completed in a twelve month period) (PHIL 498N1 and PHIL 498N2 together are equivalent to PHIL 498) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 499 Tutorials.**
  (6) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 499D1 (3), PHIL 499D2 (3) Tutorials.**
  (Students must register for both PHIL 499D1 and PHIL 499D2.) (No credit will be given for this course unless both PHIL 499D1 and PHIL 499D2 are successfully completed in consecutive terms) (PHIL 499D1 and PHIL 499D2 together are equivalent to PHIL 499) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 499N1 Tutorials.**
  (3) (Students must also register for PHIL 499N2) (No credit will be given for this course unless both PHIL 499N1 and PHIL 499N2 are successfully completed in a twelve month period) (PHIL 499N1 and PHIL 499N2 together are equivalent to PHIL 499) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 499N2 Tutorials.**
  (3) (Prerequisite: PHIL 499N1) (No credit will be given for this course unless both PHIL 499N1 and PHIL 499N2 are successfully completed in a twelve month period) (PHIL 499N1 and PHIL 499N2 together are equivalent to PHIL 499) Open to third year Full Honours students in Philosophy, and to other students, with consent of the Department.

- **PHIL 506 Seminar: Philosophy of Mind.**
  (3) (Prerequisite: PHIL 306.) (Restriction: Open only to students as indicated above and to Cognitive Science Minors) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department.) An advanced course devoted to specific topics in the philosophy of mind.

- **PHIL 507 Seminar: Cognitive Science.**
  (3) (Prerequisites: PHIL 306, PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic of philosophical interest arising from contemporary empirical work in cognitive science.

- **PHIL 510 Seminar: Advanced Logic 2.**
  (3) (Prerequisite: PHIL 310 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

- **PHIL 511 Seminar: Philosophy of Logic and Mathematics.**
  (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

- **PHIL 515 Seminar: Philosophy of Language.**
  (3) (Prerequisite: PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in the philosophy of language.

- **PHIL 519 Seminar: Epistemology.**
  (3) (Prerequisite: PHIL 420 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in epistemology.

- **PHIL 521 Seminar: Metaphysics.**
  (3) (Prerequisite: PHIL 421 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in metaphysics.

- **PHIL 534 Seminar: Ethics.**
  (3) (Prerequisite: PHIL 334 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a specific topic in the area of aesthetics and/or the philosophy of art.

- **PHIL 540 Sem: Philosophy and Social Sciences.**
  (3)

- **PHIL 541 Seminar: Philosophy of Science.**
  (3) (Prerequisite: PHIL 441 or other requirements specified by the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in the philosophy of science.

- **PHIL 543 Seminar: Medical Ethics.**
  (3) (Prerequisite: PHIL 343 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular philosophical problem as it arises in the context of medical practice or the application of medical technology.

- **PHIL 544 Political Theory.**
  (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

- **PHIL 548 Seminar: Philosophy of Law.**
  (3) (Prerequisite: PHIL 348 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular topic in
the philosophy of law. Subject varies from year to year.

- PHIL 551 Seminar: Ancient Philosophy 2.
  (3) (Prerequisite: at least one course in ancient philosophy and the specific requirements of individual instructors)
  (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular topic in medieval philosophy. Subject varies from year to year.

- PHIL 556 Seminar: Medieval Philosophy.
  (3) (Prerequisite: PHIL 345 or PHIL 357 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on a seventeenth-century philosopher or philosophical issue.

- PHIL 561 Seminar: 18th Century Philosophy.
  (3) (Prerequisite: PHIL 361 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on an eighteenth-century philosopher or philosophical issue.

- PHIL 567 Seminar: 19th Century Philosophy.
  (3) (Prerequisite: PHIL 365 or PHIL 367 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on a nineteenth-century philosopher or philosophical issue.

- PHIL 570 Seminar: Contemporary Analytic Philosophy.
  (3) (Prerequisite: PHIL 370 or PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on contemporary analytic philosopher, or some issue of central importance in the analytic tradition. Subject varies from year to year.

- PHIL 575 Seminar: Contemporary European Philosophy.
  (3) (Prerequisite: PHIL 375 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on contemporary European philosophy or some important issue in the Continental tradition.

  (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

- PHIL 581 Seminar: Problems of Philosophy.
  (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

- PHIL 590 Seminar: Special Topics in Philosophy.
  (3) (Prerequisites: one course in philosophy) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) Psychoanalysis: a critical examination. Depending on the interests of the class, areas covered would include: psychoanalytic epistemology, psychoanalysis and the pre-socratics, psychoanalysis and tragedy, reasons versus causes in psychoanalysis, hermeneutics, psychoanalytic truth, self-deception, irrationality, paradox, creativity, internal object world and its relation to external objects.

PHWR-Philosophy & Western Religions

Offered by: Arts - Dean’s Office

- PHWR 300 Philosophy & Western Religions 1.
  (3) (Restrictions: Open to students in Philosophy & Western Religions, Islamic Studies, Jewish Studies, Philosophy, Religious Studies, and to students of other units with permission of the instructor.) Introduction to the encounter between philosophy and the Abrahamic religions, Judaism, Christianity, and Islam, from the 13th Century to the Enlightenment, covering the philosophical sources (Plato to Neoplatonism), the religious sources (Bible to Qu’ran), and their manifold syntheses in the thought of theologians, philosophers and mystics within the three religious traditions.

- PHWR 301 Philosophy & Western Religions 2.
  (3) (Prerequisite: PHWR 300 or permission of the instructor.) (Restrictions: Open to students in Philosophy & Western Religions, Islamic Studies, Jewish Studies, Philosophy, Religious Studies, and to students of other units with permission of the instructor.) Introduction to the encounter between philosophy and the three Abrahamic religions, Judaism, Christianity, and Islam, from the 13th Century to the Enlightenment, covering the manifold syntheses of philosophical and religious ideas in thinkers from the Later Middle Ages, the Renaissance, the 17th Century and the Enlightenment.

- PHWR 400 Joint Honours/Honours Tutorial.
  (3) (Restrictions: Open to Joint Honours and Honours students in Philosophy & Western Religions in their final year.) Guided reading and research for Joint Honours and Honours students in their final year.

  (3) (Restrictions: Open to Honours students in Philosophy & Western Religions in their final year.) Initial guided reading and research for Honours students in their final year.

  (3) (Prerequisite: PHWR 401) (Restrictions: Open to Honours students in Philosophy & Western Religions in their final year.) Final guided reading and research for Honours students in their final year.

- PHWR 500D1 (1.5), PHWR 500D2 (1.5) Interdisciplinary Seminar.
  (Prerequisite: PHWR 300 or permission of an advisor.)
  (Restrictions: Open to Joint Honours and Honours students in Philosophy & Western Religions in their final year, as well as students of related units with permission of an advisor.)
  (Students must register for both PHWR 500D1 and PHWR 500D2.) (No credit will be given for this course unless both PHWR 500D1 and PHWR 500D2 are successfully completed in consecutive terms) Advanced undergraduate students and faculty members and graduate students conducting research in relevant areas of the academic field will discuss a specific topic (e.g., Platonism, Aristotelianism, Renaissance, Mysticism, God, Prophecy, Exegesis etc.) in an interdisciplinary perspective.
POLI-Political Science

Offered by: Political Science

POLI 211 Comparative Government and Politics.
(3) (Fall) (Note: The field is Comparative Politics in Developed Areas.) Introduction to the study of comparative politics as it applies both to the developed world and developing countries. The course presents the basic concepts and approaches used in the field of comparative politics and it focuses on patterns of similarity and difference in a way political institutions and processes are structured in a wide variety of national contexts.

POLI 212 Government and Politics - Developed World.
(3) (Winter) (Note: The field is Comparative Politics in Developed Areas.) The nature of politics in a few selected nations of the industrialized world, applying the concepts introduced in POLI 211 to specific national contexts. Countries studied will be drawn principally from Europe and North America.

POLI 221 Government of Canada.
(3) (Fall) (Note: The field is Canadian Politics.) An examination of the central governmental institutions, including parliament, federalism, and the judiciary.

POLI 222 Political Process and Behaviour in Canada.
(3) (Winter) (Note: The field is Canadian Politics.) An introduction to contemporary political life in Canada that examines how demands are identified and transmitted through the political systems. Emphasis will be placed on: the Canadian political culture; socialization and political participation; the electoral system; elections and voting; the role and structure of political parties; and the influence of organized interest.

POLI 226 La vie politique québécoise.
(3) (Restriction: An ability to understand and read French is required; writing and speaking ability are not.) (This course is offered in English and French in alternate years. For 2006-07 it will be offered in French.) (Note: The field is Canadian Politics.) Une introduction à la vie politique québécoise à travers l'étude des institutions, des idéologies et des comportements politiques. Une attention particulière sera accordée à la structure et aux changements dans le système politique québécoise.

POLI 227 Developing Areas/Introduction.
(3) (Winter) (Note: The field is Comparative Politics in Developing Areas.) An introduction to Third World politics. A comparative examination of the legacies of colonialism, the achievement of independence, and contemporary dynamics of political and socio-economic development in Africa, Asia and Latin America. Topics include modernization, dependency, state-building and national integration, revolution, the role of the military, and democratization.

POLI 231 Introduction to Political Theory.
(3) (Winter) (Note: The field is Political Theory.) The course introduces students to political theory through critical examination of classic texts in the history of political thought. In addition to gaining an understanding of several different traditions of political thought, students are encouraged to develop their skills in textual interpretation, critical reasoning, and essay-writing.

POLI 232 Modern Political Thought.
(3) (Fall) (Note: The field is Political Theory.) The course introduces students to modern political thought through a critical examination of some of the key political ideologies and concepts of contemporary political discourse. Themes vary from year to year, and may include liberalism, conservatism, socialism, feminism, democracy, power, justice, and freedom.

POLI 243 International Politics of Economic Relations.
(3) (Winter) (Note: The field is International Politics.) An introduction to international relations, through examples drawn from international political economy. The emphasis will be on the politics of trade and international monetary relations.

POLI 244 International Politics: State Behaviour.
(3) (Fall) (Note: The field is International Politics.) Offers a comprehensive introduction to the behaviour of nation states. Explores how states make foreign policy decisions and what motivates their behaviour. Other covered topics include the military and economic dimensions of state behaviour, conflict, cooperation, interdependence, integration, globalisation, and change in the international system.

POLI 300D1 (3), POLI 300D2 (3) Developing Areas/Revolution.
(Prerequisite: A basic course in Comparative Politics or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) (Students must register for both POLI 300D1 and POLI 300D2.) (No credit will be given for this course unless both POLI 300D1 and POLI 300D2 are successfully completed in consecutive terms) The post WW II revolutionary process in the third world. Attention to the nature of the revolutionary process in the struggle for national liberation both where this approach succeeded and failed. Examples drawn from Asia, Africa and Latin America. Students will be required to do a thorough case study.

POLI 311 Techniques of Empirical Research.
(3) An introduction to empirical political research. Among the topics considered are the formulation of research problems, the selection of samples, interviewing, questionnaire construction, and the analysis and interpretation of data.

POLI 315 Approaches to Political Economy.
(3) (Prerequisite: POLI 211 or POLI 212 and one preferably university-level economics course) (Note: The field is Comparative Politics in Developed Areas.) Influential traditions in political economy. Focus on how these attempted to integrate the economic and political. Application of economic analysis to social and political phenomena ("social choice"). Recent efforts to combine the deductive logic of economics with comparative empirical analysis of actors in different institutional settings. Extension to the international political economy.

POLI 318 Comparative Local Government.
(3) (Prerequisite: POLI 211 or POLI 212 or written permission of instructor) (Note: The field is Comparative Politics in Developed Areas and Canadian Politics.) An examination of the organization and conduct of local government in Canada, the United States, and selected European countries. Attention to theories of local government, the criteria for comparative analysis, the provision of public goods and bads, urban political patterns and the constitution of new institutional arrangements to deal with "urban crises" in North America.

POLI 319 Politics of Latin America.
(3) (Prerequisite: A basic course in Comparative Politics or a course on the region or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) This course will deal with the dynamics of political change in Latin America today.

POLI 320 Issues in Canadian Democracy.
(3) (Prerequisite: At least one other course in Canadian or political science or consent of instructor)
Comparative Government and Politics or permission of instructor) (Note: The field is Canadian Politics.) Critical analysis of selected issues and debates in Canadian politics, including citizen participation, electoral system effects, party financing, office-seeking, approaches to representation, and direct democracy and non-party alternatives. Topics are examined from both the perspective of the general population and the specific experience of women and ethno-racial minorities.

POLI 321 Issues: Canadian Public Policy.
(3) (Prerequisite: at least one other course in Canadian or Comparative Politics) (Note: The field is Canadian Politics.) The Canadian political process through an analysis of critical policy issues in community development, welfare state, education, and institutional reforms in public service delivery systems. Diagnostic and prescriptive interpretations of public choices in a federal-parliamentary regime.

POLI 322 Political Change in South Asia.
(3) (Prerequisite: A basic course in Comparative Politics or a course on the region or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) Political change in South Asia in late colonial and post-colonial periods. Issues covered include social and cultural history; colonial rule, nationalism and state formation; democratic and authoritarian regimes; economic policies and consequences; challenges to patterns of dominance and national boundaries; prospects for democracy, prosperity and equality.

● POLI 323 Developing Areas/China and Japan.
(3) (Winter) (Prerequisite: A basic course in Comparative Politics or a course on the region or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) The government and politics of Asian states south of the Sahara with reference to the ideological and institutional setting as influenced by the forces of tradition and the impact of Western colonialism.

POLI 325D1 (3), POLI 325D2 (3) Government and Politics: United States.
(Prerequisite: POLI 211 or POLI 212 or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) Students must register for both POLI 325D1 and POLI 325D2.) (No credit will be given for this course unless both POLI 325D1 and POLI 325D2 are successfully completed in consecutive terms) A survey of the American political system, with emphasis on the constitutional and philosophical setting, the institutions and their interactions, the political process, public policy issues, and political change.

● POLI 326 Provincial Politics.
(3) (Prerequisite: A basic course in Canadian Government or Politics or permission of the instructor) (Note: The field is Canadian Politics.) The effect of regional and provincial politics on the operation of political parties and the institutions of government; the effect of institutional modernization on provincial governments; the role of provincial sub-systems within the Canadian political system.

● POLI 328 Modern Politics in Western Europe.
(3) (Prerequisites: POLI 211 or POLI 212, or POLI 227) (Note: The field is Comparative Politics in Developing Areas.) This course seeks an understanding of the similarities and differences between the political systems of contemporary Western Europe by examining the different ways in which these systems have taken shape over time. The political development of Western Europe will be conceptualized as a series of critical phases beginning with the formation of the modern dynastic state in the 15th Century and concluding with the "postwar settlement" of the late 1940s.

POLI 329 Russian and Soviet Politics.
(3) (Prerequisite: POLI 211, POLI 212, or written consent of instructor; Soviet history helpful but not required) (Note: The field is Comparative Politics in Developing Areas.) This course explores the institutions of the Soviet system and pressures to reform this system. Examines specific changes made to the system through democratization and market reform. Compares these changes to similar transitions in other countries to assess possible twists in Russian's political future.

POLI 333 Western Political Theory 1.
(3) (Prerequisite: POLI 231 or written permission of the instructor) (Note: The field is Western Political Theory.) The major themes and writers in the political theory of classical antiquity. The political ideas of Thucydides, Plato, Aristotle, and the Hellenistic philosophers will be explored through the significant texts of this period.

POLI 334 Western Political Theory 2.
(3) (Prerequisite: POLI 333 or written permission of the instructor) (Note: The field is Western Political Theory.) Medieval and renaissance political philosophy, from Saint Augustine to Sir Thomas More. Scholastic and neo-scholastic political thought, natural law and natural rights, as well as civic and northern humanism, republicanism and liberty. Twentieth century work on similar concepts will be used.

● POLI 336 Le Québec et le Canada.
(3) (Restrictions: An ability to understand and read French is required; writing and speculative ability are not. Not open to students who have taken QCST 336.) (Note: The field is Canadian Politics.) Comment les Canadiens anglais et les Québécois se perçoivent-ils? Les différences culturelles entre les deux groupes. Les relations politiques et économiques entre les deux groupes. L'impact de la Révolution Tranquille. La place des francophones et des anglophones dans la vie collective. Les projets de réaménagement du cadre politique.

● POLI 337 Canadian Public Administration.
(3) (Prerequisite: at least one other course in Canadian government or politics) (Note: The field is Canadian Politics.) Organization and practice of public administration at the federal provincial and local level in Canada. Contrasting theories/techniques of public administration and policy, organization of field offices for delivery of essential public services, governments as employers, and institutional and policy changes to resolve crisis inherent in "the paradoxical view of bureaucracy".

● POLI 339 Comparative Developed: Topics 1.
(3) (Prerequisite: a basic course in Comparative Politics or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) Selected aspects of politics in developed countries. Topic for 2002-03: Canada's Relations with the United States and Mexico.

POLI 340 Developing Areas/Middle East.
(3) (Prerequisite: A basic course in Comparative Politics or a
course on the region or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) An examination of the societies, political forces and regimes of selected countries of the Eastern Arab world (Egypt, Syria, Lebanon, Jordan, Palestine, Saudi Arabia).

POLI 341 Foreign Policy: The Middle East.
(3) (Prerequisite: A 200- or 300-level course in International Relations or Middle East politics or permission of the instructor) (Note: The field is International Politics.) An examination of the changing regional security environment and the evolving foreign policies and relationships of Arab states in three areas - relations with non-Arab regional powers (Israel, Iran), inter-Arab relations, Great Power relations. The course will focus particularly on Egypt, Syria, Iraq and Saudi Arabia.

POLI 342 Canadian Foreign Policy.

POLI 344 Foreign Policy: Europe.
(3) (Prerequisite: A basic course in International or European Politics or written consent of instructor. POLI 346 would be a helpful preparation for this course) (Note: The field is International Politics.) An examination of the evolution of the European system since 1945.

POLI 345 International Organization.
(3) (Prerequisite: A basic course in International Politics or written consent of instructor) (Note: The field is International Politics.) Focus on the United Nations - its performance and problems. Emphasis on two of its roles: as an agent for conflict management and as a source of pressure to redistribute values, wealth and skills.

POLI 346 American Foreign Policy.
(3) (Prerequisite: POLI 244 or a course in American history) (Note: The field is International Politics.) An exploration of American foreign policy from 1945 to the present. Topics to be addressed are the origins of the Cold War, deterrence, strategy and arms control, American intervention in Latin America and Vietnam, U.S. policy in the Post Cold War era - Gulf War, Haiti, Somalia, Yugoslavia and relations with Japan.

POLI 347 Arab-Israel Conflict, Crisis, Peace.
(3) (Fall) (Prerequisite: 160-243 prior to 1997-98; or POLI 244) (Note: The field is International Politics.) An exploration of the foreign policy of the Middle East from 1948 to the present. The course will focus particularly on Egypt, Syria, Iraq and Saudi Arabia.

POLI 349 Foreign Policy: Asia.
(3) (Prerequisite: A basic course in International or Asian politics or written permission of instructor) (Note: The field is International Politics.) A study of foreign policies of three Asian states - China, Japan and India. Focuses on security and economic dimensions and internal and external sources. Also covers regional cooperation in Asia.

POLI 351 Crisis, Conflict and War.
(3) (Prerequisite: A basic course in international politics or permission of the instructor) (Note: The field is International Politics.) Deals with causes and consequences of international conflict, and its two key manifestations - crisis and war. Synthesizes research from data-based and other analytical approaches.

POLI 354 Approaches to International Political Economy.
(3) (Prerequisite: A basic course in International Relations and an introductory course in Macro Economics) (Note: The field is International Politics.) The course presents theoretical approaches to understanding change in the international political economy.

POLI 356 Public Policy: Western Europe.
(3) (Note: The field is Comparative Politics in Developed Areas.)

POLI 357 Politics: Contemporary Europe.
(3) (Prerequisite: POLI 212 or written permission of the instructor) (Note: The field is Comparative Politics in Developed Areas.) An examination of political institutions and processes in today’s Europe, concentrating on the member-states of the European Union and on the Union itself. The course is organized thematically rather than on a country-by-country basis.

POLI 359 Topics in International Politics.
(3) (Prerequisites: A basic course in International Relations) (Note: The field is International Politics.) Specific topic area in International Relations.

POLI 360 Security: War and Peace.
(3) (Prerequisite: A basic course in International Relations or written permission of the instructor) (Note: The field is International Politics.) Focuses on international security and strategies of war and peace in historical and comparative frameworks. Topics include case studies of 20th century wars, conventional and nuclear strategy, and various approaches to peace.

POLI 362 Political Theory and International Relations.
(3) (Prerequisites: POLI 231, or POLI 232 and POLI 243 or POLI 244) (Note: The field is International Politics and Political Theory.) Key contributions of political theory to the study and practice of international relations. Three prevailing theoretical traditions will be examined: realism, ‘international society’, and cosmopolitanism. Key practical issues to be explored in these perspectives include war, humanitarian intervention, economic globalization, environment, and gender.

POLI 363 Contemporary Political Theory.
(3) (Prerequisite: POLI 231 or POLI 232) (Note: The field is Political Theory.) This course explores fundamental currents of thought in political philosophy. Topics will vary from year to year, and may include issues such as classical liberalism and its opponents, the foundations of socialism and Marxism, rational choice theory and its critics.

POLI 364 Radical Political Thought.
(3) (Prerequisite: POLI 231 or POLI 232 or written permission of instructor) Radical themes in contemporary political thought and action.

POLI 365 Democratic Theory.
(3) (Prerequisite: POLI 231 or POLI 232 or written permission of instructor) (Note: The field is Political Theory.) A series of lectures and seminars on democratic theory.

POLI 366 Topics in Political Theory.
(3) (Prerequisites: A basic course in Political Theory) (Note:
The field is Political Theory. A specific problem area in Political Theory.

**POLI 371 Challenge of Canadian Federalism.**
(3) (Prerequisite: at least one course in Canadian politics) (Note: The field is Canadian Politics.) An analysis of the origins, evolution and nature of federalism in Canada. Topics and themes will include the impact of federalism on political institutions, the effect of different regional perspectives, and the issues and conflicts that currently confront Canadian federalism.

**POLI 378 The Canadian Judicial Process.**
(3) (Fall) (Prerequisite: POLI 221 or POLI 222 or permission of the instructor) (Restriction: Not open to students who took 160-379 (1990-91) or 160-427 (1989-90)) (Note: The field is Canadian Politics.) An examination of the structure of the judiciary and its role in the Canadian political process. Topics include the nature of judicial power and its constitutional framework in Canada, the structure and function of courts, judicial recruitment and personnel, judicial policy-making and the political role of the Supreme Court under the Charter of Rights and Freedoms.

**POLI 379 Topics in Canadian Politics.**
(3) (Prerequisite: A basic course in Canadian Government and Politics) (Note: The field is Canadian Politics.) Topics in Canadian politics.

**POLI 410 Canadian Political Parties.**
(3) (Prerequisite: At least one other course in Canadian Politics) This course examines Canadian political parties and party systems, stressing patterns of historical development, party organization and finance, relationships with social movement, and the impact of Canadian federalism.

**POLI 411 Immigration and Multiculturalism in Canada.**
(3) (Prerequisite: at least one course in Canadian politics, preferably at the 300 or 400 level, or permission of the instructor) (Note: The field is Canadian Politics.) An examination of various aspects of Canadian politics that stems from the country’s experience with immigration and ethnic and racial diversity.

**POLI 412 Canadian Voting/Public Opinion.**
(3) (Prerequisite: at least one course in Canadian politics, preferably at the 300 or 400 level, or permission of the instructor) (Note: The field is Canadian Politics.) A critical examination of major debates within the literature on Canadian voting behaviour and public opinion.

**POLI 414 Society and Politics in Italy.**
(3) (Prerequisite: A basic course in Comparative Politics and preferably an upper level course or written permission of the instructor) (Note: The field is Comparative Politics in Developed Areas.) Analysis of modern Italian political development in comparison to other Western and Mediterranean countries. What makes Italian politics unique, what makes it resemble that of other countries.

**POLI 417 Health Care in Canada.**
(3) (Prerequisites: POLI 221 or POLI 221) (Note: The field is Canadian Politics.) This course analyzes the theory and politics of health policy and institutions, comparing provincial models and contextualizing Canadian systems with international perspectives from the U.S. and Europe. Current health reform debates will be explored, particularly those involving federal-provincial relations, sustainable financing and the role of the state in social protection.

**POLI 419 Transitions from Communism.**
(3) (Prerequisites: A previous History or Political Science course on the USSR, or Eastern Europe after WW II, or written permission of the instructor) (Note: The field is Comparative Politics in Developed Areas.) Selected problems facing the Post-Soviet world. Themes include: new political institutions, parties, and groups; economic reform; social problems; ideological changes; the rise of ethnonationalism; linkages with the West.

**POLI 423 Politics of Ethno-Nationalism.**
(3) (Prerequisites: one 300 or 400-level course in comparative politics and one 300 or 400-level course on developing areas (any discipline).) The same course can fulfill both requirements) (Note: The field is Comparative Politics in Developing Areas.) Theories of ethno-nationalism examined in light of experience in Asia, Middle East and Africa. Topics include formation and mobilization of national, ethnic and religious identities in colonial and post-colonial societies; impact of ethno-nationalism on pluralism, democracy, class and gender relations; means to preserve tolerance in multicultural societies.

**POLI 424 Media and Politics.**
(3) (Prerequisites: POLI 211 or POLI 212; and at least 3 credits in Political Science at the 300 level) (Note: The field is Comparative Politics in Developed Areas and Canadian Politics.) The role of media in domestic and international politics with reference to recent studies in political science. Themes in the study of mass media and politics in developed democracies.

**POLI 425 Topics in American Politics.**
(3) (Prerequisite: POLI 325) (Note: The field is Comparative Politics in Developed Areas.) This course involves a detailed analysis of a limited area of American politics and government. Topic for 2002-03: The Supreme Court and Constitutional Law.

**POLI 427 Selected Topics: Canadian Politics.**
(3) (Prerequisite: A basic course and preferably an upper level course as well in Canadian Government and Politics or permission of the instructor) (Note: The field is Canadian Politics.) Selected problem areas in Canada's political process, political culture, constitutional development, and machinery of government.

**POLI 428 Politics of France.**
(3) (Prerequisite: POLI 211 or POLI 212 or POLI 328 or POLI 357 or written permission of the instructor.) (Note: The field is Comparative Politics in Developed Areas.) The distinctive characteristics of French politics in the comparative perspective of Western Europe and North America.

**POLI 431 Nations and States/Developed World.**
(3) (Prerequisite: POLI 211 or POLI 212 or POLI 328) (Note: The field is Comparative Politics in Developed Areas.) The role of nationalism in European and North American political development. Topics include: nationalism and state-formation, secession and sub-state nationalism, war and nationalism, federal and consociational arrangements in multi-national societies.

**POLI 432 Selected Topics: Comparative Politics.**
(3) (Note: The field is Comparative Politics in Developed Areas.)

**POLI 433 History of Political/Social Theory 3.**
(3) (Prerequisite: POLI 231 or written permission of instructor) (Restriction: POLI 334 should be taken before this course) (Note: The field is Political Theory.) Early modern political philosophy, from Luther to Rousseau and Burke. Resistance theories of the 16th century, Hobbes and Locke, the Enlightenment and the French Revolution. Twentieth century work...
on concepts developed in this period such as rights, revolution, legitimacy, democracy, authority and liberty.

POLI 434 History of Political/Social Theory 4.
(3) (Recommended: POLI 231 or POLI 232 or written permission of instructor) (Note: The field is Political Theory.) A consideration of selected writers and themes of late 19th and 20th century political theory. Writers include Hegel, Clausewitz, Marx, Mill, Nietzsche, Lenin, Rowis, Foucault, and Habermas. The rise of industrial society, socialism, the romantic revolt, revolutionary movements, socialism and liberal-democracy.

POLI 437 Politics in Israel.
(3) (Prerequisite: POLI 211 or POLI 212. Recommended JWST 366) (Note: The field is Comparative Politics in Developed Areas.) An analysis of the nature and development of the Israeli political system, including historical background, Zionist ideology, the electoral system, the political parties, the institutions of government, constitutional issues, and religion and politics. The relationship between domestic politics and foreign policy will also be explored.

POLI 441 IPE: North-North Relations.
(3) (Prerequisites: At least one course in international politics) (Note: The field is International Politics.) A political economy course on political and economic changes which have blurred the domestic/international distinction, making domestic issues the subject of negotiation among states. The development of the EU which reinforces this as well as the politics of firms and states, trade, money, and regulation are studied.

POLI 444 Topics in International Politics.
(3) (Prerequisite: An upper level course in International Politics or written permission of the instructor) (Note: The field is International Politics.) A specific problem area in International Politics.

POLI 445 IPE: North-South Relations.
(3) (Note: The field is International Politics.) This course examines the politics of economic relations between economically advanced, industrialized countries and the less economically developed countries in the postwar period.

POLI 446 Les politiques publiques au Québec.
(3) (Prerequisites: POLI 226 or POLI 336 or permission of the instructor) (Restrictions: An ability to understand and read French is required; writing and speaking ability are not. Not open to students who have taken QCST 446 or QCST 456.) (Note: The field is Canadian Politics.) Analyses des principaux modèles explicatifs de la décision politique au Québec: la contribution des institutions, des idéologies et des processus. Le rôle du premier ministre et du Conseil des ministres, le poids de la bureaucratie, le rôle des politiques dans la construction étatique, les contraintes du fédéralisme.

POLI 447 Canadian Constitutional Politics.
(3) (Prerequisites: A 300-level Canadian Politics course and one of POLI 221 (Government of Canada), POLI 222 (Political Process & Behaviour in Canada), POLI 226 (La Vie Politique Québécoise) or Permission of Instructor) (Note: The field is Canadian Politics.) An analysis of the major constitutional conflicts since the adoption of the Constitution Act of 1982. The focus will be on the theories of federalism and the political community informing the specific proposals, their objectives and details, and the politics of the outcomes.

POLI 450 Peacebuilding.
(3) (Prerequisites: previous courses in comparative politics/developing areas and international relations. Internet research skills are strongly recommended) (Note: The field is Comparative Politics in Developing Areas and International Politics.) An examination of transitions from civil war to peace, and the role of external actors (international organizations, bilateral donators, non-governmental organizations) in support of such transitions. Topics will include the dilemmas of humanitarian relief, peacekeeping operations, refugees, the demobilization of ex-combatants, transitional elections, and the politics of socio-economic reconstruction.

POLI 451 The European Union.
(3) (Prerequisite: one course each in International Relations and Comparative Politics) (Note: The field is Comparative Politics in Developed Areas and International Politics.) The emergence of the EU and its innovative institutions and policies will be studied through lectures, discussions, and simulated debates (of a European Council or Parliament session). Emphasis upon current debates about the EU’s developing identity, its internal political economy, its institutions of ‘multilevel’ governance, and its external relations.

POLI 459 Topics in Political Theory.
(3) (Prerequisite: An upper level course in Political theory or written permission of the instructor) (Note: The field is Political Theory.) This course will deal with a specific problem area in Political theory.

POLI 464 Comparative Political Economy.
(3) (Prerequisites: At least one course in comparative politics. A basic course in economics is advised) (Note: The field is Comparative Politics in Developed Areas.) To what extent are economic policies, institutions, and strategies converging? The comparative politics of national and sectoral economies. Structural, historical, and cultural influences. Institutional orders and market logics in different countries. Impact of the changing global economy on states and firms: what leeway for policy.

POLI 466 Public Policy Analysis.
(3) (Note: The field is Comparative Politics in Developed Areas.) The principal intellectual traditions in the study of public policy and their application to the policy process in North America and Western Europe. Criteria for evaluation, constitutional choice and governmental process, the role of political influence in policy making and implementation and the problem of change in post-industrial societies.

POLI 469 Politics of Regulation.
(3) (Prerequisite: POLI 221 or POLI 222 and at least one 300-level course or above in Canadian politics, or permission of instructor) (Note: The field is Canadian Politics.) Issues arising from the use of regulation as a governing instrument including origins of regulation, costs and benefits, political accountability and regulatory change including deregulation. Issues will be explored through examination of broadcasting and telecommunications regulation and their convergence in the “information Highway”.

POLI 473 Democracy and the Market.
(3) (Prerequisite: A course in Comparative Politics or written permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) The course examines the relationship between economic and political change by focusing on dual processes of economic reform and democratization. The inter-play of societal, state-level and international actors, and the possible trade-offs involved, are explored using examples from Latin America, the former Soviet bloc, and other developing areas.

POLI 474 Inequality and Development.
(3) (Prerequisite: A basic course in Comparative Politics or a
POLI 478 The Canadian Constitution. (3) (Winter) (Prerequisite: POLI 378 or an upper level course in Canadian Politics or permission of the instructor) (Restriction: Not open to students who took 160-427 in 1989-90 or 1991) (Note: The field is Canadian Politics.) An examination of legislative and judicial protection of rights and liberties in Canada. Topics to be covered include civil rights and the division of powers; the implied bill of rights theory; the 1960 Bill of Rights; establishment and enforcement of human rights legislation; and the Charter of Rights and Freedoms.

POLI 490 Independent Reading and Research. (3) (Fall and Winter) Final year Honours students wishing to pursue a specialized interest will be allowed to undertake a program of independent reading and/or research in that area under the supervision of a member of staff. Such programs may be undertaken by students either individually or in small groups. It is the responsibility of the student to obtain the instructor's consent prior to registration.

POLI 499 Honours Essay. (3) (Fall and Winter) (Restriction: Open to Honours students only) Regular meetings between students and professors, the writing of a well researched essay and its oral defense. The essay should demonstrate some experience with primary sources, the ability to explore various theoretical perspectives as well as to organize and present a set of arguments in a systematic and thorough manner.

POLI 521 Seminar: Canadian Politics and Government. (3) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Prerequisite: At least one 300 or 400-level course in Canadian Politics) (Note: The field is Canadian Politics.) Selected problems of Canadian socio-economic and political structures; political culture; constitutional development, and governmental structure.

POLI 522 Seminar: Developing Areas. (3) (Prerequisite: At least one upper level course in the politics of developing areas) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Note: The field is Comparative Politics in Developing Areas.) A research seminar dealing with experiences of various developing countries. Examines the intersections of visions of gender and community; the interactions between mobilization along gender and community lines; the gendered nature and cultural coding of various policy initiatives. Greater emphasis given to concerns and actions of women, and to visions of community based on religion and race. Students are expected to undertake a research project.

POLI 524 Seminar: Developed Areas. (3) (Prerequisite: At least one upper-level course in the politics of developed areas) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor)

POLI 561 Seminar: Political Theory. (3) (Prerequisite: At least one upper level course in political philosophy) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Note: The field is Political Theory.) A topic in political philosophy such as democracy, liberty, property or nationalism, or a political philosopher, is studied to enable students to research a topic in depth, to present their papers to the seminar, and to engage in and profit from discussion and debate.

POLI 575 Seminar: International Politics. (3) (Restriction: Open to graduate students and final year Honours students only) (Note: The field is International Politics.) A research seminar dealing with topics in the field of international politics.

POLI 599 Internship: Political Science. (3) (Fall and Winter) (Restriction: Open, with permission, to final year Honours and Joint Honours students, and graduate students. This course does not count as a 500-level seminar under the Honours requirements) The internship shall consist of a minimum of 150 hours of work over a period of 12 weeks, plus a major research project based on the internship. The major project will ordinarily consist of a major research paper, plus a substantial written record of the work conducted during the internship.

QCST-Quebec Studies Offered by: Arts - Dean's Office

QCST 300 Études sur le Québec. (3)

QCST 336 Quebec Studies Summer Seminar. (6) (Prerequisite: Intermediate level placement test required or permission of the instructor.) (Restrictions: Designed for non-Quebec and non-francophone students. Intermediate proficiency in French is required. Placement test is required. Enrolment is limited to 25 students. Not open to students who have taken FRSL 326 or QCST 300.) This intensive course, mainly in French, introduces non-Quebec students to Quebec and Montreal's history and culture. Special emphasis on French-language skills. Students attend lectures and seminars by instructors and invited experts. Weekend cultural activities will reinforce course themes.

QCST 440 Aspects du Québec contemporain/Aspects of Contemp. Quebec. (3) (Cours obligatoire pour tous les étudiants(es) en Études sur le Québec. Également accessible aux étudiants(es) qui ont une connaissance de base de la société et culture québécoises, avec la permission du professeur) (Required course for all students in Quebec Studies. Open also to U2 and U3 students who have a basic knowledge of Quebec society) (Instruction, discussions, oral presentations and papers can be in French or English) L'enseignement, les discussions, les exposés et les travaux peuvent se faire en français et en anglais. Le thème du séminaire change à chaque année, mais porte toujours sur une facette de la société québécoise moderne. Cours interdisciplinaire, on y étudie différents aspects: historique, sociologique, économique, politique, culturel, etc. An interdisciplinary approach from a political science angle is comparing the topic's various dimensions: historical, sociological, economical, political, cultural, etc. This seminar has a different topic each year it is given, but all topics are directly related to some important problems or phenomena in modern Quebec politics and society.

QCST 472D1, QCST 472D2 (3) Tutorial/Travaux dirigés. (Obligatoire pour les étudiants(es) inscrit(e)s au concentration majeur en Études sur le Québec.) (Required for U3 students in
Solzhenitsyn-style dissidents against cultural iconoclasts, the 
after Stalin's death (1953). The Thaw, Soviet beatniks, 
Russian literary heritage, both traditional and avant-garde, 
ideological polemics, revolutionary versus traditional values, 
change from Peter the Great to the present; the Russian national 
identity, double-faith, Western and Slavophile influences, 
Mother Russia, superfluous men and the Eternal Feminine, 
anarchism, Stalinism. Interdisciplinary (literature, art, film, 
music, pop culture, applied arts, journalism). Research- 
and conference-technique seminar.

RUSS 210 Elementary Russian Language 1. 
(3) (Fall) Reading, grammar, translation, oral practice.

RUSS 211 Elementary Russian Language 2. 
(3) (Winter) (Prerequisite: RUSS 210 or equivalent) Russian 
Language; continuation of RUSS 210.

(6) (Fall) (Restriction: Departmental approval required) 
(Restriction: Not open to students who are taking or have taken 
RUSS 210, RUSS 211 or equivalent) An intensive 
introduction to the Russian language which covers the first year of 
the normal level, i.e. RUSS 210/211 in one 
semester. The basic grammatical structures are covered.

RUSS 217 Russia’s Eternal Questions. 
(3) (Winter) (Restriction: Permission of the instructor) 
Exploration of cultural archetypes defining continuity and 
change from Peter the Great to the present; the Russian national 
identity, double-faith, Western and Slavophile influences, 
Mother Russia, superfluous men and the Eternal Feminine, 
anarchism, Stalinism. Recurring themes traced in literature, art, film, music, pop culture and the applied 
arts.

RUSS 218 Russian Literature in Revolution. 
(3) (Winter) (Prerequisite: None, but some background in Russian 
20C history is helpful) (Given in English) The Russian 
twentieth-century literary dynamic up to the watershed 
of Stalin’s death (1953). Carving out cultural territory against 
the modernity up to the watershed of 
1917. The classical novel through Symbolism to the end of the Empire. Literature in an age of uncertainty. There will be an examination of the works of Tolstoy, Dostoeevsky, Chekhov, Bely, Gorky and other 
selected authors.

RUSS 224 From War to Revolution. 
(3) (Winter) (Given in English) Russian literature from the 
Czars to the Revolution (1856) to the revolutions of 1917. The classical 
challenge and decline of perestroika, raising the literary Iron 
Curtain to include women writers, emigres, Western influence and the angst of pluralism.

RUSS 225 History of Russian Literature. 
(3) (Fall) (Prerequisite: RUSS 224) Historical overview of 
European literature, Russian literature from the 
Czars to the Revolution (1856) to the revolutions of 1917. The classical 
challenge and decline of perestroika, raising the literary Iron 
Curtain to include women writers, emigres, Western influence and the angst of pluralism.

RUSS 310 Intermediate Russian Language 1. 
(3) (Fall) (Prerequisite: RUSS 210 and RUSS 211 or 
equivalent) (Restriction: Not open to students who have taken 
RUSS 210, RUSS 211, RUSS 310, RUSS 
311 and RUSS 316.) For native speakers of Russian who 
have not had full academic instruction in the language. Focus on 
grammatical structure and syntax, the formalities of written 
Russian and appreciation of the language’s stylistic diversity. 
Multi- media approach including excerpts from literary works, 
newspapers, television news broadcasts, films and 
cartoons.

RUSS 311 Intermediate Russian Language 2. 
(3) (Winter) (Prerequisite: RUSS 310 or equivalent) 
(Restriction: Not open to students who are taking or have taken 
RUSS 310) Reading, translation, conversation.

RUSS 316 Intermediate Russian Language Intensive 2. 
(6) (Winter) (Prerequisite: RUSS 215 or equivalent)
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• Denotes courses taught only in alternate years.

中小学生 courses offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

❊ Denotes courses not offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.

❚ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
works (Abramov, Bykov, Nagibin, Tendriakov, Yashin) will be read.

- **RUSS 463 Soviet Literature: Early 70s - Perestroika.**
  (3) (Winter) (Prerequisite: RUSS 415, RUSS 416 or Permission of Department) (Given mainly in Russian) Continuation of RUSS 462. Major themes in Soviet literature from the early 1970s to present. Breakdown of the doctrine of Socialist Realism and the emergence of new themes critically evaluating the Soviet past. Excerpts from selected works (Almatov, Grossmann, Rasputin, Rybakov, Tolstaya, Trifonov) will be read.

- **RUSS 465 Russian Modernism 1.**
  (3) (Fall) (Prerequisite: Permission of the Department) (Given mainly in Russian) Russian poetry, prose, drama, the essay and other media from the Silver Age to WWI, from Chekhov to Blok and Belyi. The crisis of realism, decadence, symbolism, and its waning traced through the eternal feminine, the devil, the city, poetry as pure creation, and millennial crisis.

- **RUSS 466 Russian Modernism 2.**
  (3) (Winter) (Prerequisite: Permission of the Department) (Given mainly in Russian) Russian poetry, prose, drama, the manifesto and other media from WWI to 1930. The avantgarde responds to revolution. Acmeism, futurism, and other movements modelled and transcended in the works of Khlebnikov, Akhmatova, Pasternak, Mandel'shtam, Tsvetaeva, Maiakovskii, Platonov, Kharns, Bulgakov and others. Agitprop, utopianism and total art.

**RUSS 470 Individual Reading Course.**
(3) (Fall) (Prerequisite: Permission of instructor) Supervised reading under the direction of a member of staff.

**RUSS 471 Independent Research.**
(3) (Winter) (Prerequisite: Permission of instructor) Supervised research under the direction of a member of staff.

**RUSS 490 Honours Seminar.**
(3) (Fall) (Prerequisite: Permission of the Department) (Restriction: Honours or Joint Honours in Russian and Slavic Studies) This course is intended to allow students to bring together their knowledge of the general area of Russian & Slavic Studies and produce a synthesis appropriate to their level of development. The major exercise will consist of the writing of a research paper displaying their competence.

**RUSS 491 Honours Seminar.**
(3) (Winter) (Prerequisite: RUSS 490) This course is intended to allow students to bring together their knowledge of the general area of Russian & Slavic Studies and produce a synthesis appropriate to their level of development. The major exercise will consist of the writing of a research paper displaying their competence.

**RUSS 499 Internship: Russian and Slavic Studies.**
(3) (Fall or Winter) (Prerequisite: Permission of the departmental Internship Advisor.) (Restriction: Open to U2 and U3 students after completing 30 credits of a 90 credit degree program or 45 credits of a 69-120 credit program, a minimum CGPA of 2.7, and permission of the departmental Internship Advisor.) This course will not normally fulfill program requirements for seminar or 400-level courses.) Internship with an approved host institution or organization.

**RUSS 500 Special Topics.**
(3) (Prerequisite: Permission of Department.) Focus on a critical theme, author or work, as determined by the current research interests of faculty and visiting faculty.

**RUSS 510 High Stalinist Culture.**
(3) (Winter) (Given in English) Novels, films, art, architecture, pageantry, rhetoric and routine of the Stalinist 1950s-40s, including socialist realism as an aesthetic doctrine, utopian blueprint, target of parody, amalgam of a submerged avantgarde and state-controlled pop culture, precursor of the postmodernist simulacrum, self-proclaimed international style and/or uniquely Russian 20th-century project.

**SDST-Sexual Diversity Studies**
Offered by: Arts - Dean's Office

**SDST 250 Introduction: Sexual Diversity Studies.**
(3) A general introduction to the study of sexual and gender diversity and sexuality from a range of perspectives and across a variety of disciplines.

**SOCI-Sociology**
Offered by: Sociology

- **SOCI 199 FYS: Transition from School to Work.**
  (3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) An examination of the vocational preparation provided by various levels of the educational system (including adult education); the relationship between the preparation and subsequent labour market experience; and the organization of training with particular reference to government training policy. International comparisons are central to the content of this course.

- **SOCI 210 Sociological Perspectives.**
  (3) Major theoretical perspectives and research methods in sociology. The linkages of theory and method in various substantive areas including: the family, community and urban life, religion, ethnicity, occupations and stratification, education, and social change.

- **SOCI 211 Sociological Inquiry.**
  (3) (Prerequisite or Corequisite: SOCI 210) An introductory review of methods of sociological research including research design, elementary quantitative data analysis, observation, and use of official statistics. Detailed examination of published examples of the use of each of the major techniques of data analysis and collection.

- **SOCI 215 Gender Family and Social Change.**
  (3) An introduction to feminisms from the point of view of the social sciences. The first part takes off from the nature of gendered inequality to discuss "tools for feminist analysis", i.e., feminist frameworks, specific theories and concepts, and feminist methodology. The second part addresses various issues of concern to feminisms. The main object of the course is to facilitate and evaluate a feminist analysis of women's lives.

- **SOCI 216 Social Psychology.**
  (3) (Restriction: Not open to students who have taken PSYC 215, PSYC 330, or MGCR 221) Introduction to significant elements of theory and research related to micro-level social interactional processes involved in the development of self, perceptions, and behaviour. Topics will include socialization, attitudes, persuasion, social cognition, the behaviour of groups, emotion, prejudice and discrimination, and violence and aggression.

- **SOCI 217 Canadian Mass Communications.**
  (3) An introduction to the history, structure and functions of the mass media in Canada and the way ownership patterns affect message content. The focus is comparative, stressing differences between the U.S. and Canada and policy interrelationships resulting from overflow programming.
SOCI 219 Sociology of Culture.
(3) A survey of theoretical approaches and substantive topics in the culture. Topics include: norms and values in nation cultures; negotiation of cross-cultural interpersonal exchanges; structural codes and cultural classifications; production constraints on cultural objects; the differential reception of cultural products.

SOCI 222 Urban Sociology.
(3) Comparative analysis of the process of urbanization in Europe, North America and the Third World; effects of urbanization upon social institutions and individuals; theories of urbanization and urbanism; the Canadian urban system; urban problems in comparative view.

SOCI 225 Medicine and Health in Modern Society.
(3) Socio-medical problems and ways in which sociological analysis and research are being used to understand and deal with them. Canadian and Quebec problems include: poverty and health; mental illness; aging; death and dying; professionalism; health service organization.

SOCI 230 Sociology of Ethnic Relations.
(3) (Prerequisite: SOCI 210 or permission of instructor) An introduction to the sociological study of minority groups in Canada. The course will explore the themes of racism, prejudice, and discrimination, ethnic and racial inequalities, cultural identities, multiculturalism, immigration. Theoretical, empirical, and policy issues will be discussed. While the focus will be primarily on Canada, comparisons will be made with the United States.

● SOCI 233 Canadian Society.
(3)

SOCI 234 Population and Society.
(3) Introduction to the reciprocal linkages in the social world between population size, structure and dynamics on the one hand, social structure, action and change on the other. An examination of population processes and their relation to the social world.

SOCI 235 Technology and Society.
(3) An examination of the extent to which technological developments impose constraints on ways of arranging social relationships in bureaucratic organizations and in the wider society: the compatibility of current social structures with the effective utilization of technology.

SOCI 247 Family and Modern Society.
(3) (Course for the Women's Studies Concentrations) Contrasting family in Canada and in the United States for the recent past. Examination of theories on family; changes and diversity of family life; complex relationships among marriage, work, and family; domestic violence; various types of family experience; and the future of the family.

SOCI 250 Social Problems.
(3) Contrasting theoretical approaches to social problems.

SOCI 254 Development and Underdevelopment.
(3) Competing theories about the causes of underdevelopment in the poor countries. Topics include the impact of geography, the population explosion, culture and national character, economic and sexual inequalities, democracy and dictatorship. Western imperialism and multi-national corporations, reliance on the market, and development through local participation, cooperation, and appropriate technology.

SOCI 265 War, States and Social Change.
(3) The impact of war on society in agrarian and industrial epochs. Particular attention is given to the relationship between war and economic development, social classes, nationalism, and democratization.

SOCI 270 Sociology of Gender.
(3) This course focuses on social changes in gender relations, gender inequalities and the social construction of gender. Using sociological theories of gender, different social institutions and spheres of society will be analyzed. Topics such as gender socialization, gender relations in work, family, education, and media will be covered.

● SOCI 305 Socialization.
(3) The effects of early childhood experiences upon adult personality, and the transmission of social roles and values. Topics include: social reinforcement theories, modeling theories, maternal deprivation, culture and personality studies, cognitive development and infantile sexuality. The processes of sexrole socialization.

SOCI 309 Health and Illness.
(3) Health and illness as social rather than purely bio-medical phenomena. Topics include: studies of ill persons, health care occupations and organizations; poverty and health; inequalities in access to and use of health services; recent policies, ideologies, and problems in reform of health services organization.

SOCI 310 Sociology of Mental Disorder.
(3) Data and theories of mental disorders. Transcultural psychiatry, psychiatric epidemiology, stress, labelling, mental health care delivery, the family, positive mental health and the "sick" society in the framework of sociological theories of stratification, organization and social psychology.

SOCI 312 Industrial Sociology.
(3) Focus on the responses of both workers and managers to changes in the organization and character of industrial work, taking into account the larger social and economic contexts within which those responses take place.

● SOCI 315 Sociology of Religion.

● SOCI 318 Television in Society.
(3) TV in the social communication process: a surveyor of the environment, a socializer, a definer of "public" realities and a forum of debate. Topics include: TV reporting of political and international events, differences in French/English outlooks, and the portrayals of women.

SOCI 321 Gender and Work.
(3) (Course for the Women's Studies Concentrations) Focus on men’s and women's work in North American societies, historically and contemporarily, in order to understand the dynamisms of gender (in)equality in and outside of the home. Topics explored include: housework; the relationship(s) between gender, organizations and bureaucracy; emotional labour; occupational segregation and stratification; sexual harrassment; and work-family policy.

SOCI 326 Political Sociology.
(3) An examination of the social changes that underly the emergence of modern politics. An outline and empirical critique of the principal alternative models of political functioning in industrial societies. Empirical analysis of elite and mass political behaviour.

SOCI 327 Jews in North America.
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Denotes courses taught only in alternate years.

† Professional Practice (Stage) in Dietetics involving special prerequisites

❉ Indicates that departmental approval/permission must be obtained by a student prior to registration.

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cultural, and political issues of concern to the Jewish community. Specific characteristics of Jewish life in Canada, and Québec in particular, in comparison to the American Jewish experience.

**SOCI 330 Classical Sociological Theory.**
(3) (Prerequisite: SOCI 210 or permission of instructor)
Major sociological theoretical traditions are seen in their historical contexts, as the background to current theoretical issues. Emphasis on Smith, Tocqueville, Marx, Durkheim, Weber and Parsons.

**SOCI 333 Social Stratification.**
(3) The pattern, causes and consequences of social inequality. Among the inequalities considered are those of economic class, sex (gender), race, ethnicity and age. Competing theories of the causes of social inequalities are compared and assessed.

● **SOCI 335 Sociology of State Repression.**
(3) (Prerequisite: SOCI 210 OR POLI 211) Survey of central theories and case studies of state repression in the developing world and Western industrialized countries. Macro-sociological analysis of state structure as well as micro-level studies of soldiers and policemen engaged in repression action.

**SOCI 338 Introduction to Biomedical Knowledge.**
(3) The dynamics of biomedical disciplines and specialties. Social, scientific, political and commercial aspects of biomedical research. The organization of work in clinical and fundamental research and its consequences on the choice of research topics.

**SOCI 340 Current Problems in Sociology.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 341 Current Problems in Sociology.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 342 Independent Study 1.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 343 Independent Study 2.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 350 Statistics in Social Research.**
(3) (Prerequisite: SOCI 211) (Restriction: Not open to students who have taken PSYC 204, PSYC 305 or ECON 227) (You may not be able to receive credit for this course and other statistics courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) This is an introductory course in descriptive and inferential statistics. The course is designed to help students develop a critical attitude toward statistical argument. It serves as a background for further statistics courses, helping to provide the intuition which can sometimes be lost amid the formulas.

● **SOCI 353 Inequality and Social Conflict.**
(3) Investigation of causes, processes, and outcomes of large scale social strife particularly as related to stratification systems.

**SOCI 354 Dynamics of Industrial Societies.**
(3) (Prerequisite: SOCI 210 or any other introductory course in the social sciences) Theories of social, economic, and political change in the industrialized societies. Causes of cycles in economic growth; imperialism and war; and in ethnic, religious, and industrial conflict. Causes of long run trends in social inequality, crime, family stability, and the position of women. Comparison of North America, Europe, Russia, and Japan.

● **SOCI 366 Social Change in the Caribbean.**

**SOCI 370 Sociology; Gender and Development.**
(3) (Prerequisite: SOCI 210) Exploration of the main development theories and discussion of how gender is placed within them, analysis of the practical application of development projects and discussion of how they affect gender dynamics, and examination of power relations between development agencies and developing countries. Examples from Sub-Saharan Africa and Latin America are used.

**SOCI 377 Deviance.**
(3) Introduction to the sociological study of deviance. Emphasis on the “societal reaction” or “interactionist” approach to deviance. The correctional and causal approach towards deviance, its limitations and alternative ways to address the subject of deviance.

● **SOCI 386 Contemporary Social Movements.**
(3) This course will focus on contemporary social movements in Canada, the U.S., and Western Europe, such as the civil rights movement, the women’s movement, and the environmental movement. Empirical studies of movements will be used to explore such general issues as how social movements emerge, grow, and decline.

**SOCI 388 Crime.**
(3) Introductory course on methods and theories in criminology. Exploration of the nature and distribution of crime and critical evaluation of definitions and the measurement of crime; review of theoretical approaches used to understand such a phenomenon; a comparative overview of the criminal justice system.

● **SOCI 390 Gender and Health.**
(3) Key conceptual and substantive issues in gender and health since c1950: stratified medicalization of women’s and men’s health; social movements in health including the women’s health movement; gender inequality in morbidity and mortality; gender, power and control in patient/physician interactions; embodied experience; politics and policies of gender and health.

● **SOCI 418 Human Rights and Humanitarianism.**
(3) (Prerequisites: SOCI 210 or SOCI 211) Human rights and humanitarian actors are increasingly important players in transnational and local politics. This course will study their motivations, methods of operation, and effectiveness. Whose interest do they serve - victims of war and repression, or the interests of powerful Western nations?

**SOCI 420 Organizations.**
(3) (Prerequisites: SOCI 210 or SOCI 235) A survey of theories of organization with particular reference to problems of growth, technology, centralization and decentralization, and organizational environments.

● **SOCI 422 Health Care Providers.**
(3) Current trends and issues in health and illness. The role of
occupations and organizations which define health and illness and organize and provide health care. Topics include: the impact of interprofessional relationships; legitimation of approaches to health and illness; knowledge and belief systems, and the role of power; challenges to traditional providers, and the impact of the consumers’ and women's movements.

**SOCI 424 Networks and Social Structures.**
(3) The study of relations and networks. Concepts and techniques of network analysis. Issues include: interlocking directorates, social relationships among individuals in heterogeneous communities and organizations, and relations among elites. Students will be required to design an inquiry into one of these substantive domains.

- **SOCI 435 Popular Culture.**
  (A seminar exploring the nature of popular culture, tracing historical beginnings and contemporary changes in film, TV, comics, magazines, and rock music content. Emphasis on developing theoretical perspectives and methodologies for analysing genres and themes, and for making distinctions between so-called folk and popular art.)

**SOCI 440 Current Problems.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 441 Current Problems in Sociology.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

**SOCI 442 Independent Reading and Research.**
(3) (Prerequisite: permission of instructor.) (Restriction: Open to U2 and U3 students only) Intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit.

- **SOCI 444 The Sociology of Labour Force.**
  (3) (Prerequisite: SOCI 235 or SOCI 333 or SOCI 312 or ECOT 306, or permission of the instructor) Competing sociological theories and empirical research on labour force functioning and the labour market. Neo-classical economics, Marxian analysis, and dual-segmented labour market approaches. Topics include: education and the job market, occupational structures, income inequalities, the geographic mobility and the socio-political consequences of work structures. Canadian materials in comparative perspective.

- **SOCI 445 Readings: Sociological Theory.**
  (3) (Prerequisite: SOCI 330 or permission of instructor) Specialist examination of key issues in sociological theory, either through treatment in depth of a single theorist or through concentration on analytic issues that form the centre of continuing debates in the philosophy of social science.

**SOCI 455 Post-Socialist Societies.**
(3) (Prerequisite: SOCI 210) The demise of Communist Party rule between 1989 - 1991 throughout Eastern Europe and the Soviet Union. The societal implications (e.g. class formation, gender relations, nationalism, corruption, religious freedom) of these dramatic economic and political changes.

**SOCI 460 Responses to Social Problems.**
(3) (Prerequisite: permission of instructor.) This seminar focuses on attempts to resolve social problems. There will be discussion and debate concerning policies suggested and critical examination of their potential successes and failures. The course presupposes knowledge of social problems issues obtained in 166-250. Topics include: crime and prisons; discrimination and inequality; poverty; and drug use.

**SOCI 461 Quantitative Data Analysis.**
(3) (Prerequisite: SOCI 350) (You may not be able to get credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) This course blends theory and applications in regression analysis. It focuses on fitting a straight line regression using matrix algebra, extending models for multivariate analysis and discusses problems in the use of regression analysis, providing criteria for model building and selection, and using statistical software to apply statistics efficiently.

**SOCI 470 Topics in Economic Sociology.**
(3)

- **SOCI 475 Canadian Ethnic Studies Seminar.**
  (3) (Restriction: Open to students following the Minor Concentration in Canadian Ethnic Studies; or to students with at least nine credits, three at the 300 level, in the social sciences; or with permission of instructor. Not open to students taking CANS 404 in 2005-06.) An interdisciplinary seminar focusing on current social sciences research and public policies in areas related to Canadian ethnic studies. Topics will include ethnic and racial inequalities, prejudice and discrimination, ethnic identities and cultural expressions, the structure and organization of minority groups.

- **SOCI 477 Reactions to Deviance.**
  (3) (Prerequisite: SOCI 377) The nature and variety of agencies that exist for the control or treatment of persons designated as “deviant”. The rise and conjectured fall of institutionalization as a response to deviance. Canadian materials bearing on these subjects.

**SOCI 480 Honours Project.**
(3) (Restriction: For Sociology U3 Honours and Joint Honours students only) The Honours Project, normally in the form of a paper, provides every Honours student with the opportunity to work independently on a topic of special interest. The student works out the topic for the Honours Project through discussions with appropriate potential supervisors (aided by the Honours Adviser when necessary).

- **SOCI 484 Emerging Democratic States.**
  (3) (Prerequisite: SOCI 210) Focus on the sociological aspects of recent transitions to democracy within developing countries - particularly within Sub-Saharan Africa and Latin America. Exploration of why democratization has taken place, to what extent it has been successful and the implications of democratization.

- **SOCI 485 Society, Economy and Polity in Italy.**
  (3) (Restriction: Open to U3 students or other students with permission of instructor) This course uses concepts and measures from economic and political sociology to explore the case of Italy, emphasizing several dichotomies: official labour markets versus underground economic activities, innovative administrative reforms versus continuing regional disparities, and state intervention in the economy versus individual entrepreneurship.

**SOCI 489 Gender, Deviance and Social Control.**
(3) (Course for Women's Studies Concentrations) (Prerequisite: Permission of instructor) (Restriction: open to U3 students}
concentrating on social problems.) This seminar examines how the
definition of deviance, reactions to deviance and explanations
device are gendered. Specific topics vary from year to year.

SOCI 495 Social Problems and Conflicts.
(3) (Prerequisite: permission of instructor) This course
explores the social construction of “social problems”. It
focuses on the social conflicts involved in the definition of
social issues and on how and why “problems” change over time.
Issues such as drinking, smoking, drug use, pornography,
abortion, and homosexuality will be discussed.

SOCI 498 Internship: Sociology.
(3) (Restriction: Open to U2 and U3 students with a minimum
CGPA of 2.7, and permission of the departmental
Internship Advisor. This course will normally not fulfill
program requirements for seminar or 400-level courses. A letter
from a supervisor at the institution must attest to successful
completion of the student’s tenure.) Internship with an approved
host institution or organization.

SOCI 504 Quantitative Methods 1.
(3) (Prerequisites: SOCI 350 and SOCI 461 or
equivalents) Analysis of quantitative information, especially in
large, survey-type, data sets. Use of computer programs such as
SPSS and SAS. Topics include: cross tabulations with an
emphasis on multi-dimensional tables, multiple correlation
and regression, and, the relationship between individual and
aggregate level statistical analyses. Special reference to
demographic techniques.

SOCI 505 Quantitative Methods 2.
(3) (Prerequisite: SOCI 504) Topics include: problems - and
solutions - in regression analysis, models for categorical
dependent variables, including logit, log-linear, and linear
probability models, measurement models, structural equation
models with latent variables (LISREL), and time series and
panel analysis.

● SOCI 506 Quantitative Methods 3.
(3) (Prerequisite: SOCI 504 or equivalent or permission of
instructor.) Advanced statistical analyses focusing on advanced
methods such as event history analysis and analysis of
contingency tables.

SOCI 510 Seminar in Social Stratification.
(3) (Prerequisites: SOCI 333 and SOCI 350 or
equivalents) Recent theoretical and empirical developments in
social stratification and inequality. The study of social class,
with attention to the anomalous findings on heterogeneity in
labour markets and the labour process, status attainment
processes, and the socio-political and industrial attitudes of
the working class. Students will prepare quantitative analysis
of Canadian survey material as well as critical qualitative
reviews.

● SOCI 511 Movements/Collective Action.
(3) A critical examination of classical and more recent
approaches to the study of social movements and collective
action. Discussion of: the role of grievances and interests,
incentives and beliefs, conditions of breakdown and solidarity,
mobilization and social control, the dynamics of collective
action.

SOCI 515 Medicine and Society.
(3) (Prerequisite: Undergraduate students require permission of
instructor) The sociology of health and illness. Reading in
areas of interest, such as: the sociology of illness, health
services occupations, organizational settings of health care,
the politics of change in national health service systems, and
contemporary ethical issues in medical care and research.

SOCI 519 Gender and Globalization.
(3) (Prerequisite: SOCI 270 or permission of instructor.)
Focus on the diverse forces of globalization that impact
the lives of men and women. Critical analysis of key theories and
concepts implicated in the intersection of globalization
processes with gender dynamics.

● SOCI 520 Migration and Immigrant Groups.
(3) (Prerequisite: 15 credits in the Social Sciences) Review of
the major demographic, economic and sociological theories of
internal and international migration. The main emphasis will be
on empirical research on migration and immigrant groups.

SOCI 525 Health Care Systems in Comparative Perspective.
(3) (Prerequisite: Permission of instructor.) (Restriction: Not
open to students who are taking or have taken EPUB 525.)
(Note: This course is cross-listed in Epidemiology,
Biostatistics and Occupational Health and in Sociology.)
Comparative perspective to illustrate processes involved in
the development and evolution of health care systems around the
world. Countries examined will represent different welfare state
regimes, health care system typologies, levels of development
and wealth.

SOCI 530 Sex and Gender.
(3) (Restriction: Open to Honours Sociology students and to
Sociology Majors with the permission of the instructor) This
seminar critically reviews theoretical perspectives and research
on sex and gender in various domains of social life. It gives
special emphasis to work which considers the meaning of gender
and how it differs across time and place.

SOCI 535 Sociology of the Family.
(3) (Undergraduate students require permission of instructor)
This seminar reviews literature on major research areas in
family. The course examines families in the past, the study of
family using a life course approach, and considers selective
areas which may have had significant influences on contemporary
family such as work and family, family violence, and cultural
variation in families.

SOCI 538 Selected Topics in Sociology of Biomedical Knowledge.
(3) The seminar will examine recent work in the sociology of
biomedical knowledge. It will focus on the technological shaping
of biomedical knowledge, i.e. on the impact of new technologies
and equipments on the development of biomedical knowledge.

SOCI 540 Qualitative Research Methods.
(3) (Restrictions: open to Sociology Honours students, and
Sociology Major Concentration students with the instructor's
permission) Qualitative methodology, mainly participant
observation, structured and unstructured interviewing. Students
begin a research project using these techniques and submit field
notes once a week.

SOCI 545 Sociology of Population.
(3) (Prerequisites: SOCI 234 or equivalent.) The classic
literature of sociology of population.Drawing reciprocal
linkages between social and population processes: Historical,
family and labour force demography, demographic and fertility
transitions, mortality, ethnic and race relations, gender,
macro-structural interaction theory, and the relation of
population and the environment.

SOCI 550 Developing Societies.
(3) Comparison of alternative explanations of underdevelopment:
the impact of social stratification, relations of domination and
subordination between countries, state interference with the
market. Alternative strategies of change: revolution, structural
adjustment, community development and cooperatives. Students
will write and present a research paper, and participate

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Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
▲ Indicates that departmental approval/permission must be obtained by a
student prior to registration.
‡ Denotes courses not available as Education electives.
✱ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts
or Faculty of Science in 2006-07.
⁂ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor
of Education students.
extensively in class discussion.

SOCI 555 Comparative Historical Sociology.
(3) (Restriction: Undergraduate students require permission of instructor) The analysis of patterns of state and nation-building in historical and comparative perspectives with particular attention being given to methodology.

● SOCI 560 Gender and Organization.
(3) (Prerequisite: Permission of Instructor) An account of feminist and pro-feminist critiques and development of the traditional literature on organizations. Both gender and sexuality are covered as well as the way sexuality is used to reinforce the gendered workplace. The core focus is the conceptualization of a gendered, sexualized workplace in organizational terms.

SOCI 565 Social Change in Panama.
(3) (Prerequisites: SOCI 210 and SOCI 350 or equivalents.) (Corequisites: BIOL 473, ENVR 451 and ABEN 450.) (Restriction: location in Panama. Students must register for a full term in Panama.) Analysis of social change in Panama, particularly during the 20th century: demography, social and economic structures, rural and urban activities and landscapes, indigenous peoples, the effects of the Canal and the Free Trade Zone. Focus throughout on the interaction of human society and the environment. Four field trips.

SOCI 571 Deviance and Social Control.
(3) (This seminar focuses on how social groups enforce rules (and maintain social order) through coercion and socialization. It reviews current research and critiques key theoretical approaches to social control. Included are discussions of regulating institutions such as prisons and mental asylums, and the roles of gossip, manners and etiquettes.

SOCI 580 Social Research Design and Practice.
(3) (Restriction: Open to U3 and graduate students) Asking researchable sociological questions and evaluation of different research designs used to answer such questions. Development of cogent research proposals, including data collection procedures. Principles, dynamics, strengths and practical limitations of research designs. Examples from recent publications.

● SOCI 590 Conflict and State Breakdown.
(3) (Restriction: Open to graduate students in Sociology, Political Science, Anthropology, and History AND undergraduate students with permission of instructor) Survey of central theories of ethnic conflict, state breakdown, and warlordism in the developing world. Emphasis on the conflicts of the 1990s in Africa, the former Soviet Union and the Balkans.

SSMD-Social Studies of Medicine
Offered by: Social Studies of Medicine

SSMD 199 FYS: Mind-Body Medicine.
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Limit 25 students) Health is influenced by biological, psychological and social factors. The interaction between these determinants in the onset, course and recovery from a variety of diseases (e.g. AIDS) will be highlighted. Students will select one phase of a particular illness (e.g. remission following breast cancer treatment) and explore the related biopsychosocial factors.

● SSMD 400 Interdisciplinary Seminar.
(3)
B.S.W. students which focuses on developing basic interviewing skills. Student participation is required.

- **SWRK 351 Children's Needs and Social Services.**
  (3)

- **SWRK 352 Public Social Services in Canada.**
  (3) (Fall) (Restriction: Limited to B.S.W. U1 and Special B.S.W. Students) An introduction to public social services programs in effect in Canada, with emphasis on Quebec, in the fields of income and health care. Policy issues surrounding the programs are raised.

- **SWRK 353 Introduction to Practice.**
  (6) (Summer) (Corequisite: SWRK 350) (Restriction: Limited to Special B.S.W. students only) Introduction to the principles and practice of social work. Examination of social legislation, social policy, and social services.

- **SWRK 354 Social Work in the Health Field.**
  (3) (Winter) (Restriction: Limited to Social Work students) (Restriction: Not open to B.S.W. U1 students) An introduction to health and health institutions in the context of service delivery. Major themes will include: multidisciplinary teamwork in the hospital; crisis intervention; legal ethical issues; and emerging issues for social workers in health.

- **SWRK 355 Field Practice 1.**
  (3) (Fall and Winter and Summer) (Prerequisite: Introductory U1 and Special B.S.W. courses) (Restriction: Limited to B.S.W. U2 and Special B.S.W. students) Supervised educational experiences in social work practice designed to integrate practice and theory.

- **SWRK 356 Field Practice 2.**
  (3) (Fall and Winter and Summer) (Prerequisite: SWRK 355) (Restriction: Limited to B.S.W. U2 and Special B.S.W. students) Supervised educational experiences in social work practice designed to integrate practice with theoretical knowledge.

- **SWRK 357 Legal Problems of the Poor.**
  (3) (Winter) (Restriction: Limited to B.S.W. U1 students) Law and social welfare, with emphasis on the socio-legal problems and rights of the poor. Methods of legal protection and redress. Aspects of Canadian civil and criminal law.

- **SWRK 374 Community Development/Social Action.**
  (3) (Fall) (Restriction: Not open to U1 Level Students.) The organizing process and development of direct organizing skills. Emphasis on organizational entities, community power and conflict, organizing strategies and their application, urban community development.

- **SWRK 376 Social Work Practice with Groups.**
  (3) (Fall) (Prerequisite: U1 required Social Work course) (Restriction: Limited to B.S.W. students only) Theory and practice of work with groups. Emphasis on understanding group concepts and group dynamics and learning about various theoretical models of social group work practice. Focus on group development theory and the skills of the worker in a small group context. Small group participation, role playing and simulations will be utilized.

- **SWRK 377 Women's Issues in Practice.**
  (3) (Winter) (Restriction: Limited to B.S.W. U2, B.S.W. U3, Special B.S.W. and U3 Women's Studies Major/Minor Concentration students) Social work practice with women based on recent advances in understanding women's relationships to the structures and institutions of society. Issues which arise in the provision of social services: women and the family, mental and physical health, poverty and the welfare system, feminist counselling.

- **SWRK 400 Policy and Practice for Refugees.**
  (3) (Fall and Summer) (Restriction: Limited to B.S.W. U3 and U3 Non-Social Work students only) This course examines the kinds of research questions found in social work, the stages of the problem-solving process, and some methods commonly employed to address such questions. The course also aims to locate research, as a "way of knowing", into a broader debate on methodology.

- **SWRK 401 Social Work Research.**
  (3) (Winter) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students only.) This course examines the kinds of research questions found in social work, the stages of the problem-solving process, and some methods commonly employed to address such questions. The course also aims to locate research, as a "way of knowing", into a broader debate on methodology.

- **SWRK 402 Developmental Disabilities.**
  (3) (Winter) (Restriction: Limited to U2 and U3 level students) This course provides an indepth analysis of social work's response to persons with a developmental disability. Students will review both the practice and the policy considerations that pertain to the field of developmental disabilities with a special emphasis on the effects of deinstitutionalization and the community response.

- **SWRK 403 Assessment - Clinical and Community.**
  (3) (Winter) (Restriction: Limited to B.S.W. U2, B.S.W. U3 and Special B.S.W. students only.) (Prerequisite: SWRK 240) Social work assessment is the crucial professional activity on which all interventions, clinical and community, are based. This course will address relevant factors involved in the situations faced by social work practitioners and their clients as they attempt to collaboratively solve problems.

- **SWRK 420 Advanced Field Practice 1.**
  (3) (Fall and Winter and Summer) (Prerequisite: SWRK 355 and SWRK 356) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Supervised educational experience in social work practice at an advanced level.

- **SWRK 421 Advanced Field Practice 2.**
  (3) (Fall and Winter and Summer) (Prerequisite: SWRK 420) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Supervised educational experience in social work practice at an advanced level.

- **SWRK 434 Practice with Involuntary Clients.**
  (3) (Winter) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Issues and practice problems encountered with involuntary clients in settings such as courts, youth protection agencies and total institutions. Topics include: reaction of the client and worker to the "involuntary" situation, the ethics and efficacy of "coerced treatment" and practice interventions with involuntary clients. Students draw on their own experience with these issues.

- **SWRK 438 Drug Addiction and Society.**
  (3) (Fall or Winter) (Restriction: Limited to B.S.W. U3 and Special B.S.W. Students) This course examines primarily the abuse in our society of illegal drugs e.g. heroin, cocaine and marijuana, and the abuse of prescription drugs, e.g. tranquilizers and narcotics. Topics include: assessment and treatment; I.V. drug use and the spread of the HIV virus; Canada's policy on illegal drugs.

- **SWRK 451 Rethinking Child Welfare.**
  (3) (Fall or Winter) (Restriction: Limited to B.S.W. U3 students) Seminar will develop an appraisal of contemporary trends in child welfare and examine the forces which bring families into contact with social services. Course is aimed at
students who are interested in reflecting critically about these issues both at the organizational level and in terms of innovative practice.

**SWRK 458 Social Policy and Administration.**
(3) (Fall and Summer) (Prerequisite: SWRK 352) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An analysis of the administrative structures and dynamics of social service organizations, with special attention to Québec policies and to the role of social workers. Examples are drawn from current field experiences of students.

**● SWRK 459 Adult/Child Sexual Relations.**
(3) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An examination of intra/extra-familial child sexual abuse with a focus on the individual and family psychodynamics, the legal systems that respond to the problem and on assessment and treatment skills.

**SWRK 463 Practice with the Elderly.**
(3) (Winter) (Restriction: Limited to B.S.W. U2, B.S.W. U3, Special B.S.W. and U3 non-B.S.W. students) An introduction to social services to the aged. The involvement of the social worker with respect to: institutionalizing the elderly, community care, economics and aging, widowhood, separation and loss, the family situation of the elderly, and the strengths of older people.

**● SWRK 465 School Social Services.**
(3) (Restriction: Limited to B.S.W. students) (Restriction: Not open to U1 students) Introduction to models of school social work practice. Diagnostic and practice approaches places emphasis on the relationships between the school, family, community and the pupil. Problems which affect the school social worker include: youth protection, children with special needs, drop-outs, conduct-disordered behaviour, integration of immigrants and violence.

**● SWRK 467 Approaches to Community Practice.**
(3) (Restriction: Limited to U3 level students. Non-Social Work students are expected to have relevant field experience) A comparison of models of community practice in a variety of social settings. An analysis of practice assumptions and methods. Intervention strategies and methods from student practice will be discussed.

**SWRK 471 Tutorial in Social Work Research.**
(3) (Fall and Winter and Summer) (Prerequisite: SWRK 401) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Opportunity for interested students to conduct a small-scale practical research project, either individually or in a small group, with tutorial assistance from staff members.

**SWRK 472 Family Assessment.**
(3) (Fall) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An opportunity to participate in a seminar focusing on an integrative model of work with families. Concurrent field practice with families required.

**● SWRK 473 Individuals and Families in Crisis.**
(3) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Theory and practice of work with individuals and families under stress. Topics include: categories of hazardous events; affective, behavioural and role disorganization; phases in the crisis cycle; techniques of crisis intervention and abatement.

**● SWRK 478 Professional Practice Issues.**
(3) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Theoretical, technical and values dimensions of selected direct practice issues. Topics include: contracting with non-voluntary clients; dangerousness and safety; clashes in perspectives; interprofessional rivalry; chronology; relationship; hierarchy, bureaucracy and professional autonomy; limits to self-determination; resistance; discouragement, powerlessness and "burnout".

**● SWRK 481 Goal Directed Time Limited Practice.**
(3) (Fall) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Principles of goal directed time limited casework with individuals, couples and families. Relevant theory will be examined and applied to practice drawing upon examples from the students’ field experiences. Emphasis on goal setting, contracting, use of tasks, evaluation of practice.

**SWRK 482 Mental Health and Illness.**
(3) (Winter) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An overview of practice in the field of mental health and illness, as a base for practicum in related settings. Content includes basic understanding of mental illness, its impact on patients of all ages and their families, current approaches to prevention and treatment, cultural and ethical issues, and future orientations.

**SWRK 485 Tutorial: Social Work Practice.**
(3) (Fall and Winter and Summer) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Practice competence with various population groups. Topics may change from year to year.

**SWRK 486 Tutorial in Social Policy.**
(3) (Fall and Winter and Summer) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An individual or small group tutorial in which students will work independently in conjunction with the instructor. The student will undertake a project related to the area of specialization.

**SWRK 486 Tutorial in Social Policy.**
(3) (Fall and Winter and Summer) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) An individual or small group tutorial in which students will work independently in conjunction with the instructor. The student will undertake a project related to the area of specialization.

**SWRK 492 Violence against Women and Children.**
(3) (Winter) (Restriction: Limited to B.S.W. U3, Special B.S.W., and Women's Studies Major/Minor Concentration students) Through a feminist theoretical lens, this course examines a range of male-perpetrated sexual and physical abuses of women and children. Such an examination includes critical appraisals of "common knowledge", research findings, dominant modes of intervention, and social welfare policies and legislation.

**SWRK 493 Seminar on Child Protection.**
(3) (Fall) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) The field of child protection and the problems of physical and sexual abuse and neglect of children. The general characteristics of this vulnerable population group and their families as well as some models of intervention.

**SWRK 497 Clinical Practice Seminar 1.**
(3) (Restriction: Limited to B.S.W. U3 and Special B.S.W. students) Practice competence with various population groups: physically and mentally handicapped, terminally-ill, multi-problem families. Topics may change from year to year.

**SWRK 498 Clinical Practice Seminar 2.**
(3) (Fall) (Restriction: Limited to B.S.W. U2, B.S.W. U3, Special B.S.W. and U3 non-B.S.W. students) Practice competence with various population groups. Topics may change from year to year.

**● SWRK 531 Social Perspectives on Aging 2.**
(3) (Summer) (Restriction: School of Social Work: Limited to U3 and M.S.W. students) Instructors and students from various disciplines will focus on certain aspects of aging related to issues of independence in later life. The provision of services and their impact on the recipients will be

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- ♦ denotes courses with limited enrolment.
evaluated. Senior citizens will participate in the course as Senior Consultants.

SWRK 532 International Social Work.
(3) (Winter) (Restriction: Limited to B.S.W. U3, Special B.S.W. and M.S.W. students) Discussion based upon intensive study and reports on problems in selected countries. Emphasis on identifying major social problems, understanding the social forces bearing on those problems and considering appropriate professional approaches to aid in their solution.

WMST 494 Internship: Women's Studies.
(3) (Winter) (Restriction: Limited to B.S.W. U3, Special B.S.W. and M.S.W. students) A seminar to examine practice with persons living with chronic and terminal illnesses. Needs of families, caretakers, health care workers and the gay community are studied.

WMST-Women's Studies
Offered by: Arts - Dean's Office

WMST 200 Introduction to Women's Studies.
(3) An introduction to the interdisciplinary field of Women's Studies from historical and contemporary perspectives, this course will explore key concepts, issues and modes of analysis based on the intersection of gender with factors such as race, ethnicity, class, religion, and sexuality.

WMST 301 Women's Studies Current Topics 1.
(3) (Prerequisite: WMST 200 or PHIL 242 or permission of instructor) Consideration of contemporary issues in Women's Studies. Topic and approach will vary from year to year.

WMST 302 Women's Studies Current Topics 2.
(3) (Prerequisite: WMST 200 or PHIL 242 or permission of instructor) Consideration of contemporary issues in Women's Studies. Topic and approach will vary from year to year.

WMST 303 Feminist Theory and Research.
(3) (Prerequisite: WMST 200) (Restriction: Open to Women's Studies students only) This course explores contemporary feminist theories and critiques of approaches to knowledge developed in the humanities, social, natural, and applied sciences. Feminist contributions to research and critical practices will be examined in relation to course projects.

WMST 401 Women's Studies Special Topics 1.
(3) (Prerequisite: WMST 200 or PHIL 242 or permission of instructor) Advanced seminar in selected themes and issues in Women's Studies. Topics and theoretical or disciplinary approach will vary from year to year.

WMST 402 Women's Studies Special Topics 2.
(3) (Prerequisite: WMST 200 or PHIL 242 or permission of instructor) Advanced seminar in selected themes and issues in Women's Studies. Topics and theoretical or disciplinary approach will vary from year to year.

WMST 461 Tutorial in Women's Studies 1.
(3) (Prerequisite: WMST 303 or permission of instructor) Advanced reading course and independent research project under the supervision of an instructor on aspects of Women's Studies.

WMST 462 Tutorial in Women's Studies 2.
(3) (Prerequisite: WMST 303 and permission of instructor) (Restriction: Majors, Honours and Joint Honours students in Women's Studies.) Advanced reading course and independent research project under the supervision of an instructor on aspects of Women's Studies.

WMST 494 Internship: Women's Studies.
(3) (Restrictions: Open to U-2 and U-3 students after completing 30 credits of a 90 credit program or 45 credits of a 96-120 credit program. A minimum CGPA of 2.7, and permission of the Women's Studies Internship Program Coordinator required. This course will not normally fulfill program requirements for seminar or 400-level courses.) Internship with an approved host institution or organization.

WMST 495D1 (1.5), WMST 495D2 (1.5) Honours/Joint Honours Colloquium.
(Prerequisite: WMST 303.) (Corequisite: WMST 497D1.) (Restriction: Honours/Joint Honours students in Women's Studies) (Students must register for both WMST 495D1 and WMST 495D2.) (No credit will be given for this course unless both WMST 495D1 and WMST 495D2 are successfully completed in consecutive terms.) Students will research, discuss, and present their thesis topics.

WMST 497D1 (1.5), WMST 497D2 (1.5) Honours/Joint Honours Thesis.
(Prerequisite: WMST 303) (Corequisite: WMST 495D1) (Students must register for both WMST 497D1 and WMST 497D2.) (No credit will be given for this course unless both WMST 497D1 and WMST 497D2 are successfully completed in consecutive terms) Supervised reading and preparation of a Joint Honours thesis under the direction of a member of staff.

WMST 498 Seminar on Women's Studies 1.
(3) An interdisciplinary seminar on topics of common interest to the area of Women's Studies.

WMST 499 Seminar on Women's Studies 2.
(3) WMST 501 Advanced Topics 1.
(3) (Prerequisite: WMST 303 or permission of instructor) Advanced topics in theory and methodology related to Women's Studies. Topics will vary from year to year.

WMST 502 Advanced Topics 2.
(3) (Prerequisite: WMST 303 or permission of instructor) Advanced topics in theory and methodology related to Women's Studies. Topics will vary from year to year.

WMST 513 Gender, Race and Science.
(3) This course is a philosophical exploration of the nature of science concerning sex, gender, race and racial stereotypes, and the construction of “womanhood”. The social history/biography of women and minorities in science will be studied to develop a critique of biological determinism and explore the meaning and possibility of a “feminist science”.

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Professional Practice (Stage) in Dietetics involving special prerequisites
Indicates that departmental approval/permission must be obtained by a student prior to registration.
Denotes courses not available as Education electives.
Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
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C-107 2006-2007 Undergraduate Programs Calendar, McGill University
Faculties of Arts and Science

BASC-Arts & Science
Offered by: Science

BASC 201 Arts & Science Integrative Topics.
(3) (Restriction: Open only to students registered in the B.A. & Sc.) Topics that integrate information from Arts & Science (e.g. biomedical ethics; history of science; scientific reasoning; military conflict and geography; philosophy of mind, etc.) to exemplify the benefits of applying scholarship from diverse areas to a problem.

COGS-Cognitive Science
Offered by:

(6) (Prerequisites: 30 credits if Cognitive Science program. Approval of program Coordinator. CGPA >3.00.) (Note: The student must find a Faculty research advisor in the Department of Linguistics, Philosophy, Physiology or Psychology, or the School of Computer Science. A research proposal worked out with the research advisor requires approval of the Coordinator of the Cognitive Science Program. The research will be reported in a scholarly paper to be evaluated by the research advisor and a second reader appointed by the Coordinator of the Cognitive Science Program. Please see regulations concerning Project Courses. COGS 401 is not a prerequisite to COGS 402. Thus the 2 courses can be done in either order, or either of the courses can be done if a student is to take only one of them.) Research project supervised by a McGill Faculty member.

(6) (Prerequisites: 30 credits if Cognitive Science program. Approval of program Coordinator. CGPA >3.00.) (Note: The student must find a Faculty research advisor in the Department of Linguistics, Philosophy, Physiology or Psychology, or the School of Computer Science. A research proposal worked out with the research advisor requires approval of the Coordinator of the Cognitive Science Program. The research will be reported in a scholarly paper to be evaluated by the research advisor and a second reader appointed by the Coordinator of the Cognitive Science Program. Please see regulations concerning Project Courses. COGS 401 is not a prerequisite to COGS 402. Thus the 2 courses can be done in either order, or either of the courses can be done if a student is to take only one of them.) Research project supervised by a McGill Faculty member.

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Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
◆ Indicates that departmental approval/permission must be obtained by a student prior to registration.
‡ Denotes courses not available as Education electives.
❖ Denotes courses with limited enrolment.
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Faculty of Education

EDEA-Arts Education

Offered by: Integrated Studies in Education

▲ EDEA 201 Basic Musicianship Teaching 1.
(3) (Offered through Distance Education) Introduction to the elements of music theory through techniques of aural training, sight singing and keyboard. Lab work at the keyboard.

▲ EDEA 204 Drawing.
(3) Development of sound drafting skills through the study of organic forms and the human figure in various media.

▲ EDEA 205 Painting 2.
(3) (Prerequisite: EDEA 204) Investigation of color, media, tools, techniques. Studies of natural forms, the human figure.

EDEA 206 1st Year Professional Seminar.
(1) (Corequisite: EDFE 205) This seminar along with First Year Field Experience Music serves as an orientation to the culture of the school and to teaching as a profession. Emphasis is on the general functioning of elementary and secondary schools. Topics include the role of the arts in the curriculum.

EDEA 207 2nd Year Professional Seminar.
(1) (Prerequisites: EDEA 206 and EDFE 205.) (Corequisite: EDEA 206) This seminar continues the process of developing a professional identity. Topics include strategies for accommodating individual differences, coaching and tutoring individuals and small groups, peer teaching and tutoring, the role of the arts in the curriculum, differences and similarities in teaching music and teaching other subjects.

▲ EDEA 241 Basic Art Media for Classroom.
(3) An introduction to media that can be easily adapted to elementary classroom studio exploration.

▲ EDEA 242 Cultural Skills.
(3) Development of First Nations and Inuit skills and knowledge in art, music, handicrafts or other areas both modern and traditional. Topics will vary and be chosen from a range identified by classroom teachers. Course may continue over several training sessions.

▲ EDEA 296 Basic Design.
(3) Exploration of the basic elements of visual art through two dimensional composition and three-dimensional constructions. Investigation of materials and tools and the processes of manipulating and relating materials.

▲ EDEA 301 Foundations of Education in the Arts.
(3) An introduction to the role of the arts in education and society with emphasis on the nature of aesthetic encounters and their potential to facilitate values inquiry.

▲ EDEA 302 Special Topics.
(3) Selected topics and contemporary issues in education in the arts. The content will vary from year to year and will be announced prior to registration.

▲ EDEA 303 Musicianship for Teachers 2.
(3) (Prerequisites: EDEA 201 or EDEA 214 and permission of instructor) Advanced course in the study of the elements of music theory through techniques of aural training, sight singing, keyboard or ukulele.

▲ EDEA 304 Painting 3.
(3) (Prerequisite: EDEA 205) Continuation of course EDEA 205 with emphasis on drawing and structure.

▲ EDEA 305 Painting 4.
(3) Continuation of course EDEA 304 with emphasis on advanced composition.

EDEA 306 3rd Year Professional Seminar.
(2) (Prerequisites: EDEA 207 and EDFE 206.) (Corequisite: EDFE 206) This seminar emphasizes classroom management in the elementary classroom and the development of strategies for teaching music to large groups; critical examination of the school, the program, the teacher and the student body and how these elements converge in the elementary classroom.

▲ EDEA 307 Drawing 2.
(3) (Prerequisite: EDEA 204) A course designed to further the individual's natural drawing ability, and to develop a keen, perceptive approach to varied subject matter, including figure drawing.

▲ EDEA 314 Instruments in the Classroom.
(3) (The ability to read notation is not a prerequisite) Rhythmic and melodic instruments are introduced and their potential to enhance songs, poems, stories and movement is explored through students' active participation.

▲ EDEA 322 Art Curriculum and Instruction - Elementary.
(3) An introduction to theories on children's visual expression and perception, lesson planning, and classroom-oriented studio practice.

▲ EDEA 335 Listening in Education.
(3) Coordination of musical perception and movement and development of communication skills that arise from this course treatment. Structured and improvised eurhythmic activities are used to explore the relationship between time, space and energy. Classroom applications are explored. No formal music training is required.

▲ EDEA 337 Creative Dramatics for Classroom.
(3) (Offered through Continuing Education) A participatory course in creative drama and the use of improvisational techniques in the pursuit of student development.

▲ EDEA 342 Curriculum and Instruction in Drama Education.
(3) Pedagogical theory and practical applications in the teaching of developmental drama, dramatic forms, improvisation and theatre arts.

▲ EDEA 345 Music Curriculum and Instruction for Generalists.
(3) Study of materials and instructional techniques grounded in an understanding of basic musical concepts and contemporary theories of music teaching and learning. Definition of musical objectives and rationales, selection and development of materials, review of MEQ guidelines. Participation through singing, movement, listening, discussion and lesson planning and implementation.

▲ EDEA 352 Music Listening in Education.
(3) A perceptual development approach to music listening focusing on the relationship between the affective response and the musical stimulus. Designed to enhance the listening experience and to facilitate meaningful discourse about music. No formal music training is required.

▲ EDEA 360 Movement, Music and Communication.
(3) Coordination of musical perception and movement and development of communication skills that arise from this course treatment. Structured and improvised eurhythmic activities are used to explore the relationship between time, space and energy. Classroom applications are explored. No formal music training is required.

▲ EDEA 398 Art Classroom: Art Education and Aesthetic Experience.
(3) (Offered through Continuing Education) A course in the role of the arts in teaching music and teaching other subjects.
EDEC 404 Painting 5.
(3) (Prerequisite: EDEA 305) Major problems in graphic expression. A tutorial course where the student selects the instructor. Individual conferences and criticism leads the student to an independent approach to painting.

▲ EDEC 405 Painting 6.
(3) (Prerequisite: EDEA 404) The student will be required to work in a variety of sizes up to mural painting. Exploration of selected media and new dimensions of design.

EDEC 406 4th Year Professional Seminar.
(2) (Prerequisites: EDEA 306 and EDFE 305.) (Corequisite: EDFA 405) Continuation of topics from Third Year Professional Seminar Music with emphasis on philosophical issues of music teaching at the secondary level.

EDEC 407 Final Year Professional Seminar Music.
(3) (Corequisite: EDFA 407) (Restriction: Students in B.Ed. in Music or Concurrent B.Ed./B.Mus.) Summary of philosophical, theoretical and practical issues related to the profession of teaching.

■ EDEC 410 Aesthetics and Art for the Classroom.
(3) (Offered through Summer Studies) The course is designed to address the need for teachers to be able to lead students to increased perceptual awareness and critical thinking in relation to their visual environment. Museum visits are a regular component of this course.

※ EDEC 422 Elementary Music Curriculum and Instruction.
(3) Preparation for Third Year Field Experience. Includes the study of curriculum content and instructional approaches, classroom management issues, lesson planning and program development for elementary schools.

※ EDEC 472 Secondary Music Curriculum and Instruction.
(3) Preparation for Fourth Year Field Experience. Includes the study of curriculum content and instructional approaches, classroom management issues, lesson planning and program development for secondary schools.

EDEC 492 Drama/Play Production in Education.
(3) (Prerequisites: one or more of the following, or the permission of the instructor: EDEA 394, EDEA 494, ENGL 289) An exploration of dramatic forms, the development of drama techniques in the teaching of acting skills and methods of play production and direction for use with young people.

■ EDEC 494 Improvisational Theatre Arts for Class.
(3) (Prerequisite: EDEA 394) Further practice in and perspectives on dramatic activities through improvisation and various dramatic art forms. Analysis and interpretation of scripted scenes from improvisation to theatrical presentation are included.

■ EDEC 496 Sculpture 1.
(3) (Offered through Continuing Education) An investigation of basic sculpture methods and concepts with a view toward developing personal aptitudes. Development of three-dimensional thinking through direct experience with processes using new and traditional materials.

■ EDEC 497 Sculpture 2.
(3) (Prerequisite: EDEA 496) Further exploration of processes introduced in Sculpture 2 plus an introduction to constructive sculpture.

EDEC-Curriculum and Instruction
Offered by: Integrated Studies in Ed

▲ EDEC 200 Introduction to Inuit Studies.
(3) An introductory survey of Inuit history, language and culture, and of the social and political issues affecting contemporary Inuit life.

EDEC 201 First Year Professional Seminar.
(1) (Corequisite: EDFA 200) (Restriction: Open to B.Ed. Secondary and B.Ed. K/Elem. students only) Orientation to the culture of the school and to teaching as a profession, focusing on the general functioning of schools. Professional portfolios will be introduced.

▲ EDEC 202 Effective Communication.
(3) (Restriction: Not open to students who have taken EDES 201, EDEC 203, EDEC 204, EDEC 206 or EDEC 206) (Offered through Continuing Education) (Note that Arts students are allowed 6 credits in writing courses and may only take an EC course before EFRL 250.) A course designed to help students develop the quality and effectiveness of their writing and speaking (in English) in a variety of academic disciplines and professional situations. Emphasis is on identifying, analyzing, and solving writing and speaking problems.

▲ EDEC 203 Communication in Education.
(3) (Restriction: Education students who have not taken EDES 201 or EDEC 202) (Because this course uses a workshop format, attendance at first class is desirable.) Written and oral communication in Education (in English): emphasis on strategies for identifying, analyzing and solving writing and speaking problems. Course work based on academic and professional communication in education, with a particular focus on classroom communication.

EDEC 204 Communication in Social Work.
(3) (Restriction: Social Work students who have not taken EDES 201 or EDEC 202) (Because this course uses a workshop format, attendance at first class is desirable.) Written and oral communication in Social Work (in English): emphasis on strategies for identifying, analyzing and solving writing and speaking problems. Course work based on academic and professional communication in social work.

EDEC 205 Communication in Management 1.
(3) (Restriction: Placement test required) (Restriction: B.Com. students who have not taken EDES 201 or EDEC 202) (Because this course uses a workshop format, attendance at first class is desirable.) (Continuing Education: requirement for for the EA, AAC, and the Canadian Institute of Management) Written and oral communication in Management (in English): emphasis on strategies for identifying, analyzing and solving writing and speaking problems. Course work based on academic and professional communication in management.

EDEC 206 Communication in Engineering.
(3) (Limited enrolment) (Restriction: B.Eng. students who have not taken EDES 201 or EDEC 202) (Because this course uses a workshop format, attendance at first class is desirable.) Written and oral communication in Engineering (in English): strategies for generating, developing, organizing, and presenting ideas in a technical setting; problem-solving; communicating to different audiences, editing and revising; and public speaking. Course work based on academic, technical, and professional writing in engineering.

EDEC 207 Communication in Public Relations.
(3) (Restriction: Students in Public Relations Management Certificate only.) Identifying, analyzing, and solving communication problems in a variety of public relations contexts. Emphasis on news releases, media kits, informational and promotional materials, and oral presentations.

EDEC 208 Expressive Writing.
(3) The focus is on strategies for writing authentic,
EDEC 215 English Language Requirement.  
(0) The English Language Proficiency Test is a program requirement that must be completed in the first term. Anyone who fails the test must re-take and pass it prior to the second-year field experience. Anyone who is unsuccessful after two attempts must withdraw from the program.

EDEC 220 Curriculum Development.  
(3) This course, introducing Aboriginal educators to the principles and processes of curriculum development, emphasizes the impact of language and culture on the development of materials. Features of the process of curriculum and materials design, which are strategically important in meeting the needs of Aboriginal students, are highlighted.

EDEC 221 Leadership and Group Skills.  
(3) (Restriction: Normally for students registered within Certificate in First Nations and Inuit Educational Leadership) Management, effective team leadership, group dynamics, and communications skills crucial to First Nations and Inuit community-based educational leaders. Differences between traditional and mainstream institutional practices and leadership skills.

EDEC 222 Personnel Management and Support.  
(3) (Restriction: Normally for students registered within Certificate in First Nations and Inuit Educational Leadership.) Methods of appropriate and supportive supervision in a First Nations and Inuit educational milieu. Techniques of developing staff members’ potential through staff development and quality performance. A compulsory practicum component will demonstrate students’ transfer of theory to practice.

EDEC 233 First Nations and Inuit Education.  
(3) (Restriction: Normally for students who have taken EDEC 441. Not for credit if EDEC 410 or EDER 464 has been or is being taken.) Study of First Nations and Inuit schools as diverse social, cultural, linguistic, political and pedagogical settings. Considers school and community minority-majority interactions and their influence on teaching and learning in educational settings. Examines how a teacher’s personal practice can be influenced by an understanding of these factors.  
▲ EDEC 236 Mohawk Second Language 2.  
(3) (Prerequisite: EDEC 296) Students will continue their study of Mohawk syntax and morphology and improve their literacy. Oral skills will focus on basic interactions and classroom commands. Students will discuss the difficulties encountered in learning a second language and consider implications for their students’ language learning.

▲ EDEC 239 Mi'kmaq Language 1.  
(3) Students will learn the phonological system and develop their literacy skills. They will also begin to explore Mi'kmaq syntax and morphology. Word generation conventions will be introduced and Mi'kmaq labels developed to describe how the language functions.

▲ EDEC 240 Mi'kmaq Language 2.  
(3) (Prerequisite: EDEC 239) Students will continue their syntactical and morphological analysis of Mi'kmaq and further develop their reading and writing skills. Features of Mi'kmaq that are difficult for second language learners will be highlighted and implications for classroom practice discussed.

▲ EDEC 241 Cree Language 1.  
(3) Students will learn their own phonology and see how the phonological system is reflected in dialects. They will learn the spelling rules and develop their literacy skills in syllabics. Finally, they will derive Cree grammatical terms and begin to study Cree morphology and syntax.  
▲ EDEC 242 Cree Language 2.  
(3) (Prerequisite: EDEC 241) Students will study the morphology and syntax analysis of Cree at a more advanced level and begin the study of word generation conventions. In addition, features of Cree that are difficult in first language acquisition will be highlighted and implications for classroom practice discussed.

EDEC 243 Teaching: Multigrade Classrooms.  
(3) This course introduces students to concepts and strategies for organizing, teaching, and evaluating learning in classes in which there are students from 2, 3 or 4 grade levels.  
▲ EDEC 244 Issues in Aboriginal Education.  
(3) The content of this course changes depending on the needs and interests of the students and the educational communities participating in programs administered by the Office of First Nations and Inuit Education. It always addresses issues related to Aboriginal education, e.g., local control, development of linguistic and cultural policies.

EDEC 245 Middle School Teaching.  
(3) Explores the philosophy of middle school teaching and how this impacts on the institutional, curricula and instructional decisions made in meeting the specialized needs of Aboriginal adolescents. Particular attention will be paid to how middle school philosophy can be integrated with Aboriginal values.

EDEC 246 Middle School Curriculum.  
(3) (Prerequisite: EDEC 245) Curriculum principles underlying an integrated approach to learning in the middle school level; surveys various curricula looking at program structures; explores teaching and learning methodologies appropriate for this age level when implementing an integrated curriculum, with particular attention to integrating indigenous language and culture.

EDEC 247 Policy Issues in Quebec Education.  
(3) (Restriction: Not open to students who have taken EDEM 405.) This course examines the organization of education in Quebec from various perspectives, including historical, political, social and legal. It aims to provide students with sufficient knowledge that they can begin the life-long learning process of a professional educator, aware of, and contributing to, the policy talk on school.

EDEC 248 Multicultural Education.  
(3) (Restriction: Not open to students who have taken EDEC 410 and EDER 464.) Introduction to theories about intercultural and multicultural education in Quebec and Canadian schools.

EDEC 250 Philosophical Foundations.  
(3) (Restriction: Not open to students who have taken EDER 400.) Ideas essential for the development of a coherent educational theory and sound professional practice. Reflections on: the nature of the person, of reality, of knowledge, and of value; the aims of education, the nature of the school and the curriculum, the roles and responsibilities of professional educators.

EDEC 251 Philosophy of Catholic Education.  
(3) (Restriction: Not open to students who have taken EDER 398.) An exploration of the philosophy of Catholic education, and its relevance in the world today.

EDEC 262 Media, Technology and Education.  
(3) (Restriction: Not open to students who have taken EDEC 370.) Examines the impact of media and technology on the classroom setting. Examines the ways in which communication affects the roles and relationships within the educational setting. The use of media and technology in the classroom is considered in terms of the educational goals and in the light of the developments of the modern world. In the study of technological education, students consider the role of the teacher in the classroom, the potential and limitations of technological education, the educational and social consequences of technological education, and the legal and ethical considerations in educational technology.

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materials production and evaluation. Methods of adapting curricula to local needs and of developing local courses of study in First Nations and Inuit community schools.

**EDEE 241 Teaching Language Arts.**
(3) (Prerequisite: Fluency in Inuktitut or another Aboriginal language) Organization and planning of Language Arts programs in Inuktitut or another Aboriginal language. Preparation and presentation of lesson sequences. Use of various techniques to improve language skills in listening, speaking, reading and writing.

**EDEE 242 Teaching Mathematics.**
(3) An introduction to mathematical concepts and approaches to teaching First Nations or Inuit students at the elementary level. Emphasis on the preparation and use of materials directly related to First Nations or Inuit life.

**EDEE 243 Reading Methods in Inuktitut/Cree.**
(3) (Prerequisite: Fluency in Inuktitut/Cree syllabics) Overview of reading theories and their application to Inuktitut/Cree; processes used by proficient readers. Methods of teaching reading.

**EDEE 245 Orientation to Education.**
(3) The First Nations or Inuit classroom as a unique pedagogical setting. Introduction to planning and maintaining a learning environment for First Nations or Inuit children. Study and application of differential learning styles.

**EDEE 246 Cultivating Language and Thought.**
(3) Study and observation of spoken language development and its maturation in First Nations or Inuit children. Application of observed data to the selection and devising of appropriate materials and methods for pre-school and elementary levels.

**EDEE 248 Reading and Writing Inuktitut/Cree.**
(3) (Prerequisite: Fluency in Inuktitut/Cree syllabics) Methods of teaching syllabic reading and writing. Understanding the principles of sight word reading instruction, child observation, material development and guided instruction.

**EDEE 249 Inuktitut Orthography and Grammar.**
(3) (Prerequisite: Fluency in Inuktitut) Structure and morphology of Inuktitut for teachers working in that language. Use of orthography, both qaliujaqapit (Roman script) and qaniujaqapit (syllabics) as established by the Inuit Cultural Association.

**EDEE 250 The Kindergarten Classroom.**
(2) (Restriction: Not open to students who have taken EDEC 310) An orientation to the Kindergarten curriculum. Integration of the school subject areas (language arts, second language, mathematics, social sciences, science, expressive arts, moral and religious education, and physical education) in a manner appropriate to the developmental level of the pre-school child.

**EDEE 261 Reading Clinic - Early Childhood.**
(3) Reading problems at a readiness and basic decoding level presented in a clinic format covering classroom diagnosis and remediation.

**EDEE 270 Elementary School Science.**
(3) Science as a means of exploring and explaining our environment. A study of some of the fundamental concepts and process skills common to most elementary programs.

**EDEE 275 Science Teaching.**
(2) (Prerequisite: EDEE 270.) (Restriction: Not open to students who have taken EDEE 372 (Teaching Science)) A study of science programs and teaching strategies appropriate for providing elementary school children with an appreciation of the nature and method of science inquiry.

**EDEE 280 Geography, History and Citizenship Education.**
(3) (Restriction: Faculty of Education students.) Designed for elementary school teachers. A multi-disciplinary and cross-curricular investigation of various citizenship education themes, geographical regions and historical periods as outlined in the Quebec Education Program.

**EDEE 282 Teaching Social Sciences.**
(2) (Prerequisite: EDEE 280.) (Restriction: Not open to students who have taken EDEE 382) Programs, materials and strategies for social studies from Kindergarten through grade six.

**EDEE 290 Cooperative Learning.**
(3) Principles of cooperative learning and how they may be applied in First Nations and Inuit schools to the creation of team-building classroom activities and to the development of culturally appropriate learning materials.

**EDEE 291 Cultural Values and Socialization.**
(3) An introduction to the educational implications of cultural values and patterns of socialization of children. Topics will include a description of the cultural values of Aboriginal peoples, home styles of communication, learning and discipline and intercultural educational issues.

**EDEE 292 Using Instructional Resources.**
(3) Students will learn to find, assess, and use a variety of instructional resources. Specifically, they will learn how to evaluate the instructional value of software packages and other established audio-visual materials; how to make and use simple audio-visual materials; and how to find additional resource material in the library.

**EDEE 294 Algonquin Language 1.**
(3) Students will learn the Algonquin phonological system. They will focus on animate/inanimate and inflections for agreement, aspect, tense and number. They will analyze word generation conventions and derive Algonquin labels to describe how Algonquin operates.

**EDEE 296 Mohawk Second Language 1.**
(3) Students will develop a basic knowledge of the Mohawk phonological system and have some understanding of the morphological and syntactic rules, the stress and intonation patterns which control the language, and how Mohawk culture is reflected in the language.

**EDEE 297 Mohawk Language 1.**
(3) Students will learn the Mohawk phonological system (including glottal stop, length marking and down stress). Synthetically and morphologically, they will focus on the morpheme system (tense included). Word generation conventions will be analyzed and Mohawk labels developed to describe how the language functions.

**EDEE 298 Mohawk Language 2.**
(3) (Prerequisite: EDEE 297) Students will complete their earlier study of the predictable items in the language, and then focus on the non-predictable items in Mohawk: irregular verbs, reflexive and semi-reflexive verbs, purposive stem, translocative, etc. Importance will be placed on understanding and writing skills.

**EDEE 325 Children's Literature.**
(3) (Restriction: Not open to students who have taken ENGL 240, ENGL 341) (Limited enrollment) Selection and use of literature suitable for children in the elementary school.

**EDEE 332 Teaching Mathematics 1.**
(3) (Prerequisite: EDEE 230.) Curriculum trends in teaching mathematics to children. Programs, methods, materials and evaluation procedures appropriate for the elementary school.

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❄ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
Please check timetabled information for labs schedule.

▲ EDEE 340 Special Topics: Cultural Issues.
(3) Seminars on Inuit culture or on selected aspects of the culture of First Nations peoples. Topics will include historical cultural contexts, native oral tradition, religious beliefs and cultural change. Preparation of a project on an aspect of First Nations or Inuit life will be required.

▲ EDEE 341 Inuktitut for Beginners.
(3) An introduction to the basic structures of Inuktitut, with intensive drill and classroom practice in the use of the language.

▲ EDEE 342 Intermediate Inuktitut/Amerindian Language.
(3) (Prerequisite(s): EDEE 249 or equivalent, e.g. EDEE 295, EDEE 298 or permission of Director) A study for Inuktitut/Amerindian language speakers, of Inuktitut/Amerindian language phonology and structure, emphasizing the connection between the two, demonstrating the orderliness of many dialectic differences.

▲ EDEE 344 Advanced Inuktitut/Amerindian Language.
(3) (Prerequisite(s): EDEE 342 or permission of Director) The final course in a set dealing with Inuktitut/Amerindian Language phonology and structure. An understanding of basic Inuktitut/Amerindian Language syntax in particular, rules governing verb and possessive endings.

▲ EDEE 345 Literature and Creative Writing 1.
(3) A study of the development of oral and written poetry and prose in the various dialects of Inuktitut or of another Aboriginal Language from pre-European contact to the present day. Emphasis on themes and structures in contemporary writings. Original production of poetry, narrative, drama and journalism in the selected language is required of each student.

▲ EDEE 346 Literature and Creative Writing 2.
(3) (Prerequisite: EDEE 345) A continuation of course EDEE 345.

EDEE 350 Integrating the Curriculum.
(2) (Corequisites: EDEE 352, EDEE 355 and EDFE 303.) (Restriction: B.Ed. (K/Elem) students) Strategies and methods for integrating the individual subject areas in the elementary school curriculum, using the Québec curriculum as the primary example.

EDEE 352 Classroom Practices.
(2) (Corequisites: EDEE 350, EDEE 355 and EDFE 303.) (Restriction: B.Ed. (K/Elem) students) Theory-based strategies for setting up, managing and teaching in the elementary school classroom.

EDEE 355 Classroom-based Evaluation.
(3) (Corequisites: EDEE 350, EDEE 352 and EDFE 303.) (Restriction: B.Ed. (K/Elem) students) The role of evaluation within Kindergarten/elementary school programs. Topics include the kinds of information needed, different techniques for collecting that information, and ways of interpreting it to make educational decisions. Principles and a variety of methods for evaluation are discussed and practiced.

EDEE 372 Teaching Science.
(3) (Students must check timetable information for labs schedule) A study of science programs and teaching strategies appropriate for providing elementary school children with an appreciation of the nature and method of science inquiry.

EDEE 382 Teaching Social Studies.
(3) Programs, materials and strategies for social studies from Kindergarten through grade six.

† EDEE 402 Curriculum Development.
(3) (Corequisite: EDFE 431) Related to the field experience; workshops on integrated programs and appropriate learning environments for elementary school children, organization of groups, use of media, materials and projects, diagnosis and evaluation. Emphasis on adapting programs to the needs of children.

EDEE 435 Mathematics Topics.
(3) (Restriction: Permission of instructor) (Offered through Continuing Education) Seminars and workshops on specific topics in mathematics education. One or three topics will be chosen, from such areas as construction of teaching materials, evaluation, audio-visual techniques, use of calculating instruments, readiness for mathematics concepts, and curriculum development. This course will make significant use of microcomputers in mathematics education.

EDEE 444 First Nations and Inuit Curriculum.
(3) An introduction to First Nations and Inuit curriculum: how curriculum needs in Aboriginal communities are similar to and different from mainstream ones, the range of ways in which First Nations and Inuit have responded to curriculum needs based on language, culture, and community perceptions.

▲ EDEE 473 Ecological Studies.
(3) (Offered through Summer Studies) A lecture, laboratory and field course to train elementary school teachers in the principles and practices of field biology and nature tours. The observation and identification of various organisms and a study of their ecological relationships in the web of life.

▲ EDEE 474 Problems of the Environment.
(3) (Offered through Summer Studies) A modern study of environmental problems designed for elementary school teachers. The role of humanity in the web of life in relation to conservation, the population explosion, waste disposal, sewage treatment, air and water pollution, chemical and radiation pollution.

EDEM-Admin & Policy Studies in Ed
Offered by: Integrated Studies in Ed

EDEM 202 Educational and Administrative Institutions.
(3) (Restriction: Limited to students enrolled in off-campus programs delivered through the Office of First Nations and Inuit Education) A study of the inter-dependency of the various institutions affecting the education of Inuit or First Nations children. Relationships of non-education institutions, such as Co-ops, Health and Social Services, and other government services, to educational services.

EDEM 220 Contemporary Issues in Education.
(3) An introduction to contemporary issues in education in local, national and international contexts, including a critical perspective on educational issues by drawing on a variety of analytical frameworks.

EDEM 450 Curriculum Alternatives.
(3) (Offered through Summer Studies) An examination of various curriculum designs which cross boundaries of subject, method and culture, and the applications to programs for different populations of students.

EDER-Religious Studies
Offered by: Integrated Studies in Ed

▲ EDER 203 Philosophy of Religion.
(3) An investigation of the meaning of Religion and its relevance to our age.

▲ EDER 204 Man Before Reality.
(3) A philosophical exploration of the real in its being and its...
(EDUCATION) EDER-RELIGIOUS STUDIES

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becoming, in its principles and its causes, in its unity and its diversity, in its truth and its goodness.

▲ EDER 207 "Who is Christ?"
(3) (Offered through Continuing Education) An open search for the authentic person of Christ - from Scriptures and present day manifestations.

▲ EDER 208 Philosophy of Human Nature.
(3) (This course integrates theoretical material as well as contemporary film, music, visual art, poetry, and literature as it explores the relationship between the individual, learning and knowledge) An exploration of the process of human knowing: human nature as self-conscious and self-determining.

▲ EDER 209 Search for Authenticity.
(3) (Offered through Continuing Education) A search for meaning in contemporary living as reflected in selected authors.

▲ EDER 252 Understanding and Teaching Jewish Life.
(3) An exploration of Jewish holidays and life cycle rituals. Emphasis is placed on their historical development and philosophical meaning. Curriculum developed for teaching this material in various Jewish educational frameworks is examined and evaluated.

▲ EDER 290 Guide to Reading the Bible.
(3) An introduction to the Judeo-Christian Scriptures with the emphasis upon reading and existential interpretation.

EDER 303 Philosophies of Education.
(3)

▲ EDER 309 The Religious Quest.
(3) (Offered through Continuing Education) An approach to the study of religious experience as expressed in humanity's major religious traditions, especially Christianity, Judaism, Islam, Hinduism and Buddhism.

EDER 318 Teaching the Jewish Liturgy.
(3) (Restriction: Not open to students who have taken EDER 427.) An examination of curriculum developed for teaching prayer and fostering spirituality within Jewish educational frameworks. Excerpts from the liturgy of the Jewish people are studied with an emphasis on the theological, moral, and philosophical issues that they raise.

EDER 319 Teaching the Holocaust.
(3) (Restriction: Not open to students who have taken EDER 421.) An examination of approaches, strategies, and techniques of teaching the Holocaust, including methodologies for using the Holocaust as a basis for teaching about prejudice, cultural identity, racism, human rights and moral responsibility.

▲ EDER 320 Visions and Realities of Jewish Education.
(3) A course in the philosophy of Jewish education. Various perspectives on the purpose of Jewish education are explored, and consideration is given to how contemporary Jewish ideologies can be translated into educational forms. Challenges facing Jewish education as it approaches the millennium are examined. Research in Jewish education is evaluated.

▲ EDER 324 Values and Human Sexuality.
(3) (Offered through Distance Education) Human sexuality in the context of society, moral and religious development. The course will focus on principles and goals underlying values and moral education as applied to sexual behaviour.

▲ EDER 325 Guiding Religious Response - Elementary.
(3) Religious and moral phases in the development of the elementary school child and an exploration of various programs and procedures for cultivating this development.

EDER 333 Moral/Religious Education Elementary Curriculum.
(3) The elementary curriculum in moral and religious education: content structure, guidelines and contextual policies; methods and materials related to moral and religious education in classroom settings.

▲ EDER 340 Moral Education Curriculum and Instruction.
(3) Critical assessment of theories and models of moral education, including cognitive and affective approaches; moral education curricula and teaching methods; aims, strategies and evaluation techniques.

EDER 360 MRE in the K/Elem. Curriculum.
(2) (Restriction: Not open to students who have taken EDER 333) The elementary curriculum in moral and religious education: methods and materials related to moral and religious education in classroom settings.

EDER 370 Classroom Strategies: Jewish Studies.
(3) Detailed treatment of issues that relate to teaching Jewish Studies in various educational settings. Special emphasis on educational planning, ability grouping, individualized and cooperative learning, motivation and evaluation; cognitive and affective goals for teaching Judaica will be discussed; Hebraic curricular materials will be examined.

▲ EDER 372 Ethics & Religion (Sec School).
(3) Teaching methods and pedagogical resources for programs in moral education, ethics, and religious culture in the secondary school.

EDER 375 Catholic Religious Education (K/Elem).
(2) (Restriction: Not open to students who have taken EDER 332) Religious and moral phases in the development of the elementary school child and an exploration of various programs and procedures for cultivating this development in the Catholic faith.

▲ EDER 392 Guiding Religious Response - Secondary.
(3) A study of developmental religious and moral life of the secondary school student, and of the programs and procedures designed to meet this development.

▲ EDER 394 Philosophy of God.
(3) (Offered through Continuing Education) A critical study of the concept of God from a variety of religious, philosophic and mystical perspectives.

▲ EDER 395 Moral Values and Human Action.
(3) A philosophical critical inquiry into the relationship between belief and conduct oriented toward the teacher and his/her role in education.

▲ EDER 396 Seminar: Contemporary Theology.
(3) (Offered through Continuing Education) A reading seminar course in which current theological problems are discussed. Specific topics may differ from year to year.

EDER 401 Teaching Biblical Literature - Jewish School 1.
(3) Examination of Biblical passages raising theological, moral, historical, literary, or linguistic challenges, and their interpretation within the rabbinic tradition and modern scholarship. Methodologies for teaching such passages in Jewish studies classrooms are discussed. Some familiarity with Biblical and Rabbinic Hebrew is essential, but most texts are available in English.

EDER 404 Teaching Hebrew as a Second Language.
(3) (Prerequisite: JWST 340 or its equivalent) A study of the most up-to-date methods and theories related to the teaching of Hebrew as a second language in both day schools and supplementary settings.

▲ EDER 406 Comparative Education.
(3) Study of the dynamics of education in various societies throughout the world. The ideas and approaches of several disciplines are utilized in order to gain an understanding of
EDER 408 Human Values and Education. 
(3) [Offered through Distance Education] A study of selected works dealing with moral, religious, social, and political values with a view to determining their relevance to basic educational issues.

EDER 409 Women and Education. 
(3) [Core course for the Women's Studies Minor Program] The school as a sexist institution in both historical and contemporary perspectives; identifies women's contributions to intellectual history and the development of educational ideas and practices; analyses problems such as those of prejudice in schools, women teachers and promotion, sex role stereotypes in texts. Interdisciplinary approach. Guest speakers.

EDER 411 Teaching Yiddish as Second Language. 
(3) Up-to-date methods and theories relating to the teaching of Yiddish. This course will also offer students the opportunity to discuss some of the motivational and attitudinal issues unique to the contemporary Yiddish class.

EDER 420 Teaching Jewish History. 
(3) Approaches, strategies and techniques of teaching Jewish history from ancient times to the present. Particular attention will be paid to creating educational materials that teach an understanding of history and that relate Jewish history to general world history, primarily at the secondary level.

EDER 451 Tutorial in Jewish Education. 
(3) A reading course for students who wish to explore intensively the literature in a particular area related to teaching Jewish studies.

EDER 461 Society and Change. 
(3) Factors influencing patterns of stability and change in major social institutions and the implications for formal and non-formal education.

EDER 462 Learning in Contemporary Society. 
(3) Structures and services to promote education in a variety of contexts outside of the formal school system, especially in the exercise of professions in government services and in volunteer organizations.

EDER 473 Living with Insight. 
(3) An examination of the moral and spiritual challenges of the modern and post-modern world. Emphasis will also be placed on the role and responsibility of education in meeting these challenges.

EDER 491 Theological Themes. 
(3) [Offered through Continuing Education] A study of several theological themes central to Christianity. Particular emphasis on faith and sacramental life.

EDER 494 Ethics in Practice. 
(3) Fundamental principles of ethics as applied to current moral issues such as abortion, drugs, nuclear war, and discrimination.

EDER 505 Education and Social Issues. 
(3) A study of the philosophical aspects of major social issues to education, and of selected approaches to fostering critical thinking concerning such issues.

EDER 520 Issues in Jewish Education. 
(3) [Restriction: Not open to students who have taken 422-320 / EDER 320] An exploration of dissenting and complementary perspectives on the purpose of Jewish education. Challenges facing the field of Jewish education are examined. Emphasis will also be paid to creating educational materials that teach an understanding of history and that relate Jewish history to general world history, primarily at the secondary level.

EDER 525 Teaching Judaism: Holidays. 
(3) [Restriction: Not open to students who have taken 422-250 / EDER 252] An exploration of the rituals, customs, values and historical development of Jewish holidays. Methods of applying this material to the Jewish studies classroom are examined.

EDER 526 Teaching Judaism: Liturgy. 
(3) [Restriction: Not open to students who have taken 422-400 / EDER 407] (Prerequisite: Knowledge of Hebrew, with permission of instructor.) An exploration of curriculum developed for teaching prayer and fostering spirituality within Jewish educational frameworks. Selected portions of the High Holy Day liturgy are examined with a view to teaching this material in Jewish settings.

EDER 527 Teaching Judaism: Special Topics. 
(3) In-depth examination of topics in Jewish education. Content will vary from year to year.

EDER 528 Teaching Judaism: The Holocaust. 
(3) [Restriction: Not open to students who have taken 422-421 / EDER 421] An exploration of approaches and techniques for the teaching of the Holocaust. Strategies for using Holocaust education as a basis for discussing prejudice and moral responsibility are examined.

EDER 529 Hebrew Language Requirement. 
(0) Demonstrated mastery of the Hebrew language equivalent to JWST 340 (advanced). Must be completed prior to graduation.

EDER 610D1 (7.5), EDER 610D2 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D2 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D3 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D4 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D5 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D6 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D7 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D8 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 610D9 (7.5) Internship. 
(Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option)) (Students must register for both EDER 610D1 and EDER 610D2) No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.
High School curriculum.

EDES 361 Secondary School English 1.
(3) Examination of appropriate materials related to the high school English programs; exploration of various techniques of teaching language, literature, writing and dramatics in the secondary school.

EDES 365 Experiences in Communications.
(3) (Offered through Continuing Education) Personal development of students as communicators; involvement of the imagination in individual and group projects in language and in an other chosen medium of communication; analysis of experiences in projects in relation to general problems of communication. Continuing Education - Topic for 2003-04: Technical Writing. This course will provide the fundamental concepts and principles of technical writing including technical description, editing, document specifications and outlines, graphics, definitions, audience analysis, and document revision. Instruction on how to format and design pages, conduct and document research, use electronic mail and Web sites, make effective oral presentations, and think critically and ethically about writing.

EDES 366 Literature for Young Adults.
(3) Selection and use of literature for the differing abilities and interests of high school students.

EDES 370 Teaching General Science.
(3) (Prerequisite: EDES 335) Principles and procedures for implementation of the general science curriculum in the secondary schools of Québec. A survey of teaching methods and laboratory management appropriate to the junior and senior high school level.

EDES 389 Issues in Social Studies.
(3) (Corequisite: EDEC 334) This course will examine the nature, content, and methodology of social studies education in the secondary school.

(3) (Restriction: Open to B.Ed Secondary students having English as a teaching option.) (Prerequisite: EDES 361) Special interest areas in the teaching of English in the light of contemporary theories and research.

EDET-Vocational Education
Offered by: Integrated Studies in Ed

EDET 257 Evaluation Techniques.
(3) (Offered through Continuing Education) A competency-based course that examines concepts, methodologies, and instruments associated with trainee evaluation in business and industry. Emphasis on formative and summative evaluation, product and process evaluation, and data analysis. Special attention given to test construction, performance appraisal, and program evaluation skills.

EDET 275 Field Experience: Overview.
(3) (Offered through Continuing Education) Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. A comprehensive technical report is submitted upon completion of the work study.

EDET 357 Training Needs Analysis.
(3) (Offered through Continuing Education) A competency-based course which examines the purpose and techniques of conducting training needs analysis. Examines various needs assessment models and "systems" approaches. Special emphasis given to particular research techniques associated with needs assessment and analysis.

EDET 360 Teaching Business Subjects.
(3) (Offered through Continuing Education) A course in general teaching principles which will include the teaching and learning process, lesson planning, unit planning, and techniques of instruction specific to: a) Accounting and Business Machines b) Typewriting and Shorthand.

EDET 373 Teaching Technical Subjects.
(3) (Offered through Continuing Education) Methods and techniques of instruction in vocational education subjects. Classroom management and administration. Lesson planning and use of instructional materials. Individual assignments, demonstrations and reports. Special problems of the teacher.

EDET 376 Evaluation: Vocational Education.
(3) (Offered through Continuing Education) Emphasis on student growth and progress in public education; appraisal of specialized techniques of evaluation, teacher made tests, and data analysis as specifically related to Technical-Vocational Education.

EDET 395 Principles and Foundations.
(3) (Offered through Distance Education) A study of leaders, movements, legislation, events, and institutions that have contributed to the formation and development of vocational education. Special attention given to economic, social and philosophical factors.

EDET 398 Special Project.
(3) (Offered through Continuing Education) (May also be offered through Distance Education.) A project related to the student's teaching concentration will be investigated, developed, produced, implemented, and/or evaluated, depending on the nature of the project. Students must identify the problem or topic to be investigated and obtain approval of the instructor. Includes preparation and submission of a written report.

EDFC-Bachelor of Ed Core Program
Offered by: Education - Dean's Office

EDFC 497 Individual Research Project.
(3)

EDFC 498 Individual Research Project.
(3) (Prerequisites: open only to U3 level students and students who have completed most of the requirements of a certificate or diploma program, and with permission of the program advisor or director) An independent research project dealing with a defined theoretical, experimental, or applied topic in the study of education, carried out under the supervision of a faculty member, and leading to a formal report. The report would normally be evaluated by an appropriate committee of faculty members appointed by the faculty supervisor.

EDFE-Student Teaching
Offered by: Education - Dean's Office

EDFE 200 First Year Field Experience.
(2) (Corequisite: EDEC 201) (Restriction: Open to B.Ed. Secondary and B.Ed. K/Elem. students) Students are assigned to a school for a "participant observer" field experience of ten days.

EDFE 205 1st Field Experience Music.
(2) (Corequisite: EDEA 206) Ten days of observation and some limited teaching in an elementary school under the supervision of a cooperating music teacher.

EDFE 207 2nd Field Experience Music.
(4) (Prerequisite: EDFE 205.) (Restriction: Students in
B.Ed. in Music and Concurrent B.Ed./B.Mus.) Twenty days of observation and limited teaching in a secondary school under the supervision of a cooperating music teacher.

EDFE 209 First Year Field Experience. (2) (Prerequisite: EDSL 300.) (Corequisite: EDSL 209) This field experience involves observation in second language classrooms for the equivalent of about ten days. Observations will include the use of observation schemes designed to capture information about second language classrooms and programs.

EDFE 214 Aboriginal Education Practicum 1. (3) (Restrictions: Not open to students who have taken EDFE 444. Open to students registered in the Certificate in Education for First Nations and Inuit.) Observation and limited teaching in an elementary school.

EDFE 246 First Year Field Experience (Physical Education). (3) (Prerequisite: EDKP 342) This is a three-week experience in which the student will observe and teach physical education in an elementary school setting.

EDFE 253 Second Field Experience (K/Elem). (4) (Prerequisite: EDFE 200, EDEC 201.) (Restriction: Restricted to B.Ed. (K/Elem) students) Initial supervised teaching experience in an elementary school classroom.

EDFE 254 Second Field Experience (Sec). (3) (Prerequisite: EDEC 201 and EDFE 200) Classroom teaching under the supervision of a cooperating teacher.

EDFE 255 Second Year Field Experience (TESL). (3) (Prerequisites: EDSL 210, EDFE 209.) (Restrictions: Open only to B.Ed. TESL students. Not open to students who have taken or are taking EDFE 259.) Individual and class teaching.

EDFE 260 Stage de familiarisation. (1) (Restriction: Not open to students who have taken UdeM: EDU 1060.) Stage de familiarisation. à l'école en milieu pluriethnique et d'introduction à la fonction enseignante. Observation des élèves à l'école. Contacts avec des intervenants. Étude du projet éducatif.

EDFE 261 Stage d'assistant - 2e année. (3) (Prerequisites: EDFE 260.) (Corequisites: EDSL 260) Interventions progressives par tutorat auprès d'un élève ou de petits groupes d'élèves au primaire en immersion sous la supervision de l'enseignant. Assistant auprès d'un enseignant associé.

EDFE 303 Third Field Experience (K/Elem). (7) (Prerequisites: EDFE 275, EDEE 223, EDEE 250, EDEE 282, EDEE 332, EDFE 253.) (Corequisites: EDEE 350, EDEE 352 and EDEE 355.) (Restriction: Open to B.Ed. K/Elem. students only) 35 to 40 days of student teaching in a host school.

EDFE 305 3rd Field Experience Music. (7) (Prerequisites: EDFE 207) Thirty-five days of teaching in an elementary school under the supervision of a cooperating music teacher.

EDFE 325 Aboriginal Education Practicum 2. (3) (Restrictions: Not open to students who have taken EDFE 422. Open to students registered in the Certificate in Education for First Nations and Inuit.) Supervised teaching of designated subject areas in an elementary school.

EDFE 326 Aboriginal Education Practicum 3. (3) (Restrictions: Not open to students who have taken EDFE 423. Open to students registered in the Certificate in Education for First Nations and Inuit.) Supervised teaching of designated subject areas for a specific number of weeks in an elementary school, including assuming more responsibility for student learning, classroom management and formative and summative evaluation.

EDFE 348 Third Year Field Experience Physical Education. (6) This first major field experience consists of six weeks of supervised student teaching in physical education under the tutelage of school personnel.

EDFE 351 Third Year Field Experience (Sec.). (8) (Prerequisite: EDFE 254.) (Corequisite: EDEC 306) (Restriction: Open to B.Ed. Secondary students only. Students must have completed, with a grade of C or higher, a minimum of 18 credits in each of their two teaching subjects) 35 to 40 days of student teaching in a host school.

EDFE 359 Third Year Field Experience (ESL/FSL). (8) (Prerequisites: EDSL 259 and EDFE 259.) (Corequisites: EDSL 309 and EDSL 447) The third-year field experience will consist of about 40 days of student teaching under the tutelage of experienced school personnel at the elementary level.

EDFE 361 Stage d'enseignement 1. (7) (Prerequisites: EDSL 260, EDFE 261.) (Corequisites: EDSL 391, EDSL 394.) (Restriction: Not open to students who have taken UdeM: EDU 3060.) Enseignement au secondaire en milieu pluriethnique. Gestion de classe, intervention et réflexion sur les pratiques. Réalisation de projets.

EDFE 362 Stage d'enseignement en français langue seconde. (7) Enseignement accompagné d'un enseignant associé, avec prise en charge d'une classe.

EDFE 373 Second Year Field Experience (Physical Education). (3) (Prerequisite: EDFE 246) This is a three-week experience in a secondary school in which the student will observe and teach in a physical education setting.

EDFE 374 Field Experience Secondary School One Subject. (3) (1 subject)

EDFE 374D1 (1.5), EDFE 374D2 (1.5) Field Experience Secondary School One Subject. (Students must register for both EDFE 374D1 and EDFE 374D2.) (Restriction: Not open to students who have taken EDFE 403) (Restriction: Only open to B.Ed. Physical and Health Education students.) Third year supervised student teaching in physical education.

EDFE 406 Fourth Field Experience (K/Elem). (7) (Prerequisite: EDFE 303, EDEE 223, EDEE 332, EDEE 275, EDEE 282.) (Corequisite: EDEC 405) (Restriction: Not open to students who have taken EDFE 403) (Restriction: Open only to students registered in the Certificate in Education in Music and the Concurrent B.Ed./B.Mus.) Thirty-five days of teaching in a secondary school under the supervision of a cooperating music teacher. Students will gradually assume more responsibility for student learning, formative and summative evaluation, and will be expected to experience a full teaching load.

EDFE 425 Aboriginal Education Practicum 4. (3) (Restrictions: Not open to students who have taken EDFE...
anatomically and physiologically within the realm of how they
(3) Skeletal, muscular and nervous system are examined
EDKP 205 Structural Anatomy.

issues in contemporary health education.
▲
(1) .
EDKP 213 Aquatics 1.
(1)
EDKP 214 Basketball 1.
(1)
EDKP 216 Gymnastics 1.
(1)
EDKP 217 Track & Field / Cross Country.
(2) Skills and techniques of the various disciplines in track
and field/cross country and the teaching and evaluation
strategies for the elementary and secondary school levels.
EDKP 218 Volleyball 1.
(1)
EDKP 220 Creative Dance.
(1)
EDKP 221 Wrestling 1.
(1)
EDKP 223 Basic Games.
(2) Content and methodology of games teaching in elementary
and secondary school settings.
▲ EDKP 224 Foundations of Movement Education.
(3) (Restriction: Not open to P.E. Majors) This course is
designed for the elementary school classroom teacher. It will
include the study of basic movement education concepts,
principles of movement and the role of movement education in the
life of the developing child.
EDKP 225 Archery/Golf.
(1)
EDKP 226 Badminton.
(1)
EDKP 227 Rugby.
(1)
EDKP 228 Football 1.
(1)
EDKP 229 Ice Hockey 1.
(1)
EDKP 231 Martial Arts.
(1) (Summer)
EDKP 233 Soccer.
(1)
EDKP 234 Team Handball.
(1)
EDKP 235 Tennis.
(1)
EDKP 236 Softball.
(1)
EDKP 238 Field Hockey 1.
(1)

EDKP-Kinesiology&Physical Education
Offered by: Kinesiology and Physical Ed

Edward 200 Weight Training.
(1)
EDKP 201 Physical Activity Leadership.
(3) The methods of active lifestyle leadership from
establishment of appropriate fitness objectives through the
means of helping clients achieve their goals. Included are
individual and group program designs and exercise precautions in
various forms of exercise programs.
EDKP 202 Rhythmic Activities.
(1)
▲ EDKP 204 Health Education.
(3) A study of the teacher’s role in the total school health
program at both elementary and high school levels; current
issues in contemporary health education.
▲ EDKP 205 Structural Anatomy.
(3) Skeletal, muscular and nervous system are examined
anatomically and physiologically within the realm of how they
interact to generate and apply the forces which permit man’s
mobility.
▲ EDKP 206 Biomechanics of Human Movement.
(3) Analysis of fundamental human movement and the kinematic
concepts which underlie each: Stability, agility, walking,
routing, jumping, throwing, absorbing forces, striking, kicking,
spinning, twisting, aquatics and work positions.
EDKP 208 Applied Biomechanics.
(3) (Prerequisite: EDKP 293.) (Restriction: Not open to
students who have taken EDKP 206.) Nature and mechanical
function of human movement in sport, dance, physical recreation
and adapted movement activities.
EDKP 210 Educational Gymnastics.
(1)
EDKP 212 Folk Dance.
(1)
EDKP 213 Aquatics 1.
(1)
EDKP 214 Basketball 1.
(1)
EDKP 216 Gymnastics 1.
(1)
EDKP 217 Track & Field / Cross Country.
(2) Skills and techniques of the various disciplines in track
and field/cross country and the teaching and evaluation
strategies for the elementary and secondary school levels.
EDKP 218 Volleyball 1.
(1)
EDKP 220 Creative Dance.
(1)
EDKP 221 Wrestling 1.
(1)
EDKP 223 Basic Games.
(2) Content and methodology of games teaching in elementary
and secondary school settings.
▲ EDKP 224 Foundations of Movement Education.
(3) (Restriction: Not open to P.E. Majors) This course is
designed for the elementary school classroom teacher. It will
include the study of basic movement education concepts,
principles of movement and the role of movement education in the
life of the developing child.
EDKP 225 Archery/Golf.
(1)
EDKP 226 Badminton.
(1)
EDKP 227 Rugby.
(1)
EDKP 228 Football 1.
(1)
EDKP 229 Ice Hockey 1.
(1)
EDKP 231 Martial Arts.
(1) (Summer)
EDKP 233 Soccer.
(1)
EDKP 234 Team Handball.
(1)
EDKP 235 Tennis.
(1)
EDKP 236 Softball.
(1)
EDKP 238 Field Hockey 1.
(1)

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at
www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

● Denotes courses taught only in alternate years.
‡ Professional Practice (Stage) in Dietetics involving special prerequisites
◆ Indicates that departmental approval/permission must be obtained by a
student prior to registration.
† Denotes courses not available as Education electives.
❖ Denotes courses with limited enrolment.
★ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts
or Faculty of Science in 2006-07.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be
included in the academic concentration.
❖ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor
of Education students.

EDFE 459 Fourth Year Field Experience (ESL/FLS).
(7) (Prerequisites: EDSL 309 and EDFE 359.)
(Corequisites: EDSL 409 and EDFE 458) The fourth-year
field experience will consist of about 35 days of student
teaching under the tutelage of experienced school personnel. Students will be
expected to assume more responsibility for student learning,
classroom management and formative and summative evaluation.

EDFE 461 Stage d'enseignement - immersion.
(9) Enseignement accompagné d’un enseignant associé, avec prise
en charge d’une classe en immersion.
EDFE 478 Field Experience (One Subject) - Secondary Level.
(6) (1 subject)
EDFE 478D1 (3), EDFE 478D2 (3) Field Experience (One
Subject) - Secondary Level.
(Students must register for both EDFE 478D1 and EDFE
478D2.) (No credit will be given for this course unless both
EDFE 478D1 and EDFE 478D2 are successfully completed in
consecutive terms) (EDFE 478D1 and EDFE 478D2 are
equivalent to EDFE 478)
EDFE 479 Fourth Year Field Experience Physical Education.
(6) (Prerequisite: EDKP 442) This second major field
experience consists of six weeks of supervised student teaching
in physical education under the tutelage of school personnel.
EDFE 480 4th Year Field Experience (Physical Education).
(7) (Prerequisite: EDFE 351.) (Corequisite: EDEC 404.)
Fourth year supervised student teaching in physical education.

EDKP 224 Foundations of Movement Education.
(3) (Prerequisite: EDKP 293.) (Restriction: Not open to
students who have taken UdeM: EDU 4060) de classe, intervention et
réflexion sur les pratiques. Réalisation de projets.
EDKP 225 Archery/Golf.
(1) (Summer)
EDKP 227 Rugby.
(1)
EDKP 228 Football 1.
(1)
EDKP 230 Health Education.
(1)
EDKP 232 Team Handball.
(1)
EDKP 233 Hockey 2.
(1)
EDKP 234 Soccer 2.
(1)
EDKP 235 Tennis 2.
(1)
EDKP 236 Softball 2.
(1)
EDKP 238 Field Hockey 2.
(1)
EDKP 240 Weight Training 1.
(1)
EDKP 241 Basketball 1.
(1)
EDKP 242 Track & Field / Cross Country.
(2) Skills and techniques of the various disciplines in track
and field/cross country and the teaching and evaluation
strategies for the elementary and secondary school levels.
EDKP 244 Track & Field / Cross Country.
(2) Skills and techniques of the various disciplines in track
and field/cross country and the teaching and evaluation
strategies for the elementary and secondary school levels.
EDKP 245 Athletes' Education.
(1) (1 subject)
EDKP 246 Hip Hop Dance.
(1)
concerning nutrient supplements will be studied.

exercise, sport performance and wellness. The validity of claims

Students will be introduced to the affects of nutrition on

fats, proteins, vitamins, minerals and water in a balanced diet.

392) This course will examine the role of carbohydrates,

(3) (Restriction: Not open to students who have taken EDKP

EDKP 292 Nutrition and Wellness.

socio-cultural factors.

motor behaviour and influences of physical growth,

historical theories of human development, 2) development of

movement form, dance curriculum content and dance teaching

skills, and resources to support dance instructional programs.

EDKP 202 and EDKP 243) Basic dance skills, dance as a

professional sport, including impact on the workplace.

EDKP 330 Physical Activity and Health.

(3) This course introduces students to literature on the role of

physical activity and general health and well-being. Students

will examine issues of exercise adherence, exercise prescription

and the economic impact of physical fitness programs in the

workplace.

EDKP 332 Physical Education Curriculum and Instruction.

(3) (Restriction: Not open to P.E. Majors) Principles, programs

and procedures that an elementary teacher may use to promote the

designing and teaching of elementary school P.E.

EDKP 336 Lacrosse.

(1)

EDKP 334 Physical Education Methods.

(3) (Prerequisite: EDKP 331.) This course is designed to

educate students about the prevention, immediate care, and minor

rehabilitation of athletic injuries. The course will focus on

specific situations encountered in elementary, high school and

fitness centers. An intensive academic program is coupled with

practical lab sessions and field experience.

EDKP 314 Basketball 2.

(1)

EDKP 318 Volleyball 2.

(1)

EDKP 330 Physical Activity and Health.

(3) This course introduces students to literature on the role of

physical activity and general health and well-being. Students

will examine issues of exercise adherence, exercise prescription

and the economic impact of physical fitness programs in the

workplace.

EDKP 332 Physical Education Curriculum and Instruction.

(3) (Restriction: Not open to P.E. Majors) Principles, programs

and procedures that an elementary teacher may use to promote the

designing and teaching of elementary school P.E.

EDKP 336 Lacrosse.

(1)

EDKP 334 Physical Education Methods.

(3) (Prerequisite: EDKP 331.) This course is designed to

educate students about the prevention, immediate care, and minor

rehabilitation of athletic injuries. The course will focus on

specific situations encountered in elementary, high school and

fitness centers. An intensive academic program is coupled with

practical lab sessions and field experience.

EDKP 314 Basketball 2.

(1)

EDKP 318 Volleyball 2.

(1)

EDKP 330 Physical Activity and Health.

(3) This course introduces students to literature on the role of

physical activity and general health and well-being. Students

will examine issues of exercise adherence, exercise prescription

and the economic impact of physical fitness programs in the

workplace.

EDKP 332 Physical Education Curriculum and Instruction.

(3) (Restriction: Not open to P.E. Majors) Principles, programs

and procedures that an elementary teacher may use to promote the

designing and teaching of elementary school P.E.

EDKP 336 Lacrosse.

(1)

EDKP 334 Physical Education Methods.

(3) (Prerequisite: EDKP 331.) This course is designed to

educate students about the prevention, immediate care, and minor

rehabilitation of athletic injuries. The course will focus on

specific situations encountered in elementary, high school and

fitness centers. An intensive academic program is coupled with

practical lab sessions and field experience.

EDKP 314 Basketball 2.

(1)

EDKP 318 Volleyball 2.

(1)
EDKP 394 Historical Perspectives.
(3) A historical survey of the form and function of organized sport and physical activity.

EDKP 395 Exercise Physiology.
(3) (Prerequisites: PHGY 201 and PHGY 202.) Examination of the physiological responses of the neuromuscular, metabolic, endocrine, and circulatory and respiratory systems to acute and chronic exercise.

EDKP 396 Adaptable Physical Activity.
(3) (Restriction: Not open to students who have taken EDKP 496) Assessment, instruction and evaluation in physical activity for special populations. Emphasis on inclusion of people labelled intellectually disabled, learning disabled, physically awkward, autistic, visually or hearing impaired and physically disabled. Weekly lectures plus practical teaching lab.

EDKP 400 Special Topics.
(3)

EDKP 442 Physical Education Pedagogy.
(3) (Prerequisites: EDKP 342, EDFE 246 and EDFE 373) This pedagogy course builds on physical education methods and field experiences. It focuses on the developing teacher, the establishment of the learning environment, and the implementation of the varied teaching strategies. Principles of research on teaching in physical education are translated into practical techniques for application in the field.

EDKP 443 Research Methods.
(3) (Prerequisites: PSYC 204 or equivalent.) How to conduct and understand research in physical activity, including a complete overview of the research process, statistical and measurement concepts in research, the various types of research including both quantitative and qualitative aspects, as well as ways of presenting research.

EDKP 444 Ergonomics.
(3) (Prerequisites: EDKP 205, EDKP 206.) An examination of ergonomic issues including: injury mechanisms, evaluation and assessment techniques, occupational health and safety legislation, and ergonomic inventions.

EDKP 445 Exercise Metabolism.
(3) (Prerequisite: EDKP 395.) The biochemical structure and regulation of major biochemical pathways related to exercise. Examine the hormonal regulation of lipid, carbohydrate and protein metabolism during short and prolonged exercise as well as the influence of physical training. Examine gender-related differences and exercise metabolism.

EDKP 446 Physical Activity and Ageing.
(3) (Prerequisite: EDKP 395.) Review of ageing-related changes in circulatory, respiratory, neuromuscular, hormonal, metabolic and immune systems as they relate to functional limitations and the physiological responses to acute and chronic exercise. Examination of the role of exercise in mitigating ageing response.

EDKP 447 Motor Development 2.
(3) (Prerequisites: ANAT 316, EDKP 205, PHGY 201, PHGY 202, EDKP 261.) An examination of the basic concepts and theories of biological growth, maturation and ageing and a consideration of the outcome of these processes for physical performance and exercise responses across the lifespan.

EDKP 448 Exercise and Health Psychology.
(3) (Prerequisites: EDKP 261, EDKP 393.) The psychological aspects of health and participation in exercise and physical activity. The application of psychological knowledge and methodology within exercise and health. Theory and evidence on selected topics in this area of study.

EDKP 449 Exercise Pathophysiology 2.
(3) (Prerequisite: EDKP 395.) Review of the physiological bases of selected disorders of the immune, renal, neurological and muscular-skeletal systems and an examination of the particularities of exercise responses and the effects of exercise conditioning in these populations. A special emphasis on the scientific bases for exercise prescription.

EDKP 450 Practicum 3.
(3) (Prerequisites: EDKP 250 and EDKP 350) A work-study experience with a focus on administration and program development in fitness. Work will be in a community placement under a qualified sponsor selected with the approval of the Department.

EDKP 450D1 (1.5), EDKP 450D2 (1.5) Practicum 3.
(Students must register for both EDKP 450D1 and EDKP 450D2.) (No credit will be given for this course unless both EDKP 450D1 and EDKP 450D2 are successfully completed in consecutive terms) (EDKP 450D1 and EDKP 450D2 together are equivalent to EDKP 450) A work-study experience with a focus on administration and program development in fitness. Work will be in a community placement under a qualified sponsor selected with the approval of the Department.

EDKP 451 Personal Trainer Practicum.
(3)

EDKP 451D1 (1.5), EDKP 451D2 (1.5) Personal Trainer Practicum.
(Students must register for both EDKP 451D1 and EDKP 451D2) (No credit will be given for this course unless both EDKP 451D1 and EDKP 451D2 are successfully completed in consecutive terms) (EDKP 451D1 and EDKP 451D2 together are equivalent to EDKP 451)

EDKP 452 Fitness & Lifestyle Consulting.
(3) (Prerequisites: EDKP 201, EDKP 249 and EDKP 350D1/D2.) This course prepares Kinesiology and Physical Education students for Professional Fitness and Lifestyle Consultant Certification from the Canadian Society of Exercise Physiology. Core competencies in ten subject domains as outlined in the certification guide will be reviewed. The certification process includes both theoretical and practical examinations.

EDKP 452D1 (1.5), EDKP 452D2 (1.5) Fitness & Lifestyle Consulting.
(Students must register for both EDKP 452D1 and EDKP 452D2.)

EDKP 453 Research Practicum in Kinesiology.
(3) (Prerequisites: EDKP 206, EDKP 395, EDKP 393) (formerly EDKP 492) (Restriction: Open to Kinesiology students only.) Research project in kinesiology. Independent work under the supervision of the thesis advisor(s) leading to the finalization of procedures for data collection.

EDKP 453D1 (1.5), EDKP 453D2 (1.5) Research Practicum in Kinesiology.
(Prerequisites: EDKP 206, EDKP 395, EDKP 393) (formerly EDKP 492) (Restriction: Open to Kinesiology students only.) Research project in kinesiology. Independent work under the supervision of the thesis advisor(s) leading to the finalization of procedures for data collection.

EDKP 450D1 (1.5), EDKP 450D2 (1.5) Research Practicum in Kinesiology.
(Students must register for both EDKP 450D1 and EDKP 450D2.) (No credit will be given for this course unless both EDKP 450D1 and EDKP 450D2 are successfully completed in consecutive terms) (EDKP 450D1 and EDKP 450D2 together are equivalent to EDKP 450)

EDKP 485 Exercise Pathophysiology 1.
(3) (Prerequisite: EDKP 395.) The physiological bases of
selected cardiovascular, respiratory and metabolic disorders and
an examination of the particularities of exercise responses and
the effects of exercise conditioning in these populations. A
special emphasis on the scientific bases for exercise
prescription.

EDKP 493 Administration.
(3) Organization and administration of physical education
programs in various settings with emphasis on common problems
relating to management practices of centres offering physical
activity. Topics include facilities and equipment, fiscal
considerations, liability and program planning.

†EDKP 494 Physical Education Curriculum Development.
(3) (Prerequisite: EDKP 442) Analysis of important
philosophies, principles, and personal, educational, and
societal issues that influence current physical and health
education curricula with particular emphasis on the Quebec
curriculum for Physical Education and Health.

▲EDKP 495 Scientific Principles of Training.
(3) (Prerequisite: EDKP 395) Application of physiological
and kinesiological principles in the selection and evaluation of
athletic and physical fitness programs. Specific topics studied
will include aerobic and anaerobic training, interval training,
circuit training, weight training for muscular strength and
endurance, flexibility, motor ability, obesity and energy
balance.

▲EDKP 498 Sport Psychology.
(3) (Prerequisite: EDKP 393) The psychological aspects of
participation in sport and physical activity relative to
performance enhancement.

EDKP 505 Sport in Society.
(3) (Prerequisites: EDKP 261, EDKP 393.) (Corequisite:
EDKP 498) An examination of the cultural, social, political
and economic factors that influence sport in society. Special
attention to the effects of gender, financial constraints and
political policies on involvement in physical activity and
sports programs.

EDKP 542 Environmental Exercise Physiology.
(3) (Prerequisite: EDKP 395.) Environmental Exercise
Physiology will examine human physiological responses to acute
and chronic exercise in the following environments: thermal
stress (hot and cold), hypobaric (medium and high altitude),
hyperbaric (diving and chambers), and microgravity.

EDKP 550 Analyzing Instructional Behaviors.
(3) Students will investigate generic and specialized data
collection instruments used in the supervision of and research
into teaching and coaching. Practical experience will include
the selection and use of appropriate tools, establishment of
observer reliability, critical analysis of observational
systems, and application of systematic observation to pertinent
research questions.

EDKP 553 Physical Activity Assessments.
(3) (Prerequisite: EDKP 395.) Measurement techniques used to
assess physical activity of sedentary and active persons,
including heart rate monitors, accelerometry based activity
monitors, pedometers, direct observation, self-report
instruments, doubly labeled water, and indirect calorimetry.

EDKP 566 Mechanics.
(3) (Prerequisite: EDKP 206) Theoretical basis of muscle
activity measurement in the context of biomechanical studies,
including muscle-related topics such as fatigue, injury and
control.

EDKP 568 Biomechanics Instrumentation.
(3) (Restriction: Not open to students who have taken EDKP
668.) Instrumentation and technical knowledge to assist in
the acquisition and processing of data used in biomechanics.

EDPC-Ed Psych & Couns (Counselling)
Offered by: Educational&Counselling Psych

EDPC 201 Introduction to Student Advising.
(3) Introduction to student advising and guidance including
personal, vocational, and educational aspects of services
normally found in Aboriginal school settings. Role of the
student personnel advisor at both the elementary and secondary
levels.

EDPC 202 Helping Skills Practicum 1.
(3) (Prerequisite: EDPC 201) Basic interviewing and helping
skills relevant to the helping profession in Aboriginal
settings. Interpersonal skills which facilitate the prevention
and amelioration of problems.

EDPC 203 Helping Skills Practicum 2.
(3) (Prerequisite: EDPC 202) Parent and student interviews.
Practicing interviewing techniques within the context of the
student¿s own community and culture.

EDPC 205 Career/Occupational Development.
(3) (Prerequisite: EDPC 203) Career patterns development,
occupational choice relevant to native and northern careers.
Basic studies of career development and career/educational
planning in northern communities. Employment trends,
occupational classification and information.

EDPC 206 Group Leadership Skills.
(3) (Prerequisite: EDPC 203) Animation and practice of group
leadership skills. Students learn to organize and lead groups,
how and when to use groups for particular settings and topics.

EDPC 207 Aboriginal Adolescent Development.
(3) (Prerequisite: EDPC 201) Adolescent development
including physical, intellectual and social-emotional growth
from the viewpoint of northern society. A social behaviour and
psychopathology within the context of Aboriginal cultural and
behavioral norms.

EDPC 208 Native Families' Social Problems.
(3) (Prerequisite: EDPC 203) Adolescent sexuality and
concurrent problems, substance addictions, physical abuse and
violence, and suicide within the milieu of the native family,
with a review of possible basic interventions for remediation.
The roles of teachers, counsellors, social workers, physicians
and legal authorities.

EDPC 209 Basic Crisis Intervention Skills.
(3) (Prerequisite: EDPC 208) Models and methods of crisis
intervention as well as the development of skills in working
with individuals experiencing emotional trauma, and identifying
referral sources for individuals who require medical or
psychiatric consultation.

EDPC 210 Field Experience.
(3) (Prerequisite: EDPC 202) An extended practicum
experience which commences at the beginning of formal academic
training. On-going development of student personnel services
training experience at the individual and group level, "progress
file" and evaluation of performance over the course of training,
organization and administration of student personnel services.
This comprises site visits, workshops and seminars interwoven
with the other courses.

EDPC 211 Special Topics in Student Personnel Services.
(3) (Prerequisite: EDPC 203) Subject areas for this course
will vary depending upon the contemporary and cultural needs and
interests of Aboriginal student advising.
EDPC 501 Helping Relationships.
(3) (Offered through Continuing Education.) A course in the basic principles of human relationships and communication skills, approached from a theoretical and experimental viewpoint. An emphasis will be given to training in basic listening skills, interviewing techniques, and the interpretation of non-verbal behaviour and communication.

EDPC 502 Group Processes and Individuals.
(3) (Offered through Continuing Education.) A laboratory course in which participants observe individual dynamics within a group setting as well as understand the developmental phases of the group. Participants will be encouraged to experiment with their own behaviour, in order to increase their own awareness of functioning.

EDPC 503 Human Sexuality: Professionals.
(3) (Offered through Summer Studies) Historical, biological, anthropological, psychological and sociological perspectives of human sexual development. Sexual dysfunction and approaches to sex therapy. Attitudes toward sexuality held by professional helpers relative to their implications for the learning and teaching of human sexuality and sex therapy.

EDPC 504 Practicum: Interviewing Skills.
(3) (Offered through Continuing Education.) (Prerequisite: EDPC 501) This course will enable students to become practitioners in the field of Applied Social Sciences. Theoretical principles of the helping relationship will be applied in particular situations. Demonstration, lecture, role-playing and psychodrama techniques will be used.

EDPC 505 Crisis Intervention Processes.
(3) (Offered through Continuing Education.) Instruction in the skills of working with crisis situations involving persons emotionally disturbed, suicidal, or alcoholic, and those who are on drugs or experiencing emotional trauma, as well as other problems. Attention will be given to identification of referral sources and the writing of reports.

EDPC 507 Practicum: Group Leadership Skills.
(3) (Offered through Continuing Education.) (Prerequisite: EDPC 502) The practical aspects of group leadership, group design and planning. Candidates will set up groups, conduct such groups over a number of sessions, and assess these groups according to the theoretical models covered in the prerequisite course.

EDPC 508 Seminar in Special Topics.
(3) (Offered through Summer Studies.) Content will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants.

EDPC 509 Individual Reading Course.
(3) (Restriction: Permission of Program Director required) (By arrangement with individual instructor.)

EDPC 510 Family Life Education and Marriage.
(3) (Offered through Continuing Education.) The contribution of central concepts of psychological theories and therapeutic systems to the understanding of marriage and relationships. Special attention will be given to gender and ethnicity issues in order to increase the sensitivity of students to the issues typically confronted in the modern marriage and family.

EDPC 540 Foundation of Family Life Education.
(3) (Restriction: Not open to students who have taken EDPC 640) (Offered through Continuing Education.) An examination of the psychological and sociological foundations of family life education tracing the evolution of theory, research and practice within this domain.

EDPC 542 Counselling Role of the Teacher.
(3) (Offered through Continuing Education or Summer Studies.) Theory and practice in interpersonal communication, interviewing, group dynamics, group leadership management, and referral criteria and procedures for students with developmental problems who experience trauma or crisis. Addressed primarily to elementary and secondary teachers who combine instructional responsibilities with a supportive role in school guidance and counselling activities.

EDPC 562 Career Education and Guidance.
(3) (Offered through Continuing Education or Summer Studies.) A review of career education and guidance programs that refer to the subject matter and related methods and techniques designed to foster the intellectual development of career awareness, career planning, career decision-making, and the necessary career-resilient employability skills for the school-to-work transition.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
300) Psychological processes in instruction and learning, assessment, and curriculum design, based on theories of cognition, motivation, and the social context of instruction.

**EDPE 355 Cognition and Education.**
(3) (Prerequisites: PSYC 213 or permission of the instructor) Cognition and learning in educational domains and contexts. Contributions of cognitive science to issues in education including domain-specific and general knowledge and expertise, situated cognition and learning, cognitive apprenticeship, and uses of computers and networks as cognitive tools in educational settings.

**EDPE 377 Adolescence and Education.**
(3) (Offered through Continuing Education or Summer Studies) Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development.

**EDPE 410 Advanced Computer Applications.**
(3) (Prerequisite: EDPE 310) The course will deal with such topics as Advanced Computer Assisted Instruction tailored testing by computer, advanced computer managed instruction, and multi media Computer Assisted Instruction.

**EDPE 495 Individual Reading Course.**
(3) (By arrangement with individual instructor. Permission must be obtained from the Department before registration)

† **EDPE 496 Individual Reading Course.**
(3) (By arrangement with individual instructor. Permission must be obtained from the Department before registration)

**EDPE 510 Learning and Technology.**
(3) (Offered through Continuing Education or Summer Studies) Impact of virtual learning communities on learners/teachers in formal schooling and beyond. Information technologies as a resource to enhance learning experiences, creative/critical thinking. Principles of internet design, authoring, management. Evaluation of computer-based information quality and strategies for efficient and effective use of the technology in education and society.

**EDPE 515 Gender Identity Development.**
(3) (Prerequisites: EDPE 208, EDPE 300 or a course in developmental psychology) (Offered through Continuing Education.) Theoretical models and empirical findings relevant to the development of gender identity. Special attention is given to the influence of peers in school settings. Psychological, physiological, parental, peer and cultural influences on gender identity.

† **EDPE 535 Instructional Design.**
(3) This course draws on the fields of learning theory, developmental psychology, and measurement to focus on the tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction.

**EDPE 555 Applied Cognitive Science.**
(3) Examination of foundations of cognitive science including contributions by psychology, linguistics, and computer science. Consideration of theory and methodology or cognitive science in educational and instructional contexts.

**EDPE 560 Human Development.**
(3) (Offered through Continuing Education.) A review of current theory and knowledge of human development through the life cycle. Particular attention is given to emotional and social development. All major age-stages are considered. Emphasis is placed on the effects of interaction between individuals of these different age groupings.

**EDPE 564 Family Communication.**
(3) (May be offered through Summer Studies.) Family communication processes and interpersonal reactions in the context of marriage and the contemporary family will be considered. Attention will be given to role changes and the effect of crises on marital and family relationships.

**EDPE 575 Educational Measurement.**
(3) (Offered through Continuing Education and Summer Studies.) Statistical measurements in education, graphs, charts, frequency distributions, central tendencies, dispersion, correlation, and sampling errors.

**EDPE 595 Seminar in Special Topics.**
(3) (Restriction: Permission must be obtained from the Department before registration.) The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants.

**EDPE 596 Seminar in Special Topics.**
(3) Seminar in selected topics in Educational and Counselling Psychology. The topic will vary from year and will be announced prior to registration.

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**EDPI-Ed Psych & Couns (Inclusive)**

Offered by: Educational & Counselling Psych

**EDPI 211 Social and Emotional Development.**
(3) (Offered through Continuing Education. Limited to students enrolled in programs offered by the Office of First Nations and Inuit Education) Intensive training in observation of the development and behaviour of children as individuals and as members of modern First Nations or Inuit society. Study of educational implications of both common and divergent behaviour. Development of relevant teaching practices.

**EDPI 212 Perceptual Motor Development.**
(3) (Offered through Continuing Education. Limited to students enrolled in programs offered by the Office of First Nations and Inuit Education) Observation of perceptual-motor aspects of child development at the pre-school and elementary levels. Application of observations to teaching methods and materials, curriculum, classroom management and evaluation.

**EDPI 309 Exceptional Students.**
(3) (Restriction: Open to B.Ed. and Concurrent students only.) (Also offered through Continuing Education or Summer Studies.) Evolution of special education to inclusive education; characteristics, teaching practices, and teachers’ roles in inclusive classrooms. Overview of characteristics, causes, needs, and teaching strategies for students with each exceptionality, including students with intellectual, emotional, behavioral, sensory, physical and learning differences.

**EDPI 341 Instruction in Inclusive Schools.**
(3) (Restriction: Open to B.Ed. students only) (Also offered through Continuing Education.) Planning, implementing and evaluating curriculum and instruction for students with exceptionailties. Using technology and adapting curriculum and instruction for learners with varying abilities, learning styles, and needs. Collaboration with students, families, and other educators in the instructional process. Application component: application of instructional modifications for exceptional students in inclusive schools.

**EDPI 344 Assessment for Instruction.**
(3) (Offered through Summer Studies.) Assessing student strengths, problems and needs; functions and use of different

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Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

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- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
- Denotes courses not available as Education electives.
EDPI 440 Managing the Inclusive Classroom.  
(3) (Offered through Continuing Education.) Comprehensive approach to classroom management, including management of student learning and behavior, classroom environment, material and human resources, and teacher growth. Focus on research-based practices, including behavioral approaches, for effectively managing a classroom with diversity of students. Application component: application of classroom management principles in the field.  
Multimodal team intervention approaches are emphasized. Application component: application of teaching methods with students experiencing behavior difficulties.

EDPI 441 Students with Behavior Difficulties.  
(3) (Offered through Continuing Education.) Theoretical approaches and specific teaching methods appropriate to the needs of students with emotional or behavior problems, including students with attention deficit hyperactivity disorder. Multimodal team intervention approaches are emphasized. Application component: application of teaching methods with students experiencing behavior difficulties.

EDPI 442 Students with Learning Difficulties.  
(3) (Offered through Continuing Education.) Commonalities and differences between students with specific learning disabilities, and related teaching approaches. Emphasis on methods, materials, and technology for teaching academic content as well as social skills. Application component: modifying and teaching content areas to students experiencing learning difficulties.

EDPI 444 Specialized Methods and Materials.  
(3) (May be offered through Continuing Education) Critical review of specialized methods, materials, and technology specifically developed for teaching academic content areas and personal and social development to students with special learning needs. Use of specialized methods and materials in elementary and secondary classrooms. Emphasis on using an integrated curriculum approach.

EDPI 446 Special Topics.  
(3) Selected topics in the field of educating students with specific learning disabilities.

EDPI 447 Special Topics.  
(3) Selected topics in the field of educating students with specific learning disabilities.

EDPI 448 Special Topics.  
(3) Selected topics in the field of educating students with specific learning disabilities.

EDPI 450 Computers and Special Needs.  
(3) (May be offered through Continuing Education.) Overview of the role and contribution of computers in relation to students with exceptionalities. Review of instructional uses of computers, applications for modifying and teaching curriculum applications for specific learning needs, assistive devices for students with sensory and physical disabilities, and resources for students and teachers.

EDPI 526 Talented and Gifted Students.  
(3) (Offered through Continuing Education.) The psychology and education of exceptionally able children. Definitions, assessment, classroom adaptations, technology, educational programs and educational issues. The course combines theoretical background and practical concerns. Application component: application of teaching methods with exceptionally able students.

EDPI 527 Creativity and its Cultivation.  
(3) (Offered through Continuing Education.) Recent research, theory, and educational practice concerning creativity, with special attention to creativity in students and educational settings.

EDPI 536 Practicum Gifted Education 1.  
(3) (Prerequisite: EDPI 526) (Offered only during the Explorations Summer School) Supervised practice in demonstration classrooms for gifted and talented children, with supporting seminars.

EDPI 537 Practicum Gifted Education 2.  
(3) (Prerequisite: EDPI 526) (Restriction: Normally available in July only during the Explorations Summer School) Supervised practice in demonstration classrooms for gifted and talented children, with supporting seminars.

EDPI 539 Field Work 1: Exceptional Students.  
(3) (Restriction: Permission of Program Director required.) Supervised experience with exceptional students in an approved educational setting.

EDPI 540 Field Work 2: Exceptional Students.  
(3) (Prerequisite: EDPI 539) (Restriction: Permission of Program Director required.) Supervised experience with exceptional students in an approved educational setting.

EDPI 543 Family, School and Community.  
(3) (Formerly 414-443) (Offered through Summer Studies.) Examination of family, school and societal influences on student growth, development and adjustment. Emphasis on family perspectives, school orientation, community services, and community collaboration. Application component: using knowledge and skills in the field.

EDPT-Ed Psych & Couns (Media)  
Offered by: Educational&Counselling Psych  
Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

EDPT 200 Integrating Educational Technology in Classrooms.  
(3) (Also offered through Continuing Education and Summer Studies.) Applications Software is the "gateway" course to educational computing. It introduces novices to basic computing skills, using a printer, word processing, data bases and spreadsheets. Assignments and projects focus on educational applications by teachers and students.

EDPT 201 Educational Media 1.  
(3) (Offered through Continuing Education) Educational Media 1 is the "gateway" course for educational media. It reviews audio-visual education and emphasises the rationale for audio-visual materials in education, and the underlying principles in their design, production and effective use.

EDPT 202 Spreadsheet and Charting.  
(3) (Prerequisite: EDPT 200) (Offered only through Distance Education) This course explores the techniques and educational applications of spreadsheets and simple charting.

EDPT 203 Educational Photography 1.  
(3) (Prerequisite: EDPT 204 or equivalent) (Offered only through Distance Education) An introduction to the history, use, research and principles of photography in education. Emphasis is on developing visual literacy and basic photographic and darkroom techniques for teachers and their students.

EDPT 206 Video Production for Education 1.  
(3) (Prerequisite: EDPT 204) (Offered only through Distance Education) The course comprises a survey of the development of video production techniques and applications.
EDPT 308 Video in the Classroom.  
(3) (Prerequisite: EDPT 204) (Offered only through Distance Education) Language of the moving image; techniques of influencing the viewer; components of program design; development of criteria for evaluating and selecting television and video for instructional use; review of current research in the effectiveness of television and video instruction; sources of materials; design of integrated lessons.

EDPT 310 Discovery Through LOGO.  
(3) (Offered only through Distance Education) Through simple geometry and drawing shapes in the LOGO programming language, learners develop a first-hand appreciation of the merits of practical problem-solving. The course includes Papert's approach to discovery methods on the computer, integrating text and graphics, and emphasizes classroom activities and applications.

EDPT 315 Instructional Design.  
(3) (Offered only through Distance Education) The examination and application of the systematic planning techniques necessary in the design, development and validation of effective instructional materials.

▲ EDPT 320 Desktop Publishing for Schools 1.  
(3) (Prerequisite: EDPT 200) (Offered only through Distance Education) The course develops a knowledge of, and practical skills in, graphic design for producing audio-visual and printed instructional materials. It covers typography fundamentals, layout techniques, graphic design and production. Word processing and graphics files are used to create educational page designs and related student desktop activities.

▲ EDPT 321 Desktop Publishing for Schools 2.  
(3) (Prerequisite: EDPT 220 or EDPT 320) (Offered only through Distance Education) (Prerequisite (Continuing Education): EDPT 200) The second course elaborates further on graphic design fundamentals and explores the capabilities of desktop publishing software for creating a professional appearance for yearbooks, brochures and school newspapers.

EDPT 330 Audio Production for Education.  
(3) (Prerequisite: EDPT 204) (Offered only through Distance Education) A practical introduction to audio production techniques using available resources in the school setting. This course explores audio both as a medium of communications and as a component of video and multi-media productions.

EDPT 340 Databases in Education.  
(3) (Prerequisite: EDPT 200) (Offered only through Distance Education) This course explores the design and applications of databases in classroom learning and administration.

EDPT 341 Instructional Programming 1.  
(3) (Offered only through Distance Education) This course introduces the principles and classroom applications of a computer programming language commonly found in schools. Programming language will be Visual BASIC.

▲ EDPT 346 Creating Computer Courseware.  
(3) (Prerequisite: EDPT 315) (Offered only through Distance Education) This course is designed for teachers who wish to develop educational software and classroom activities through the use of authoring tools. Emphasis is on learning how to design and produce inter-active Computer Assisted Learning units such as simulation exercises with graphics and sound.

EDPT 347 Multi-Media Tools.  
(3) (Prerequisite: EDPT 200 or equivalent) (Offered only through Distance Education.) The course examines theoretical concepts for, and provides a practical training in, the creation of multi-media presentations for the classroom and Web sites.

▲ EDPT 348 Educational Software.  
(3) (Prerequisites: EDPT 200 and EDPT 315) (Offered only through Distance Education) This course explores the approaches taken by different software packages, their educational applications and the management of multi-media based learning resources. Students develop and apply evaluation criteria for software selection, design teaching units incorporating educational software, and devise plans for integrating multi-media into the school curriculum.

▲ † EDPT 405 Independent Project.  
(6) (This should be the last course undertaken by a student in the program) A major instructional media or educational computing production undertaken by the student after consultation with the Director of the Educational Technology Program.

▲ EDPT 408 Internet Resources.  
(3) (Prerequisite: EDPT 200 or equivalent) (Offered only through Continuing Education and/or Distance Education) This practical course introduces teachers to the vast resources of the Internet and World Wide Web, and explores their educational applications.

EDPT 409 Special Topics.  
(3) (Offered only through Distance Education) Special Topics examines selected topics in Educational Technology and/or meets the needs of special interest groups. Topics will vary from year to year.

▲ EDPT 415 Managing Computer Resources.  
(3) (Prerequisite: EDPT 200) (Offered only through Distance Education) This course covers topics such as determining school policy for computer use, equipment selection, classroom computer management, developing in-school workshops, network management, basic computer maintenance, resource budgeting, software copyright, and support through bulletin boards, public on-line services and publications.

▲ EDPT 420 Media Literacy for Education.  
(3) (Prerequisite: EDPT 204) (Offered only through Distance Education) The course explores the pedagogical use of media and multi-media in the classroom, and focuses in particular on the text, audience and production of media in a media literacy and integrated language arts program.

EDPT 441 Graphics Software in Education.  
(3) (Prerequisite: EDPT 200 or equivalent) (Offered only through Distance Education) This course focuses on the creation, manipulation and presentation of graphics produced by scanned images and graphics software in the context of classroom applications, desktop publishing and video production.

EDPT 450 Designing for the Web.  
(3) (Prerequisite: EDPT 408) This course stresses the relationship between theories of learning and cognitive development, teaching strategies and the use of the Web as a tool for classroom support and extended studies. The course refers to, and offers experience with Web-based resources and includes a structure for collaborative learning through computer-mediated communication.

EDSL-Education in Second Languages  
Offered by: Integrated Studies in Ed

EDSL 209 First Year Professional Seminar.  
(1) (Corequisite: EDFE 209) The first-year professional seminar is concerned with how to observe in second language teaching environments.

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† Denotes courses not available as Education electives.

Denotes courses with limited enrolment.
classrooms. Students will be introduced to ways of observing instructional practices and procedures and will begin to reflect on various interactional patterns between teachers and students as observed in the First Year Field Experience.

**EDSL 210 First Professional Seminar.**
(1) (Corequisite: EDFE 209) (Restriction: Not open to students who have taken EDSL 209 (First Year Professional Seminar)) How to observe in second language classrooms. Students will be introduced to ways of observing instructional practices and procedures and will begin to reflect on various interactional patterns between teachers and students as observed in the First Year Field Experience.

▲ **EDSL 247 Second Language Education in Aboriginal Communities.**
(3) (Restriction: Limited to students enrolled in off-campus programs delivered through the Office of First Nations and Inuit Education) Issues and considerations in the learning of English or French in Aboriginal communities. Emphasis on teaching a second language to Aboriginal children.

**EDSL 255 Second Professional Seminar.**
(2) (Restrictions: Open to B.Ed (TESL) students. Not open to students who have taken EDSL 259 (Second Year Professional Seminar).) (Prerequisites: EDSL 210 and EDFE 209.) The course aims to develop basic practices in planning and teaching in ESL classrooms, including microteaching and reflective analysis.

**EDSL 260 Séminaire professionnel-2e.**
(1) (Prerequisite: EDFE 260) (Corequisite: EDFE 261, EDSL 444) Analyse réflexive des pratiques d'enseignement propres à l'assistantat.

**EDSL 262 Système éducatif - profession enseignante.**
(3) (Restriction: Not open to students who have taken UdE: ETA 1900, McGill: EDEC 247 (formerly EDEM 405)) Initiation aux institutions scolaires du Québec et, au premier chef, à l'école. Initiation au rôle professionnel des enseignants. Perspectives historique et contemporaine.

**EDSL 263 Apprentissage et développement.**
(3) (Restriction: Not open to students who have taken UdE: PPA 1100.) Théories de l'apprentissage scolaire. L'enseignant comme médiateur des apprentissages. Milieu scolaire et croissance de 4 à 12 ans. Entrée à l'école. Facteurs d'adaptation scolaire et sociale. Élèves à besoins particuliers.

**EDSL 264 Phonétique et phonologie.**
(3) (Restriction: Not open to students who have taken UdE: LNG 1400.) Introduction à la phonétique et à la phonologie. Techniques d'analyse et de description.

**EDSL 265 Acquisition-apprentissage-langues secondes.**
(3) (Restriction: Not open to students who have taken UdE: DID 2102, McGill: EDSL 305.) Connaissance des facteurs qui influent sur l'apprentissage et l'acquisition d'une langue seconde. Historique des méthodes d'enseignement. Approche communicative. Caractéristiques des clientèles de français langue seconde.

**EDSL 266 Mathématiques au primaire.**
(3) (Restriction: Not open to students who have taken UdE: DID 1500.) Les mathématiques enseignées: histoire, savoirs, rapports au savoir et transposition. Arrimage entre les différents ordres d'enseignement.

**EDSL 267 Didactique des arts plastiques 1.**
(3) (Restriction: Not open to students who have taken UdE: DID 2910.) Expérience des arts plastiques, médias plastiques, éléments du langage plastique. Programme des arts plastiques au primaire. Élaboration, animation d'activités et évaluation des apprentissages.

**EDSL 268 Intégration des TIC.**
(3) (Restriction: Not open to students who have taken UdE: PPA 2100) Développement, mise à l'essai et analyse de situations pédagogiques intégrant stratégiquement les TIC. Réflexion critique et participation à une communauté apprenante dans une perspective de développement professionnel.

**EDSL 269 École et environnement social.**
(3) (Restriction: Not open to students who have taken UdE: ETA 2200.) L'école comme milieu de vie et lieu d'exercice de la citoyenneté. Impacts sur les acteurs éducatifs et les disparités économiques, sociales et culturelles. Critique des politiques et pratiques pertinentes.

**EDSL 270 Morphologie et syntaxe.**
(3) (Restriction: Not open to students who have taken UdE: LNG 1540.) Principaux concepts et méthodes de l'analyse morphologique et syntaxique en grammaire générative transformatielle. Application à la structure du mot et de la phrase en français contemporain et analyse de constructions problématiques.

**EDSL 271 Lexique et sémantique.**
(3) (Restriction: Not open to students who have taken UdE: LNG 1080) Types de sens: prédicats et objets sémantiques. Sens lexicaux vs grammaticaux: notion d'unité lexicale; lexique vs grammaire. Relations sémantiques de base (synonymie, antonymie...).

▲ **EDSL 300 Foundations of L2 Education.**
(3) (Restriction: Not for credit if EDSL 311 or EDEC 302 has been or is being taken) Notions de base pour l'enseignement des composantes linguistique (lexique, morphologie, syntaxe et sémantique) et discursive (de la phrase aux types de textes et de discours); apprentissage de la grammaire nouvelle; composante langue des programmes d'études.

▲ **EDSL 304 Sociolinguistics and L2 Education.**
(3) (May be offered in English or French) This course introduces students to various social aspects of language, language use, and language learning by examining second language education from three interrelated perspectives: sociolinguistics, discourse, and culture. Issues range from language variation and social attitudes to conversations and cross-cultural communication.

▲ **EDSL 305 L2 Learning: Classroom Settings.**
(3) (Prerequisite: EDSL 300 or LING 200 or LING 201.) This course provides an introduction to theory and research in second language acquisition (SLA). It is designed to help students understand the processes, developmental patterns and factors contributing to SLA so that the students will be prepared to evaluate and develop teaching procedures in light of this understanding.

**EDSL 310 Third Professional Seminar.**
(3) (Prerequisite: EDSL 255.) (Corequisite: EDFE 359) (Restriction: Not open to students who have taken EDSL 309) Focus is on classroom processes such as teaching and learning strategies, lesson planning and implementation, classroom organization and management, and on developing a reflective teaching and learning practice.

**EDSL 311 Pedagogical Grammar.**
(3) (Prerequisite: EDSL 350) (Restriction: Not for credit if
EDSL 301 or EDEC 302 has been or is being taken) The course focuses on how the English language works as a system, examining it from the levels of phonology, morphology, syntax, semantics, and discourse. These aspects will be considered in relation to second language teaching and learning.

EDSL 315 Third Year Professional Seminar. (2) (Prerequisites: EDSL 255 and EDFE 255.) (Restrictions: Open only to B.Ed. TESL students who have taken EDFE 255. Not open to students who have taken or are taking EDFE 259. EDSL 309 or EDSL 310.) Classroom processes such as teaching and learning strategies, lesson planning and implementation, classroom organization and management, and developing a reflective teaching and learning practice.

EDSL 319 Séminaire professionnel 3. (3) Ce séminaire professionnel porte sur l'analyse réflexive des pratiques stratégiques d'enseignement propres aux divers contextes scolaires au primaire. Ce séminaire vise également l'expérimentation de divers matériels pédagogiques et la simulation de techniques d'animation et de gestion de classe.

EDSL 320 Séminaire 3 professionnel. (1) Ce séminaire professionnel porte sur l'analyse réflexive des pratiques stratégiques d'enseignement propres aux divers contextes scolaires au primaire. Ce séminaire vise également l'expérimentation de divers matériels pédagogiques et la simulation de techniques d'animation et de gestion de classe.

EDSL 330 L2 Literacy Development. (3) This course examines current theories of second language literacy development and their implications for teaching, including the use of literature as a tool for language learning. Key issues include the nature of literacy development, reading and writing processes, and appropriate pedagogical approaches.

EDSL 334 Teaching Oral Skills in ESL. (3) (Prerequisite: LING 200 or LING 201.) Application of the English sound system to practical ESL teaching situations, planning and integrating pronunciation (as well as other oral skills, such as fluency) into activities and projects, developing materials, and assessing progress.

▲ EDSL 341 Littératie et Littérature Jeunesse en FLS. (3) Développement de la littérature en langue seconde; les stratégies d'enseignement et d'apprentissage de la lecture et de l'écriture; l'exploration et l'utilisation de la littérature enfantine et de jeunesse propre à la francophonie dans divers contextes scolaires.

EDSL 345 Enseignement du FLS-immersion. (3) Ce cours examine divers cheminement retrouvés en contexte immersif ainsi que diverses approches pédagogiques propices à l'enseignement du FLS par le biais de matières scolaires. Des recherches effectuées en contexte immersif seront également examinées par rapport au développement langagier des élèves en immersion.

EDSL 350 Essentials of English Grammar. (3) (Restriction: Restricted to B.Ed. (TESL) students) (Restriction: This is a required course for B.Ed. TESL students. Students from other programs may be admitted at the discretion of the instructor.) Analysis of English phrases, clauses and sentences up to discourse level in connected text. Emphasis on distinguishing between grammatical form, meaning, and function. Identification, analysis and correction of common errors made by ESL learners.

EDSL 360 TESL/TFSL Practicum - Elementary. (3) (Corequisites: EDSL 444 for TFSL students; EDSL 447 for TESL students) (Offered through Continuing Education) Supervised practice in the application of language teaching and learning theories: focus on the design and use of teaching units, the organization of communication activities, the selection and use of diagnostic and remedial materials.

EDSL 361 TESL/TFSL Practicum - Secondary. (3) (Corequisites: EDSL 472 for TFSL students; EDSL 458 for TESL students) (Offered through Continuing Education) Supervised practice in the application of language teaching and learning theories: focus on curriculum development, and on the production of instructional, diagnostic and remedial materials.

EDSL 390 Teaching English as a Second Language in the Community. (3) Introduction to pedagogical, program and policy contexts of teaching ESL outside the formal K - 11 school setting, including teaching children, adolescents and adults, in the private and community sectors in Canada and abroad.

EDSL 391 Didactique du français en aide à l'élève. (3) (Prerequisite: EDSL 301.) Content and techniques in didactic of the oral and of the writing in second language: focus on practical forms of services of aid to the francisation. Conception d’activités et de séquences d'apprentissage. Programmes d'étude.


EDSL 393 Adolescent et expérience scolaire. (3) (Restriction: Not open to students who have taken UdeM: PPA 1210.) Développement psychosocial des élèves; influence des environnements sociaux; problématiques contemporaines de l'adolescence (anxiété, suicide, abandon scolaire). Relations entre enseignants - élèves et entre pairs. Aperçu de la recherche récente.

EDSL 394 Séminaire de stage 3e. (1) (Prerequisites: EDSL 260, EDFE 261.) (Corequisite: EDFE 361.) (Restriction: Not open to students who have taken UdeM: EDU 3080.) Analyse réfléctive des pratiques d'enseignement propres au secondaire.

EDSL 401 Enseignement du FLS: méthodologie de l'évaluation. (3) Évaluation des compétences en enseignement du FLS: fondations de l'évaluation; approches normative et critique; planification de situations d'évaluation authentiques; élaboration d'instruments; interprétation des résultats; modalités de consignation.

EDSL 402 Évaluation en français langue seconde. (3) Evaluation des compétences en enseignement du FLS: méthodologie de l'évaluation; approches normative et critique; planification de situations d'évaluation authentiques; élaboration d'instruments; interprétation des résultats; modalités de consignation.

EDSL 412 Assessment in TESL. (3) (Prerequisites: EDSL 447 and EDFE 359) This course deals with the role of assessment in TESL. Students will explore the kinds of information needed to make educational decisions in second language courses, different techniques for collecting that information, and ways for interpreting it. Principles and methods for assessment with and without tests are discussed and practiced.

EDSL 415 Fourth Professional Seminar. (3) (Prerequisite: EDSL 310.) (Corequisite: EDFE 459) (Restriction: Not open to students who have taken EDSL 409) Focus is on development as a TESL professional, preparation for the workplace, and analysis, reflection, problem solving and support of actual teaching practice.

EDSL 419 Séminaire professionnel 4. (3) Analyse réfléctive des pratiques d'enseignement propres à l'immersion.
EDSL 420 Séminaire 4 professionnel.
(2) Ce séminaire professionnel porte sur l'analyse réflexive des pratiques stratégiques d'enseignement propres aux divers contextes scolaires au secondaire. Ce séminaire vise également l'expérimentation de divers matériaux pédagogiques et la simulation de techniques d'animation et de gestion de classe.

EDSL 444 Laboratoire d'enseignement en français langue seconde.
(3) Entraînement à l'observation et à l'analyse de situations d'enseignement du français langue seconde au primaire. Pratiques d'habiletés en situation microenseignement. Vidéoscopie et entraînement à la pratique réfléchie.

EDSL 447 Third-Year Methods in TESL.
(3) (Prerequisite: EDSL 311.) (Corequisites: EDSL 310 and EDFE 359) Intermediate-level skills in planning and teaching appropriate lessons, activities, and projects for ESL learners in a variety of programs at the elementary and secondary school levels.

EDSL 449 Special Topics in Second Language Teaching.
(3) Selected topics in second language teaching. Possible topics include communicative competence, interlanguage/error analysis and functional-notional approach to second language teaching.

EDSL 458 Fourth-Year Methods in TESL.
(3) (Prerequisite: EDSL 447, EDSL 311) (Corequisites: EDSL 415 and EDFE 459) Advanced-level skills in planning appropriate lessons, activities, units and projects for ESL learners in a variety of programs at the elementary and secondary levels.

EDSL 472 Enseignement du français langue seconde-secondaire.
(3) Le but de ce cours est de développer l'habileté à planifier des activités, des unités et des projets, dans des séquences d'enseignement, en fonction des programmes d'études: FLS, immersion et accueil. Le cours intègre les pédagogies de la communication orale et écrite de la langue seconde au secondaire.

EDSL 491 Didactique des mathématiques en langues secondes.
(3) (Restriction: Not open to students who have taken UdeM: DID 3506.) Problématique spécifique de l'enseignement des mathématiques à des élèves non francophones. Principaux savoirs arithmétiques et géométriques enseignés au primaire. Situations didactiques. Évaluation.

EDSL 492 Didactique des sciences-technologies.
(3) (Restriction: Not open to students who have taken UdeM: DID 2110.) Apprentissages propres aux sciences et à la technologie au préscolaire et au primaire. Conception des élèves et démarche didactique. Résolution de problèmes et autres activités. Évaluation des apprentissages et du curriculum.

EDSL 493 Sciences humaines au primaire.
(3) (Restriction: Not open to students who have taken UdeM: DID 2205.) Sciences humaines et culture. Nature de savoir élaboré, rapport au savoir et transposition sous forme de programme d'étude. Éducation à la citoyenneté.

EDSL 494 Didactique de l'univers social et TIC.
(3) (Restriction: Not open to students who have taken UdeM: DID 3237.) Évaluation critique de logiciels et sites Internet relatifs à l'univers social. Production et diffusion de documents multimédias. Scénario d'intégration pédagogique des TIC.

EDSL 495 Recherche-résolution de problèmes.
(3) (Restriction: Not open to students who have taken UdeM: ETA 4000.) Études des grands courants de la recherche actuelle en éducation comme facteurs de renouvellement des pratiques pédagogiques en classe hétérogène et de l'école dans un environnement culturel et technologique en mutation.

EDSL 496 Laboratoire de formation professionnelle.
(3) (Restriction: Not open to students who have taken UdeM: ETA 4410.) Élaboration d'un projet permettant de faire la synthèse des connaissances et de les mettre en pratique dans le cadre d'une intervention planifiée en collaboration avec les divers intervenants du milieu scolaire.

EDSL 497 Problématique en éducation préscolaire.
(3) (Restriction: Not open to students who have taken UdeM: PPA 1205.) Le rôle et l'évolution des services offerts à la petite enfance au Québec. Les facteurs socio-économiques, culture et familiaux qui affectent le développement du jeune enfant. La prévention auprès de l'enfant et sa famille.

EDSL 498 Didactique du français en accueil 2.
(3) (Prerequisite: EDSL 391.) (Restriction: Not open to students who have taken UdeM: DID 4214.) Contenus et démarches en didactique du français L2 au primaire en classe d'accueil et autres services d'aide à la francisation. Intégration des TIC. Élèves à besoins particuliers. Conception de projets d'enseignement. Programmes d'étude.

EDSL 499 Séminaire de stage-4e.
(2) (Prerequisites: EDSL 394, EDFE 361.) (Corequisite: EDFE 460.) (Restriction: Not open to students who have taken UdeM: EDU 4061.) Analyse réflexive des pratiques d'enseignement dans une perspective d'insertion professionnelle.
Faculty of Engineering

ARCH-Architecture

Offered by: Architecture

A limited number of courses are open to students not registered in the School of Architecture. Please consult Class Schedule for further information.

ARCH 201 Communication, Behaviour and Architecture.
(6) (2-10-6) Introduction to design; development of design judgement and communication skills in a series of exercises addressing light, scale, space, form and colour in the built environment; introduction to techniques of oral and graphic presentation, including model making, photography, sketching and architectural drawing. The course is based in the studio and includes lectures, seminars and field trips.

ARCH 202 Architectural Graphics and Elements of Design.
(6) (2-10-6) (Prerequisite: ARCH 201) Introduction to architectural design; consideration of building form in relation to program, structural system, material selection, site and climate; further development of skills in model making, conventional architectural drawing, axonometric and perspective drawing, sketching and architectural rendering. The course is based in the studio and includes lectures, seminars and field trips.

ARCH 217 Freehand Drawing 1.
(1) (0-2-1) Development of skills in drawing and observation through a series of exercises based on the study of the human figure in a studio setting. Media include pencil, charcoal, conte crayon, and pen and ink.

ARCH 218 Freehand Drawing 2.
(1) (0-2-1) (Prerequisite: ARCH 217) Continuation of ARCH 217. Development of graphic skills and visual literacy through exercises in life drawing. Introduction to basic colour theory: hue, intensity/dilution, temperature and emotional power. Additional media include coloured chalk and gouache.

ARCH 240 Organization of Materials in Buildings.
(3) (2-3-4) The characteristics of basic building materials: wood, steel, masonry and concrete. How building materials are shaped into building components, and how these components are integrated into the building envelope. Problems, laboratory projects and field trips to illustrate principles.

ARCH 241 Architectural Structures.
(3) (2-1-6) Introduction to the basic concepts and forms of structures in architecture.

ARCH 242 Digital Representation.
(2) (2-0-4) (Prerequisite: ARCH 201.) This course introduces students to digital representation in architecture. Students explore applications of state-of-the-art two- and three-dimensional computer modeling software in architectural design.

ARCH 250 Architectural History 1.
(3) (3-0-6) The study of architecture in relation to landscape, urban form and culture, from Antiquity to the end of the Middle Ages.

ARCH 251 Architectural History 2.
(3) (3-0-6) (Prerequisite: ARCH 250) Overview of early 20th century architecture with emphasis on a thematic approach to buildings and cities, architects and ideologies. The lectures will examine the origins, development and impact of canonical figures and buildings of Modernism.

ARCH 303 Design and Construction 1.
(6) (2-10-6) (Prerequisite: ARCH 202) An exploration of the design of buildings. Projects emphasize the major social, technological, environmental, and symbolic aspects of the design process. Introduction to specific modelling, presentation, and documentation techniques. Discussions, readings, field trips and practical exercises.

ARCH 304 Design and Construction 2.
(6) (2-10-6) (Prerequisite: ARCH 303) Continuation of Design and Construction I with projects of increasing complexity. Projects deal with particular aspects of architectural design and/or explore approaches to design methodology. Discussions, readings, field trips and practical exercises.

ARCH 319 The Camera and Perception.
(3) (2-4-3) (Prerequisite: ARCH 202) (Restriction: Departmental permission required) An intensive study of man and the urban environment. Through the use of still photography, the relationship of time, motion, space, place and light are explored in order to gain insights into the urban environment. Topics include: “photographic seeing”, light, survey of masters, history of photography, camera and darkroom techniques, tonal control, composition, etc.

ARCH 321 Freehand Drawing 3.
(1) (0-2-1) (Prerequisite: ARCH 218) Continuation of ARCH 218. Refinement of graphic skills and visual literacy through exercises in life drawing. Introduction to the materials and methods of watercolour painting.

ARCH 322 Freehand Drawing 4.
(1) (0-2-1) (Prerequisite: ARCH 321) Synthesis of ARCH 217, 218 and ARCH 321. Further refinement of graphic skills and visual literacy through exercises in life drawing. Students select and combine various media and apply them to diverse drawing and painting surfaces.

ARCH 324 Sketching School 1.
(1) (0-0-3) (Prerequisite: ARCH 218) An eight-day supervised field trip in the late summer to sketch places or things having specific visual characteristics. Students are required to include Sketching School I in the B.Sc.(Arch.) program.

ARCH 352 Art and Theory of House Design.
(3) (2-2-5) (Prerequisite: ARCH 202 or permission of instructor) An examination of the art and theory of the design of houses by architects who developed the form to perfection. Lectures and field trips will focus on the work of selected house architects from antiquity to the present.

ARCH 354 Architectural History 3.
(3) (3-0-6) (Prerequisite: ARCH 250 and Arch 251) General introduction to Modern Architecture in Western Europe from the Renaissance to the end of the 19th century. The course uses a thematic approach and sources on specific ideas and works drawn particularly from Italy, France, England and Germany.

ARCH 355 Architectural History 4.
(3) (3-0-6) (Prerequisite: ARCH 250 and ARCH 251) The study of architecture and cities in the postwar period. Emphasis placed on themes and approaches to architectural history, as opposed to traditional survey.

ARCH 372 History of Architecture in Canada.
(2) (2-0-4) (Prerequisite: ARCH 202) (Given alternate years, alternating with ARCH 388) French, British and American influences in the Maritime Provinces, Quebec and Ontario.

ARCH 375 Landscape.
(2) (2-2-2) (Prerequisite: ARCH 202) Land form, plant life, microclimate; land use and land preservation; elements and methods of landscape design.

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Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
✦ Indicates that departmental approval/permission must be obtained by a student prior to registration.
♦ Denotes courses not available as Education electives.
▲ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
❉ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
★ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

2006-2007 Undergraduate Programs Calendar, McGill University C-130
(3) (3-0-6) (Prerequisite: ARCH 202 or permission of instructor) Exploration of the interrelationship between energy, environment and building. Topics include sustainability, assessment tools, the integrated design process, water conservation, energy conservation, renewable energy, materials and embodied energy, indoor environmental quality, environmental acoustics, and advanced building technology.

ARCH 378 Site Usage.
(3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) The study of the creation, form and usage of the exterior space generated in various patterns of low-rise housing. Socio-cultural aspects of patterns; exterior space as a logical extension of the living unit; social control of the use of urban and suburban land; comparative model for low-rise housing patterns.

ARCH 379 Summer Course Abroad.
(3) (0-0-9) (Prerequisite: ARCH 202 or permission of instructor) Restriction: Departmental permission required Study of a distinct urban environment and its key buildings; graphic recording and analysis of physical configuration, constructional peculiarities and present use. Excursions to neighbouring sites of special architectural interest.

ARCH 383 Geometry and Architecture.
(3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) Geometry in the formal structure of design. Grids, lattices, polygons and polyhedra; proportional systems. Evidence of these figures and structures in natural objects and phenomena. Graphical and physical models. Application to architecture and the human environment. Case studies.

ARCH 388 Introduction to Historic Preservation.
(2) (2-2-2) (Prerequisite: ARCH 303) (Given alternate years, alternating with ARCH 372) Historic attitudes and terminologies of conservation; historic research techniques. Restoration technology of building materials and principles of interior design in the 19th and 20th centuries; current preservation planning.

ARCH 405 Design and Construction 3.
(6) (2-10-6) (Prerequisite: ARCH 304) A structured investigation of architectural concepts; program interpretation with respect to relevant cultural, social and environmental contexts; applications of appropriate formal languages and building technologies in integrated proposals for a variety of building forms.

(6) (2-10-6) (Prerequisite: ARCH 405) A detailed study and comprehensive development of architectural proposals for complex building types and site conditions; the exploration of coherent initial concepts with respect to programmatic requirements, image and form; subsequent elaboration leading to meaningful and technologically viable designs for the built environment.

ARCH 447 Lighting.
(2) (2-2-2) (Prerequisite: ARCH 304) Concepts of natural and artificial lighting in architecture and urban design.

ARCH 451 Building Regulations and Safety.
(2) (2-2-2) (Prerequisite: ARCH 405) The study of building codes with specific emphasis on the National Building and National Fire Codes of Canada. Examples of existing buildings with assignments to illustrate regulations. Development of a systematic approach to the implementation of codes during the preliminary design stage of an architectural project.

ARCH 461 Freehand Drawing and Sketching.
(1) (0-3-0) (Prerequisite: ARCH 324) Drawing and sketching in pencil, charcoal and other media both in the studio and out-of-doors.

ARCH 471 Computer-Aided Building Design.
(2) (2-2-2) (Prerequisite: ARCH 202 or equivalent) An introduction to selected applications of interactive computing in architecture; emphasis on development of simple algorithms in graphic, as well as non-graphic, modes in hands-on situations in the lab; field trips to several in use installations.

ARCH 490 Selected Topics in Design.
(2) (2-0-4) (Prerequisite: ARCH 202 or permission of instructor) A course to allow the introduction of special topics in related areas of design.

ARCH 512 Architectural Modelling.
(3) (2-1-6) (Prerequisites: ARCH 304 and ARCH 471 or equivalent.) (Restrictions: Not open to students who have taken ARCH 364.) Architectural modelling using advanced applications in digital media. Topics include: 3-D modelling and rendering; image editing; digital animation; hypertext and the World Wide Web; issues of representation and methodology; comparison of publishing applications. Projects complement design studio courses and independent studies that are student or instructor initiated.

ARCH 514 Community Design Workshop.
(4) (4-20-15) (Prerequisite: ARCH 202) A design-build studio that engages community-based projects with identified needs and a requirement for intervention on real sites. Exploration of selected problems in architectural design and develop solutions from first concept to implementation on-site.

ARCH 515 Sustainable Design.
(3) (3-0-6) (Prerequisite: ARCH 377 or permission of instructor) This course will address sustainable design theory and applications in the built environment with students from a variety of fields (architecture, urban planning, engineering, sociology, environmental studies, economics, international studies). Architecture will provide the focus for environmental, socio-cultural and economic issues.

ARCH 520 Montreal: Urban Morphology.
(3) (2-1-6) (Prerequisite: ARCH 251) Historical, geographical, demographic, and regional evolution of the metropolis of Montreal. Topics include: important quartiers, the Montreal urban grid, industrialization, reform movements, geographical diversity, urban culture, local building techniques and materials. Basic concepts of urban morphology and their relationships to the contemporary urban context will be explored.

ARCH 521 Structure of Cities.
(3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) Nature, pattern and life of modern cities. Urban networks, special areas, problems and prosects.

ARCH 522 History of Domestic Architecture in Quebec.
(3) (2-0-7) (Prerequisite: ARCH 251) (Restriction: Departmental permission required) The architecture of houses in Quebec from 1650 to the present. Distinguished buildings are reviewed from the point of view of form, style, siting and material, as influenced by climate, culture and architectural antecedents in France, England and the United States. The course material is presented through alternating bi-weekly lectures and seminars.

ARCH 523 Significant Texts and Buildings.
(3) (2-0-7) (Prerequisite: ARCH 251) Alternating with ARCH 524) (Restriction: Departmental permission required) Critical study of significant architectural thought since 1750 as it has been expressed in buildings and texts (treatises, treatises, case studies, seminars, and other written works).

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Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
manifestos, criticisms). A specific theme will be addressed every year to allow in-depth interpretations of the material presented and discussed.

ARCH 524 Seminar on Architectural Criticism.
(3) (2-0-7) (Prerequisite: ARCH 251) (Alternating with ARCH 523) (Restriction: Departmental permission required) The development and current role of architectural criticism with particular reference to its affinities with art and literary criticism.

ARCH 525 Seminar on Analysis and Theory.
(3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) (Restriction: Departmental permission required) Analysis and evaluation of significant architectural projects with reference to contemporary architectural theories.

ARCH 526 Philosophy of Structure.
(3) (2-0-7) (Prerequisite: ARCH 202 or permission of Instructor) (Restriction: Not open to students who have taken ARCH 374) Philosophy of Structure aims to investigate structure in its broadest sense. The course is divided in two halves: the first one gives an overview of the development of theoretical structural frameworks such as mathematics and geometry, while the second one highlights physical structures constructed by nature (geology, turbulence), man or animals.

ARCH 527 Civic Design.
(3) (2-0-7) (Prerequisite: ARCH 378) The elements of form in buildings and their siting design in the urban setting.

ARCH 528 History of Housing.
(3) (2-0-7) (Prerequisite: ARCH 251 or permission of instructor) Indigenous housing both transient and permanent, from the standpoint of individual structure and pattern of settlements. The principal historic examples of houses including housing in the age of industrial revolution and contemporary housing.

ARCH 529 Housing Theory.
(3) (2-0-7) (Prerequisite: ARCH 528 or permission of instructor) A review of environmental alternatives in housing; contemporary housing and the physical and sociological determinants that shape it; Canadian housing.

ARCH 531 Architectural Intentions Vitruvius - Renaissance.
(3) (2-0-7) (Prerequisite: ARCH 251) Architectural intentions embodied in buildings and writings of architects from antiquity to the Renaissance. Special emphasis is placed on the cultural connections of architecture to science and philosophy.

ARCH 532 Origins of Modern Architecture.
(3) (2-0-7) (Prerequisite: ARCH 251) Examination of architectural intentions (theory and practice) in the European context (especially France, Italy and England), during the crucial period that marks the beginning of the modern era.

ARCH 534 Architectural Archives.
(3) (3-0-6) (Prerequisites: ARCH 250 and ARCH 251 or equivalent.) (Restriction: Open only to architecture students.) Role of archives in architectural culture. Methods of development, documentation and communication. Formats of architectural representation. Problems inherent in the creation and preservation of archival records, and access to them. Case studies based on 19th and 20th century archives in the John Bland Canadian Architecture Collection, and other collections.

ARCH 540 Selected Topics in Architecture 1.
(3) (2-0-7) A course to allow the introduction of new topics in Architecture as needs arise, by regular and visiting staff.

ARCH 541 Selected Topics in Architecture 2.
(3) (2-0-7) A course to allow the introduction of new topics in Architecture as needs arise, by regular and visiting staff.

ARCH 550 Urban Planning and Development.
(4) (3-1-8) (Prerequisite: B.Sc.(Arch.) or permission of instructor) (Restriction: Not normally open to Urban Planning students) A survey of municipal, regional and provincial actions to guide urban development in Canada, with a particular emphasis on Montreal and Quebec. It also introduces students to concepts in real-estate development and highlights the relationship between developers and planners.

ARCH 554 Mechanical Services.
(2) (2-0-4) (Prerequisite: ARCH 405 or permission of instructor) Problems encountered in providing mechanical services in buildings. Physiological and environmental aspects of heat, ventilation and air conditions, estimation of heating and cooling loads and selection and specification of equipment. Sprinkler systems and plumbing. Construction problems produced by installation of this equipment.

ARCH 555 Environmental Acoustics.
(2) (2-0-4) (Prerequisite: ARCH 405 or permission of instructor) Acoustics in architectural design, and in environmental control of buildings. Acoustical requirements in the design of auditoria such as theatres, lecture halls, opera houses, concert halls, churches, motion picture theatres, studios. Principles of noise and vibration control, sound insulating in building construction. Practical noise control in various types of buildings.

BMDE-Biomedical Engineering

Offered by: Biomedical Engineering

BMDE 500D1 (1.5), BMDE 500D2 (1.5) Seminars in Biomedical Engineering.
(Students must register for both BMDE 500D1 and BMDE 500D2.) (No credit will be given for this course unless both BMDE 500D1 and BMDE 500D2 are successfully completed in consecutive terms)

BMDE 501 Selected Topics in Biomedical Engineering.
(3) (3-0-6) An overview of how techniques from engineering and the physical sciences are applied to the study of selected physiological systems and biological signals. Using specific biological examples, systems will be studied using: signal or finite-element analysis, system and identification, modelling and simulation, computer control of experiments and data acquisition.

BMDE 502 BME Modelling and Identification.
(3) (3-0-6) (Prerequisites: Undergraduate basic statistics and: either BMDE 519, or Signals and Systems (e.g., ECSE 303 & ECSE 304) or equivalent) Methodologies in systems or distributed multidimensional processes. System themes include parametric vs non-parametric system representations; linear/non-linear; noise, transients and time variation; mapping from continuous to discrete models; and relevant identification approaches in continuous and discrete time formulations.

BMDE 503 Biomedical Instrumentation.
(3) (3-0-6) The principles and practice of making biological measurements in the laboratory, including theory of linear systems, data sampling, computer interfaces, basic electronic circuit design and machining.

BMDE 504 Biomaterials and Bioperformance.
(3) (3-0-6) (Restriction: graduate and final-year undergraduate students from physical, biological and medical science, and engineering.) Biological and synthetic biomaterials, medical devices, and the issues related to their bioperformance. The physicochemical characteristics of biomaterials in relation to...
their biocompatibility and sterilization.

**BMDE 505 Cell and Tissue Engineering.** (3) (3-0-6) (1.5 hours lecture/1.5 hours seminar per week)) (Restriction: graduate and final year undergraduate students from physical, biological, and medical science, and engineering.) Application of the principles of engineering, physical, and biological sciences to modify and create cells and tissues for therapeutic applications will be discussed, as well as the industrial perspective and related ethical issues.

**BMDE 506 Molecular Biology Techniques.** (3) (1-5-3) (Prerequisites: MATH 222, BIOL 200 or BIOL 201, CHEM 212 or CHEM 213 or PHYS 253.) (Restrictions: Limited to 18 students. Calculus required, physics or physical chemistry (thermodynamics, statistical mechanics) preferred. Primarily for graduate students or advanced undergraduate students in the physical sciences who are interested in learning molecular biology techniques. Preference given to graduate students in Biomedical Engineering and Physics. Students who have completed BIOC 300 or MIMM 366 are not eligible.) (Grades: 15% midterm and final, 40% lab notebook, 30% written final project.) Introduction to major techniques of molecular biology for physical scientists.

**CHEE 519 Biomedical Signals and Systems.** (3) (3-0-6) (Prerequisites: Satisfactory standing in U3 Honours Physiology; or U3 Major in Physics-Physiology; or U3 MSc in Physiology-Mathematics; or permission of instructor.) An introduction to the theoretical framework, experimental techniques and analysis procedures available for the quantitative analysis of physiological systems and signals. Lectures plus laboratory work using the Biomedical Engineering computer system. Topics include: amplitude and frequency structure of signals, filtering, sampling, correlation functions, time and frequency-domain descriptions of systems.

**CHEE-Chemical Engineering**

**Offered by:** Chemical Engineering

**CHEE 200 Introduction to Chemical Engineering.** (4) (3-1-8) (Restrictions: students with DCS in PAS, HS or equivalent) Introduction to the design of industrial processes. Survey of unit operations, and systems of units. Elementary material balances, first and second laws of thermodynamics, use of property tables and charts, steady flow processes, heat engines, refrigeration cycles. Relationships between thermodynamic properties, property estimation techniques. Laboratory and design exercise.

**CHEE 204 Chemical Manufacturing Processes.** (3) (3-2-4) (Prerequisite: CHEE 200) Material and energy balances in chemical processes. Problem solving in the design of separation processes (evaporation, crystallization), reactor design, process control, and environmental applications.

**CHEE 220 Chemical Engineering Thermodynamics.** (3) (3-1-5) (Prerequisite: CHEE 220) Application of thermodynamic equilibrium; free energy and equilibrium; phase rule; chemical reaction equilibrium for homogenous and multicomponent/multiphase systems. Application to the design of binary distillation. Laboratory exercise.

**CHEE 230 Environmental Aspects of Technology.** (3) (3-0-6) The impact of urbanization and technology on the environment. Topics include urbanization: causes, effects, land use regulations; transportation technology and environmental implications; environmental impact of energy conversions; energy policy alternatives; formulation of energy and environmental policy; air pollution: sources, effects, control; water pollution: sources, effects, control.

**CHEE 291 Instrumental Measurement Laboratory.** (4) (2-5-5) Elements of statistical analysis associated with instrumental measurements. Principles of operation and calibration of selected measuring instruments. Principles of modern data acquisition and processing. Introduction to instrument system selection in chemical engineering.

**CHEE 310 Physical Chemistry for Engineers.** (3) (3-1-5) (Prerequisite: CHEE 220 or MIME 212.) (Restriction: Not open to students having taken CHEM 233.) Introduction to statistical thermodynamics, chemical kinetics, surface and colloid chemistry, spectroscopy, and electrochemistry from an engineering viewpoint. Topics emphasize applications of physical chemistry for chemical engineers.

**CHEE 314 Fluid Mechanics.** (4) (3-3-6) (Prerequisite: CHEE 204.) (Corequisite: MATH 265 or MATH 264.) Fluid properties; dimensional analysis; drag; packed/fluidized beds; macroscopic energy balances, Bernoulli's equation and linear momentum theorem; flowmeters, pipeline systems, non-Newtonian fluids, microscopic balances leading to continuity and Navier-Stokes equations; boundary layer approximation; turbulence. Laboratory exercises.

**CHEE 315 Heat and Mass Transfer.** (4) (3-2-7) (Prerequisite: CHEE 314) Transport of heat and mass by diffusion and convection; transport of heat by radiation; diffusion; convective mass transfer; drying; absorption; mathematical formulation of problems and equipment design for heat and mass transfer; laboratory exercises.

**CHEE 340 Process Modelling.** (3) (3-1-5) (Prerequisites: MATH 261 or MATH 263; MATH 264 or MATH 265; CHEE 314) Principles of mathematical modelling in chemical engineering: problem formulation, solution, discrete systems; difference and difference-differential equations, methods of solution; understanding system behaviour, optimization.

**CHEE 351 Separation Processes.** (3) (3-0-6) (Prerequisites: CHEE 204, CHEE 220. Corequisites: CHEE 315.) Concepts underlying separation processes. Equilibrium-based processes with staging and continuous contacting, distillation, evaporation, liquid-liquid extraction, leaching. Introduction to membrane based separations.

**CHEE 360 Technical Paper 1.** (1) (0-0-3) A technical paper prepared according to instructions issued by the Department.

**CHEE 363 Projects Chemical Engineering 1.** (2) (1-0-5) (Prerequisite: CHEE 200 (A grade is acceptable for prerequisite purposes only)) Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff. Students may work in groups.

**CHEE 370 Elements of Biotechnology.** (3) (3-0-6) (Prerequisite: CHEE 234) Enzyme kinetics; proteins, carbohydrates and other biochemicals; industrially significant microbes; introduction to genetic engineering, cell structure and metabolism; laboratory exercises.

**CHEE 380 Materials Science.** (3) (3-1-5) (Prerequisites: CHEE 220 or MIME 212) Structure/property relationship for metals, ceramics, polymers and composite materials. Atomic and molecular structure, bonds, electronic band structure and semi-conductors. Order in solids: crystal structure, disorders, solid phases. Mechanical properties and fracture, physico-chemical properties,
CHEE 392 Project Laboratory 1.
(4) (3-3-6) (Prerequisite: CHEE 291) Planning for the solution of experimental problems; design of experiments for logical and statistical interpretation; statistical analysis of experimental data; effective work in groups; selected laboratory exercises.

CHEE 393 Project Laboratory 2.
(5) (2-10-3) (Prerequisite: CHEE 392) Student groups execute and report on experimental projects.

CHEE 423 Chemical Reaction Engineering.

CHEE 430 Technology Impact Assessment.
(3) (3-1-5) (Restriction: final year students by permission of instructor) The power of technology to shape man's physical, economic and social environment: effects of technological transitions on culture and ecology; (TIA) methodologies, public participation, engineering contributions, regulations; implications of TIA on social and economic development.

(3) (3-0-6) (Corequisite: CHEE 423) Characterization of wood, pulp and paper. Flowsheets of basic pulpizing processes. Applications of thermodynamics, fluid mechanics, heat and mass transfer, and reaction engineering principles in the pulp and paper processes.

CHEE 452 Particulate Systems.
(3) (3-0-6) (Prerequisites: CHEE 200, CHEE 314. A D grade is acceptable for prerequisite purposes only.) Study of operations involving multiphase systems with one of the phases finely sub-divided as bubbles, drops or particles. Applications in environmental engineering, grinding, agglomeration, settling, fluidization.

CHEE 453 Process Design.
(4) (4-1-7) (Prerequisite: CHEE 315; MIME 310. Corequisite: CHEE 351) Analysis of design alternatives. Structure of process design systems, degrees of freedom, information flow. Computer-aided process and plant design programs, physical properties, specifications, recycle convergence, optimization, applications, economics. Safety, environmental control in plant design.

CHEE 455 Process Control.
(4) (3-2-7) (Prerequisites: CHEE 315; CHEE 351; CHEE 423) Dynamic modelling of processes, transfer functions, first and higher-order systems, dead-time, open and closed loop responses, empirical models, stability, feedback control, controller tuning, transient response, frequency response, feedforward and ratio control, introduction to computer control, sampling, discrete models, Z-transform, introduction to multivariable control. Laboratory exercises.

CHEE 456 Design Project 1.
(1) (1-0-2) (Prerequisite: CHEE 393. Corequisite: CHEE 453.) (Restriction: Must be taken in the semester preceding CHEE 457.) Introduction to a process design and economic evaluation project, including environmental and safety aspects, for a major industrial operation. Students work in small groups under an experienced plant design supervisor.

CHEE 457 Design Project 2.
(5) (1-2-12) (Prerequisite: CHEE 456.) (Restriction: Must be taken in the semester following CHEE 456.) A process plant design and economic evaluation, including environmental and safety aspects, for a major industrial operation. Students work in small groups, under an experienced plant design supervisor. Plant visit.

CHEE 458 Computer Applications.
(3) (2-3-4) (Prerequisites: COMP 208 and CHEE 393) Use of computers and software as problem solving aids in chemical engineering. Lectures on software engineering, computer architectures, and multitasking. In laboratory work, groups of students will produce software to be used and maintained by others.

CHEE 462 Technical Paper 2.
(1) (0-0-3) (Prerequisite: CHEE 360) A technical paper prepared according to instructions issued by the Department.

CHEE 464 Projects Chemical Engineering 2.
(2) (1-0-5) (Prerequisite: CHEE 363) Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff. Students may work in groups.

CHEE 471 Industrial Water Pollution Control.
(3) (3-0-6) (Prerequisite: CHEE 314 or equivalent) Effect of wastes on streams, water quality and standard analyses, waste water sampling techniques, waste water treatment technology and processes; design of treatment operations and equipment; physical, chemical and biological methods; specific industrial applications with emphasis on Canadian case studies; industrial effluent treatability studies.

CHEE 474 Biochemical Engineering.
(3) (3-0-6) (Prerequisite: CHEE 370.) (Corequisite: CHEE 423.) Bioreactor design for biotechnology and environmental applications; microbial growth kinetics; application of transport phenomena and selected chemical engineering unit operations. Bioreactor instrumentation and performance optimization. Air and media sterilization processes. Selected operations of downstream processing and product recovery.

CHEE 481 Polymer Engineering.
(3) (3-0-6) (Corequisites: CHEE 315 or MIME 356.) The application of engineering fundamentals to the preparation and processing of polymers emphasizing the relationship between polymer structure and properties. Topics include: polymer synthesis techniques, characterization of molecular weight, crystallinity, glass transition, phase behaviour, mechanical properties, visco-elasticity and rheology, and polymer processing for use in blends and composite materials.

CHEE 484 Materials Engineering.
(3) (3-0-6) (Prerequisites: CHEE 315, CHEE 380) Processes for forming and producing engineering materials such as amorphous, semicrystalline, textured and crystal-oriented substances and composites. Effect of processing variables on the properties of the finished article. Process of blending and alloying. Shaping and joining operations. Vessel equipment design for chemical engineering applications.

CHEE 487 Chemical Processing: Electronics Industry.
(3) (3-0-6) (Prerequisite: CHEE 310.) Chemical processes and unit operations in the manufacture of microelectronic components and their supports. Fabrication of silicon wafers, purification, crystal growth. Imaging processes, deposition of semiconductive materials, plasma and chemical etching. Reclamation of reagents from waste streams. Safety and environmental concerns.

CHEE 494 Research Project and Seminar 1.
(3) (1-6-2) (Prerequisite: CHEE 393) Independent study and experimental work on a topic chosen by consultation between the

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- Denotes courses taught only in alternate years.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses not available as Education electives.
- Denotes courses with limited enrolment.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
CHEE 494D1 (1.5), CHEE 494D2 (1.5) Research Project and Seminar 1. (Students must register for both CHEE 494D1 and CHEE 494D2.) (No credit will be given for this course unless both CHEE 494D1 and CHEE 494D2 are successfully completed in consecutive terms) (CHEE 494D1 and CHEE 494D2 together are equivalent to CHEE 494) Independent study and experimental work on a topic chosen by consultation between the student and Departmental Staff.

CHEE 495 Research Project and Seminar 2. (4) (1-9-2) (Prerequisite: CHEE 393) Independent study and experimental work on a topic chosen by consultation between the student and the Departmental staff.

CHEE 495D1 (2), CHEE 495D2 (2) Research Project and Seminar 2. (Students must register for both CHEE 495D1 and CHEE 495D2.) (No credit will be given for this course unless both CHEE 495D1 and CHEE 495D2 are successfully completed in consecutive terms) (CHEE 495D1 and CHEE 495D2 together are equivalent to CHEE 495) Independent study and experimental work on a topic chosen by consultation between the student and the Departmental staff.

CHEE 496 Environmental Research Project. (3) (1-6-2) (Prerequisite: CHEE 393 or permission of instructor.) Independent study and experimental work on an environmental topic chosen by consultation between the student and Departmental staff.

CHEE 496D1 (1.5), CHEE 496D2 (1.5) Environmental Research Project. (Students must register for both CHEE 496D1 and CHEE 496D2.) (No credit will be given for this course unless both CHEE 496D1 and CHEE 496D2 are successfully completed in consecutive terms) (CHEE 496D1 and CHEE 496D2 together are equivalent to CHEE 496) Independent study and experimental work on an environmental topic chosen by consultation between the student and Departmental staff.


CHEE 543 Plasma Engineering. (3) (3-1-5) (Prerequisites: CHEE 220 and CHEE 314 or equivalent.) Description of the plasma state and parameters, plasma generation methods, and of the related process control and instrumentation. Electrical breakdown in gases and a series of discharge models are covered. Plasma processing applications such as PVD, PECVD, plasma polymerisation and etching, environmental applications, nanoparticle synthesis, spraying and sterilization are treated.

CHEE 563 Biofluids and Cardiovascular Mechanics. (3) (3-0-6) (Prerequisites: CHEE 314 or MECH 331 or permission of instructor.) Application of chemical engineering fundamentals to energy recovery, conversion, and environmental impact. Topics include thermodynamics of fossil fuel deposits, reaction engineering of fuel upgrading, power generation, operation of power sources, production/use of alternative fuels, environmental impact and pollution mitigation technologies dealing with energy use.

CIVE-Civil Engineering Offered by: Civil Engineering

CIVE 202 Construction Materials. (4) (2-4-6) (Prerequisite: CIVE 290) Classification of materials; atomic bonds; phase diagrams; elementary crystallography, imperfections and their relationship to mechanical behaviour; engineering properties and uses of ferrous and non-ferrous metals, ceramics, cement, concrete, timber and timber products, polymers, composites; smart materials and systems; electrochemical reactions and corrosion, prevention and protection; environmental influences; group laboratory projects.
CIVE 203 Solid Mechanics Laboratory.

(1)

CIVE 205 Statics.
(3) (3-2-4) Systems of forces and couples, resultants, equilibrium. Trusses, frames and beams, reactions, shear forces, bending moments. Centroids, centres of gravity, distributed forces, moments of inertia. Friction, limiting equilibrium, screws, belts.

CIVE 206 Dynamics.
(3) (3-2-4) (Prerequisite: CIVE 205.) (Corequisites: MATH 262 or MATH 260 and MATH 263 or MATH 261.) Kinematics and kinetics of particles, systems, and rigid bodies; mass-acceleration, work-energy, impulse-momentum. Moving coordinate systems. Lagrange's equations. Vibrations and waves.

CIVE 207 Solid Mechanics.
(4) (3-2-7) (Prerequisites: CIVE 205 (a D grade is acceptable for prerequisite purposes) or MECH 210 (under special circumstances, the Department may permit this course to be taken as a corequisite) or equivalent.) (Four laboratory sessions and weekly tutorials) Stress-strain relationships; elastic and inelastic behaviour; performance criteria. Elementary and compound stress states, Mohr's circle. Shear strains, torsion. Bending and shear stresses in flexural members. Deflections of beams. Statically indeterminate systems under flexural and axial loads. Columns. Dynamic loading.

CIVE 208 Civil Engineering System Analysis.
(3) (3-1-5) (Prerequisite: COMP 208.) (Corequisite: MATH 264 or MATH 265.) Introduction to civil engineering systems; system modelling process; systems approach and optimization techniques; application of linear programming; simplex method; duality theory; sensitivity analysis; transportation problem; assignment problem; network analysis including critical path method; integer linear programming method.

CIVE 210 Surveying.
(2) (Prerequisite: MECH 289.) The construction and use of modern surveying instruments; transit, level, etc.; linear and angular measurements and errors; horizontal and vertical curves; error analysis, significance of figures; use of computers and software; recent developments.

CIVE 225 Environmental Engineering.
(4) (4-2-6) (Prerequisite: CIVE 290.) (Corequisite: MATH 261 or MATH 262.) Introduction to environmental chemistry; mass balance analyses in engineered and natural systems; water, soil and air pollution characterization and control; water quality parameters; drinking water and wastewater treatment technologies; global climate change: possible causes and effects; risk assessment for pollutant exposure; solid- and hazardous-waste management.

CIVE 281 Analytical Mechanics.
(3) (3-1-5) (Corequisites: MATH 260 or MATH 262, MATH 261 or MATH 262.) Kinematics of particles, dynamics of particles, work, conservative forces, potential energy. Relative motion and general moving frames of reference. Central force fields and orbits. Dynamics of a system of particles. General motion of rigid bodies, angular momentum and kinetic energy of rigid bodies. Generalized coordinates and forces, Lagrange's equations.

CIVE 284 Structural Engineering Basics.
(4) (3-3-6) (Restriction: Not open to students who have taken CIVE 205 and CIVE 283.) Basic principles of statics; force systems; trusses; centroids and second moment of areas; stress and strain; beams; shearing and bending stresses; deflections; combined stresses; columns.

CIVE 290 Thermodynamics and Heat Transfer.
(3) (3-2-4) Macroscopic vs. microscopic viewpoint; states and processes; energy conservation and transformation. Phase equilibrium; equations of state; thermodynamic properties; work; heat; First Law of thermodynamics; internal energy; enthalpy; specific heat; thermodynamic processes: reversibility, polytrophic processes, applications of First Law; Second Law; entropy; introduction to heat transfer.

CIVE 302 Probabilistic Systems.
(3) (3-1-5) (Prerequisites: MATH 260 or MATH 262, COMP 208 (a D grade is acceptable for prerequisite purposes)) An introduction to probability and statistics with applications to Civil Engineering design. Descriptive statistics, common probability models, statistical estimation, regression and correlation, acceptance sampling.

CIVE 311 Geotechnical Mechanics.
(4) (3-3-6) (Prerequisite: CIVE 207) Identification and classification of soils; physical and engineering properties; principle of effective stress; permeability, compressibility, shear strength, stress-strain characteristics; groundwater flow and seepage; earth pressure and retaining structures; stress distributions in soils; settlement; bearing capacity of shallow foundations.

CIVE 312 Structural Engineering 1.
(3) (3-1-5) (Prerequisites: CIVE 202, CIVE 207 and MECH 290) The design process; loads, sources, classifications, load factors, combinations; limit states design; structural systems and foundations; choice of materials; virtual work and energy methods; statical and kinematic indeterminacy; slope deflection method, introduction to matrix methods; analysis of indeterminate systems; force envelopes.

CIVE 319 Structural Engineering 2.
(3) (3-1-5) (Prerequisite: CIVE 317) Durability and service life; fire resistance and protection; steel, reinforced concrete and timber; behaviour and design of components in tension, compression, bending and shear; slenderness, global and local instability; axial load and moment interaction; curvature, deflection, ductility; connections; bond and anchorage of reinforcement; simple footings.

CIVE 320 Numerical Methods.
(4) (3-3-6) (Prerequisites: COMP 208, MATH 264 or MATH 265) Numerical procedures applicable to civil engineering problems: integration, differentiation, solution of initial-value problems, solving linear and non-linear systems of equations, boundary-value problems for ordinary-differential equations, and for partial-differential equations.

CIVE 323 Hydrology and Water Resources.
(3) (3-2-4) (Prerequisite: CIVE 302) Precipitation, evaporation and transpiration, Streamflow, storage reservoirs. Groundwater hydrology. Morphology of river basins. Statistical analysis in hydrology, stochastic modelling and simulation. Case studies in hydroelectric power development, flood damage mitigation, irrigation and drainage.

CIVE 324 Construction Project Management.
(3) (3-1-5) (Prerequisites: MIME 310 and CIVE 208)
Construction fundamentals; procedures and responsibilities; tender documents, specifications, proposals, contracts; construction project organization, estimating, planning, scheduling, control; liability, claims procedures, arbitration; job safety; security and loss control; case histories, site visits.

CIVE 326 Fluids & Hydraulics Laboratory.
(1) (0-1-2) (Restriction: Not open to students who have take or have taken CIVE 327.) (Prerequisite: Course equivalent to CIVE 327 without laboratory component.) Laboratory experiments in fluid mechanics and hydraulics.

CIVE 327 Fluid Mechanics and Hydraulics.
(4) (3-6-3) (Prerequisites: CIVE 206, MATH 264 or MATH 265.) Fluid properties; hydrostatics; dimensional analysis and similarity, fluxes of mass, momentum and energy; Bemoulli's equation; method of control volume; streamline curvature; potential flow and boundary layers; pipe flow, hydraulic machinery and introduction to open-channel flow.

CIVE 382 Partial Differential Equations in Engineering.
(3) (3-1-5) (Prerequisites: MATH 261 or MATH 263, MATH 264 or MATH 265, CIVE 281 (a D grade is acceptable for prerequisite purposes)) Classifications of PDEs; Laplace's Equation, steady fluid flow. Diffusion Equation; pressure transients in porous media, moisture and chemical diffusion, heat conduction; Wave Equation; waves and vibrations in strings, membranes and bars. Uniqueness of solution; variables separable solutions in rectangular and cylindrical coordinates; product solutions, elementary applications of integral transforms.

CIVE 385 Structural Steel and Timber Design.
(3) (3-1-5) (Prerequisite: CIVE 284.) (Corequisite: ARCH 240) Structural loadings, load factors, code requirements and design procedures. Characteristics of structural steel and structural timber in building construction. Structural design of axially loaded tension and compression members, joists, beams, girders, trusses and framing systems.

CIVE 388 Foundation and Concrete Design.
(3) (3-1-5) (Prerequisite: CIVE 284.) Physical properties of concrete; behaviour and design of reinforced concrete members in compression, tension, bending, shear and combined loadings; bond and anchorage; soil properties, soil testing, footings; pile foundation; sheeting, retaining walls.

CIVE 416 Geotechnical Engineering.
(3) (3-1.5-4.5) (Prerequisite: CIVE 311) Site investigation, in-situ measurement of engineering properties of soils; braced excavations; bearing capacity of shallow foundations; upper bound solutions; soil structure interaction; design aspects of footing and rafts, coefficient of subgrade reaction; deep foundations; bearing capacity of piles, pile settlement; stability of slopes; infinite slopes; frost action in soils.

CIVE 418 Design Project.
(3) (1-2-6) (Prerequisite: Completion of an approved set of required and complementary courses; normally restricted to final semester.) Capstone design project.

CIVE 421 Municipal Systems.
(3) (3-2-4) (Prerequisite: CIVE 327) Design of water-related municipal services; sources of water and intake design; estimation of water demand and wastewater production rates; design, construction and maintenance of water distribution, wastewater and stormwater collection systems; pumps and pumping stations; pipe materials, network analysis and optimization; storage; treatment objectives for water and wastewater.

CIVE 428 Water Resources and Hydraulic Engineering.
(3) (3-3-3) (Prerequisite: CIVE 327) Application of continuity, energy and momentum concepts to open-channel flow; design of channels considering uniform flow and flow resistance, non-uniform flow and longitudinal profiles; design of channel controls and transitions; unsteady flow and flood routing; river ice engineering.

CIVE 430 Water Treatment and Pollution Control.
(3) (3-3-3) (Prerequisites: CIVE 225 and CIVE 327) Principles of water and sewage treatment. Water and sewage characteristics; design of conventional unit operations and processes; laboratory analyses of potable and waste waters.

CIVE 432 Technical Paper.
(1) (0-0-3) (Prerequisite: EDEC 206) A technical paper, on a suitable topic, is to be prepared in accordance with detailed instructions which are provided by the Department. This paper will normally be written in the U3 year and may be submitted in September or January.

CIVE 433 Urban Planning.
(3) (3-1-5) (Prerequisites: CIVE 421 and MIME 310.) (Corequisite: CIVE 319) The City in History. The planning profession, evolution of planning in North America, Canada and Quebec. Planning theories, the general or master plan, planning processes and techniques, planning and design of residential subdivisions. Local planning issues, housing policies, planning laws.

CIVE 440 Traffic Engineering.
(3) (3-1-5) (Prerequisite: CIVE 319 (a D grade is acceptable for prerequisite purposes)) Driver, vehicle and traffic flow characteristics; origin-destination studies, traffic studies and analysis, accident studies, queuing theory applications, gap acceptance, simulation, highway capacity, traffic regulations and control measures, intersection control.

CIVE 446 Construction Engineering.
(3) (3-1-5) (Prerequisite: CIVE 208 and MIME 310.) Project management principles; construction equipment economics, selection, operation; characteristics of building, heavy, marine, underground and route construction projects; international projects.

CIVE 451 Geoenvironmental Engineering.
(3) (3-1.5-4.5) (Prerequisites: CIVE 225 and CIVE 311) Geoenvironmental hazards; land management of waste; regulatory overview, waste characterization; soil-waste interaction; geosynthetics; low permeability clay barriers; contaminant transport; containment systems; collection and removal systems; design aspects; strategies for remediation; rehabilitation technologies.

CIVE 452 Water Resources in Barbados.
(3) (Corequisites: Enrolment in full "Barbados Field Study Semester"; AGRI 413, AGRI 519 or CIVE 519 or URBP 519, URBP 507.) (Restrictions: Not open to students who have taken AGRI 452. Permission of the Coordinator of the Field Semester required.) Physical environment challenges, centered on water, being faced by an island nation. Guest speakers, field study tours and laboratory tests. Private, government and NGO institutional context of conservation strategies, and water quantity and quality analyses for water management specific to Barbados.

CIVE 460 Matrix Structural Analysis.
(3) (3-2-4) (Prerequisites: CIVE 206 and CIVE 317) Computer structural analysis, direct stiffness applied to two and three dimensional frames and trusses, matrix force method, nonlinear problems, buckling of trusses and frames, introduction to finite element analysis.

CIVE 462 Design of Steel Structures.
(3) (3-3-3) (Prerequisite: CIVE 318) Design of structural...
steels: plate girders, members under combined loadings, eccentrically loaded connections, structural systems. Design of structural steel systems: composite floor systems, braced frames, moment resisting frames.

CIVE 463 Design of Concrete Structures.
(3) (3-3-3) (Prerequisite: CIVE 318) Review of flexural behaviour and design concepts. Design of flexural members, columns, two-way slab systems, retaining walls, disturbed regions, and shear walls. Introduction to prestressed concrete design.

CIVE 469 Infrastructure and Society.
(3) (3-2-4) (Prerequisite: MIME 310) Infrastructure systems, historical background and socio-economic impact; planning, organization, communication and decision support systems; budgeting and management; operations, maintenance, rehabilitation and replacement issues; public and private sectors, privatization and governments; infrastructure crisis and new technologies; legal, environmental, socio-economic and political aspects of infrastructure issues; professional ethics and responsibilities; case studies.

CIVE 470 Research Project.
(3) (0-1-8) (Prerequisite: 60 credits in the Civil Engineering and Applied Mechanics program) Open to students with a high CGPA. A research project must be carried out and a technical paper or prepared under the supervision of a member of staff. The project must be established with the consent of the Staff Supervisor, and must be approved by the Department before registration. May be taken in conjunction with the required course CIVE 418 and the project therefore can be carried out through two semesters.

CIVE 492 Structures.
(2) (2-2-2) (Prerequisites: CIVE 385 and CIVE 388) A study of structural systems in concrete, steel, timber; a philosophy of structure; choice of structure; economic factors in design; recent developments and trends in structure; lateral stability by frame action, bracing shear walls; mechanics of certain structural forms.

CIVE 512 Advanced Civil Engineering Materials.
(3) (3-3-3) (Prerequisite: CIVE 202) Production, structure and properties of engineering materials; ferrous alloys, treatments, welding, special steels, cast iron; ceramic materials; polymers: composite materials; concrete, admixtures, structure, creep, shrinkage; asphalt and asphaltic materials; clay materials and bricks; impact of environment on material response, durability, quality assessment and control, industrial specifications; recent advances.

CIVE 519 Sustainable Development Plans.
(6) (1-9-8) (Corequisites: Enrolment in full “Barbados Field Study Semester”: AGRI 413, AGRI 452 or CIVE 452. URBP 507) (Restrictions: Not open to students who have taken AGRI 519 or URBP 519. Permission of the Coordinator of the Field Semester required.) Geared for solving real-world environmental problems related to water at the local, regional and international scale in Barbados. Projects to be designed by instructors in consultation with university, government and NGO partners and to be conducted by teams of 2 to 4 students in collaboration with them.

CIVE 526 Solid Waste Management.
(3) (3-2-4) (Prerequisite: CIVE 225) Characterization of municipal and industrial solid wastes. Review of solid and hazardous waste impacts, regulations and treatment options. Collection and transportation of solid wastes. Methods of reclamation and disposal. Introduction to the design of landfill sites and incinerators.

CIVE 527 Renovation and Preservation: Infrastructure.
(3) (3-2-4) (Prerequisite (Undergraduate): CIVE 202 and CIVE 318) Maintenance, rehabilitation, renovation and preservation of infrastructure; infrastructure degradation mechanisms; mechanical, chemical and biological degradation; corrosion of steel; condition surveys and evaluation of buildings and bridges; repair and preservation materials, techniques and strategies; codes and guidelines; case studies.

CIVE 540 Urban Transportation Planning.
(3) (3-1-5) (Prerequisite: CIVE 319 or permission of instructor) Process and techniques of urban transportation engineering and planning, including demand analysis framework, data collection procedures, travel demand modelling and forecasting, and cost-effectiveness framework for evaluation of project and system alternatives.

CIVE 546 Selected Topics in Civil Engineering 1.
(3) (3-0-6) (Prerequisite (Undergraduate): Permission of instructor) Special topics related to Civil Engineering will be presented by staff and visiting lecturers.

CIVE 550 Water Resources Management.
(3) (3-0-6) (Prerequisite (Undergraduate): CIVE 323 or equivalent) State-of-the-art water resources management techniques; case studies of their application to Canadian situations; identification of major issues and problem areas; interprovincial and international river basins; implications of development alternatives; institutional arrangements for planning and development of water resources; and, legal and economic aspects.

CIVE 553 Stream Pollution and Control.
(3) (3-2-4) (Prerequisite (Undergraduate): CIVE 225) Water quality standards. Physical and chemical pollution, and bacterial contamination of surface waters. Effects of specific types of pollution such as thermal, point and non-point sources. Stream self purification. Effects on lake eutrophication. Pollution surveys and methods of control.

CIVE 555 Environmental Data Analysis.
(3) (3-0-6) (Prerequisite (Undergraduate): CIVE 302 or permission of instructor) Application of statistical principles to design of measurement systems and sampling programs. Introduction to experimental design, graphical data analysis. Description of uncertainty. Hypothesis tests. Model parameter estimation methods: linear and nonlinear regression methods. Trend analysis. Statistical analysis of censored data. Statistics of extremes.

CIVE 572 Computational Hydraulics.
(3) (3-0-6) (Prerequisite: CIVE 327 or equivalent) Computation of unsteady flows in open channels; abrupt waves, flood waves, tidal propogations; method of characteristics; mathematical modelling of river and coastal currents.

CIVE 573 Hydraulic Structures.
(3) (3-0-6) (Prerequisites: CIVE 323 and CIVE 327) Hydraulic aspects of the theory and design of hydraulic structures. Storage dams, spillways, outlet works, diversion works, drop structures, stone structures, conveyance and control structures, flow measurement and culverts.

CIVE 574 Fluid Mechanics of Water Pollution.
(3) (3-0-6) (Prerequisite: CIVE 327 or equivalent) Mixing, dilution and dispersion of pollutants discharged into lakes, rivers, estuaries and oceans; salinity intrusion in estuaries and its effects on dispersion; biochemical oxygen demand and dissolved oxygen as water quality indicators; thermal pollution; oil pollution.

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CIEE 577 River Engineering.
(3) (3-0-6) (Prerequisite: Undergraduate; CIVE 428 or permission of the instructor.)
Course content includes:
- Fluvial geomorphology: sediment properties; river turbulence; mechanics of the entrainment, transportation and deposition of sediments by fluids; threshold of movement; bed forms; suspended load, bed load and total load equations; stable channel design and regime rivers; river modeling; river engineering and river management.

ECSE-Electrical Engineering
Offered by: Electrical & Computer Engr

ECSE 200 Fundamentals of Electrical Engineering.
(3) (3-0-6) (Prerequisite: PHYS 142 or CEGEP equivalent.)
Course content includes:
- Introduction to the broad scope of electrical engineering: electrostatics, capacitance, conduction, magnetic fields, inductance, circuits and components, sine waves in time and space, electrical machines and transformers, signal amplification.

ECSE 210 Circuit Analysis.
(3) (3-1-5) (Prerequisite: ECSE 200) (For Fall Term: Limited to Electrical Honours and Computer Engineering students only.)
Course content includes:
- An introduction to basic electrical circuits: dependent and independent sources, Kirchhoff's laws, mesh analysis, node analysis, superposition, Thevenin's theorem, and Norton's theorem.

ECSE 291 Electrical Measurements Laboratory.
(2) (1-4-1) (Corequisite: ECSE 210) (Lab hours assigned by instructor.)
Course content includes:
- Basic electrical measurements in the laboratory: current, voltage, resistance, power, and frequency.

ECSE 303 Signals and Systems 1.
(3) (3-0-6) (Prerequisites: ECSE 210, MATH 247 or MATH 270 or MATH 271.)
Course content includes:
- Basic concepts in signal and system analysis: transfer functions, impulse response, convolution, frequency response, and stability criteria.

ECSE 304 Signals and Systems 2.
(3) (3-0-6) (Prerequisite: ECSE 303) (Tutorials assigned by instructor.)
Course content includes:
- Advanced topics in signal and system analysis: Fourier series, Laplace transforms, and state-space analysis.

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**ECSE 353 Electromagnetic Fields and Waves.**
(3) (3-1-5) (Prerequisites: ECSE 210, MATH 264 or MATH 285.) (Tutorials assigned by instructor.) Maxwell's equations. Waves in free space and on transmission lines. Electric and magnetic force and energy. Magnetic materials. Faraday's law. Applications to engineering problems. S-parameters.

**ECSE 361 Power Engineering.**

**ECSE 404 Control Systems.**
(3) (3-0-6) (Corequisite: ECSE 304) Modelling and simulation of control systems; Basic concepts of linear systems; open and closed loop control; classical design of controllers - specifications in the step response and the frequency domain; State space design of controllers - pole placement and LQR; Sampled data systems.

**ECSE 405 Antennas.**
(3) (3-0-6) (Prerequisites: ECSE 303 and ECSE 352.) (Restriction: Not open to students who have taken ECSE 593.) Fundamentals of antenna theory: sources, radiation pattern and gain. Classification of antennas. Main antenna types and their characteristics. Antenna temperature, remote sensing and radar cross-section. Self and mutual impedances. Special topics include adaptive antennas, very large array (VLA) used in radio astronomy and biomedical applications.

**ECSE 411 Communications Systems 1.**
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 305) (Tutorials assigned by instructor.) Communication system models; AM and FM modulation, performance of AM and FM systems in noise; sampling, PCM and DPCM techniques; FDM and TDM multiplexing systems; baseband digital transmission over bandlimited channels, digital modulation and detection techniques; illustrative examples of subscriber loop telephone systems, cable TV systems and broadcasting systems.

**ECSE 412 Discrete Time Signal Processing.**
(3) (3-0-6) (Prerequisite: ECSE 304) (Tutorials assigned by instructor.) Discrete-time signals and systems; Fourier and Z-transform analysis techniques, the discrete Fourier transform; elements of FIR and IIR filter design, filter structures; FFT techniques for high speed convolution; quantization effects.

**ECSE 413 Communications Systems 2.**
(3) (3-0-6) (Prerequisite: ECSE 411) (Tutorials assigned by instructor.) Introduction to radio communications; satellite communication systems; the cellular concept; fading channel models, digital modulation techniques over fading channels, diversity systems, spread spectrum techniques; fixed assignment multiple access (FDMA, TDMA, CDMA), duplexing methods (FDD, TDD); illustrative examples of terrestrial mobile systems, fixed wireless systems, LEOs, etc.; overview of standardization activities.

**ECSE 414 Introduction to Telecommunication Networks.**
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 322.) Introduction to the physical and software architecture of modern networks; transport configurations, multiplexing, the digital hierarchy; wired and wireless access systems; circuit and packet switching systems, signaling, addressing and routing; protocol stacks; local area networking; introduction to network engineering; examples include: ATM, ISDN, IP, Frame Relay, Ethernet.

**ECSE 420 Parallel Computing.**

**ECSE 421 Embedded Systems.**
(3) (3-0-6) (Prerequisites: ECSE 322, ECSE 323.) Definition, structure and properties of embedded systems. Real-time programming: interrupts, latency, context, re-entrancy, thread and process models. Microcontroller and DSP architectures, I/O systems, timing and event management. Real-time kernels and services. Techniques for development, debugging and verification. Techniques for limited resource environments. Networking for distributed systems.

**ECSE 422 Fault Tolerant Computing.**
(3) (3-0-6) (Prerequisite: ECSE 322.) Introduction to fault-tolerant systems. Fault-tolerance techniques through hardware, software, information and time redundancy. Failure classification, failure semantics, failure masking. Exception handling: detection, recovery, masking and propagation, termination vs resumption. Reliable storage, reliable communication. Process groups, synchronous and asynchronous group membership and broadcast services. Automatic redundancy management. Case studies.

**ECSE 423 Fundamentals of Photonics.**
(3) (3-1-5) (Prerequisite: ECSE 352.) Introduction to the fundamentals of modern optics and photonics. Geometrical optics, wave optics, Gaussian beam optics and resonators, polarization, Fourier optics. Attenuation and dispersion. Optical waveguides. Classical description of optical amplifiers, introduction to lasers.

**ECSE 424 Human-Computer Interaction.**
(3) (3-4-2) (Prerequisite: ECSE 322) The course highlights human-computer interaction strategies from an engineering perspective. Topics include user interfaces, novel paradigms in human-computer interaction, affordances, ecological interface design, ubiquitous computing and computer-supported cooperative work. Attention will be paid to issues of safety, usability, and performance.

**ECSE 425 Computer Organization and Architecture.**

**ECSE 426 Microprocessor Systems.**
(3) (1-5-3) (Prerequisites: ECSE 323 and EDEC 206) (This course may be counted as a technical complementary or a lab course).
complementary.) (Limited Enrolment (50)) (Lab hours assigned by instructor.) Introduction to current microprocessors, their architecture, programming, interfacing and operating systems. The course includes lectures, use of crossassemblers, and simulators as well as laboratory experiments on actual microprocessor hardware.

ECSE 427 Operating Systems.
(3) (3-3-3) (Prerequisite: ECSE 322 or COMP 273)
(Tutorials assigned by instructor.) Operating system services, file system organization, disk and cpu scheduling, virtual memory management, concurrent processing and distributed systems, protection and security. Aspects of the DOS and UNIX operating systems and the C programming language. Programs that communicate between workstations across a network.

ECSE 428 Software Engineering Practice.
(3) (3-4-2) (Prerequisite: ECSE 321 or COMP 335)
Software engineering practice in industry, related to the design and commissioning of large software systems. Ethical, social, economic, safety and legal issues. Metrics, project management, costing, marketing, control, standards, CASE tools and bugs. The course involves a large team project.

ECSE 429 Software Validation.
(3) (3-0-6) (Prerequisite: ECSE 321) Correct and complete implementation of software requirements. Verification and validation lifecycle. Requirements analysis, model based analysis, and design analysis. Unit and system testing, performance, risk management, software reuse. Ubiquitous computing.

ECSE 430 Photonic Devices and Systems.
(3) (3-1-5) (Prerequisites: ECSE 304, ECSE 423)
(Corequisites: ECSE 305.) (Tutorials assigned by instructor.) Introduction to photonic devices and applications. Semiconductor lasers, optical amplifiers, optical modulators, photodetectors and optical receivers, optical fibers and waveguides, fiber and waveguide devices, systems applications.

infeld to VLSI CAD.
(3) (3-4-2) (Prerequisites: ECSE 323 and ECSE 330)
(Limited enrolment - 30. Departmental permission required.) (Note: This course may be counted as a technical complementary or as a lab complementary.) (Lab hours assigned by instructor.) The computer-aided design of digital VLSI circuits. Hardware description languages, automatic synthesis, design for testability, technology mapping, simulation, timing analysis, generation of test vectors and fault coverage analysis.

ECSE 432 Physical Basis: Transistor Devices.
(3) (3-0-6) (Prerequisites: ECSE 330, ECSE 351 and PHYS 271) Quantitative analysis of diodes and transistors. Semiconductor fundamentals, equilibrium and non-equilibrium carrier transport, and Fermi levels. PN junction diodes, the ideal diode, and diode switching, Bipolar Junction Transistors (BJT), physics of the ideal BJT, the Ebers-Moll model. Field effect transistors, metal-oxide semiconductor structures, static and dynamic behaviour, small-signal models.

ECSE 435 Mixed-Signal Test Techniques.
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 334)
(Note: This course may be counted as a technical complementary or as a lab complementary.) (Note: This course may be counted as a technical complementary or as a lab complementary.) Purpose and economics of mixed-signal test, DC measurements. Accuracy and repeatability. DSP-based theory and its applications to parametric testing of analog filters, DACs, and ADC. Timing and PLL measurements. Design for Testability.

ECSE 436 Signal Processing Hardware.
(3) (1-3-5) (Prerequisites: ECSE 322, ECSE 323, ECSE 304) (Note: This course may be counted as a technical complementary or as a lab complementary. Limited enrolment (20).) Review of basic concepts in signals and microprocessors. Digital Signal Processing microprocessor architecture. Finite precision effects, real-time constraints, assembly language optimization. Implementation of DSP algorithms on a DSP microprocessor platform. Lab experiments on FIR filtering, IIR filtering, FFT computation, LPC analysis, circular and bit-reversed addressing, ping-pong buffering and frame-based processing.

ECSE 450 Electromagnetic Compatibility.
(3) (2-4-3) (Prerequisites: ECSE 221, ECSE 334, ECSE 352 or ECSE 353) Electromagnetic Compatibility (EMC), regulations and EMC requirements of electronic systems, non-ideal behaviour of circuit components, signal spectra, radiated emission and susceptibility, conducted noise, crosstalk, differential mode and common mode, shielding, and system design for EMC.

ECSE 451 EM Transmission and Radiation.
(3) (3-0-6) (Prerequisite: ECSE 352) Microwave transmission through waveguides: impedance matching, microwave devices, filters and resonators; microwave transmission through free space; near and far field behaviour of electromagnetic radiators, simple antennas, antenna arrays, practical antenna parameters; the physics of the radio communication channel: reflection, diffraction and scattering and their macroscopic impact (multipath, fading).

ECSE 460 Appareillage électrique (Electrical Power Equipment).
(3) (3-2-4) (Prerequisite: ECSE 361) (Taught in French.) (This course is offered by the Power Engineering Institute.) Éléments d'un réseau de transport. Lignes: modélisation et paramètres. Transformateurs: circuits équivalents, pertes, enclenchement, protection. Disjoncteurs: fonctionnement et dimensionnement. Equipements de compensation: condensateurs, branchement série et shunt, inductances. Coordination d'isolement.

ECSE 461 Electric Machinery.
(3) (3-0-6) (Restriction: Not open to students in Electrical Engineering.) (Note: Tutorials assigned by instructor.) Electric and magnetic circuits. Notions of electromechanical energy conversion applied to electrical machines. Basic electrical machines - transformers, direct-current motors, synchronous motors and generators, three phase and single phase induction machines. Elements of modern electronically controlled electric drive systems.

ECSE 462 Electromechanical Energy Conversion.
(3) (3-0-6) (Prerequisite: ECSE 361) (Note: Taught in french. This course is offered by the Power Engineering Institute.) Applications de matériaux en électrotechnique: appareillage, transformateurs, machines électriques. Matériaux conducteurs: propriétés, pertes, isolation. Matériaux magnétiques: propriétés thermiques / mécaniques, pertes, types, aimants. Matériaux isolants: conduction, pertes, claquage et performances des isolants, contraintes. Caractérisation et diagnostic: essais et analyses, mécanismes de vieillissement et de désalignement, maintenance prédictive. Considerations et équipements typiques.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

* Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
✦ Indicates that departmental approval/permission must be obtained by a student prior to registration.
‡ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
● Denotes courses not available as Education electives.
▲ Denotes courses taught only in alternate years.
● Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
★ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
ECSE 486 Power Laboratory.
(2) (1-3-2) (Prerequisites: ECSE 334, ECSE 361 and EDEC 206) (Limited Enrolment - 14) (Lab hours assigned by instructor.) Techniques of electric power, efficiency, torque, speed measurements. Starting, running and control of electric machines: dc, synchronous, induction types. Power electronic controllers. Each group of students has access to a compact experiment bench containing a set of micro-machines and all the necessary equipment.

ECSE 487 Computer Architecture Laboratory.
(2) (0-3-3) (Prerequisite: ECSE 451.) (Limited Enrollment - 50) (Requires Permit to Register. See Department web site.) (Lab hours assigned by instructor.) Basic software tools used in the design, synthesis and analysis of computer and communication systems such as data-paths, switching circuits, and arithmetic and logic circuits. Behavioral and structural modeling of hardware designs in the IEEE standard hardware description language VHDL. Synthesis and implementation of hardware designs using Programmable Logic Devices.

ECSE 488 High Frequency Laboratory.
(1) (1-3-2) (Prerequisites: ECSE 291, EDEC 206.) (Corequisite: ECSE 451.) (Limited Enrolment - 20) (Lab hours assigned by instructor.) High frequency measurement techniques. Vector network analyzer and spectrum analyzer. Resistors, capacitors and inductors at high frequencies. High-level signal handling of a high-frequency bandpass amplifier. Electromagnetic interference (EMI) and spectrum coordination. Cavity resonators. Standing waves in waveguides. Reciprocity of microwave networks. Scattering parameters of a microstrip network.

ECSE 489 Telecommunication Network Laboratory.
(2) (0-3-3) (Prerequisites: EDEC 206) (Corequisite: ECSE 414 or ECSE 528 or COMP 535.) (Lab hours assigned by instructor.) Experiments involving the configuration and operation of telecommunication systems, network topologies, and the implementation of telecommunication networks. Configuration of transport facility (SONET), management of bandwidth with permanent virtual connections (ATM), implementation of a routing plan in a packet switched network (IP), configuration of end-to-end service (telephony over IP).

ECSE 490 Digital Signal Processing Laboratory.
(2) (0-3-3) (Prerequisites: ECSE 291 and EDEC 206.) (Corequisite: ECSE 412 or ECSE 512.) (Limited Enrollment - 30) (Restriction: Departmental approval required) (Requires Permit to Register. See Department web site.) (Lab hours assigned by instructor.) Experiments involving the digital processing of signals using computer-aided design tools for design, processing and visualization and real-time processing using DSP chips. Filter structures and design, multi-rate signal processing, filter banks, fast transforms, adaptive filtering, signal coding and quantization.

ECSE 491 Communication Systems Laboratory.
(2) (0-3-3) (Prerequisites: ECSE 291 and EDEC 206.) (Corequisite: ECSE 411 or ECSE 511) (Limited Enrollment - 30) (Lab hours assigned by instructor.) Experimental studies and simulation of analog and digital transmission techniques. Performance of AM and FM systems. FSK and PSK modulation techniques and spectra. Sampling of analog signals, PCM and silicon semiconductor device fabrication: etching, diffusion, photolithography. Fabrication of large area PN junctions, selective area PN junctions and MOSFETs. Design and fabrication of simple MOS circuits. Electrical characterization of devices and circuits.
TDM techniques.

ECSE 492 Optical Communications Laboratory.
(2) (0-3-3) (Prerequisite: EDEC 206.) (Corequisite: ECSE 423 or ECSE 527.) (Lab hours assigned by instructor.)
Hands-on experience of the physical layer of optical communications systems. Experiments involving optical fiber link characterization, laser measurements, beam divergence, coupling efficiency. Use of lasers, optical spectrum analysers, data generator, beam profiler, photodetectors, optical filters. Experiments are supported with simulation and analysis software.

ECSE 493 Control and Robotics Laboratory.
(2) (0-3-3) (Prerequisites: ECSE 291 and EDEC 206.)
(Corequisite: ECSE 404 or ECSE 501.) (Limited Enrolment - 20) (Lab hours assigned by instructor.)
Experimental studies for the design of control systems, with particular emphasis on motion control as applicable to robotics. Modeling of DC motors and electro-mechanical systems. Controller design in the time and frequency domain as well as state space. Experimental examples of PID, lead-lag, full state feedback and LQR controllers.

ECSE 494 Electrical Engineering Design Project.
(3) (0-5-4) (Prerequisites: EDEC 206 and at least 42 Departmental credits) (Limited Enrolment - 50) A laboratory design project undertaken with close supervision by a staff member.
The project consists of defining an engineering problem and seeking the solution through experimental investigation. Results are reported in a seminar at the end of term and in a technical paper.

ECSE 495 Software Engineering Design Project.
(3) (0-5-4) (Prerequisites: ECSE 321 and at least 42 Departmental credits from Electrical and Computer Eng. and Computer Science) Self-managed design and implementation of a complex software system according to a set or prescribed specifications.

ECSE 496 Telecommunications Systems and Services.
(3) (3-3-3) (Prerequisites: ECSE 411 and ECSE 414) Case studies of several end-to-end telecommunications systems used for the delivery of various service application scenarios. Issues in network and systems architecture, technology, operations management, regulation and competition. Examples from conventional telephoney, internet service delivery, wireless services and cable TV distribution.

ECSE 498 Honours Thesis 1.
(3) (0-3-6) (Prerequisites: EDEC 206 and at least 42 Departmental credits) A research project undertaken with close supervision by a staff member. The work consists of defining an engineering problem, reviewing the associated literature, and seeking the solution through experimental investigation. A literature review and a written thesis proposal are required along with a seminar presentation at end of term.

ECSE 499 Honours Thesis 2.
(3) (0-3-6) (Prerequisite: ECSE 498) A research project undertaken with close supervision by a staff member. A continuation of ECSE 498. The work consists of carrying out the research plan developed in ECSE 498 along with a seminar presentation at end of term.

ECSE 500 Mathematical Foundations of Systems.
(3) (3-0-6) (Restriction: Open only to graduate students within the Faculty of Engineering.) Basic set theories and algebraic structures, linear spaces, linear mappings, topological and metric spaces, separable spaces, continuity, compactness, Lebesque measure on Euclidean spaces, measurability, Banach spaces, Hilbert spaces, linear bounded operators in Banach spaces, dual spaces, adjoint operators, the Orthogonal Projection Theorem, properties of the Fourier series, convergence in probability.

ECSE 501 Linear Systems.
(3) (3-0-6) (Corequisite: ECSE 500 or permission of instructor.) Mathematical models of linear systems, fundamental solution and transition matrices, non-homogeneous linear equations, controllability and observability of linear systems, reachable subspaces. Celey-Hamilton's Theorem, Kalman's controllability and observability rank conditions, minimal realizations, frequency response, invariant subspaces, finite and infinite horizon linear regulator problems, uniform, exponential, and input-output stability, the Lyapunov equation.

ECSE 504 Sampled Data Control.
(3) (3-0-6) (Prerequisite: ECSE 304.) (Corequisite: ECSE 404.) Sampling and aliasing. Conversion of continuous-time controllers using s-to-z transformations; pre- and post-filtering. Discrete time state representation and z-transfer function of sampled linear, time-invariant systems. Correspondence between system theoretic results for continuous- and discrete-time systems. Sampled-data design, including pole placement, LQR control and model predictive control.

ECSE 505 Nonlinear Control Systems.
(3) (3-0-6) (Prerequisite: ECSE 501) Basic ODE formulation of non-linear systems; structural properties; Lyapunov and LaSalle stability theory and nonlinear and multivariable controller design; input-output stability; small gain theorem, conservation, passivity; system linearization, zero and inverse dynamics and regulator design; discontinuous and sliding mode control; applications to deterministic adaptive control.

ECSE 506 Stochastic Control & Decision Theory.
(3) (3-0-6) (Prerequisites: ECSE 509 and ECSE 500.) Gaussian processes and tail bounds; Bandit problems and optimal policies; Markov decision processes; Dynamic programming and optimal control in discrete time; learning models control from data; the ODE method and stochastic approximation; Q-learning; Approximate dynamic programming, linear stochastic systems; linear Gaussian systems; linear-quadratic control; system identification and stochastic adaptive control.

ECSE 507 Optimization and Optimal Control.
(3) (3-0-6) (Prerequisites: MATH 264 or MATH 265 or MATH 248, MATH 270 or MATH 247) General Introduction to optimization methods including steepest descent, conjugate gradient, Newton algorithms. Generalized matrix inverses and the least squared error problem. Introduction to constrained optimally; convexity and duality; interior point methods. Introduction to dynamic optimization; existence theory, relaxed controls, the Pontryagin Maximum Principle. Sufficiency of the Maximum Principle.

ECSE 508 Multi-Agent Systems.
(3) (3-0-6) (Prerequisite: ECSE 305 or equivalent.) Introduction to game theory, strategic games, extensive form games with perfect and imperfect information, repeated games and folk theorems, cooperative game theory, introduction to mechanism design, markets and market equilibrium, pricing and resource allocation, application in telecommunication networks, applications in communication networks, stochastic games.

ECSE 509 Probability and Random Sig. 2.
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 305) Multivariate Gaussian distributions; finite-dimensional mean-square estimation (multivariate case); principal components; introduction to random processes; weak stationarity;
correlation functions, spectra, linear processing and estimation; Poisson processes and Markov chains; state processes, invariant distributions; stochastic simulation.

**ECSE 510 Stochastic Processes and Systems.**
(3) (3-0-6) (Prerequisite: ECSE 500 and ECSE 509 or equivalent.) Basic notions. Linear state space (SS) systems. Least squares estimation and prediction; conditional expectations; Orthogonal Projection Theorem. Kalman filtering; innovations; Riccati equation. ARMA and SS systems. Stationary processes; Wold decomposition; spectral factorization; Weiner filtering. The Weiner process; linear stochastic differential equations; continuous time filtering. Chapman-Kolmogorov, Fokker-Plank equations. Applications.

**ECSE 511 Introduction to Digital Communication.**
(3) (3-0-6) (Prerequisite: ECSE 304.) (Corequisite: ECSE 509) (An advanced version of ECSE 411) (Tutorials assigned by instructor.) Amplitude and angle modulation including AM, FM, FDM and television systems; introduction to random processes; sampling and quantization, PCM systems, TDM; digital modulation techniques, Maximum-Likelihood receivers, synchronization issues; elements of information theory including information sources, source coding and channel capacity.

**ECSE 512 Digital Signal Processing 1.**
(3) (3-1-5) (Prerequisites: ECSE 304 and ECSE 305) Feedback interconnections of LTI systems; Nominal stability and performance of feedback control systems; Norms of signals and systems; H2-optimal control; H-infinity-optimal control; Uncertainty modeling for robust control; Robust closed-loop stability and performance; Robust H-infinity control; Robustness check using mu-analysis; Robust controller design via mu-synthesis.

**ECSE 513 Robust Control Systems.**
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 500.) Feedback interconnections of LTI systems; Nominal stability and performance of feedback control systems; Norms of signals and systems; H2-optimal control; H-infinity-optimal control; Uncertainty modeling for robust control; Robust closed-loop stability and performance; Robust H-infinity control; Robustness check using mu-analysis; Robust controller design via mu-synthesis.

**ECSE 521 Digital Communications 1.**

**ECSE 522 Asynchronous Circuits and Systems.**

**ECSE 523 Speech Communications.**
(3) (3-0-6) (Prerequisite: ECSE 412 or ECSE 512) Articulatory and acoustic descriptions of speech production, speech production models, speech perception, digital processing of speech signals, vocoders using formant, linear predictive and cepstral techniques, overview of automatic speech recognition systems, speech synthesis systems and speaker verification systems.

**ECSE 524 Interconnects and Signal Integrity.**
(3) (3-0-6) (Prerequisites: ECSE 334 and ECSE 352 or ECSE 353.) Interconnect structures, signal integrity issues: reflection, crosstalk, noise, electromagnetic interference, Lossy transmission lines, RLGC matrix representations, wave propagation in multilayered substrates, periodically loaded lines, Floquet's theorem, power distribution network, simultaneous switching noise, packaging structures, chip interconnection technologies, substrate integrated waveguides, methods for experimental characterization of interconnects, signal integrity CAD tools.

**ECSE 525 Computer Architecture.**

**ECSE 526 Artificial Intelligence.**
(3) (3-0-6) (Prerequisite: ECSE 322) Design principles of autonomous agents, agent architectures, machine learning, neural networks, genetic algorithms, and multi-agent collaboration. The course includes a term project that consists of designing and implementing software agents that collaborate and compete in a simulated environment.

**ECSE 527 Optical Engineering.**
(3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 352) A structure introduction to modern optical engineering. Topics covered include the propagation of light through space, refraction, diffraction, polarization, lens systems, ray-tracing, aberrations, computer-aided design and optimization techniques, Gaussian beam analysis, micro-optics and computer generated diffractive optical elements. Systems and applications will be stressed throughout.

**ECSE 528 Telecommunication Network Architecture.**

**ECSE 529 Image Processing and Communication.**
(3) (3-0-6) (Prerequisite: ECSE 304) Introduction to vision in man and machine; computer vision systems; biological vision systems; biological signal processing; edge detection; spatial- and frequency-domain processing; color. Low-level visual processing in computer vision, psychophysics, and neurobiology, and their similarities and differences.

**ECSE 530 Logic Synthesis.**
(3) (3-2-4) (Prerequisite: ECSE 323) The place of logic synthesis in microelectronics. Representations of Boolean functions: logic covers, binary decision diagrams. Two-level synthesis algorithms, Espresso. Multi-level synthesis to Boolean networks: don’t care methods, algebraic optimizations, delay

**ECSE 531 Real Time Systems.**
(3) (3-3-3) (Prerequisites: ECSE 322 and ECSE 323)
Real-time engineering applications of computers to on-line control, communication systems and data acquisition. Aspects of hardware, software, interfacing, operating systems, and their integration into a complete system are addressed.

**ECSE 532 Computer Graphics.**
(3) (3-3-3) (Prerequisite: ECSE 322) Introduction to computer graphics systems and display devices: raster scan, scan conversion, graphical input and interactive techniques - window environments; display files: graphics languages and data structures: 2D transformations; 3D computer graphics, hidden line removal and shading; graphics system design; applications. Laboratory project involving the preparation and running of graphics programs.

**ECSE 533 Physical Basis of Semiconductor Devices.**
(3) (3-0-6) (Prerequisites: ECSE 330, ECSE 351 and PHYS 271) Quantitative analysis of diodes and transistors. Semiconductor fundamentals, equilibrium and non-equilibrium carrier transport, and Fermi levels. PN junction diodes, the ideal diode, and diode switching. Bipolar Junction Transistors (BJT), physics of the ideal BJT, the Ebers-Moll model. Field effect transistors, metal-oxide semiconductor structures, static and dynamic behaviour, small-signal models.

**ECSE 534 Analog Microelectronics.**
(3) (3-0-6) (Prerequisite: ECSE 334) Design of analog ICs using specialized analog CAD tools such as SPICE. Voltage and current amplifier design which encompasses the study of biasing circuits, current sources and mirrors, input and output stages, and frequency compensation; precision reference sources; analog multipliers; oscillators; waveform generators and shaping circuits, and analog switches.

**ECSE 536 RF Microelectronics.**
(3) (3-3-3) (Prerequisite: ECSE 334.) (Restriction: Instructor's permission required.) Introduction to Radio Frequency Integrated Circuits and wireless transceiver architectures. Modeling of passive/active integrated devices. Design of monolithic bipolar and CMOS LNAs, mixers, filters, broadband amplifiers, RF power amplifiers, VCOs, and frequency synthesizers. Analysis of noise and non-linearity in RFICs. Project using modern RFIC simulation/layout CAD tools.

**ECSE 543 Numerical Methods in Electrical Engineering.**

**ECSE 545 Microelectronics Technology.**
(3) (3-0-6) (Prerequisite: ECSE 432 or ECSE 533) Basic techniques in the fabrication of microelectronic circuits. Four-point probe, alloyed contacts, diffusion processes, ion implantation epitaxy, silicon dioxide, photolithography, selected diffusion and metallization, transistor fabrication, dry etching, monolithic integrated circuits, isolation, mask making, thin and thick film components, MOS gate voltage and integrated circuits.

**ECSE 547 Finite Elements in Electrical Engineering.**

**ECSE 548 Introduction to VLSI Systems.**
(3) (2-2-5) (Prerequisites: ECSE 334 and ECSE 323) (Restriction: Instructor's permission required.) An interdisciplinary course for electrical engineering and computer science students. A structured design methodology for managing the complexity of VLSI system design. Sufficient information on integrated devices, circuits, digital subsystems and system architecture is presented to enable students to span the range of abstractions from device physics to VLSI digital systems.

**ECSE 549 Expert Systems in Electrical Design.**

**ECSE 559 Flexible AC Transmission Systems.**

**ECSE 563 Power Systems Operation and Planning.**

**ECSE 565 Introduction to Power Electronics.**
(3) (3-0-6) (Prerequisite: ECSE 334) Semiconductor power switches - thyristors, GTO's, bipolar transistors, MOSFET's. Switch mode power amplifiers. Buck and boost principles. Modulation methods - PWM, delta, hysteresis current control. Rectifiers, inverters, choppers.

**ECSE 570 Automatic Speech Recognition.**
(3) (3-0-6) (Prerequisites: ECSE 305 and ECSE 322.) Acoustic phonetics and signal representations. Pattern classification, stochastic modeling, language modeling and search algorithms as applied to speech recognition. Techniques for robustness, integration of speech recognition with other user interface modalities, and the role of automatic speech recognition in speech understanding.

**ECSE 571 Optoelectronic Devices.**
(3) (3-0-6) (Prerequisites: ECSE 304, ECSE 305, ECSE 352.) (Corequisite: ECSE 533) Physical basis of optoelectronic devices including Light Emitting Diodes, semiconductor optical amplifiers, semiconductor lasers, quantum well devices, and solid state lasers. Quantitative description of detectors, optical modulation, optical logic devices, optical interconnects, and optomechanical hardware. Throughout the
course, photonic systems applications will be addressed.

ECSE 573 Microwave Electronics.
(3) (3-0-6) (Prerequisite: ECSE 432 or ECSE 533)
Physical basis of modern microwave devices and circuits. Microwave transistors and tunnel diodes, transferred electron devices, transit time devices and infra red devices. Microwave generation and amplification, microwave FET circuits. Noise and power amplification.

ECSE 578 Crystals and Conduction.
(3) (3-0-6) (Prerequisite: ECSE 432 or ECSE 532) Crystal lattices, point symmetry and operations. Miller indices, important crystal structures, lattice matrix, reciprocal matrix, characteristics of X-rays, diffraction theory, structure factor. Kinetic theory of gases review, free electron theory of metals, mobility, classical theory anomalies, quantum treatment, density of states, Fermi Dirac distribution, Krong Penney model, Brillouin zones, band filling, thermionic emission.

ECSE 593 Antennas and Propagation.
(3) (3-0-6) (Prerequisites: ECSE 303 and ECSE 352.) Fundamentals of antenna theory: sources, radiation pattern and gain. Classification of antennas. Main antenna types and their characteristics. Antenna temperature, remote sensing and radar cross-section. Self and mutual impedances. Special topics include adaptive antennas, very large array (VLA) used in radio astronomy and biomedical applications.

ECSE 596 Optical Waveguides.
(3) (3-0-6) (Prerequisite: ECSE 352) An in-depth analysis to guided-wave propagation. Dielectric waveguides (slab, 2D, nonlinear, spatial solitons), optical fibers (modes, dispersion relations, propagation in dispersive, nonlinear fibers, temporal solitons), beam propagation method, coupled mode theory, waveguide devices (couplers, gratings, etc.). Selection of current research topics of interest (e.g. photonic crystals, optical signal processing, etc.).

ECSE 597 Circuit Simulators.

FACC-Faculty Course

FACC 200 Industrial Practicum.
(0) The purpose of this course is to expose engineering students to engineering practice in industry. It consists of a minimum of three months of full-time remunerated work in industry, typically done during the summer. The course is administered by the McGill Engineering Career Centre.

FACC 220 Law for Architects and Engineers.
(3) (3-0-6) Aspects of the law which affect architects and engineers; patents, trade marks, industrial design and copyrights; statutes of limitations; strict liability of architect, engineer and builder; patents, trade marks, industrial design and copyright; bankruptcy; labour law; general and expert evidence; court procedure and arbitration.

FACC 500 Technology Business Plan Design.
(3) (3-0-6) (Prerequisite: MIME 310 or permission of Instructor.) (Recommended to be taken in combination with FACC 501.) This course combines several management functional areas such as marketing, financial, operations and strategy with the skills of creativity, engineering innovation, leadership and communications. Students learn how to design an effective and winning business plan around a technology or engineering project in small, medium or large enterprises.

FACC 501 Technology Business Plan Project.
(3) (1-0-8) (Prerequisite: FACC 500 or Permission of Instructor.) (Restrictions: Not open to students who have taken FACC 480.) (Recommended to be taken in combination with FACC 500.) Students work in teams to develop a comprehensive business plan project based on a technological or engineering innovation while utilizing site visits.

MECH-Mechanical Engineering

Offered by: Mechanical Engineering

MECH 201 Introduction to Mechanical Engineering.

MECH 210 Mechanics 1.
(2) (2-1-3) Static equilibrium of particles and rigid bodies. Beams, trusses, frames and machines. Concept of work and energy. Static equilibrium and stability.

MECH 220 Mechanics 2.
(4) (4-1-7) (Prerequisites: MECH 210 and (MATH 260 or MATH 262), Pre-/Co-requisite: MATH 261 or MATH 263.) Kinematics of particles and rigid bodies. Particle dynamics: force-momentum and work-energy approaches. Kinematics and kinetics of rigid bodies.

MECH 240 Thermodynamics 1.
(3) (3-1-5) Thermodynamic systems and properties. First law of thermodynamics: energy, work and heat. State principle, p-v-T surfaces, phase equilibrium, ideal gas model. Second law of thermodynamics, entropy, exergy analysis. Energy analysis applied to steady and transient engineering systems including heat engines, refrigerators and heat pumps, air compressors.

MECH 260 Machine Tool Laboratory.
(2) (1-3-2) Basic machine tool operations, numerical control of machine tools, and metrology. The use of hand tools, and sheet metal work. Introduction to rapid prototyping and nontraditional machining methods. Extensive laboratory hands-on exercises.

MECH 261 Measurement Laboratory.
(2) (2-3-1) (Restriction: Civil Engineering students) Basic experimental laboratory measurements, such as measurement of strain, pressure, force, position, and temperature.

MECH 262 Statistics and Measurement Laboratory.
(3) (3-3-3) Introduction to probability: conditional probability, binomial and Poisson distributions, random variables, laws of large numbers. Statistical analysis associated with measurements; regression and correlation. Basic experimental laboratory techniques, including the measurement of strain, pressure, force, position, and temperature.

MECH 289 Design Graphics.
(3) (3-3-3) (Restriction: Not open to students who have taken MECH 290 or MECH 291.) Preliminary concepts of design,
including free-hand sketching; fundamentals of geometry construction; and technology of object representation.

MECH 292 Conceptual Design.
(3) (1-3-5) (Prerequisites: MECH 260 and MECH 289 or MECH 291. Pre-/Co-requisite: CIVE 207) Introduction to design. Problem formulation; idea generation; feasibility study; preliminary design; design analysis, design evaluation, project management, and optimal design.

MECH 309 Numerical Methods in Mechanical Engineering.
(3) (3-1-5) (Prerequisites: MATH 261 or MATH 263, MATH 266 or MATH 271. COMP 208.) Numerical techniques for problems commonly encountered in Mechanical Engineering are presented. Chebyshev interpolation, quadrature, roots of equations in one or more variables, matrices, curve fitting, splines and ordinary differential equations. The emphasis is on the analysis and understanding of the problem rather than the details of the actual numerical program.

MECH 314 Dynamics of Mechanisms.
(3) (3-1-5) (Prerequisite: MECH 220.) First principles of analysis; motion; position; displacement; velocity; acceleration; force; inertia and its effects. Kinematic and dynamic analysis of rigid bodies in pure rotation and in pin-connected systems; dynamic balance. Rigid bodies in rolling contact; planetary gear-trains. Bodies in sliding contact; lower and higher sliding pairs.

MECH 315 Mechanics 3.

(3) (3-1-5) (Prerequisite: CIVE 207) Modern phenomenological theories of the behaviour of engineering materials. Stress and strain concepts and introduction to constitutive theory. Applications of theory of elasticity and thermoelasticity. Introduction to finite element stress analysis methods.

MECH 331 Fluid Mechanics 1.
(3) (3-1-5) (Prerequisite: MECH 210. Pre-/Co-requisites: MECH 220, MECH 240 and (MATH 266 or MATH 271.).) Physical properties of fluids. Kinematics and dynamics of fluid flow: stress in a continuum, rates of strain, rotation. Control volume analysis; conservation of mass, linear momentum and energy; Euler and Bernoulli equations; Flow measurement. Dimensional analysis and dynamical similarity. Laminar and turbulent flow in pipes and boundary layers.

MECH 341 Thermodynamics 2.

MECH 346 Heat Transfer.
(3) (3-1-5) (Prerequisites: MECH 240 or BREE 301, MECH 331 or BREE 305, MATH 266 or MATH 271 or BREE 319.) Basic concepts and overview. Steady and unsteady heat conduction. Fin Theory. Convective heat transfer; governing equations; dimensionless parameters; analogy between momentum and heat transfer. Design correlations for forced, natural, and mixed convection. Heat exchangers. Radiative heat transfer: black- and gray-body radiation; shape factors; enclosure theory. Thermal engineering design project.

MECH 362 Mechanical Laboratory 1.
(2) (0-3-3) (Prerequisite: MECH 261 or MECH 262 or BREE 216) Experiments will be performed in four areas: MECH 240 Thermodynamics, MECH 315 Vibrations, MECH 331 Fluid Mechanics 1, and MECH 346 Heat Transfer. Students should sign up to do experiments in one or more areas the term following the completion of one or more of the above courses. Students will not formally register for this course until the term in which they will complete all of the experiments.

MECH 383 Applied Electronics and Instrumentation.
(3) (3-2-4) (Prerequisites: MECH 261 or MECH 262, and (MATH 261 or MATH 263.) Discrete and integrated components, both analogue and digital. Characteristics of passive elements. Semiconductors, amplifiers, filters, oscillators, modulators, power supplies and nonlinear devices. Introduction to digital electronics. Transducer/signal conditioner interfacing considerations.

MECH 393 Machine Element Design.
(3) (3-1-5) (Prerequisites: MECH 260 and (MECH 289 or MECH 291) and CIVE 207 and EDEC 206. Pre-/co-requisites: MECH 292 and MECH 314 and MIME 260.) The design of machine elements for strength requirements in consideration of various methods of manufacture. Synthesis of mechanical systems to fulfill performance requirements, following the engineering design process. Static and fatigue failure prevention. Students form groups to work on a design project.

MECH 403D1 (3), MECH 403D2 (3) Thesis (Honours).
(0-6-12) (Prerequisite: Candidates must have completed courses in the Mechanical Engineering Program weighted at a minimum of 60 credits.) (Students must register for both MECH 403D1 and MECH 403D2.) (No credit will be given for this course unless both MECH 403D1 and MECH 403D2 are successfully completed in consecutive terms) This course, together with course MECH 404 involves a research project containing an explicit component of design, encompassing interrelated aspects of engineering theory and requiring a theoretical and/or experimental investigation. Students will work under the supervision of one or more staff members; completed work will be submitted in the form of a thesis.

MECH 403N1 Thesis (Honours).
(3) (Students must also register for MECH 403N2) (No credit will be given for this course unless both MECH 403N1 and MECH 403N2 are successfully completed in a twelve month period) This course, together with course MECH 404 involves a research project containing an explicit component of design, encompassing interrelated aspects of engineering theory and requiring a theoretical and/or experimental investigation. Students will work under the supervision of one or more staff members; completed work will be submitted in the form of a thesis.

MECH 403N2 Thesis (Honours).
(3) (Prerequisite: MECH 403N1) (No credit will be given for this course unless both MECH 403N1 and MECH 403N2 are successfully completed in a twelve month period) See MECH 403N1 for course description.

MECH 404 Honours Thesis 2.
(3) (0-6-3) (Corequisite: MECH 403) This course is part of the same thesis project as course MECH 403.

MECH 412 Dynamics of Systems.
(3) (3-1-5) (Prerequisites: MECH 309 or MATH 317, MECH

MECH 419 Advanced Mechanics of Systems.

MECH 430 Fluid Mechanics 2.

MECH 432 Aircraft Structures.

MECH 447 Combustion.
(3) (3-0-6) (Prerequisite: MECH 331) A broad general treatment of energy transfer between a fluid and a rotor, velocity vector diagrams, and non-dimensional characteristics. Applications to hydraulic pumps and turbines. Two dimensional cascade theory leading to study of axial gas compressors and turbine stages. Three dimensional free and forced vortex configurations. Centrifugal compressors and radial inflow turbines.

MECH 456D1, MECH 456D2 (3) (3-0-6) (Prerequisite: MECH 331) Review of Hugoniot analysis, flame propagation mechanisms, introduction to chemical kinetics, models for laminar flame propagation, ignition, quenching, flammability limits, turbulent flames, flame instability mechanisms, detonations, and solid and liquid combustion.

MECH 463D1, MECH 463D2 (3) Mechanical Engineering Project.
(1-3-5) (Prerequisite: MECH 393) (Students must register for both MECH 463D1 and MECH 463D2.) (No credit will be given for this course unless both MECH 463D1 and MECH 463D2 are successfully completed in consecutive terms) Team project work typically involving the design, fabrication, verification, and experimental testing of a mechanical device/system, or experimental facility. The project work is complemented with lectures in the Fall term on topics related to design and management of design projects. Emphasis is on the completion of a project of professional quality.

MECH 474 Selected Topics in Operations Research.
(3) (3-0-6) (Prerequisites: MATH 266 or MATH 271) and COMP 208) Introduction to the general mathematical programming problem in the context of engineering design; linear programming, queuing theory, Monte Carlo simulation. The above techniques will be used to study the optimization of engineering systems.

MECH 494 Honours Design Project.
(3) (0-6-3) (Prerequisite: MECH 292) (Restriction: Mechanical Engineering Honours students.) An advanced design project course with emphasis on analytical solutions, performance prediction and validation, and planning for production.

MECH 497 Value Engineering.
(3) (0-8-1) (Prerequisites: MECH 393 and completion of 45 credits) Value Engineering is an in-depth analysis of an industrial product or process with a view to improving its design and/or performance to increase its worth. This is a workshop type of course. Projects will be supplied by industrial firms and students will work in teams with industrial personnel.

MECH 498 Interdisciplinary Design Project 1.
(3) (1-2-6) Completion of an individual project on an interdisciplinary theme with emphasis on a balanced combination on analysis and synthesis.

MECH 499 Interdisciplinary Design Project 2.
(3) (1-2-6) (Prerequisite: MECH 498 or permission of instructor.) The individual project initiated in MECH 498 is continued and finalized in this course.

MECH 500 Selected Topics in Mechanical Engineering.
(3) (3-0-6) A course to allow the introduction of new topics in Mechanical Engineering as needs arise, by regular and visiting staff.

MECH 501 Special Topics: Mechanical Engineering.
(3) (3-0-6) A course to allow the introduction of new topics in Mechanical Engineering as needs arise, by regular and visiting staff.

MECH 513 Control Systems.
(3) (3-1-5) (Prerequisite: MECH 412.) (Restriction: Not open to students who have taken MECH 413.) Stability: Lyapunov, Routh-Hurwitz and Nyquist criteria. Root-locus design of feedback control systems. Controller design based on polynomial methods and internal model principle. Frequency-response controller design. State feedback control. Controllability, observability, LQR, full- and reduced-order observer design. Robust control design. Optimization problems in control.

MECH 515 Unsteady Gasdynamics 1.
(3) (3-1-5) (Prerequisites: MECH 341, MECH 430.) (Restriction: Not open to students who have taken MECH 615) Fundamentals of unsteady gasdynamics. Shock and detonation waves in gases and condensed material. Condensed explosives: hydrodynamic theory, equations of state, initiation. Shock interactions. Blast wave theory, similarity methods, blast scaling.

MECH 522 Production Systems.

MECH 524 Computer Integrated Manufacturing.
(3) (3-0-6) (Prerequisite: Permission of the instructor) A study of the present impact of computers and automation on manufacturing. Computer-aided systems. Information modelling.

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Information system structures. Study of several types of production systems. Integration issues: inter-and intra-enterprise. Laboratory experience with manufacturing software systems.

MECH 526 Manufacturing and the Environment.
(3) (3-0-6) (Prerequisite (Undergraduate): Permission of the instructor) Course topics include: clean manufacturing, product and process design for minimizing materials and energy use, the product life cycle, impact of technology on the environment, environmental impact assessment, regulatory process, and managing the "political" process.

MECH 528 Product Design.

MECH 529 Discrete Manufacturing Systems.
(3) (3-0-6) (Prerequisite (Undergraduate): Permission of the instructor) An overview of present day production machines and systems with special emphasis on automation, computer control and integration techniques. Material handling, automatic inspection, process monitoring, maintenance. Socio-economic and environmental issues. Laboratory experience with factory simulation.

MECH 530 Mechanics of Composite Materials.

MECH 531 Aeroelasticity.
(3) (3-1-5) (Prerequisite (Undergraduate): MECH 419 or MECH 315 and MECH 533) (Prerequisite (Graduate): MECH 533) Wing divergence using strip-theory aerodynamics. Effect of aircraft flexibility on the control and stability. Flutter calculations for two-dimensional wings with discussion of three-dimensional effects. Some examples of aeroelastic instability, and the relevant analysis of non-aeronautical problems.

MECH 532 Aircraft Performance, Stability and Control.
(3) (3-0-6) (Prerequisite (Undergraduate): MECH 412 or MECH 419, MECH 533) (Prerequisite (Graduate): MECH 533) Aircraft performance criteria such as range, endurance, rate of climb, maximum ceiling for steady and accelerated flight. Landing and take-off distances. Static and dynamic stability in the longitudinal (stick-fixed and stick-free) and coupled lateral and directional modes. Control response for all three modes.

MECH 533 Subsonic Aerodynamics.
(3) (3-1-5) (Prerequisite (Undergraduate): MECH 331) Kinematics: equations of motion; vorticity and circulation, conformal mapping and flow round simple bodies. Two-dimensional flow round aerofoils. Three-dimensional flows: high and low aspect-ratio wings; airscrews. Wind tunnel interference. Similarity rules for subsonic rotational flows.

MECH 534 Air Pollution Engineering.
(3) (3-0-6) (Prerequisite (Undergraduate): MECH 331, MECH 341.) Pollutants from power production and their effects on the environment. Mechanisms of pollutant formation in combustion. Photochemical pollutants and smog, atmospheric dispersion. Pollutant generation from internal combustion engines and stationary power plants. Methods of pollution control (exhaust gas treatment, absorption, filtration, scrubbers, etc.).

MECH 537 High-Speed Aerodynamics.

MECH 538 Unsteady Aerodynamics.
(3) (3-0-6) (Prerequisite (Undergraduate): MECH 533) Fundamental equations of unsteady compressible flows in fixed or moving reference frames. Unsteady flows past bodies in translation and having oscillatory motions. Oscillations of cylindrical pipes or shells subjected to internal flows. Vortex theory of oscillating aerofoils in incompressible flows. Theodorsen's method. Unsteady compressible flow past oscillating aerofoils.

MECH 539 Computational Aerodynamics.

MECH 541 Kinematic Synthesis.
(3) (3-0-6) (Prerequisite: MECH 309 or MATH 317 or permission of the instructor.) The role of kinematic synthesis within the design process. Degree of freedom. Kinematic pairs and bonds. Groups and subgroups of displacements. Applications to the qualitative synthesis of parallel-kinematics machines with three and four degrees of freedom. Function, motion and path generation problems in planar, spherical and spatial four-bar linkages. Extensions to six-bar linkages. Cam mechanisms.

MECH 542 Spacecraft Dynamics.
(3) (3-0-6) (Prerequisite (Undergraduate): MECH 220. Corequisite: MECH 412 or MECH 419) Review of central force motion; Hohmann and other coplanar transfers, rotation of the orbital plane, patched conic method. Orbital perturbations due to the earth's oblateness, solar-lunar attraction, solar radiation pressure and atmospheric drag. Attitude dynamics of a rigid spacecraft; attitude stabilization and control; attitude manoeuvres; large space structures.

MECH 543 Design with Composite Materials.

MECH 544 Processing of Composite Materials.
(3) (3-0-6) (Prerequisite: MECH 530 or permission of instructor.) (Restriction: This course requires the use of a finite element software, so experience with finite elements is

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Denotes courses not offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
MECH 545 Advanced Stress Analysis.  

(3) (3-0-6) (Prerequisites: MECH 315 or MECH 419, and MECH 321, or Instructor's permission.) (Restriction: Not open to students who have taken MECH 645.) Discrete systems; variational formulation and approximation for continuous systems; direct and variational methods of element formulation in 1-, 2-, and 3-dimensions; formulation of isoparametric finite elements; plate and shell elements; finite element method for static analysis, vibration analysis and structural dynamics; introduction to nonlinear problems.

MECH 552 Advanced Applied Mathematics.  

MECH 553 Design and Manufacture of Microdevices.  
(3) (3-0-6) (Prerequisite: Instructors' Permission.) Introduction to microelectromechanical systems (MEMS). Micromachining techniques (thin-film deposition; lithography; etching; bonding). Microscale mechanical behaviour (deformation and fracture; residual stresses; adhesion; experimental techniques). Materials- and process-selection. Process integration. Design of microdevice components to meet specified performance and reliability targets using realistic manufacturing processes.

MECH 554 Microprocessors for Mechanical Systems.  
(3) (2-3-4) (Prerequisite (Undergraduate): MECH 383 and COMP 208) Digital logic and circuits - asynchronous and synchronous design. Microcontroller architectures, organization and programming - assembly and high-level. Analog/digital/hybrid sensors and actuators. Sensing and conditioning subsystems. Interfacing issues. Real-time issues. Operator interfaces. Laboratory exercises on digital logic design, interfacing and control of peripherals with a final team project.

MECH 557 Mechatronic Design.  
(3) (3-1-5) (Prerequisite (Undergraduate): ECSE 461, MECH 383 and (MECH 412 or MECH 419)) Team project course on the design, modelling, model validation, and control of complete mechatronic systems, constructed with modern sensors, actuators, real-time operating systems, embedded controllers, and intelligent control.

MECH 561 Biomechanics of Musculoskeletal Systems.  
(3) (3-0-6) (Prerequisite (Undergraduate): MECH 321 and (MECH 315 or MECH 419)) The musculoskeletal system; general characteristics and classification of tissues and joints. Biomechanics and clinical problems in orthopaedics. Modelling and force analysis of musculoskeletal systems. Passive and active kinematics. Load-deformation properties of passive connective tissue, passive and stimulated muscle response. Experimental approaches, case studies.

MECH 562 Advanced Fluid Mechanics.  
(3) (3-0-6) (Prerequisite: MATH 271 or permission of instructor.) Conservation laws, control volume analysis, Navier stokes equations, dimensional analysis and limiting forms of N-S equation, laminar viscous flows, boundary layer theory, inviscid potential flows, lift and drag, introduction to turbulence.

MECH 563 Biofluids and Cardiovascular Mechanics.  
(3) (3-0-6) (Prerequisites: CHEE 314 or MECH 331 or permission of instructor.) (Restriction: Not open to students who have taken CHEE 563.) Basic principles of circulation including vascular fluid and solid mechanics, modeling techniques, clinical and experimental methods and the design of cardiovascular devices.

MECH 565 Fluid Flow and Heat Transfer Equipment.  
(3) (3-1-5) (Prerequisite (Undergraduate): MECH 240, MECH 309 or MATH 317, MECH 331, MECH 341, MECH 346 or permission of the instructor.) Pipes and piping systems, pumps, and valves. Fans and building air distribution systems. Basic thermal design methods for fans and heat exchangers. Thermal design of shell-and-tube and compact heat exchangers.

MECH 566 Fluid-Structure Interactions.  
(3) (3-0-6) (Prerequisite: MECH 315 or MECH 419 or equivalent.) Pipes and cylindrical shells containing flow: fundamentals and applications in ocean mining, Coriolis mass-flow meters, heat exchangers, nuclear reactors and aircraft engines; chaos. Cylinders in axial flow and in cross-flow; vortex-shedding and galloping. Cylinder arrays in cross-flow; fluidelastic instabilities. Ovaling of chimneys.

MECH 572 Introduction to Robotics.  
(3) (3-0-6) (Prerequisite (Undergraduate): MATH 266 or MATH 271) and MECH 220 or permission of the instructor) (Restriction: Not open to students who have taken MECH 573) Overview of the field of robotics. Kinematics, statics, singularity analysis and workspace of serial robots with decoupled architecture. Direct and inverse kinematics and dynamics. Algorithms for manipulator kinematics and dynamics.

MECH 573 Mechanics of Robotic Systems.  
(3) (3-0-6) (Prerequisite: MECH 309 or MATH 317, and MECH 572 or permission of the instructor.) (Since the course is open to both undergraduate and graduate students, and B- is the minimum passing mark for graduate students, this minimum mark will be relaxed for undergraduates. The regulations applicable to undergraduates will apply accordingly.) Manipulator performance and design. Pick-and-place and continuous-path operations. Computation of rigid-body angular velocity and acceleration from point-data measurements. Inverse kinematics of serial manipulators with coupled architectures; kinetostatics of multifingered hands and walking machines. Kinematics and dynamics of parallel manipulators and wheeled mobile robots.

(3) (2-3-4) (Prerequisite (Undergraduate): MATH 266 or MATH 271) and (MECH 309 or MATH 317) and (MECH 289 or MECH 290 or MECH 291) or permission of the instructor.) Review of pertinent linear algebra and projective geometry.

**MECH 577 Optimum Design.**
(3) (2-3-4) (Prerequisite: MECH 309 or MATH 317 or permission of the instructor) The role of optimization within the design process: Design methodology and philosophy. Constrained optimization: The Kuhn-Tucker conditions. Techniques of linear and non-linear programming. The simplex and the complex methods. Sensitivity of the design to manufacturing errors. Robustness of the design to manufacturing and operation errors.

**MECH 578 Advanced Thermodynamics.**
(3) (3-0-6) Review of classical mechanics; Boltzmann statistics, thermodynamics of ideal gases; Fermi-Dirac and Bose-Einstein statistics, Gibbsian ensembles; elementary kinetic theory of transport processes, Boltzmann equation, Boltzmann H-theorem and entropy, KBG approximation, discussion on the solution of Boltzmann equation; Maxwell transport equations, derivation of Navier Stokes equations.

**MECH 593 Design Theory and Methodology.**
(3) (3-0-6) (Prerequisite: Permission of instructor.) The overall design process is scrutinized within a discipline-independent framework. The nature of design as a creative engineering activity. The polarity of design. The role of knowledge in design. Design representation. History of design and design schools. Design trends in the 21st century. Design engineering schools. Design models.

**MIME-Mining, Metals, Materials Engr**
Offered by: Mining, Metals & Materials Engr

**MIME 200 Introduction to the Minerals Industry.**
(3) (3-3-3) Economic importance of the minerals industry. Mining: legislation, regulations, criteria for exploiting an ore: mining methods, equipment. Extractive metallurgy: mineral processing, hydrometallurgy, pyrometallurgy. Environmental protection.

**MIME 202 Engineering Communication Skills.**
(2) (1-2-3) Basic forms of engineering communication: memoranda, executive summaries, letters, proposals, evaluations, oral presentations and presentation graphics, email, groupware, workflow, internet, graphics and presentation tools. Adaptation into engineering. Short assignments and oral presentations.

**MIME 203 Mine Surveying.**
(2) (3-3-0) (Prerequisite: MIME 200 or permission of instructor) Introduction to surveying. Definitions & mathematics. Measurement of levels, angles and distances. Fundamentals of control surveying. Underground mine surveying. GPS and laser applications.

**MIME 209 Mathematical Applications.**
(3) (3-2-4) Introduction to stochastic modelling of mining and metallurgical engineering processes. Description and analysis of data distributions observed in mineral engineering applications. Modelling with linear regression analysis. Taylor series application to error and uncertainty propagation. Metallurgical mass balance adjustments.

**MIME 212 Engineering Thermodynamics.**

**MIME 221 Engineering Professional Practice.**

**MIME 250 Introduction to Extractive Metallurgy.**
(3) (3-3-3) (Corequisite: MIME 202.) Introduction to physical, hydrochemical, electrochemical and thermochemical processing in the production of metals and materials; description of the industries, basic processing concepts, unit operations and an introduction to environmental exchanges. Size reduction and classification, particle separation, stoichiometric and mass balance calculations, chemical equilibria, aqueous processing, smelting and refining.

**MIME 260 Materials Science and Engineering.**
(3) (2-2-5) Structure properties and fabrication of metals, polymers, ceramics, composites; engineering properties: tensile, fracture, creep, oxidation, corrosion, friction, wear; fabrication and joining methods; principles of materials selection.

**MIME 261 Structure of Materials.**
(3) (2-3-4) Classification of materials, electrons in atoms, molecules and solids, bonding in solids, elements of crystallography, common crystal structures, atoms positions, directions and planes in crystal structures, defects in crystalline solids, point defects, dislocations, structure of polycrystalline materials, grains, grain boundaries, non-crystalline solids.

**MIME 280 Industrial Training 1.**
(2) (Prerequisite: Must have obtained a minimum of 40 credits of the core program.) Four-month work period in industry.

**MIME 290 Industrial Work Period 1.**
(2) (Prerequisites: MIME 200 or MIME 203) A four-month industrial work period in the mineral industry, to expose the student to an industrial environment. Candidates will receive basic industrial training. A complete report must be submitted at the end of the term.

**MIME 291 Industrial Work Period 2.**
(2) (Prerequisite: MIME 290) A four-month industrial work period in a mining company, research laboratory or government agency. The student will receive formal industrial training in a technical position. A complete report must be submitted at the end of the term.

**MIME 308 Social Impact of Technology.**
(3) (3-0-6) (Enrolment encouraged by students outside the Faculty of Engineering) Critical examination of the socio-economic costs and benefits of technology, case studies of old engineering works and new technologies. The integration of applied ethics and engineering practice, analysis of basic concepts of technology assessment, the inter-connected processes of risk assessment, management, and communication.

**MIME 310 Engineering Economy.**
(3) (3-1-5) Introduction to the basic concepts required for the economic assessment of engineering projects. Topics include:
accounting methods, marginal analysis, cash flow and time value of money, taxation and depreciation, discounted cash flow analysis techniques, cost of capital, inflation, sensitivity and risk analysis, analysis of R and D, ongoing as well as new investment opportunities.

MIME 311 Modelling and Automatic Control.
(3) (3-2-4) (Prerequisite: MIME 356) Mass and energy conservation laws. Dynamic versus steady state models, dynamic behaviour of first and higher order metallurgical systems, linear and nonlinear models, interacting and noninteracting systems. Laplace domain dynamics and transfer functions. Feedback control, control valves and controllers, transducers. Feedback-feedforward control, introduction to cascade, adaptive and statistical control strategies. Digital computer control, instruments and interfaces.

MIME 313 Mining Science and Technology Seminar.
(1) (1-0-2) (Prerequisites: MIME 322 and MIME 333.) Review of mining-related technological advances in fragmentation, materials handling, processing ventilation and ground control.

MIME 317 Analytical and Characterization Techniques.
(3) (2-3-4) (Prerequisite: MIME 261) Bulk, surface and microanalytical techniques for materials characterization. Bulk analysis: spectrophotometry using UV, visible, flame and atomic absorption, x-ray diffraction and x-ray fluorescence. Surface and microanalysis: infrared spectroscopy, scanning and transmission electron microscopy, Auger electron and x-ray photoelectron spectroscopy.

MIME 320 Extraction of Energy Resources.
(3) (3-0-6) The extraction of energy resources, i.e. coal, gas, oil and tar sands. After a brief geological review, different extraction techniques for these substances will be discussed. Emphasis on problems such as northern mining and offshore oil extraction with reference to Canadian operations. Transportation and marketing.

MIME 322 Rock Fragmentation.

MIME 323 Rock and Soil Mass Characterization.
(3) (3-3-3) (Prerequisite (Undergraduate): EPSC 221 and MIME 200) Characteristics of soil and rock masses and the stability of mine workings. Mechanical properties of rocks and soils related to physical/chemical properties. Characterization of rock mass discontinuities. Laboratory and in-situ techniques to define mechanical properties of soils, rocks and discontinuities. Permeability and groundwater flow principles. In-situ stresses and their measurement. Rock mass quality and classification systems.

MIME 325 Mineral Industry Economics.
(3) (3-2-4) (Prerequisite: MIME 310) Geographical distribution of mineral resources. Production, consumption and prices of minerals. Market structure of selected minerals. Economic evaluation aspects: grade-tonnage considerations; capital and operating cost estimation; assessment of market conditions; estimation of revenue; taxation; sensitivity and risk analyses; economic optimization of mine development and extraction.

MIME 333 Materials Handling.

MIME 337 Electrotechnology.
(2) (3-1-2) Emphasize role of electrical equipment in the mining, metals and materials industry sectors. Operating theory and technical standards of prime electrical equipment, transformers, motors, generators, rectifiers, variable speed drives, circuit breakers, starters. DC and AC theory for circuit components, resistance, capacitance, inductance and impedance. Distribution system single line diagrams.

MIME 340 Applied Fluid Dynamics.

MIME 341 Introduction to Mineral Processing.
(3) (2-3-4) (Prerequisite (Undergraduate): MIME 200 or MIME 250) Theory and practice of unit operations including: size reduction-crushing and grading; size separation-screening and classification; mineral separation-flotation, magnetic and gravity separation. Equipment and circuit design and selection. Mass balancing. Laboratory procedures: grindability, liberation, magnetic and gravity separation, flotation and solid-liquid separation.

MIME 350 Extractive Metallurgical Engineering.
(3) (2-3-4) (Prerequisites: MIME 200 or MIME 250, MIME 212) Principle non-ferrous base-metal pyrometallurgical extraction processes, relevant thermodynamics, heat and mass balances, transport phenomena (copper, nickel, lead, zinc, aluminum, magnesium). Ores, gangue, fuels, slag, fluxes, recovery, refining, minor elements, byproducts and the environment. Roasting, drying, smelting, converting, reverberatory furnaces, flash furnaces, continuous and batch operations, injection practices and oxygen enrichment. Simulation, modelling, control and optimization.

MIME 352 Hydrochemical Processing.
(3) (3-2-4) (Prerequisites: CHEM 233, MIME 212, MIME 200 or MIME 250) (Corequisite: MIME 356) Analysis and description of dissolution (leaching), solute separation (solvent extraction, ion exchange, carbon adsorption) and deposition operations (precipitation, crystallization, electrolysis) in aqueous reaction media as these apply to: (i) the hydrometallurgical extraction of metals from primary/secondary sources; (ii) the treatment of effluents and (iii) the production of inorganic materials.


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† Denotes Professional Practice (Stage) in Dietetics involving special prerequisites
‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.
† Denotes courses not available as Education electives.
❉ Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
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Transport coefficients in slags, metals and gases. Radiative heat transfer. Transient/steady state flow.

MIME 360 Phase Transformations: Solids.
(3) (2-3-4) (Pre/Corequisite: MIME 212.) (Prerequisite: MIME 260 or MIME 261.) Free energy (equilibrium) and kinetic (non-equilibrium) considerations, phase diagrams and TTT diagrams, solid state diffusion, diffusional (nucleation and growth) and shear (martensitic) transformations.

MIME 362 Mechanical Properties.

(3) (3-3-3) (Prerequisite: MIME 261) Structure of materials, electronic structure, electrical and thermal conductivity, semiconducting materials, fundamentals of magnetism, hard and soft magnetic materials, superconductivity and superconductive materials, dielectric materials, optical properties of materials, thermoelectricity. Advanced materials and their technological applications.

MIME 380 Industrial Training 2.
(2) (Prerequisite: MIME 280) 2 Four-month work period in industry. Work term report required upon completion.

MIME 392 Industrial Work Period 3.
(2) (Prerequisite: 75 credits including MIME 291) A four-month industrial work period in a mining company, research laboratory or government agency. Based on the experience gained during the first two work periods, the student may be asked to undertake more challenging technical tasks. A complete report must be submitted at the end of the term.

MIME 410 Research Project.
(3) (0-6-3) (Prerequisite: Recommendation of Instructor) A research project will be carried out, usually in groups, under the guidance of a staff member. A technical report will be prepared at the end and a formal presentation will be made on the research topic.

MIME 412 Corrosion and Degradation.

MIME 419 Surface Mining.

MIME 420 Feasibility Study.
(3) (1-2-6) (Prerequisite (Undergraduate): MIME 419, MIME 426 and MPMC 421) This course consists of a case study exercise in the application of the specialist skills which the student has developed in the mining engineering program. The objective is to combine these skills in carrying out a professional appraisal of the technical feasibility and economic viability of developing a mineral deposit. Students are required to prepare a professional level report and present seminars on particular aspects of the feasibility analysis.

MIME 422 Mine Ventilation.
(3) (3-3-3) (Prerequisite: MIME 340.) (Restriction: Not open fo students who have taken MPMC 422.) Statutory regulations and engineering design criteria. Occupational health hazards of mine gasses, dusts, etc. Ventilation system design. Natural and mechanical ventilation. Measuring and modelling air flow in ventilation networks. Calculation of head losses. Selection of mine ventilation fans. Air heating and cooling. Aspects of economics.

MIME 426 Development and Services.
(3) (3-3-3) (Prerequisite (Undergraduate): MIME 324 and MIME 333) Selection and design of the facilities required to start production at both surface and underground mines, based on design criteria dictated by mining plans, geography, geology and government regulations. Scheduling of development and construction. Staffing and health and safety considerations during development, construction and operations.

MIME 442 Modelling and Control: Mineral Processing.
(3) (3-3-3) (Prerequisite: MIME 341) Basic kinetic modelling: perfect mixers, plug-flow, zero and first-order kinetics, residence time distributions. Grinding: breakage and selection functions. Overview of the modelling of flotation and gravity separation. Introduction to control: economic incentives, basic PI control, applications to grinding and flotation circuits.

MIME 452 Process and Materials Design.
(4) (4-2-6) Design of new metallurgical plants, processes, materials and products based on 3 previous core courses; materials and heat balances, metal economics, design and optimization; materials selection, design and failure problems in various materials systems.

MIME 455 Advanced Process Engineering.

MIME 456 Steelmaking and Steel Processing.
(3) (2-2-5) (Prerequisite: MIME 360. Pre/corequisite: MIME 455) The production and refining of liquid iron in the iron blast furnace, the production and refining of liquid steel, secondary refining operations, continuous casting and thermomechanical processing (hot rolling). Specialty steels and newly emerging technologies (e.g. thin slab casting, direct ironmaking) are also discussed in terms of process/environment and productivity. "Downstream" topics will include cold rolling, batch and continuous annealing, and coating operations.

MIME 457 Light Metals Extraction and Processing.
(3) (2-0-7) (Prerequisites: MIME 350, MIME 352)
Physicochemical, kinetic and economic aspects of light metals extraction, refining and finishing for marketing. Alumina production, aluminum electrolysis, carbon technology, alloying and casting, magnesium smelting and electrolysis, strontium, lithium, sodium extraction.

**MIME 465 Ceramic Engineering.**

**MIME 480 Industrial Training 3.**
(2) (See details listed under MIME 481) (Prerequisite: MIME 380) Four-month work period in industry. Work term report due upon completion of MIME 481.

**MIME 481 Industrial Training 4.**
(2) (Prerequisite: MIME 480) Four-month work period in industry. This course is intended to be taken immediately after MIME 480 at the same work location. One work term report and one seminar are required upon completion of this course. If MIME 480 and MIME 481 are in different work locations, the work term report should be divided into two parts following the co-op handbook guidelines.

**MIME 484 Mining Project.**
(3) (0-0-9) (Corequisites: MIME 419, MIME 426, MPMC 328 and MPMC 421) A mining research project to be completed during one semester. The project must be approved by an academic advisor. A comprehensive report and a seminar presentation are required for the project.

**MIME 494 Industrial Work Period 4.**
(2) (Prerequisites: MIME 419, MIME 426, MPMC 328 and MPMC 421) A four-month industrial work period after which the student must submit a report.

**MIME 512 Corrosion and Degradation of Materials.**
(3) (3-3-3) (Prerequisites: MIME 261 and MIME 352 or permission of instructor.) Electrochemical theory of metal corrosion, Evans Diagrams, corrosion rate controlling mechanisms, passivation, coatings, measurement and control; surface and electrochemistry, including absorption, surface charge, coagulation, electron transfer reactions, electrochemistry in plant practice.

**MIME 513 Mine Planning Optimization Under Uncertainty.**
(3) (3-3-3) (Prerequisite: Permission of instructor.) Strategic mine planning and optimization under uncertain demand and supply. Modern optimization techniques in mine design and production scheduling related to orebody modelling. Market forecasting and planning with flexibility. Valuing information. Stochastic mine optimization and applications in open pit and underground metal mines.

**MIME 520 Stability of Rock Slopes.**
(3) (3-0-6) (Prerequisite: permission of instructor.) The properties of rock masses and of structural discontinuities. Influence of geological structure on stability. Linear, non-linear, and wedge failures. Site investigations. Methods of slope stabilization.

**MIME 521 Stability of Underground Openings.**
(3) (3-3-3) (Prerequisite: permission of instructor) The properties of rock masses and stability classification systems.

The influence and properties of geological structural features. Stability related to the design of underground openings and mining systems. Site investigations. Methods of stabilization.

**MIME 525 Stochastic Orebody Modelling.**

**MIME 526 Mineral Economics.**
(3) (3-2-5) (Prerequisite: MIME 310 or equivalent) Mineral project evaluation techniques and applications. Topics covered include grade-tonnage relationships, capital and operating cost estimation techniques, assessment of mineral market conditions, taxation, discounted cash flow analysis, risk analysis, and optimization of project specifications with respect to capacity and cutoff grade.

**MIME 528 Mining Automation.**
(3) (3-3-3) (Prerequisite: MIME 426) System analysis and design in the frequency domain. Review of optimization methods. Mining system modelling applied to rock cutting, materials transport, and bunker control. Pitch, yaw and roll steering of mining machines. Control and robotics: digitization, discrete systems, sensors, actuators and real time algorithms. Data communication in mines. Simulation exercises.

**MIME 544 Analysis: Mineral Processing Systems 1.**
(3) (2-3-4) (Prerequisite (Undergraduate): MIME 341) The course covers three major topics: principles of separation, including data presentation, properties of recovery/yield plots, technical and economic efficiency and identification of limits to separation; column flotation, hydrodynamics of collection and froth zones, mixing, scale-up and design, measurements and control; surface and electrochemistry, including absorption, surface charge, coagulation, electron transfer reactions, electrochemistry in plant practice.

**MIME 545 Analysis: Mineral Processing Systems 2.**
(3) (4-2-3) (Prerequisite (Undergraduate): MIME 341) Gold recovery (as a Professional Development Seminar): methods of recovery (gravity, flotation, cyanidation), refractory gold (roasting, pressure oxidation, bacterial leaching), dissolved gold recovery (Merrill-Crowe) and activated carbon methods. Sampling: definition of errors, sample extraction, size, and processing. Mass balancing: basic considerations, definition of networks, software. Blending: auto-correlation functions, transfer functions, blending systems. Effect of feed variability.

**MIME 551 Electrochemical Processing.**
(3) (3-2-4) (Prerequisite: MIME 352) Characterization of aqueous, fused salt and solid electrolytes; laws of electrolysis; ion transport mechanisms; interfacial phenomena (electrolyte-electrolyte, electrode-electrolyte); reversible cells and potentials; electrode kinetics, overpotential and potential-current laws; industrial applications; electrolytic winning and refining, electropolishing, surface cleaning and coating, electrodialysis and electrochemical sensors.

**MIME 552 Environmental Controls in Metallurgical Plants.**
(3) (3-3-3) (Prerequisites: MIME 341, 350 and 352 or permission of instructor.) (Restriction: Not open to students who have taken MIME 451.) Generation, characterization and abatement of pollutants in the minerals and metals industries.
Environmental regulations. Control technologies for gaseous, aqueous and solid waste streams. Heavy metal removal, arsenic control, cyanide destruction, prediction of acidic drainage, greenhouse gas effects, control of SO2 and NOx emissions, destruction of organic pollutants.

**MIME 555 Waste Management Environment and Society.**

(3) (3-0-6) (Prerequisites: MIME 212 or equivalent.) Issues related to waste management, renewable and sustainable energy resources, hydrogen fuel generation and its storage, as well as changes in global environmental policies. Topics include hydrogen economy, sustainable energy, patterns of waste in society, and their environmental consequences.

**MIME 556 Sustainable Materials Processing.**

(3) (3-1-5) (Prerequisite: Permission of Instructor.) Sustainability, population and environment impact, environmental impact indicators, materials flows, enthalpy flows, the carbon cycle, materials intensity, energy intensity, global warming potential, acidification potential, FACTOR-Two, -Four and -Ten, life-cycle-inventory/assessment, end-of-pipe strategies, supply-chain and flow-sheet redesign, recycling, waste treatment and materials case studies.

**MIME 558 Engineering Nanomaterials.**

(3) (3-2-4) (Prerequisite: MIME 260 or MIME 261 and MIME 362 or equivalent or permission of instructor.) Aspects of manufacturing bulk-nanostructured materials. Fabrication of nanosized and nanostructured precursors (metals, ceramics, intermetallics,CNT). Reactivity, handling and safety of nano-particles. Processes developed to fabricate bulk nanostructured materials (pressing and sintering, hot pressing and extrusion, ECAP, electrodeposition, spray forming, shockwave compaction). Characterisation of nanostructures. Physical and mechanical properties of nanomaterials.

**MIME 559 Aluminum Physical Metallurgy.**

(3) (3-3-3) (Prerequisites: MIME 360 and MIME 362, or permission of instructor.) Crystal structure, deformation characteristics, strengthening and softening mechanisms, hot and cold working. Microstructure property relationships in aluminum alloys. Physical metallurgy of aluminum casting alloys and their uses. Properties, and physical metallurgy of aluminum wrought alloys and their industrial applications.

**MIME 560 Joining Processes.**

(3) (3-3-3) (Prerequisite: MIME 200, MIME 360) Physics of joining; interfacial requirements; energy sources, chemical, mechanical and electrical; homogeneous hot-joining, arc-, Mig-, TIG-, gas-, thermite- and Plasma-welding; Autogeneous hot-joining, forge-, pressure-, friction-, explosive-, electron beam- and laser-welding; Heterogeneous hot-joining, brazing, soldering, diffusion bonding; Heterogeneous cold joining, adhesives, mechanical fastening; Filler materials; Joint metallurgy; Heat affected zone, non-metallic systems; joint design and economics; defects and testing methods.

**MIME 561 Advanced Materials Design.**

(3) (0-4-5) (Prerequisite: MIME 362 or equivalent) Advanced topics in materials design problems. Discussion and laboratory work, supplemented by detailed technical reports. Special attention is given to analysis, design and failure problems in various materials systems.

**MIME 563 Hot Deformation of Metals.**

(3) (2-2-5) (Prerequisite (Undergraduate): MIME 360 and MIME 362) (Prerequisite (Graduate): MIME 362 or equivalent.) High temperature deformation processing of metallic materials. Topics include static and dynamic recrystallization, recovery, precipitation; effect of deformation on phase transformations and microstructural evolution during industrial processing. Mathematical modelling of microstructural evolution.

**MIME 564 X-Ray Diffraction Analysis of Materials.**

(3) (2-3-4) (Prerequisite: MIME 317 or equivalent) The techniques of X-ray and neutron diffraction are discussed as applied to the minerals and materials production industries. Special emphasis is placed on automated X-ray powder diffractometry as employed for determining the structure and composition of materials. The application of X-ray techniques to studies of crystal structure, crystal orientation, residual stress, short-range order in liquid metals, phase diagram determination, order-disorder transformation and chemical analysis are presented.

**MIME 565 Aerospace Metallic-Materials and Manufacturing Processes.**

(3) (3-0-6) (Prerequisites: MIME 260 or MIME 261 or Permission of Instructor.) (Restriction: Permission of Instructor required.) Integrated approach to aerospace materials, manufacturing and repair; materials and selection criteria for airframe, engines and coatings; repair concepts and technologies; application of new and emerging manufacturing technologies for the forming, joining and repair of aerospace products.

**MIME 566 Texture, Structure & Properties of Polycrystalline Materials.**

(3) (2-3-4) (Prerequisite: MIME 317) Concepts and quantitative methods for the description of the structure of minerals and materials are discussed. Special emphasis is placed on experimental techniques of texture measurement. Procedures are demonstrated for the control of deformation and recrystallization textures in order to obtain the properties required for industrial products. Finally, the correlation between texture and the anisotropy of elastic, plastic and magnetic properties of engineering materials is described and analyzed.

**MIME 567 Aluminum Casting Alloys.**

(3) (3-0-6) (Prerequisite: MIME 361 or equivalent) The family of aluminum foundry alloys; alloy systems, intermetallic phases and their formation, heat treatment processes, mechanical and physical properties of aluminum casting alloys, foundry properties, eutectic modification, porosity formation, gassing and degassing, refinement of hypereutectic alloys, grain refinement, filtration; non-destructive control of microstructure.

**MIME 568 Topics in Advanced Materials.**


**MIME 569 Electron Beam Analysis of Materials.**

(3) (2-3-4) (Prerequisite: MIME 317) Emphasis on operation of scanning and transmission electron microscopes. Topics covered are electron/specimen interactions, hardware description; image contrast description; qualitative and quantitative (ZAF) x-ray analysis; electron diffraction pattern analysis.

**MPMC-McGill/Poly Mining Coop**

Offered by: Mining, Metals & Materials Engr

**MPMC 320 CAO et informatique pour les mines.**

(3) (2-3-4) Présentation de techniques informatisées et de...
logiciels permettant d'apporter l'informatique dans le cadre des diverses opérations relées à l'exploitation des mines. Utilisation de logiciels de support: chiffrerie électronique, traitement de texte, éditeur graphique, utilitaires de DOS. Utilisation de graphisme, de traceurs à plumes, de tablettes numérisantes, d'interfaces pour capteurs analogique/numérique et numérique/ analogique. Notions de géométrie descriptive appliquées à des problèmes miniers.

MPCM 321 Mécanique des roches et contrôle des terrains.

MPCM 326 Recherche opérationnelle I.

MPCM 327 Hydrogéologie appliquée.

MPCM 328 Environnement et gestion des rejets miniers.
(3) (3-3-3) (Prérequis: MIME 200 et MIME 291) Effets du milieu de travail sur l'homme (hygiène du travail): législation; contraintes thermiques, problèmes de bruit, de contaminants gazeux et de poussières; techniques de mesures. Effets de l'exploitation d'une mine sur le milieu (environnement et écologie): législation; études d'impacts: effluents miniers: origine, nature et traitement des effluents; entreposage des résidus; restauration des sites.

MPCM 329 Géologie minière.
(2) (2-2-2) (Prérequis: EPSC 221, MIME 200 et MIME 209) Méthodes de cartographie minière, de sondages et d'échantillonnage. Notion de teneur de coupure, calcul des réserves par les méthodes conventionnelles. Évaluation des réserves par méthodes géostatistiques.

MPCM 330 Géotechnique minière.
(3) (3-3-3) (Prérequis: MIME 323) Propriétés mécaniques des matériaux meubles. Conception d'emplacements et de digues de rétention pour les matériaux miniers. Conception de structures enfouies. Problèmes particuliers avec les résidus miniers: liquéfaction, dépôt, etc. Écoulement gravitaire des matériaux meubles.

MPMC 421 Exploitation en souterrain.

**URBP-Urban Planning**

**URBP 201 Planning the 21st Century City.**
(3) (3-1-5) The study of how modern urban planners respond to the challenges posed by contemporary cities world-wide. Urban problems related to the environment, shelter, transport, human health, livelihoods and governance are addressed: innovative plans to improve cities and city life are analyzed.

**URBP 501 Principles and Practice 1.**
(2) (2-0-4) This six-week intensive course exposes students to issues and techniques that are applicable in diverse professional planning contexts. The subject matter, geographic area, scale of intervention and institutional location of planning varies from semester to semester. The course focuses on a specific case study and is taught by a visiting lecturer with professional experience in the selected subject matter.

**URBP 505 Geographic Information Systems.**
(3) (0-2-7) An introduction to fundamental geographic information system (GIS) concepts and a range of GIS applications in urban and regional planning.

**URBP 506 Environmental Policy and Planning.**
(3) (3-0-6) (Restriction: This course is open to students in U3 and above) Analytical and institutional approaches for understanding and addressing urban and other environmental problems at various scales; characteristics of environmental problems and implications; political-institutional context and policy instruments; risk perception and implications; cost-benefit analysis, risk assessment, multiple-objectives approaches, life-cycle analysis; policy implementation issues; case studies.

**URBP 507 Planning and Infrastructure.**
(6) (0-10-8) (Corequisites: Enrolment in full "Barbados Field Study Semester"; AGRI 413, AGRI 452 or CIVE 452, URBP 519, AGRI 452 or CIVE 452.) An exploration of the interrelationship between land-use planning and infrastructure provision, especially water and sewerage. An examination of their political, institutional and regulatory frameworks and other methodology of plan making and evaluation.

**URBP 519 Sustainable Development Plans.**
(6) (0-10-8) (Corequisites: Enrolment in full "Barbados Field Study Semester"; AGRI 413, AGRI 452 or CIVE 452, URBP 519, AGRI 452 or CIVE 452, URBP 507) (Restrictions: Not open to students who have taken AGRI 451 or CIVE 519.) Geared for solving real-world environmental problems related to water at the local, regional and international scale in Barbados. Projects to be designed by instructors in consultation with university, government and NGO partners and to be conducted by teams of 2 to 4 students in collaboration with them.

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*Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at [www.mcgill.ca/courses](http://www.mcgill.ca/courses) for the most up-to-date information on whether a course is offered.*

- Denotes courses taught only in alternate years.
- † Professional Practice (Stage) in Dietetics involving special prerequisites
- ‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.
- †† Denotes courses not available as Education electives.
- †‡ Denotes courses with limited enrolment.

2006-2007 Undergraduate Programs Calendar, McGill University
McGill School of Environment

ENVR-Environment
Offered by: McGill School of Environment

ENVR 200 The Global Environment.
(3) (Fall) (Section 001: Downtown Campus) (Section 051: Macdonald Campus) A systems approach to study the different components of the environment involved in global climate change: the atmosphere, biosphere, hydrosphere, and lithosphere. The interactions among these components. Their role in global climate change. The human dimension to global change.

ENVR 201 Society and Environment.
(3) (Fall) (Section 001: Downtown Campus) (Section 051: Macdonald Campus) An introduction to human societies and their relations with the biophysical environment, focusing on how economy, technology, and institutions interact to give rise to environmental problems. Analytical treatment of key concepts from distinct disciplinary perspectives in the social and life sciences, including "carrying capacity", "renewable resources", "environmental equity", and "sustainability".

ENVR 202 The Evolving Earth.
(3) (Winter) (Section 001: Downtown Campus) (Section 051: Macdonald Campus) Formation of the Earth and the evolution of life. How geological and biological change are the consequence of history, chance, and necessity acting over different scales of space and time. General principles governing the formation of modern landscapes and biotas. Effects of human activities on natural systems.

ENVR 203 Knowledge, Ethics and Environment.
(3) (Fall - Macdonald Campus; Winter - Downtown) (Section 001: Downtown Campus) (Section 051: Macdonald Campus) Techniques used in design and completion of environmental research projects. Problem definition, data sources and use of appropriate strategies and methodologies. Principles underlying research design are emphasized, including critical thinking, recognizing causal relationships, ideologies and biases research, and when and where to seek expertise.

ENVR 380 Topics in Environment 1.
(3) (Restriction: Normally open only to U3 MSE students) Intermediate-level seminars and discussion of interdisciplinary aspects of current problems in environment led by staff and/or special guests. This course is offered on an irregular basis.

ENVR 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

ENVR 400 Environmental Thought.
(3) (Fall - Macdonald Campus; Fall and Winter - Downtown) (Section 001: Downtown Campus) (Section 051: Macdonald Campus) Students work in interdisciplinary seminar groups on challenging philosophical, ethical, scientific and practical issues. They will explore cutting-edge ideas and grapple with the reconciliation of environmental imperatives and social, political and economic pragmatics. Activities include meeting practitioners, attending guest lectures, following directed readings, and organizing, leading and participating in seminars.

ENVR 401 Environmental Research.
(3) (Fall) (Prerequisite: ENVR 301) (Restriction: B.A. Faculty Program in Environment, B.A.&Sc. Faculty Program in Environment, B.Sc.(Ag.Env.Sc.) and B.Sc. Major in Environment, and Diploma in Environment.) (Downtown Campus only) Students work in an interdisciplinary team on a real-world research project involving problem definition, methodology development, social, ethical and environmental impact assessment, execution of the study, and dissemination of results to the research community and to the people affected. Teams begin defining their projects during the preceding spring.

ENVR 451 Research in Panama.
(6) (Winter) (Restriction: students in the Panama Field Semester program. Offered in Panama only) Research projects will be developed by instructors in consultation with Panamanian universities, government agencies and non-governmental organizations. Project groups will consist of four to six students working with a Panamanian institution. Topics will be relevant to Panama: e.g., protection of the Canal watershed, economical alternatives to deforestation, etc.

ENVR 480 Topics in Environment 2.
(3) (Restriction: Normally open only to U3 MSE students) Intermediate-level seminars and discussion of interdisciplinary aspects of current problems in environment led by staff and/or special guests. This course is offered on an irregular basis.

ENVR 485 Readings in Environment.
(3) (Restriction: Normally open only to U3 MSE students) Interdisciplinary literature project/essays related to environment, enabling independent study under guidance of qualified MSE staff in areas outside the scope of individual departments. Proposed topic and method of evaluation must be approved by the Associate Director one month before the beginning of term. Contact the Program Coordinator for more information.

ENVR 490 Independent Study in Environment.
(3) (Prerequisite: Permission of instructor) (Restrictions: Normally open only to U3 MSE students. Proposed topic and method of evaluation must be approved by the Director one month before the beginning of term. Contact the Program Coordinator for information.) Interdisciplinary research projects related to environment, enabling independent study under guidance of qualified MSE staff in areas outside the scope of individual departments.

ENVR 491 Independent Project in Environment.
(1) (Prerequisite: Permission of instructor) (Restrictions:
Normally open only to U3 MSE students. Proposed topic and method of evaluation must be approved by the Director one month before the beginning of term. Contact the Program Coordinator for information. Interdisciplinary research projects related to environment, enabling independent study under guidance of qualified MSE staff in areas outside the scope of individual departments.

**ENVR 495D1 (3), ENVR 495D2 (3) Honours Research.**
(Prerequisites: ENVR 301. Acceptance to Honours Program in Environment.) (Restrictions: For U3 B.A., B.Sc., and B&A&Sc Honours Program in Environment students. Not open to students in the BSc (AgEnvSc) Honours in Environment program.) (Students must register for both ENVR 495D1 and ENVR 495D2.) (No credit will be given for this course unless both ENVR 495D1 and ENVR 495D2 are successfully completed in consecutive terms.) Preparation of an honours thesis.

**ENVR 495N1 Honours Research.**
(3) (Prerequisites: ENVR 301. Acceptance to Honours Program in Environment.) (Restrictions: For U3 B.A., B.Sc., and B&A&Sc Honours Program in Environment students. Not open to students in the BSc (AgEnvSc) Honours in Environment program.) (Students must register for both ENVR 495N1 and ENVR 495N2.) (No credit will be given for this course unless both ENVR 495N1 and ENVR 495N2 are successfully completed in a twelve month period.) Preparation of an honours thesis.

**ENVR 495N2 Honours Research.**
(3) (Prerequisite: ENVR 495N1.) (Students must register for both ENVR 495N1 and ENVR 495N2.) See ENVR 495N1 for description.

**ENVR 496 Honours Research Part 1.**
(3) (Prerequisite: ENVR 496. Acceptance to Honours Program in Environment.) (Restrictions: For U3 B.Sc. (Ag.Env.Sc.) Honours Program in Environment students. Normally, credit for ENVR 496 will not be given unless ENVR 497 is completed; the courses may be evaluated together and the same mark will be given for both ENVR 496 and ENVR 497; ENVR 496 and ENVR 497 must be taken in consecutive semesters. Not open to students in the BA Honours, BSc Honours, or BA&Sc Honours programs in Environment.) Preparation of an honours thesis.

**ENVR 497 Honours Research Part 2.**
(3) (Prerequisite: ENVR 496. Acceptance to Honours Program in Environment.) (Restrictions: For U3 B.Sc. (Ag.Env.Sc.) Honours Program in Environment students. Normally, credit for ENVR 496 will not be given unless ENVR 497 is completed; the courses may be evaluated together and the same mark will be given for both ENVR 496 and ENVR 497; ENVR 496 and ENVR 497 must be taken in consecutive semesters. Not open to students in the BA Honours, BSc Honours, or BA&Sc Honours programs in Environment.) Continuation of the preparation of an honours thesis.

**ENVR 540 Ecology of Species Invasions.**
(3) (Winter) (3 hours lecture) (Prerequisite: BIOL 308 or permission of instructor.) (Restrictions: Not open to U1 or U2 students. Not open to students who are taking or have taken BIOL 540.) Causes and consequences of biological invasion, as well as risk assessment methods and management strategies for dealing with invasive species.

**ENVR 580 Topics in Environment 3.**
(3) (Prerequisite: Permission of instructor) Civilization & Environment Part 1 - must also take ENVR 580 Civilization & Environment Part 2 - must have taken Advanced-level seminars and discussion of interdisciplinary aspects of current problems in environment led by staff and/or special guests. This course is offered on an irregular basis.

**ENVR 585 Readings in Environment 2.**
(3) (Prerequisites: ENVR 400 and ENVR 401, or permission of instructor) Interdisciplinary literature project/essays related to environment, enabling advanced-level study under guidance of qualified MSE staff in areas outside the scope of individual departments. Proposed topic and method of evaluation must be approved by the Associate Director one month before the beginning of term. Contact the Program Coordinator for information.
Desautels Faculty of Management

ACCT-Accounting
Offered by: Management

ACCT 311 Financial Accounting 1.
(3) (Prerequisite: MGCR 211) A detailed examination of the issues involved in the measurement, recording and reporting of assets and related revenues and expenses.

ACCT 312 Financial Accounting 2.
(3) (Prerequisite: ACCT 311) A continuation of Financial Accounting 1, examining the issues involved in the measurement, recording and reporting of liabilities and owner's equity.

ACCT 313 Management Accounting 1.
(3) (Prerequisite: MGCR 213.) Cost accounting, budgeting and budgetary control, standard costing, break-even analysis, variable costing, costs for decision-making.

(3) (Prerequisites: MGCR 211 and MGCR 213) An examination of the theoretical foundation for financial reporting and revenue recognition. The tools of accounting, including a review of the accounting process and compound interest concepts. Asset recognition, measurement and disclosure. Partnership accounting.

(3) (Prerequisite: ACCT 351) A continuation of Intermediate Financial Accounting 1. An examination of liability recognition, measurement and disclosure, including leases, pension costs and corporate income tax. Shareholders' equity, dilutive securities and earnings per share. The statement of changes in financial position, basic financial statement analysis and full disclosure in financial reporting.

ACCT 356 International Accounting.
(3) (Prerequisites: ACCT 351 and ACCT 361) (Restriction: Open only to Accounting Honours students) Current international issues in financial and management accounting including different reporting models and standards, the International Accounting Standards Committee, international transfer pricing and control systems in multinationals.

ACCT 361 Intermediate Management Accounting 1.
(3) (Prerequisites: MGCR 211 and MGCR 213) The role of management accounting information to support internal management decisions and to provide performance incentives.

ACCT 362 Intermediate Management Accounting 2.
(3) (Prerequisite: ACCT 361) An examination of a number of recurring issues in the area of decision-making and control, including cost allocation, alternative costing systems, and innovations in costing and performance measurement.

ACCT 385 Principles of Taxation.
(3) (Prerequisite: MGCR 211) An introduction to the concepts underlying the Canadian tax system and how they are applied in relation to the taxation of individuals and businesses.

ACCT 411 Accounting Theory.
(3) (Prerequisite: ACCT 312) (CGA requirement) The course will focus on developing a cohesive body of postulates which describe the discipline of accounting.

ACCT 412 Taxation 1.
(3) An examination of Federal Income Tax and its impact on business operations: tax treatment of individuals, partnerships and corporations. The concepts underlying tax legislation will be emphasized.

ACCT 413 Systems and Auditing.
(3) (Prerequisite: ACCT 312) (Requirement for CGA, CMA and the Institute of Internal Auditors) The principles of accounting systems and auditing.

ACCT 414 Financial Accounting 3.
(3) (Prerequisite: ACCT 312) (Requirement for CGA, CMA and the Institute of Internal Auditors) Advanced topics in financial accounting, including consolidations, business combinations, accounting for foreign currency and other topics.

ACCT 415 Management Accounting 2.
(3) (Prerequisite: ACCT 313) A critical evaluation of accounting control systems and some related quantitative business controls. Conceptual and measurement problems in evaluating performance, including problems of decentralization. Control of the data-informa- tion flow.

ACCT 416 Management Accounting 3.
(3) (Prerequisite: ACCT 415) (CMA requirement) A survey of planning and decision concepts and models: relevant data or information for planning common classes of business decisions. Behavioural and information analysis of the planning/control functions using recent literature and research results.

ACCT 417 Taxation and Business Decisions.
(3) (Prerequisite: MGCR 211) An overview of the income tax system; emphasis on its impact on selected business decisions. Topics include: individual and corporate taxation, tax shelters, tax planning and international operations. Use of cases.

ACCT 430 Operational Auditing.
(3) (Prerequisite: ACCT 312) (Requirement for CGA and the Institute of Internal Auditors) The internal use of auditing techniques to appraise the control provided by accounting and management systems. The challenge of reporting audit findings to prompt management action. Topics: objectives of internal audit, responsibilities and relationships, planning audit projects, preliminary surveys, sampling, computer auditing, operational areas, reporting.

ACCT 431 External Auditing.
(3) (Prerequisite: ACCT 413) (CGA requirement) Auditing standards; auditor's legal rights and responsibilities; problems relating to: incorporated business; consolidated statements prospectuses; events subsequent to balance sheet date; audit of E.D.P. systems; audits requiring special considerations; investigations and special reports; current developments in auditing standards.

ACCT 434 Topics in Accounting.
(3) (Restriction: Open to advanced students only) Topics will be selected from current issues in the Accounting Area.

ACCT 441 Taxation 2.
(3) The development and application of topics presented in the introductory income tax course; tax planning matters are dealt with throughout; corporate reorganizations and liqui- dations; purchase and sale of a business; surplus stripping and estate planning; primary emphasis is on the corporation and its shareholders.

(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385) Reporting relevant financial information subsequent to long term intercorporate investments. The preparation of consolidated financial statements with emphasis on their economic substance rather than legal form.

ACCT 454 Financial Reporting.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385) An in-depth study of Canadian accounting standards and how Canadian corporations apply them in their financial reporting.
ACCT 455 Development of Accounting Thought.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385)
The conceptual underpinning of accounting thought, including its
historical development and the modifications that have occurred
time. A review of accounting literature and its relevance to
practice.

ACCT 463 Advanced Management Accounting.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385)
The theoretical frameworks for the examination and evaluation of
management accounting and control systems. The technical aspects of
accounting along with behavioural issues of management control.

ACCT 471 Non-Profit Accounting.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385)
(Restriction: Open only to Accounting Honours students) The
foundations and practices of non-profit accounting for
organizations including government, volunteer, charitable,
health care and educational. The framework to evaluate and
understand emerging issues.

ACCT 475 Principles of Auditing.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385)
An introduction to basic auditing concepts and internal controls of
an accounting system. Topics include current auditing standards,
ethical conduct, legal liability, planning of an audit, sampling techniques, non-audit engagements, the study and
evaluation of internal controls in an accounting system.

ACCT 476 Internal Auditing.
(3) (Prerequisites: ACCT 352, ACCT 362 and ACCT 385)
(Restriction: Open only to Accounting Honours students) The
modern internal audit approach including operational and
management audit practices within the internal audit framework.
Topics include objectives of an internal audit, communication by
internal auditors, planning audit projects, audit of EDP
systems, audit testing, operational areas.

ACCT 477 External Auditing.
(3) (Prerequisites: ACCT 352, ACCT 385 and ACCT 475)
(Restriction: Open only to Accounting Honours students) The
theory of auditing financial statements and the various
complexities encountered in these audit environments. A thorough
study of auditing standards, ethical conduct, communication by
auditors, auditing in an EDP environment, audit of a small
business, other reports and services provided by auditors and
public accountants.

ACCT 486 Business Taxation 2.
(3) (Prerequisite: ACCT 385) A study of the Income Tax Act
as it applies to the taxation of individuals and corporations,
including capital cost allowances, capital gains, corporate
reorganisations, trusts and partnerships and administrative
regulations. A review of consumption taxes.

BUSA-Business Admin
Offered by: Management

BUSA 364 Business Law 1.
(3) (Restriction: This course cannot be double-counted from the
Certificate in Management.) An introduction to the legal system and
basic legal principles affecting business. Tort negligence
contracts, forms of business organization, creditors’ rights and
bankruptcy.

BUSA 368 Business Law 2.
(3) An outline of the application of law to professional
negligence, product liability, competition, corporate governance
and employment. Review of particular contracts; sale, agency,
mortgages, lease, insurance.

BUSA 391 International Business Law.
(3) (Prerequisite: MGCR 382) Introduction to the legal
aspects of foreign trade and investment transactions. Forms and
documentation of types of foreign trade contracts. Conflict
avoidance, arbitration, and litigation arising from
international transactions. Government regulation of foreign
trade. Legal aspects of the international transfer of
investments and technology. Conventions and institutions of
international economic cooperation (e.g. GATT, ICC, IMF, etc.).

BUSA 395 European Economy and Business.
(3) (Prerequisite: MGCR 382) An overview of current social,
economic and trade developments in the rapidly-evolving European
arena. Focus on both the integrating economies of the EU and the
emerging market economies and central and eastern Europe.
Emphasis on the expanded opportunities and the challenges facing
international managers.

BUSA 399 Internship Project.
(1) Upon completion of the internship, students must submit a
paper on the integration of the applied and academic aspects of
their B.Com. courses and the Internship experience.

BUSA 400 Independent Studies in Management.
(3) (Prerequisite: U3 students only. CGPA of at least 3.00
required.) Research reading or field projects, permitting
independent study under the guidance of a Faculty member.
Projects to be arranged individually with instructors. A
detailed student proposal must be submitted to the instructor
and the Associate Dean during the first week of term.

BUSA 462 Management of New Enterprises.
(3) (Prerequisite: MGCR 341) (BUSA 462 and BUSA 465
cannot both be taken for credit) Evaluation of new business
ventures, recognition and treatment of associated risks.
Detailed consideration is given to sources of risk funds in the
form of venture capital, public, private and government
programs. Emphasis on the critical importance of the
entrepreneur, the demands and the risks faced as well as the
rewards and satisfactions.

BUSA 464 Management of Small Enterprises.
(3) (Prerequisite: MGCR 341) The distinctive
characteristics, risks, opportunities and rewards inherent in
the ownership and management of a small enterprise. It will
assist students in judging the appropriateness of an
entrepreneurial career and in selecting and timing a specific
venture.

BUSA 465 Technological Entrepreneurship.
(3) (Prerequisite: MIME 310 or MGCR 341) (BUSA 462
and BUSA 465 cannot both be taken for credit) Concentrating
on entrepreneurship and enterprise development, particular
attention is given to the start-up, purchasing and management of
small to medium-sized industrial firms in an environment that
would appeal to Engineering students. The focal point is in
understanding the dilemmas faced by entrepreneurs, resolving
them, developing a business plan and the maximum utilization
of the financial, marketing and human resources that make for a
successful operation.

BUSA 466 Technological Entrepreneurship Project.
(3) (Restriction: students registered in Minor in Technological
Entrepreneurship program) (Prerequisite: 12 credits in the MTE
program and BUSA 465) Project involving a small to
medium company in the high technology field.

BUSA 481 North America: Global Markets.
(3) (Restriction: U2 and U3 students.) (Prerequisite: MGCR
382 or permission of instructor) Analysis of corporate

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at
www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

Denotes courses taught only in alternate years.
† Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts
or Faculty of Science in 2006-07.
‡ Denotes courses offered by the Faculty of Education which, if applicable to the student’s program, may be
included in the academic concentration.
◆ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor
of Education students.
strategies in the Canada-United States context. Emphasis on public policy impact of corporate decision-making and implications of alternative public policy options. Bilateral experience by major industrial sectors examined and compared with global corporate strategies. Theoretical and empirical literature combined with industrial histories and policy case studies.

FINE 443 Applied Corporate Finance.
(3) (Prerequisite: FINE 342) Concepts and techniques are applied to problems faced by managers in Corporate Finance, such as working capital management, capital budgeting, capital structure, dividend policy, cost of capital, and mergers and acquisition. Application of theory and techniques through case studies.

FINE 444 Risk Management and Insurance.
(3) (Prerequisite: MGCR 341) Risk exposures of the individual and the firm. A wide variety of techniques for reducing risk exposure are studied including Life, Property and Casualty Insurance. In addition, the course treats the problems faced by insurers such as re-insurance and investment policy.

FINE 445 Real Estate Finance.
(3) (Prerequisite: MGCR 341) Fundamentals of mortgages from the viewpoint of both consumer and the firm. Emphasis on legal, mathematical and financial structure, provides a micro basis for analysis of the functions and performance of the mortgage market, in conjunction with the housing market. A weekly series of one-hour tutorials are mandatory for the first six weeks of class.

FINE 446 Real Estate Investment Analysis.
(3) (Restriction: For non-Finance Concentration) (Prerequisite: FINE 445) Risk and return in real estate investment. Analysis of investment measurement techniques, financial combinations, ownership patterns and tax strategy are analyzed on a risk-return relationship. Use of a micro computer to build investment models and compare them to those available on large mainframe computers.

FINE 447 Real Estate Valuation.
(3) (Restriction: For non-Finance Concentration) (Prerequisite: FINE 445) Valuation theories are analyzed and tested empirically, recognizing that forces from international to neighbourhood level impact value. Use of micro and macro computer systems are utilized in a regression analysis of real property.

FINE 448 Derivatives and Risk Management.
(3) (Prerequisites: FINE 342 and FINE 441 or consent of instructor) The course will concentrate on both the analytical and practical aspects of investments in options and futures. The first part of the course concentrates on option and futures valuation, considering both discrete and continuous time models. The second part of the course concentrates on the practical aspects of options and futures trading.

FINE 449 Market Risk Models.
(3) (Prerequisite: FINE 448) Dynamic market risk models including GARCH volatility models, dynamic conditional correlation models, non-normal return distributions, option pricing allowing for skewness and kurtosis, and option risk management using, delta, delta-gamma and full-valuation.

FINE 451 Fixed Income Analysis.
(3) (Prerequisites: FINE 441, FINE 445) Fixed income financial instruments and their uses for both financial engineering and risk management (at the trading desk and aggregate firm level). This will involve coverage of fixed income mathematics, risk management concepts, term structure modeling, derivatives valuation and credit risk analysis.

FINE 478 International Financial Management.
(3) (Prerequisite: MGCR 341, MGCR 382) An overview of operational problems and policies of financial management in an international context; the international monetary system; foreign exchange and Eurocurrency markets; effects of exchange-rate changes; protecting the firm against losses;
multinational sources and costs of capital; international capital project analysis; contemporary developments.

FINE 480 Global Investments.
(3) (Prerequisite: FINE 441, FINE 482, or consent of instructor) The theoretical foundations of international investments theory and empirical evidence in a real world setting. This course will focus on portfolio investment decisions of investment banks. It will span the Developed Markets (DMs) of Europe and Japan, Newly Industrialized Nations (NICs) of the Pacific rim, Emerging Markets (EMs) of Asia, Latin America, Eastern Europe and Africa.

FINE 482 International Finance 1.
(3) (Prerequisite: FINE 342) The international financial environment as it affects the multinational manager. Balance of payments concepts, adjustment process of the external imbalances and the international monetary system. In depth study of the institutional and theoretical aspects of foreign exchange markets; International capital markets, including Eurobonds and eurocurrency markets.

FINE 492 International Finance 2.
(3) (Prerequisite: FINE 482) Focus on the operational problems of financial management in the multinational enterprise: Financing of international trade, international capital budgeting, multinational cost of capital, working capital management; International banking and recent developments in international capital markets.

FINE 541 Applied Investments.
(3) (Prerequisite (Undergraduate): FINE 441. U3 students only) (Prerequisite (Graduate): Permission of the instructor.) Students are exposed to practical aspects of managing investment portfolios. A principal activity of students is participation in the management of a substantial investment fund.

FINE 541D1 (1.5), FINE 541D2 (1.5) Applied Investments.
(Prerequisite (Undergraduate): FINE 441. U3 students only) (Prerequisite (Graduate): Permission of the instructor.) (Students must register for both FINE 541D1 and FINE 541D2.) (No credit will be given for this course unless both FINE 541D1 and FINE 541D2 are successfully completed in consecutive terms) (FINE 541D1 and FINE 541D2 together are equivalent to FINE 541) Students are exposed to practical aspects of managing investment portfolios. A principal activity of students is participation in the management of a substantial investment fund.

FINE 546 Land Law.
(3) (Prerequisite: BUSA 364 or equivalent) Overview of legal aspects of real property and real estate transactions. Creation of interests in land and the rights and responsibilities encompassed. Transactions in the sale or purchase of real property involve study of securities such as leases and mortgages. Knowledge of French is useful.

FINE 547 Advanced Finance Seminar.
(3) (Prerequisite (Undergraduate): FINE 441 and FINE 443, or FINE 464.) (Prerequisite (Graduate): must have completed at least 4 finance courses and/or be taking last courses in concentration concurrently.) (Restriction: Not open to students who have taken FINE 467.) (Note: Lectures for this course span both the fall and winter semesters.) Selected topics will be discussed by Faculty members, invited guest speakers, and the students. Each student is required to select a topic for study and prepare a written report for presentation.

FINE 548 International Finance Seminar.
(3) (Prerequisite: FINE 441, FINE 482, or consent of instructor) The theoretical foundations of international investments theory and empirical evidence in a real world setting. This course will focus on portfolio investment decisions of investment banks. It will span the Developed Markets (DMs) of Europe and Japan, Newly Industrialized Nations (NICs) of the Pacific rim, Emerging Markets (EMs) of Asia, Latin America, Eastern Europe and Africa.

FINE 482 International Finance 1.
(3) (Prerequisite: FINE 342) The international financial environment as it affects the multinational manager. Balance of payments concepts, adjustment process of the external imbalances and the international monetary system. In depth study of the institutional and theoretical aspects of foreign exchange markets; International capital markets, including Eurobonds and eurocurrency markets.

FINE 492 International Finance 2.
(3) (Prerequisite: FINE 482) Focus on the operational problems of financial management in the multinational enterprise: Financing of international trade, international capital budgeting, multinational cost of capital, working capital management; International banking and recent developments in international capital markets.

FINE 541 Applied Investments.
(3) (Prerequisite (Undergraduate): FINE 441. U3 students only) (Prerequisite (Graduate): Permission of the instructor.) Students are exposed to practical aspects of managing investment portfolios. A principal activity of students is participation in the management of a substantial investment fund.

FINE 541D1 (1.5), FINE 541D2 (1.5) Applied Investments.
(Prerequisite (Undergraduate): FINE 441. U3 students only) (Prerequisite (Graduate): Permission of the instructor.) (Students must register for both FINE 541D1 and FINE 541D2.) (No credit will be given for this course unless both FINE 541D1 and FINE 541D2 are successfully completed in consecutive terms) (FINE 541D1 and FINE 541D2 together are equivalent to FINE 541) Students are exposed to practical aspects of managing investment portfolios. A principal activity of students is participation in the management of a substantial investment fund.

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credit program, a minimum CGPA of 2.7, and permission of
the departmental Internship Advisor. This course will normally
not fulfill program requirements for seminar or 400-level
courses. A letter from a supervisor at the institution must
attest to successful completion of the student's tenure.)
Internship with an approved host institution or organization.

**INSY-Information Systems**

*Offered by: Management*

**INSY 331 Managing Information Technology.**
(3) (Prerequisite: MGCR 331) Tools and concepts necessary to manage information systems in an organization: hardware/software/telecom administration, knowledge discovery/management, web-technologies, and computer security. Focuses on both mechanical aspects of IT and conceptual understanding with regard to impact on business organizations.

**INSY 332 Accounting Information Systems.**
(3) (Prerequisites: MGCR 331 and MGCR 211) Accounting cycles and information flows and the systems that manage those flows. Principals of systems development and data management as relates to accounting information. Relationship between accounting applications and transaction processing systems. Practical experience with accounting packages.

**INSY 333 Systems Analysis and Modelling.**
(3) (Prerequisite: MGCR 331) First two phases of the software development life cycle. Techniques used to conduct system requirement analysis, practical application of the analyst role in identifying operational problems, defining information system requirements, working with technical and non-technical staff, and making recommendations for system improvement.

**INSY 334 Business Programming Development.**
(3) (Prerequisite: INSY 342) Program development in business. Emphasis on data processing application programs in COBOL using structured programming techniques. Topics include: table handling, sequential file processing, error controls, audit trails, control languages, testing and forms.

**INSY 341 Developing Business Applications.**
(3) (Prerequisite: MGCR 331) Fundamental programming techniques, concepts, and data structures. Discusses modularization and maintainability. Emphasis on facilitating communication and understanding between systems analysts and programmers to support decision-making.

**INSY 342 Advanced Application Development.**
(3) (Prerequisite: INSY 341) Object oriented design, modeling (UML) and programming techniques, including the creation of classes, the use of objects, inheritance, and other object oriented principles. Strong focus on problem solving techniques and ways in which programmers can support decision-making within an organization.

**INSY 422 Object Oriented Design.**
(3) (Prerequisite: INSY 342) (Restriction: Not open to students having taken COMP 202, COMP 203) Principals of the object oriented paradigm. Object technology, data management, and design principals related to business application development.

**INSY 431 System Design and Implementation.**
(3) (Prerequisites: INSY 333, INSY 437, and INSY 341.) Latter phases of the software development life cycle. Techniques used to design and implement the results of the systems analysis. Practical application of IS team roles.

**INSY 432 Information Technology in Business.**
(3) (Prerequisite: INSY 333) Discusses the role of the information systems department within an organization, information systems resource management, staff organization and leadership, strategic systems, planning, and end-user computing. Focuses on key IT trends in industries such as banking, insurance, manufacturing, retailing & distribution, and health.

**INSY 434 Advanced Topics.**
(3) (Prerequisite: MGCR 331) Current topics in the area of information systems.

**INSY 436 Telecommunications Management.**
(3) (Prerequisites: MGCR 331 and INSY 333) This course addresses the challenges and issues managers face in delivering telecommunications and data networking services to their organizations. Using case studies and lectures, it explores technical and managerial aspects of data communications; local, wide-area and wireless networks; network protocols; Internet/intranets; client/server computing; network security and management.

**INSY 437 Managing Data & Databases.**
(3) (Prerequisite: INSY 333) (Management: students are encouraged to take this course as early as possible in their program.) Management of organizational data, implementation of database management systems, and the roles and responsibilities of data management personnel. Explores different models of data representation with an emphasis on the relational model; simple and complex SQL queries.

**INSY 438 Interface Design & Prototyping.**
(3) (Prerequisites: INSY 333 & INSY 341.) (Corequisite: INSY 342) Practical and theoretical interface design & prototyping principles and tools. Practical application of principles in an event-driven development environment.

**INSY 440 Information Technology Challenges in Electronic Business.**
(3) (Prerequisite: MGCR 331) Build the knowledge base and skills needed to face today's electronic business challenges, opportunities, and issues. Explore important concepts, models, tools and applications related to e-business.

**INSY 444 Managing Knowledge with Information Technology.**
(3) (Prerequisite: MGCR 331) Types of organizational knowledge and their value for organizations, analyzing knowledge processes, and assessing tools and technologies for managing knowledge.

**INSY 450 Information Systems Project Management.**
(3) (Prerequisite: MGCR 331) Practical principles of project management essential to successful IS development projects or other complex undertakings within an organization; includes methods for defining, planning, and scheduling activities and resources. Discusses managerial and behavioural issues.

**INSY 454 Technological Foundation for E-Commerce.**
(3) (Prerequisite: MGCR 331.) (Restriction: A basic understanding of HTML is necessary.) Technology trends and vocabulary pertaining to current technology developments in E-Commerce. Practical IT skills in web application design, including ASP, XML, etc. Discusses business issues affected by the introduction of e-technologies.

**INSY 533 Information Systems Auditing and Security.**
(3) (Prerequisite: INSY 332 or CCCC 300) (Requirement for the Institute of Internal Auditors) This course considers problems and methods of establishing effective controls of computer systems at an advanced level. The student will learn how to review, and evaluate controls in a computer environment through the use of case studies. The student will also learn how to use computer assisted audit techniques to test computer controls, and through the use of case studies. The student will also learn how to use computer assisted audit techniques to test computer controls,
MGCR-Management Core
Offered by: Management

MGCR 211 Introduction to Financial Accounting.
(3) The role of financial accounting in the reporting of the financial performance of a business. The principles, components and uses of financial accounting and reporting from a user's perspective, including the recording of accounting transactions and events, the examination of the elements of financial statements, the preparation of financial statements and the analysis of financial results.

MGCR 213 Introduction to Management Accounting.
(3) (Prerequisite: MGCR 211) An introduction to the role of management accounting information in manufacturing, service and not-for-profit organizations. The focus is on the activities performed to create value for customers. The course blends contemporary theory with practical applications to illustrate the demand for management accounting information in implementing organizational strategy.

MGCR 221 Social Psychology.
(3) Method and theories of analysing individual and small group behaviour. Topics include person perception, social motivation, attitudes, conformity, group structure, group dynamics and leadership phenomena. Experimental approach to social behaviour is emphasized.

MGCR 222 Introduction to Organizational Behaviour.
(3) Individual motivation and communication style; group dynamics as related to problem solving and decision making, leadership style, work structuring and the larger environment. Interdependence of individual, group and organization task and structure.

MGCR 271 Statistics 1.
(3) (Prerequisite: MATH 131 or equivalent) (Restriction: Not open to students who have taken or are taking MATH 323, PSYC 204, ECON 227, ECON 257) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Statistical concepts and methodology, their application to management problems. Topics include: descriptive statistics; probability theory, random variables, important discrete and continuous probability distributions, sampling and sampling distributions, interval estimation and index numbers.

MGCR 272 Statistics 2.
(3) (Prerequisite: MGCR 271) (Restriction: Not open to students who have taken or are taking MATH 324, PSYC 307, ECON 227, ECON 257) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Hypothesis testing and estimation, sampling procedures, nonparametric procedures, goodness-of-fit tests, analysis of variance, simple and multiple regression analysis, time series.

MGCR 273 Introductory Management Statistics.
(3) (Prerequisite: CMSC 101 College Algebra and Functions or Diagnostic Test) (Requirement for the Institute of Internal Auditors, CMA and CGA) Descriptive statistics, probability, random variables, binomial, poisson, normal distributions, sampling distribution of the mean, estimation, hypothesis testing, analysis of variance, tests of goodness of fit, simple linear regression, non-parametric statistics. Use of computer statistics package (no computer background needed). Application to problems in business and management.

MGCR 274 Statistical Methods in Management.
(3) (Prerequisites: CMSC 204; MGCR 273) (Requirement for the Institute of Internal Auditors) Review in greater depth some topics introduced in Introductory Management Statistics. Further topics: covariance, Bayes's Theorem, probability distributions, Power and OC curves, various tests, testing data for normality and particular distributions, multiple regression including polynomial and stepwise regression, diagnostics, indicator variables, autocorrelation, time series. Use of computer statistics package.

MGCR 293 Managerial Economics.
(3) The course focuses on the application of economic theory to management problems and the economic foundations of marketing, finance, and production. Attention is given to the following topics: price and cost analysis; demand and supply analysis, conditions of competition.

MGCR 320 Managing Human Resources.
(3) (Prerequisite: for B.Com. students only, MGCR 222) Human resource systems are examined from a strategic business perspective and in an overall global context, with a focus on the role of the line manager. Topics covered include: staffing, training and development, performance management, reward systems, employee relations, high performance work systems, diversity, work/life issues.

MGCR 331 Information Systems.
(3) (Restriction: Fall sections restricted to B.Com. students.) (A special seminar will be available to those students who do not possess the above basic computer skills, at the students' own expense.) Introduction to principles and concepts of information systems in organizations. Topics include information technology, transaction processing systems, decision support systems, database and systems development. Students are required to have background preparation on basic micro computer skills including spreadsheet and word-processing.

MGCR 341 Finance 1.
(3) (Prerequisites: MGCR 271, MGCR 211 and MGCR 293) An introduction to the principles, issues, and institutions of Finance. Topics include valuation, risk, capital investment, financial structure, cost of capital, working capital management, financial markets, and securities.

MGCR 352 Marketing Management 1.
(3) Introduction to marketing principles, focusing on problem solving and decision making. Topics include: the marketing concept; marketing strategies; buyer behavior; Canadian demographics; internal and external constraints; product; promotion; distribution; price. Lectures, text material and case studies.

MGCR 360 Social Context of Business.
(3) This course examines how business interacts with the larger society. It explores the development of modern capitalist society, and the dilemmas that organizations face in acting in a socially responsible manner. Students will examine these issues with reference to sustainable development, business ethics, globalization and developing countries, and political activity.

(3) (Prerequisite: MGCR 271) Topics include: introduction to decision analysis and risk attitudes, inventory control, linear programming and simulation. Emphasis on the formulation of problems and their solution by standard methods or by computer packages.

MGCR 382 International Business.
(3) An introduction to the world of international business.
Economic foundations of international trade and investment. The international trade, finance, and regulatory frameworks. Relations between international companies and nation-states, including costs and benefits of foreign investment and alternative controls and responses. Effects of local environmental characteristics on the operations of multi-national enterprises.

**MGCR 423 Organizational Policy.**
(3) (Restriction: Open to U3 students only) Focus on the primary functions of general management: the formation of a corporate strategy that relates the company's opportunities to its resources, competence, and leadership style. Measures to improve organization effectiveness.

**MGCR 472 Operations Management.**
(3) (Prerequisite: MGCR 271 or equivalent.) (Corequisite: MGCR 373) (Requirement for the Canadian Institute of Management) Introduction to decisions and trade-offs associated with production of goods and services. Topics include technology planning (production process), control issues (production planning and inventory control, MRP/JIT, scheduling, quality and reliability and distribution planning), design for manufacturability, management of new technology (FMS, group technology and robotics) and management of service operations.

**MGPO-Management Policy**

**MGPO 383 International Business Policy.**
(3) (Prerequisites: MGCR 382 and MGCR 341 or permission of instructor) Development and application of conceptual approaches to general management policy and strategy formulation in multinational business involvement (exporting, licensing, contractual arrangements, turnkey projects, joint ventures, consortia); technology transfer, location and ownership strategies: competitive multinational relationships. Emphasis on pragmatic analysis, using case studies.

**MGPO 434 Topics in Policy.**
(3) This is a specialized course covering an advanced topic in strategy and organization.

**MGPO 440 Strategies for Sustainability.**
(3) This course explores the relationship between economic activity, management, and the natural environment. Using readings, discussions and cases, the course will explore the challenges that the goal of sustainable development poses for our existing notions of economic goals, production and consumption practices and the management of organizations.

**MGPO 445 Industry Analysis & Competitive Strategy.**
(3) (Restriction: Open to U3 students only.) Analysis of industry structure, macro-environment, and evolution. Evaluation of strategic position, behaviour, and intent of organizations within industry context. Development of strategic recommendations for these firms.

**MGPO 450 Ethics in Management.**
(3) (Restriction: U2 and U3 students only.) An examination of the economic, legal and ethical responsibilities of managers in both private and public organizations. Through readings, case studies, discussions and projects the class evaluates alternative ethical systems and norms of behaviour and draws conclusions as to the right, proper and just decisions and actions in the face of moral dilemmas. The focus of this course is on the decision process, values and consistency of values of the individual and on the impact of systems control and incentives on managerial morality.

**MGPO 460 Managing Innovation.**
(3) Firms face difficulties in developing new products. This course examines the new product development process to understand why problems occur and what managers can do. Topics include the creative synthesis of market and technology; the coordination of functions; and the strategic connection between the project and the strategy.

**MGPO 468 Managing Organizational Politics.**
(3) Power and politics can be mechanisms of control that maintain the status quo or they can be used as a force for change. Students learn how to recognize politics and use power. There is also a strong focus on the ethical implications.

**MGPO 469 Managing Globalization.**
(3) (Recommended: MGCR 423) This course exposes students to global competition. Many critical questions will be explored, such as: why do industries globalize? how do firms expand and grow internationally? what are strategies that firms can use to compete internationally? Many industries will be covered, such as: telecommunications, airlines, footwear, and automobiles.

**MGPO 470 Strategy and Organization.**
(3) This course explores how strategic change affects the organization and how the organization can be designed to realize its strategy more effectively. It will examine how strategic choices affect organizational structures, processes, culture, human resource policies, leadership styles, etc. and how the organization can be aligned with the organizational mission.

**MGPO 475 Strategies for Developing Countries.**
(3) Strategic management challenges in developing and emerging economies. Focus on strategies that foster both firm competitiveness and economic development, including: technological capabilities, new forms of organization, small and large firms, global production, social impact, global standards and governance.

**MGPO 562 Seminar in Organizational Strategy.**
(3) (Restriction: U3 standing or permission of the instructor) Participants study concepts of strategy, including: positioning the organization within its environment; evaluating the organization's capabilities in relation to its competitive market environment; and dealing with environmental discontinuities. Participants will be encouraged to introduce original materials and ideas to complement materials assigned by the instructor.

**MGPO 567 Business in Society.**
(3) (Restriction: U2 and U3 students only) Examines different ideologies; business ethics and values; the corporation and its constituencies; the social impact of corporate decisions. The focus of this course is on the interaction between business organizations and society and on incorporating social impact analysis into strategic management.

**MGSC-Management Science**

**MGSC 601 Management of Technology in Manufacturing.**
(3) This course discusses the latest developments in manufacturing technology and manufacturing planning, and examines issues in manufacturing management. Lectures and cases emphasize both the understanding of technology as well as operational and planning issues in effective utilization of technology. With this as a framework the course deals with appropriate technology (conventional and automated) and its evaluation, development and implementation process, manufacturing planning and design, design for manufacturability.
and the engineering/manufacturing interface. The course will present in detail operational issues related to management (design and control) of automated systems.

**MGSC 602 Manufacturing Strategy.**
(3) A review of the basic framework of competitive strategies, and the role of manufacturing in the elaboration of the firm's overall strategy. Specific manufacturing determinants of competitiveness include: technology, processes, integration, manufacturing-marketing-design interface, location, product mix, cost, quality and timeliness.

**MGSC 603 Logistics Management.**
(3) (Prerequisite (Undergraduate): MGSC 472) The management of the logistics functions in a manufacturing firm. Internal logistics includes the design and operation of a production-distribution system, with emphasis on the management of supply chains in global manufacturing companies. External logistics includes an analysis of the prevailing sourcing strategies and alternative means of customer satisfaction. Important tools such as forecasting techniques and information technology are also covered.

**MGSC 605 Total Quality Management.**
(3) (Prerequisite (Undergraduate): MGCR 272 or MGCR 274) The topics include: Top Management Commitment, Leadership Style, Bench Marking, Employee involvement, Human Resource Utilization, Employee Motivation, Quality Function Deployment, Statistical Techniques for Quality Improvement including the seven tools of quality and statistical process control. New topics of ISO9000, Just-in-Time, “Kaizen” and Return-of Quality are also discussed. Students are encouraged to do industry projects on TQM.

**MGSC 608 Data Decisions and Models.**
(3) The goal is to evaluate quantitative information and to make sound decisions in complex situations. The course provides a foundation for various models of uncertainty. Techniques for interpreting data and many decision making approaches in both deterministic and stochastic environments.

**MGSC 615 The Internet and Manufacturing.**
(3) Emergent concepts in the field of electronic commerce.

**MGSC 631 Analysis: Production Operations.**
(3) (Prerequisite (Undergraduate): MGCR 472) This course presents a framework for design and control of modern production and inventory systems, and bridges the gap between theory and practice of production and inventory management. The course develops analytical concepts in the area and highlights their applications in manufacturing industry. The course is divided into three segments. The first segment looks at the production planning process and discusses in detail the resource allocation issues. The second segment deals with analysis and operation of inventory systems. The third segment integrates production planning and inventory control and looks at various integrated models for determining replenishment quantities and production lots.

**MGSC 632 Sample Survey Methods and Analysis.**
(3) (Prerequisite (Undergraduate): MGCR 272 or MGCR 274) Practical aspects of study design, including design strategies, measurement, scaling and sampling methods. Collection of data, survey methods, survey instruments, observation and experimentation. Analysis of survey data based on simple random, pps, stratified, systematic, cluster and multistage samples. Estimation methods, including ratio, regression and difference methods, methods for population size and for complex survey designs.

**MGSC 671 Statistics for Business Decisions.**
(3) (Prerequisite (Undergraduate): MGCR 272 or MGCR 274) Theory, methods of linear statistical models, application to management. Simple, multiple, polynomial regression; matrix approach to regression; diagnostics and remedial measures; indicator variables; model selection, including stepwise regression; autocorrelation, one-and two-factor ANOVA, analysis of covariance; selected topics in experimental design and generalized linear models as time permits. Extensive use of Minitab.

**MGSC 675 Applied Time Series Analysis Managerial Forecasting.**
(3) (Prerequisite (Undergraduate): MGCR 272 or MGCR 274) Management applications of time series analysis. Starting with ratio-to-moving average methods, the course deals successively with Census 2, exponential smoothing methods, the methodology introduced by Box and Jenkins, spectral analysis and time-series regression techniques. Computational aspects and applications of the methodology are emphasized.

**MGSC 676 Applied Multivariate Data Analysis.**
(3) (Prerequisite (Undergraduate): MGCR 272 or MGCR 274) Statistical methods and applications of multivariate data analysis, including: multivariate analysis of variance (MANOVA), multivariate linear regression, principal components, factor analysis, canonical correlation, discrimination and classification, and clustering. The course makes extensive use of the SAS statistical software package.

**MGSC 678 Simulation of Management Systems.**
(3) (Prerequisite (Undergraduate): MGCR 272, MGCR 373) Building simulation models of management systems. Design of simulation experiments and the analysis and implementation of results. Students are expected to design a complete simulation of a real problem using a standard simulation language.

**MGSC 690 Topics in Management Science.**
(3)

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**MRKT-Marketing**

**Offered by:** Management

**MRKT 351 Marketing and Society.**
(3) (Prerequisite: MGCR 352) The social issues and concerns affecting marketing management are examined and the two way relationship between marketing and social change is explored. Particular attention is paid to consumerism, government regulation in marketing, corporate social responsibility, social marketing and marketing role in a conserve society.

**MRKT 353 Channels Management.**
(3) (Prerequisite: MGCR 352) A systems approach to managing channels of distribution, including issues of channel design, channel behaviour, selection, motivation and evaluation of channels members, retailing and wholesaling.

**MRKT 354 Marketing Management 2.**
(3) (Prerequisite: MGCR 352) The decision areas in marketing. Emphasis on the use of marketing theory and concepts in the solution of realistic marketing problems. Decision making in a marketing context using cases, some of which will be
computer assisted, and readings.

MRKT 355 Services Marketing.  
(3) (Prerequisite: MGCR 352) Services are fleeting and involve direct contact between the supplier and the buyer. Inventories disappear every time an aircraft takes off or the night passes for an hotel. Yet services have become the largest sector in modern Western economy and their importance shows every sign of continuing to grow. This course focuses on the key differences between product and services marketing and the skills that are necessary for the services sector.

MRKT 357 Marketing Planning 1.  
(3) (Prerequisites: MRKT 354, MRKT 451, and MRKT 452 (Restriction: Management: U3 students only) Marketing Planning is designed as a capstone to previous marketing courses; Structured approach to developing a marketing plan, proceeding from corporate mission and objectives through to detailed marketing mix programs. Lectures, discussions and cases. A field project provides marketing planning experience.

MRKT 360 Marketing of Technology.  
(3) (Restriction: non-Management students) The analysis, planning, and control of marketing activities in a high technology business environment through the application of a good conceptual framework that is useful in addressing marketing management problems.

MRKT 365 New Products.  
(3) (Prerequisite: MGCR 352) New products will follow the new product introduction process from idea generation to post introduction. It will use ideas developed in marketing, production and policy. It will use cases and projects and will involve a real life new product project. In the average firm today, 40% of sales come from products not being sold five years ago. The ability of the firm to innovate is at the heart of long term success.

MRKT 434 Topics in Marketing 1.  
(3) (Prerequisite: MGCR 352.) (Corequisite: MGCR 272 or equivalent) (Corequisite Current topics in marketing.

MRKT 438 Brand Management.  
(3) (Prerequisite: MGCR 352) Looks at the decisions a brand manager in a major consumer goods company takes. It examines, in particular, the breakdown of advertising and sales promotion expenditures. It looks at the short term nature of the decisions taken. It will concentrate on the vast amount of new information available to brand managers today, especially in the form of scanner data.

MRKT 451 Marketing Research.  
(3) (Prerequisite: MGCR 352.) (Corequisite: MGCR 272) Theoretical techniques and procedures common in marketing research. Topics include: research design, sampling, questionnaire design, coding, tabulating, data analysis (including statistical techniques). Specialized topics may encompass advertising, motivation and product research; forecasting and location theory.

MRKT 452 Consumer Behaviour.  
(3) (Prerequisite: MGCR 352) A study of basic factors influencing consumer behaviour. Attention is focused on psychological, sociological and economic variables including motivation, learning, attitude, personality, small groups, social class, demographic factors and culture, to analyze their effects on purchasing behaviour.

MRKT 453 Advertising Management.  
(3) (Prerequisite: MRKT 452) Surveys advertising and promotion in Canadian context. Examines activities as they relate to advertisers, the advertising agency and media.

Stresses advertising by objectives as the approach to developing strategy and tactics. Real examples from current campaigns are the focal point of class discussions.

MRKT 455 Sales Management.  
(3) (Prerequisite: MGCR 352) Responsibilities of the sales manager as they relate to the sales force. These include the selection of process, training alternatives, compensation and incentive plans, supervision and evaluation and budgeting and forecasting. Case studies and discussions of sales force models are used.

MRKT 456 Business to Business Marketing.  
(3) (Prerequisite: MGCR 352) Decision-making and management of the marketing effort in a business to business (b-to-b) context, including the b-to-b marketing system; b-to-b purchasing; researching the b-to-b market; product, price distribution, selling and advertising decisions; strategies for business markets.

MRKT 459 Retail Management.  
(3) (Prerequisite: MGCR 352) Principles and methods of marketing management as applied to retailing, including strategy and tactics: market structure; consumer behaviour; competition; financial management; human resources planning; promotion; presentation; merchandising; operations; pricing; planning and attaining retail profits. Lectures, text material, outside reading, planned retail visiting, cases.

MRKT 461 Advertising Practicum.  
(3) (Corequisite: MRKT 458) Primarily designed as a practical course in measuring advertising effectiveness. Emphasis on understanding the dynamics of persuasion in an advertising context and developing projects focused on specific aspects of campaign strategies. Knowledge of basic techniques of statistical hypothesis testing is essential.

MRKT 483 International Marketing Management.  
(3) (Prerequisites: MGCR 382 and MGCR 352, or permission of instructor) (Formerly MGMT 483) Marketing management considerations of a company seeking to extend beyond its domestic market. Required changes in product, pricing, channel, and communications policies. Attention to international trade and export marketing in the Canadian context.

MRKT 557 Marketing Productivity.  
(3) (Prerequisite (Undergraduate): MRKT 451) (Prerequisite (Graduate): MRKT 658) Assessing the effectiveness of marketing effort (return on marketing), including relevant methodology to assess productivity for better marketing decisions. Topics include: linking internal marketing program metrics (e.g. awareness) to external financial metrics (e.g. ROI), valuation of customers, brands and innovation, global metrics and measures.

ORB-Organizational Behaviour

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Denotes courses taught only in alternate years.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.

Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
communication skills necessary to manage in multicultural organizations. Focus on the relationship between cultural values and communication style as they affect inter and intra cultural communication of managers, personnel and clients of multinational and multicultural organizations.

**ORGB 409 Organizational Research Methods.**
(3) (Prerequisite: MGCR 222 or MGCR 320.) Field research in organizational behaviour.

**ORGB 420 Managing Organizational Teams.**
(3) (Prerequisite: MGCR 222 or permission of Instructor) Theory, research, and applications. Principles of team processes and effectiveness in organizational settings, specifically the theoretical developments and empirical findings of group dynamics and team effectiveness, and practical strategies and skills for successful management of organizational teams.

**ORGB 421 Managing Organizational Change.**
(3) (Prerequisite: MGCR 222 or permission of Instructor) Organizational change theory and techniques are examined with an emphasis on techno-structural interventions such as Quality-of-Work-Life approaches. Through simulations and case-studies, the course explores initiatives in organizational change, primarily in contemporary Canadian organizations. It also includes opportunities for "hands-on" experience in work and organization redesign.

**ORGB 423 Human Resources Management.**
(3) (Prerequisite: MGCR 222) (Requirement for the Institute of Internal Auditors) Issues involved in personnel administration. Topics include: human resource planning, job analysis, recruitment and selection, training and development, performance appraisal, organization development and change, issues in compensation and benefits, and labour-management relations.

**ORGB 424 Employment.**
(3) (Prerequisites: MGCR 320, MGCR 271) Reviews in sequence all aspects of the hiring of employees. Topics covered will include manpower planning, recruiting, selection, placement orientation, retirement and dehiring. Each area will be covered from legal, technical and theoretical perspectives.

**ORGB 426 Human Resource Training and Development.**
(3) (Prerequisite: MGCR 320) Planning, conceptualization, design, implementation and evaluation of training and career development programs. Review of the major techniques in each area. Training and development approached from a systems point of view.

**ORGB 429D1 (3), ORGB 429D2 (3) Organizational Behaviour for Course Counsellors.**
(Prerequisite: MGCR 222) (Students must register for both ORGB 429D1 and ORGB 429D2.) (No credit will be given for this course unless both ORGB 429D1 and ORGB 429D2 are successfully completed in consecutive terms) Examination of behaviour in organizations, coupled with training in teaching methods, to prepare students to team teach a section of MGCR 222. Selection of course counsellors is made toward the end of the preceding winter term. Only students thus selected will be permitted to register for this course.

**ORGB 434 Advanced Topics in Organizational Behaviour.**
(3) (Prerequisite: MGCR 222) This is an advanced course for students with a special interest in Organizational Behaviour. Topics will be selected from current issues or themes in literature.

**ORGB 435 Women as Global Leaders and Managers.**
(3) (Prerequisite: MGCR 222) Women are assuming leadership roles in many fields heretofore almost exclusively led by men.

Yet even in the 1990s, less than 5% of international managers are women and less than 3% of international business cases portray women in leadership roles. This seminar will review the major trends affecting women's power and influence in society in general and in organizations in particular. Participants will develop the vision, skills, and competencies needed for global leadership.

**ORGB 525 Compensation Management.**
(3) (Prerequisite (Undergraduate): MGCR 320) Compensation policies and practices, consistent with motivational theories, are examined. Topics include: design and evaluation of job evaluation systems, salary structures, and performance-based pay; compensation of special employee groups; and current public equity laws. Projects and simulations provide "hands-on" experience in the use of compensation techniques.
Schulich School of Music

MUCO-Composition

Offered by: Music, Theory

MUCO 240D1 (3), MUCO 240D2 (3) Tonal Composition.

(3 hours) (Prerequisites: MUTH 110 and MUTH 111 OR their equivalent.) (Corequisites: MUSP 229 and MUSP 231 AND MUSP 170 and MUSP 171.) (Restriction: Open only to students in Composition) (Students must register for both MUCO 240D1 and MUCO 240D2.) (No credit will be given for this course unless both MUCO 240D1 and MUCO 240D2 are successfully completed in consecutive terms) A writing course based on the stylistic concepts and resources of European music - 1770-1850 - and designed to develop control of factors such as phrase structure, melodic shape, rhythm, linear continuity, economy of means, notation, and basic contrapuntal procedures. Extensive and detailed analysis of characteristic forms.

MUCO 245D1 (2), MUCO 245D2 (2) Composition.

(2 hours) (Prerequisites: MUTH 110 and MUTH 111.) (Corequisites: MUSP 229 and MUSP 231 AND MUSP 170 and MUSP 171.) (Restriction: Open only to students in Composition) (Students must register for both MUCO 245D1 and MUCO 245D2.) (No credit will be given for this courseunless both MUCO 245D1 and MUCO 245D2 are successfully completed in consecutive terms) 20th Century techniques and approaches. Basic dimensions such as pitch, rhythm and timbre, and their inter-relationship at all structural levels. Notation and score preparation. Performance practice. Analysis of selected 20th Century scores. Writing of short pieces for solo instruments and small ensembles, including voice.

MUCO 260 Instruments of the Orchestra.

(2) (2 hours) (Prerequisite: MUTH 111 or equivalent) An introductory study of the instruments of string, woodwind and brass families, elementary acoustics of the instruments. Techniques of playing including embouchure, fingering, bowing, hand-stopping, transposing instruments. Evolution of the instruments, their technique and their music from the 18th century to the present.

MUCO 261 Elementary Orchestration.

(2) (2 hours) (Prerequisite: MUCO 260) Study of traditional orchestration through analysis. Transcription of piano works for small ensembles (string quartet, woodwind quintet, brass quintet). Reduction of orchestral scores for piano.

MUCO 340D1 (3), MUCO 340D2 (3) Composition.

(3 hours) (Prerequisites: MUCO 240 AND MUCO 245 with a "B" standing in each.) (Corequisites: MUSP 329 and MUSP 331) (Students must register for both MUCO 340D1 and MUCO 340D2.) (No credit will be given for this course unless both MUCO 340D1 and MUCO 340D2 are successfully completed in consecutive terms) Free composition.

MUCO 341 Digital Studio Composition 1.

(3) (3 hours lecture-demonstration and 3 hours studio time) (Prerequisites: MUCO 240D1/D2 and MUCO 245D1/D2.) Composition with MIDI, audio recording, digital audio signal processing software and hardware. Creation of small-scale composition studies using technological resources in the context of electroacoustic music. The hands-on activities will include critical listening and evaluation of electronic and computer music repertoire.

MUCO 342 Digital Studio Composition 2.

(3) (3 hours lecture-demonstration and 3 hours studio time) (Prerequisite: MUCO 341) Advanced composition with MIDI, audio recording, digital audio signal processing software and hardware. Creation of complete electroacoustic pieces and/or production of audio media materials.

MUCO 373 Special Topic in Composition 1.

(3) (Prerequisites: MUHL 184, MUHL 185. MUTH 211 or MUCO 240, MUSP 231.) Special topic in composition.

MUCO 374 Special Topic in Composition 2.

(3) (Prerequisites: MUHL 184, MUHL 185. MUTH 211 or MUCO 240, MUSP 231.) Special topic in composition.

MUCO 440D1 (3), MUCO 440D2 (3) Composition.

(2 hours) (Prerequisite: MUCO 340) (Students must register for both MUCO 440D1 and MUCO 440D2.) (No credit will be given for this course unless both MUCO 440D1 and MUCO 440D2 are successfully completed in consecutive terms) Free composition.

MUCO 441 Special Projects: Composition.

(6) (2 hours) (Prerequisite: MUCO 440)

MUCO 441D1 (3), MUCO 441D2 (3) Special Projects: Composition.

(Students must register for both MUCO 441D1 and MUCO 441D2.) (No credit will be given for this course unless both MUCO 441D1 and MUCO 441D2 are successfully completed in consecutive terms) Free composition.

MUCO 460D1 (2), MUCO 460D2 (2) Advanced Orchestration.

(2 hours) (Prerequisites: MUCO 240 and MUCO 261) (Students must register for both MUCO 460D1 and MUCO 460D2.) (No credit will be given for this course unless both MUCO 460D1 and MUCO 460D2 are successfully completed in consecutive terms) A short survey of the history of instrumentation and orchestration. Various orchestration theories and practices used by composers, particularly in the twentieth century. Analysis of orchestration techniques. Major orchestration project to be rehearsed by the McGill Symphony Orchestra. Other projects may be linked to electroacoustic and world music practices.

MUCO 541 Advanced Digital Studio Composition 1.

(3) (Prerequisite: MUCO 342 or permission of the instructor.) Advanced topics in digital studio composition. Aesthetics and poetics of electroacoustic composition. Analytical approaches to this repertoire. Use of digital signal processing and synthesis techniques. Creation of complete pieces incorporating music technology which may include a live performance component.

MUCO 542 Advanced Digital Studio Composition 2.

(3) (Prerequisite: MUCO 541.) Further advanced topics in digital studio composition culminating in a complete large-scale work incorporating music technology, including computer-assisted composition, analysis/resynthesis techniques, and new gestural controllers for live performance of digital musical instruments.

MUCT-Choral Techniques

Offered by: Theory

MUCT 235 Vocal Techniques.

(3) (3 hours and 2 hours lab) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) Development of basic singing skills through group voice lessons, lectures, and Choral Lab performances. Emphasis will be on: text production, breathing, projection, clarity of vowels and consonants, the International Phonetic Alphabet, and definition of voice categories. Simple
diagnostic teaching skills will be developed through observation of group voice lessons.

MUEN 315 Choral Conducting 1.
(3) (3 hours and 2 hours lab) (Prerequisite: MUTH 211, MUSP 229, MUCT 235, MUGT 215 or permission of instructor.) The fundamental skills of choral conducting, including baton technique, score reading, and rehearsal procedures. Conducting materials will be selected from representative choral works.

MUEN 335 Advanced Vocal/Choral Techniques.
(3) (3 hours and 2 hours lab) (Prerequisite: MUCT 235.) Continued exploration of fundamentals of voice development. Emphasis will be on vocal physiology, basic principles of voice pedagogy, children's voices, voice development, the development of choral sounds, and contemporary vocal techniques. Teaching skills will be developed through observation of and participation in group voice lessons.

MUEN 415 Choral Conducting 2.
(3) (3 hours and 2 hours lab) (Prerequisite: MUEN 315.) Advanced techniques of choral conducting with emphasis on expressive gestures and phrasal conducting, interpretation and chironomy of chant, recitative conducting, repertoire selection, score preparation and conducting of choral-instrumental works.

MUEN-Ensemble
Offered by: Performance

MUEN 463 Jazz Vocal Workshop.
(2)

MUEN 468 Ensemble.
(1)

MUEN 470 Jazz Combo.
(1) (1 hour) (Prerequisite: Audition.) (Restriction: Open only to Jazz Performance Majors) A Jazz Improvisation Ensemble of approximately 4 to 9 players.

MUEN 472 Cappella Antica.
(2) (4 hours) (Prerequisite: Audition) An ensemble of 8 to 12 voices specializing in early music. N.B. This ensemble may substitute as a Basic Ensemble in programs that specify Choral Ensemble, with Departmental approval.

MUEN 473 Collegium Musicum.
(2) (4 hours) (Prerequisites: Audition AND MUEN 480 AND a prerequisite or corequisite of MUPP 381. Additional prerequisite for keyboard players: MUPG 372 with a grade of A.) Open to singers and instrumentalists, this ensemble specializes in chamber music primarily of the Baroque era.

MUEN 479 Song Interpretation.
(1) (2 hours) (Prerequisite: Audition) Normally open only to Voice and Piano Performance students. Study of the standard song repertoire with emphasis on the singer and pianist as partners. A public recital will be given at the end of each term.

MUEN 480 Early Music Ensemble.
(1) (Prerequisite: Audition. Prerequisite or corequisite for keyboard players: MUPG 272) An ensemble of 4-6 vocalists and instrumentalists which performs music of the Medieval, Renaissance and Baroque periods.

MUEN 481 Piano Ensemble.
(1) (1 hour) (Prerequisite: Piano Concentration 1 Examination or Audition) Concentration on interpretation and performance of piano duet and two piano repertoire.

MUEN 483 Piano Accompanying.
(1) (2 hours) (Prerequisite: Audition) A limited number of qualified students will be accepted for intensive work in this field. Singers and other instrumentalists will be admitted.

MUEN 484 Studio Accompanying.
(1) (4 hours) (Prerequisite: MUEN 483) Highly qualified accompanists will be assigned to work independently with studio teachers and their students.

MUEN 485 Mixed Ensembles.
(1) (1-2 hours) (Prerequisite: Audition)

MUEN 486 Opera Coaching.
(1) (3-6 hours) (Prerequisite: open to advanced pianists by audition and with the approval of Director of Opera Studies; may be repeated for credit) Supervised playing of Opera McGill scenes and productions; repetiteur and rehearsal pianist responsibilities; playing of performance of operatic scenes.

MUEN 487 Cappella McGill.
(2) (4 hours) (Prerequisite: Audition) (May be taken instead of Choral Ensemble) An ensemble of 16 voices performing challenging repertoire from the Renaissance to the present day. Since the expectation is a level of performance equivalent to a professional chamber ensemble, singers wishing to join this group should have had considerable ensemble experience, and advanced vocal and sight-reading skills.

MUEN 488 Ensemble.
(1)

MUEN 489 Woodwind Ensembles.
(1) (2-3 hours) (Prerequisite: audition)

MUEN 490 McGill Winds.
(2) (4-6 hours) (Prerequisite: audition)

MUEN 491 Brass Ensembles.
(1) (2-3 hours) (Prerequisite: audition)

MUEN 492 Chamber Jazz Ensemble.
(2) (Restriction: Open to Jazz Performance students only.) This ensemble will deal with the extensive repertoire of music which exists for small jazz orchestra (9-13 instruments).

MUEN 493 Choral Ensembles.
(2) (4 hours) (Prerequisite: audition) (Section 01 Chamber Singers: a group of approximately 24 mixed voices which explores the a capella repertoire of all periods as well as works with chamber accompaniment) (Section 02 Concert Choir: an ensemble of approximately 60 voices (S.A.T.B.) which performs the repertoire from all periods appropriate to a group of this size) (Section 03 University Chorus: a mixed chorus of approximately 100 which performs a variety of choral material including both traditional and popular selections) (Section 04 Women’s Chorale: an ensemble of approximately 40 women stressing the fundamentals of singing and ensemble participation) Students enrolling in Choral Ensembles will be assigned to one of the above groups.

MUEN 494 Contemporary Music Ensemble.
(2) (4 hours) (Prerequisite: audition)

MUEN 495 Jazz Ensembles.
(2) (3-4 hours) (Prerequisite: audition)

MUEN 496 Opera Studio.
(4) (3-6 hours) (Prerequisites for B.Mus. (Majors & Honours) & L.Mus.: MUHL 184, MUHL 185, MUTH 110, MUTH 211, MUSP 129, MUSP 131. Other prerequisites for B.Mus. (Majors & Honours) only: MUHL 210, MUHL 211, MUSP 229. Open to Voice Performance students by audition and with practical teacher's approval; open to others by special permission; may be repeated for credit.)

MUEN 497 Orchestral Ensembles.
(2) (6-7 hours) (Prerequisite: audition)

MUEN 498 Percussion Ensembles.
(1) (2-3 hours)

MUEN 499 String Ensembles.
(1) (2-3 hours) (Prerequisite: audition) (Restriction: Guitar...
ensemble is restricted to Performance Majors only) (Section 01 Chamber Music) (Section 02 Bass Ensemble) (Section 03 Guitar Ensemble)

MUEN 596 Opera Repetiteur.
(2) (6 hours) (Restriction: Open by audition to advanced pianists, and to students in conducting, who are interested in training as operatic coaches. Students enrolled for piano instruction at McGill must also have their practical teacher’s approval) Supervised coaching of singers, and playing of scenes and productions; rehearsal pianists and backstage conducting responsibilities.

MUGT-General Music Techniques
Offered by: Theory

MUGT 205 Psychology of Music.
(3)

MUGT 215 Basic Conducting Techniques.
(1) (1 hour) (Prerequisites: MUTH 110, MUTH 111, MUSP 129.) Development of basic manual dexterity and rehearsal skills. Topics include: preparatory posture, establishing tempo, releases, simple duple and triple metre beat patterns, cueing, dynamics, fermata, transposition, terminology, score preparation, and listening.

MUGT 301 Technology and Media for Music Education.
(3) (3 hours) Introduction to the use of microcomputers and electronic music instruments in the music classroom and in individualized instruction. Topics include: computer-assisted instruction, MIDI, sequencing and notation software, hard disk recording, NICT, and object-oriented authoring software.

MUGT 305 Introduction to Music Therapy.
(3) (3 hours) (Prerequisites: MUTH 210 and MUSP 229) Introduction to basic principles and techniques of music therapy. Topics will include: definitions of music therapy; identifying and developing an understanding of the individual’s special needs; simple social, emotional, and physiological therapeutic applications; and music as a motivational tool. Will include limited field observation.

MUGT 355 Music in Early Childhood.
(3) (3 hours) Organized as a laboratory, this course will explore the musical growth and development of children from birth to age six, with topics including heredity and environment, music skills and concept development, affective development, creativity, and musical activities.

(3) (3 hours) (Prerequisite: none) Introduction to techniques for cultivating musical understanding and creativity in children from age 6 to 12. Traditional and contemporary approaches such as Orff, Kodaly, Dalcroze, Montessori, Gordon, and Carabo-Cone, plus relevant research will be examined for underlying principles of musical development. Will include guided field observation.

MUGT 357 Music for Children 2: Philosophy and Techniques.
(3) (3 hours) (Prerequisite: MUGT 356) Continued exploration of techniques for cultivating musical understanding, with emphasis on needs and musical development of older children, and creativity begun in MUGT 356. Will include guided field observation and planning of activity sequences.

MUGT 358 General Music for Adults and Teenagers.
(3) (Prerequisite: MUTH 210 and MUSP 131.)

MUGT 401 Issues in Music Education.
(3)

MUGT 402D1 (3), MUGT 402D2 (3) Principles and Processes of Music Education.
(3 hours and Teaching Lab) (Prerequisites or corequisites: one of MUCT 315, MUGT 356, MUIT 315) (Students must register for both MUGT 402D1 and MUGT 402D2.) (No credit will be given for this course unless both MUGT 402D1 and MUGT 402D2 are successfully completed in consecutive terms) Contemporary musical, social, educational, and psychological foundations of music education as a means of articulating the why, what and how of music education. Descriptive, historical, philosophical and experimental research methodologies will be examined as they relate to music learning and teaching. Participation in field rehearsal lab.

MUGT 403 Selected Topics in Music Education.
(3) (3 hours) (Restriction: Open only to students in Music Education or by permission of instructor) Exploration of a specific issue, topic, or problem in music education through readings of related research and exploration of relevant curriculum materials. Possible topics include: musical attitude and performance anxiety, acquisition of musicianship skills, creativity, musical ability, evaluation, multicultural perspectives on music education.

MUGT 404 Selected Topics in Music Education.
(3) (3 hours) (Restriction: Open only to honours students in Music Education or by permission of instructor)

MUGT 475 Special Project.
(3) (Restriction: Open only to honours students in School Music) A student may engage in an individual research project with the approval of the Departmental Chair and under appropriate supervision.

MUEN 474D1 (1,5), MUEN 474D2 (1,5) Special Project.
(Students must register for both MUEN 474D1 and MUEN 474D2.) (No credit will be given for this course unless both MUEN 474D1 and MUEN 474D2 are successfully completed in consecutive terms) (MUEN 474D1 and MUEN 474D2 together are equivalent to MUGT 475) A student may engage in an individual research project with the approval of the Departmental Chair and under appropriate supervision.

MUHL-Music History and Literature
Offered by: Theory

MUHL 184 History Survey - Medieval, Renaissance, Baroque.
(3) (Corequisites: MUTH 110 and MUSP 129 OR permission of instructor) Representative works from the Carolingian Renaissance to 1750 and their relation to the social and cultural milieu. Basic reference works. Developments in notation, instruments, and performance practice.

MUHL 185 History Survey - Classical, Romantic, 20th-C.
(3) (4 hours) (Corequisites: MUTH 111 and MUSP 131 OR permission of instructor) Historical and stylistic investigation of music and musical life from circa 1750 to the present, i.e., the transition to the Classical period, the period of C.P.E. Bach and the Mannheim, Berlin, and Viennese symphonists, to recent developments, including electronic and music technology.

MUHL 200 Women in Music.
(3) (3 hours) (Prerequisites: MUAR 201 and/or MUAR 211 and/or MUHL 184/185 or permission of the instructor.) Case studies in contributions of selected women to various areas of music (including composition, teaching, performance, and patronage), in Europe and North America, chosen mainly from 19th and 20th centuries. Topics include: women as amateurs and professionals; past restrictions; movement for full acceptance into “musical mainstream” especially during twentieth century.

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Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites.
● Indicates that departmental approval/permission must be obtained by a student prior to registration.
▲ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
❉ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
• Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
MUHL 330 Music and Film.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231.) The modern genre of music for films, and its changing styles (symphonic, jazz, pop compilation) from the silent era to today. Includes study of major film composers in North America and other traditions; analysis of the role of music in cinematic narrative, expression and symbolism.

MUHL 342 History of Electroacoustic Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Restriction: Open to non-music students by permission of instructor) (Normally offered in alternate years) Investigation of the repertoire and techniques of electro-acoustic music and the historical developments at important centers for research and creative activities. The roles of electronic and computer technologies in commercial and concert music are examined.

MUHL 362 Popular Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) History, criticism, and analysis of twentieth-century repertoires of popular music. Detailed examination of special topics. These include genre and style in 1970s rock and soul, history of the Broadway musical, approaches to the transcription of pop music, and/or constructions of race and gender in music video.

MUHL 366 The Era of the Fortepiano.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Survey of the repertoire for keyboard 1750-1850: the instruments, Empfindsamkeit, galant style, London, Paris, Vienna, the Czech school, Haydn, Mozart, Beethoven, sonatas, variations, character pieces, “high” and “low” salon music, virtuosoos and the virtuoso repertoire, Schubert, Chopin, Schumann, Mendelssohn, early Liszt.

MUHL 372 Solo Song Outside Germany and Austria.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Topics in American and European non-German song repertoire from the eighteenth century to the present. Issues discussed may include the role of song in national music culture, art song and folk song, national styles and poetic traditions, text-music relationships, and performance practice.

MUHL 373 Special Topic.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231)

MUHL 374 Special Topic.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231)

MUHL 377 Baroque Opera.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) History of opera from its origins in the musical, literary, and philosophical models available to the Florentine Camerata to the end of the baroque. The development of opera will be studied from the perspective of artistic style and in the light of historical, political, social, and economic conditions.

MUHL 380 Medieval Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Corequisites: MUTH 210 and MUSP 229) ( Normally alternates with MUHL 381) The medieval style - an intensive study of one or more selected topics from the repertoire. Possible subjects include liturgical chant, Notre Dame, the medieval motet, secular developments, and instrumental literature.

MUHL 381 Renaissance Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Corequisites: MUTH 210 and MUSP 229) ( Normally alternates with MUHL 380) Sacred and secular musical genres of the 15th and 16th Centuries. Various phases of imitative practice, cantus firmus and parody techniques. The emergence of homophonic textures in peripheral areas of the repertoire. Selected problems in the fields of theory, bibliography and aesthetics.

MUHL 382 Baroque Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) A detailed examination of several selected areas of Baroque music. Topics will be drawn from different geographical regions (e.g., Italy, France, Germany, etc.) and encompass church, chamber and theatre music, as well as performance practice. Each topic will be related to general musical developments of the period.

MUHL 383 Classical Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) The period covered will be from approximately 1740-1828, from the schools of the Italian keyboard composers, opera buffa and seria, and composers centered at Mannheim, Paris, London, Berlin and Vienna, through the Viennese Classic period of Haydn, Mozart and Beethoven, to the death of Schubert.

MUHL 384 Romantic Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) The Romantic style as traced by an analysis of works by the major composers of Lied, symphony, symphonic poem, chamber music, and opera.

MUHL 385 Early Twentieth-Century Music.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Development of European, Russian, and American music from the 1890s until the early 1940s, tracing its roots in late 19th-century Romanticism and following its evolution in central Europe, France, and the United States. The music of major innovators such as Debussy, Stravinsky, Schoenberg, Ives, and Varèse will be discussed.

MUHL 386 Chamber Music Literature.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) The course will concentrate on the forms and media for chamber ensembles during the 18th, 19th and 20th centuries: accompanied sonatas, duos, trios, quartets, quintets, sexets, divertimenti, and works for small chamber orchestra. Major works of the most representative composers will be discussed.

MUHL 387 Opera from Mozart to Puccini.

MUHL 388 Twentieth-Century Opera.
(3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Major early
twentieth-century works by Debussy, Strauss, Schreker, Bartók, Stravinsky and Schoenberg. Opera in Europe between the Wars including operas of Berg, Milhaud, Krenek, Hindemith and Weill. Politics, sociology, and literature in relationship to musical style. Approaches since 1945 in selected works by Britten, Henze, Zimmermann, Ligeti, Somers and Glass.

MUHL 389 Orchestral Literature. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Study of the literature for orchestra alone, composed since the early 18th Century. The material will be divided as follows: 1) orchestral music to the time of Beethoven; 2) orchestral music from 1800 to 1860; 3) orchestral music from 1860 to 1900; 4) orchestral music of the 20th Century.

MUHL 390 The German Lied. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Survey of the German Lied from the late eighteenth to the early twentieth century, focusing on songs and song cycles by Schubert, Schumann, Brahms, Wolf, Mahler, Schoenberg, Berg, and Webern. Topics include text, musical form and text-music relationships, melodic style and harmonic organization, accompaniment, and performance practice.

MUHL 391 Canadian Music. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Survey of music in Canada from the 16th Century to the present. Current musical organizations and institutions, and contemporary Canadian music will be stressed. Time permitting, brief reference will be made to the folk music of indigenous and immigrant groups.

MUHL 392 Music since 1945. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Appearance and evolution of such post-war phenomena as total serialism, "chance" music of various kinds, and electronic music as seen in major figures such as Boulez, Stockhausen, Cage and others in Europe and the United States. Important developments during the 1960. Rise of "minimalism" and "neo-Romanticism" during the 1970s and 80s.

MUHL 393 History of Jazz. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Prerequisite for Jazz Performance Majors: permission of instructor) The evolution of jazz from its origins to the present day. The course centers upon musical issues and will include careful analysis of style based upon recordings, live performances and transcriptions. Ragtime, blues, the Twenties, big-band, swing, bebop, cool, third stream, hard bop and free jazz will be explored.

MUHL 395 Keyboard Literature before 1750. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) The solo repertoire for organ, harpsichord, and clavicord from 1400 to 1750: intabulation, cantus firmus treatment, indigenous keyboard genres, German organ literature, French harpsichord repertoire.

MUHL 396 Era of the Modern Piano. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Study of keyboard repertoire from 1850 to the present: instruments, the crisis at mid-century, character pieces, Brahms, late Liszt, national schools, commercialization - the concert hall, music for the bourgeois - salon music, Scriabin, the Second Viennese School, Impressionism, Neo-Classicism, Neo-Romanticism, serialism, the sonata in the 20th-century, North American composers.

MUHL 397 Choral Literature after 1750. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) The development of sacred and secular choral music from 1750 to the present. Selected liturgical and secular works will be included; the Mass, the cantata, the oratorio and other genres. Form and stylistic considerations will be examined in representative works.

MUHL 398 Wind Ensemble Literature after 1750. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Study of wind ensemble music from Handel to Xenakis as it evolved under the influences of changing musical taste and technological advance. Topics include wind chamber music, music of the French Revolution, the 19th-century military band and the development of school, college and professional bands since 1900.

MUHL 475 Special Project. (3) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) For details contact the Department of Theory.

MUHL 475D1 (1.5), MUHL 475D2 (1.5) Special Project. (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Students must register for both MUHL 475D1 and MUHL 475D2) (No credit will be given for this course unless both MUHL 475D1 and MUHL 475D2 are successfully completed in consecutive terms) (MUHL 475D1 and MUHL 475D2 together are equivalent to MUHL 475) For details contact the Department of Theory.

MUHL 475N1 Special Project. (1.5) (Prerequisite: MUHL 475N1) (No credit will be given for this course unless both MUHL 475N1 and MUHL 475N2 are successfully completed in the same calendar year) (MUHL 475N1 and MUHL 475N2 together are equivalent to MUHL 475) For details contact the Department of Theory.

MUHL 475N2 Special Project. (1.5) (Prerequisite: MUHL 475N1) (No credit will be given for this course unless both MUHL 475N1 and MUHL 475N2 are successfully completed in the same calendar year) (MUHL 475N1 and MUHL 475N2 together are equivalent to MUHL 475) See MUHL 475N1 for course description.

MUHL 529 Proseminar in Musicology. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Prerequisite: open to all students in a Major or Honours program in Music History, and to students in other programs by permission of instructor) (Normally alternates with MUHL 591) Study of selected methodologies in musicology through critical examination of significant texts. Topics may include approaches to historiography, biography, editing and source studies, as well as aesthetics, literary criticism, semiology, feminist musicology, and ideology critique. Works by Adler, Adorno, Dahlhaus, Kerman, McClary, Meyer, Nattiez, and Subotnik, among others, will be addressed.

MUHL 570 Research Methods in Music. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231. Additional prerequisite: one MUHL or MUPP course at the 300 level or higher, or permission of instructor.) Survey and critical evaluation of research- and performance-related tools: composers’ collected editions, monuments of music,
bibliographies of music and music literature, discographies, directories, and databases. Topics will include: developing bibliographies, structuring written arguments, assessing academic and popular writings about music, and understanding the task of the music editor.

MUIN 591D1 (1.5), MUHL 591D2 (1.5) Paleography.
(1 hour) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Restriction: U3 honours students in History) (Normally alternates with MUHL 529) (Students must register for both MUHL 591D1 and MUHL 591D2). (No credit will be given for this course unless both MUHL 591D1 and MUHL 591D2 are successfully completed in consecutive terms) The theory and practice of musical transcription for the period 1100 to 1600. Black modal notation, Franconian notation, French and Italian Ars Nova notation, Mannerism, white mensural notation, proportions, and lute and keyboard tablatures will be studied.

MUIN-Practical Instrument
Offered by: Performance
MUIN 110 Elective Practical Instruction 1.
(2)
MUIN 111 Elective Practical Instruction 2.
(2)
MUIN 120 Practical Instruction 1.
(2) (1 hour) (Prerequisite: Admission to the B.Mus. program by audition) (Restriction: Open to students entering directly from High Schools outside Quebec.)
MUIN 121 Practical Instruction 2.
(2) (1 hour) (Prerequisite: MUIN 120) (Restriction: Open to transfer students and high school students entering directly from outside Quebec.)
MUIN 130 Performance Practical Instruction 1.
(4) (1 hour) (Prerequisite: Admission to the B.Mus.)(Performance program by audition) (Restriction: Open to students entering directly from high school outside Quebec.)
MUIN 131 Performance Practical Instruction 2.
(4) (1 hour) (Prerequisite: MUIN 130) (Restriction: Open to transfer students and high school students entering directly from outside Quebec.)
MUIN 180 Flute Doubling Proficiency Test.
(0)
MUIN 181 Clarinet Doubling Proficiency Test.
(0)
MUIN 182 Sax Doubling Proficiency Test.
(0)
MUIN 210 Elective Practical Instruction 3.
(2)
MUIN 211 Elective Practical Instruction 4.
(2)
MUIN 220 Practical Instruction 3.
(2) (1 hour) (Prerequisite: MUIN 121)
MUIN 221 Practical Instruction 4.
(2) (1 hour) (Prerequisite: MUIN 220).
MUIN 222 Concentration 1 Examination.
(0).
MUIN 230 Performance Practical Instruction 3.
(4) (1 hour) (Prerequisite: MUIN 131)
MUIN 231 Performance Practical Instruction 4.
(4) (1 hour) (Prerequisite: MUIN 230)
MUIN 232 Performance 1 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 250 L.Mus. Practical Instruction 1.
(8) (1 hour) (Prerequisite: Admission to the L.Mus. program by audition)
MUIN 251 L.Mus. Practical Instruction 2.
(8) (1 hour) (Prerequisite: MUIN 250).
MUIN 252 L.Mus. Performance 1 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 300 Vocal Repertoire Coaching 1.
(2)
MUIN 301 Vocal Repertoire Coaching 2.
(2)
MUIN 310 Elective Practical Instruction 5.
(2)
MUIN 311 Elective Practical Instruction 6.
(2)
MUIN 320 Practical Instruction 5.
(2) (1 hour) (Prerequisite: MUIN 221)
MUIN 321 Practical Instruction 6.
(2) (1 hour) (Prerequisite: MUIN 320).
MUIN 322 Concentration 2 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 330 Performance Practical Instruction 5.
(4) (1 hour) (Prerequisite: MUIN 231)
MUIN 331 Performance Practical Instruction 6.
(4) (1 hour) (Prerequisite: MUIN 330).
MUIN 332 Performance 2 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 333 Piano Techniques 2.
(0) (pass/fail) (Mandatory test for pianists to be taken prior to the Performance 2 Exam.)
MUIN 340 Honours Practical Instruction 5.
(4) (1 hour) (Prerequisite: MUIN 231)
MUIN 341 Honours Practical Instruction 6.
(4) (1 hour) (Prerequisite: MUIN 340).
MUIN 342 Honours Performance 2 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 350 L.Mus. Practical Instruction 3.
(8) (1 hour) (Prerequisite: MUIN 251)
MUIN 351 LMus Practical Instruction 4.
(8) (1 hour) (Prerequisite: MUIN 350).
MUIN 352 L.Mus. Performance 2 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)
MUIN 369 Concerto.
(0) (pass/fail) (Mandatory test for pianists)
MUIN 430 Performance Practical Instruction 7.
(4) (1 hour) (Prerequisite: MUIN 331)
MUIN 431 Performance Practical Instruction 8.
(4) (1 hour) (Prerequisite: MUIN 430).
MUIN 432 Performance 3 Examination.
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)

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Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.
▲ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
● Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
‡ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

2006-2007 Undergraduate Programs Calendar, McGill University
Chapter of the University Calendar.) .

MUIN 433 Piano Techniques 3.  
(0) (pass/fail) (Mandatory test for pianists to be taken prior to the Performance 3 Exam.)

MUIN 440 Honours Practical Instruction 7.  
(4) (1 hour) (Prerequisite: MUIN 341)

MUIN 441 Honours Practical Instruction 8.  
(4) (1 hour) (Prerequisite: MUIN 440) .

MUIN 442 Honours Performance 3 Examination.  
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.) .

MUIN 450 L.Mus. Practical Instruction 5.  
(8) (1 hour) (Prerequisite: MUIN 351)

(8) (1 hour) (Prerequisite: MUIN 450) .

MUIN 452 L.Mus. Performance 3 Examination.  
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)

MUIN 460 Artist Diploma Practical Instruction 1.  
(8) (1.5 hours) (Prerequisite: admission to the Artist Diploma program by audition.)

MUIN 461 Artist Diploma Practical Instruction 2.  
(8) (1.5 hours) (Prerequisite: MUIN 460) .

MUIN 462 Artist Diploma Recital 1.  
(0) (Note: Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)

MUIN 469 Artist Diploma Concerto 1.  
(1) (Prerequisite: MUIN 460)

MUIN 560 Artist Diploma Practical Instruction 3.  
(8) (1.5 hours) (Prerequisite: MUIN 461)

MUIN 561 Artist Diploma Practical Instruction 4.  
(8) (1.5 hours) (Prerequisite: MUIN 560) .

MUIN 562 Artist Diploma Recital 2.  
(0) (Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.)

MUIN 563 Artist Diploma Recital 3.  
(0) (Complete descriptions are to be found under Examinations and Goals in Practical Subjects in the Music Chapter of the University Calendar.) (Restriction: Not open to students who have taken MUIN 562 prior to 200509.) .

MUIN 569 Artist Diploma Concerto 2.  
(1) (Prerequisite: MUIN 469)

MUIT-Instrumental Techniques
Offered by: Theory

MUIT 201 String Techniques.  
(3) (3 hours and 2 hours lab) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) The fundamental techniques in performance of four common stringed instruments, i.e., violin, viola, cello, and bass. Principles of sound production on stringed instruments, historical development of the strings, purchase of new and used instruments, maintenance and repairs, teaching procedures and reference materials.

MUIT 202 Woodwind Techniques.  
(3) (3 hours and 2 hours lab) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) The fundamental techniques in performance of five common woodwind instruments, i.e., clarinet, flute, oboe, bassoon, and saxophone. Principles of sound production, historical development of the woodwinds, purchase of new and used instruments, maintenance and repairs, teaching procedures and reference materials.

MUIT 203 Brass Techniques.  
(3) (3 hours and 2 hours lab) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) The fundamental techniques in performance of five common brass instruments, i.e., trumpet, horn, trombone, baritone, and tuba. Principles of sound production, historical development of the brass, purchase of new and used instruments, maintenance and repairs, teaching procedures and reference materials.

MUIT 204 Percussion Techniques.  
(3) (3 hours and 2 hours lab) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) The fundamental techniques in performance of percussion instruments commonly in use in symphonic bands and orchestras. Principles of sound production, historical development of the percussion, purchase of new and used instruments, maintenance and repairs, teaching procedures and reference materials.

MUIT 250 Guitar Techniques.  
(3) (3 hours) (Corequisites: MUTH 110 or MUTH 111 AND MUSP 129 or MUSP 131 AND MUHL 184 or MUHL 185.) The fundamental techniques in guitar performance. Basic principles of beginning and intermediate pedagogy, sound production, historical development of the instrument, purchase of new and used instruments, maintenance and repair, and teaching materials and repertoire for solo and ensemble performance.

MUIT 302 Advanced Wind Techniques.  
(3) (3 hours and 2 hours lab) (Prerequisites: MUIT 202, MUIT 203.) Continued exploration of brass and woodwind pedagogy. Methods for developing technique and musical sensitivity in beginning and intermediate performers will be explored through in-depth study of heterogeneous and homogeneous instrumental methods. Skill on secondary instruments and diagnostic and prescriptive teaching abilities will be expanded through Lab performances and individual coaching projects.

MUIT 315 Instrumental Conducting.  
(3) (3 hours and 2 hours lab) (Prerequisites: MUTH 211, MUSP 229, MUGT 215, MUIT 201 or MUIT 250, MUIT 202, MUIT 203, MUIT 204.) (Restriction: Open to non-music education students with permission of instructor.) The fundamental skills of instrumental conducting, including baton technique, score analysis, and rehearsal procedures; conducting materials are selected from representative orchestral works.

MUIT 356 Jazz Instruction: Philosophy and Techniques.  
(3) (3 hours) (Prerequisites: MUIT 202, MUIT 203, MUIT 204. May be taken by Jazz Performance students with approval of instructor.) Introduction to techniques for the development of school and community-based jazz programs. Topics will include: philosophy of jazz instruction, rhythm section, musical materials, techniques to develop improvisation and aural skills, jazz styles, score preparation, rehearsal techniques, and administration of jazz programs. Will include observation of rehearsals and coaching opportunities.

MUIT 415 Advanced Instrumental Conducting.  
(3) (3 hours and 2 hours lab) (Prerequisites: MUIT 202, MUIT 203, MUIT 204.) Advanced techniques of instrumental conducting with emphasis on interpretation, score preparation and
MUJZ-Jazz Studies
Offered by: Performance

MUJZ 160 Jazz Materials 1.
(3) (4 hours) (Prerequisite: none. Open to non-jazz majors, space permitting, but not for elective credit in B.Mus. or Artist Diploma programs) Fundamental aural and theoretical skills associated with the jazz idiom. Nomenclature, chord construction, chord/scale relationships, harmonic progression, circle of 5ths, simple turnarounds, simple substitution, symmetrical scales and chord relationships, voice leading.

MUJZ 161 Jazz Materials 2.
(3) (4 hours) (Prerequisite: MUJZ 160. Open to non-jazz majors, space permitting, but not for elective credit in B.Mus. or Artist Diploma programs) Simple and advanced substitution, borrowed chords, reharmonisation, modes of harmonic minor and melodic minor diatonic systems, unresolved tensions, odd and infrequent modulations, mixed two-five-ones, introduction to polychords, slashchords and non-functional harmony.

MUJZ 170 Jazz Keyboard Proficiency 1.
(1) (1 hour) (Prerequisite: none. Open only to Jazz Performance Majors. May not be taken for elective credit in B.Mus. or Artist Diploma programs) Basic piano skills, basic comping techniques, standard 3 note rootless voicings in 7, 3 and 3, 7 position with one extension, two-five-ones in major and minor - limited keys. Simple substitution and reharmonisation.

MUJZ 171 Jazz Keyboard Proficiency 2.
(1) (1 hour) (Prerequisite: MUJZ 170. Open only to Jazz Performance Majors. May not be taken for elective credit in B.Mus. or Artist Diploma programs) Continuation of previous semester. Two-five-ones and mixed two-five-ones using 4 note close position voicings and 4 and 5 note spreads, in all keys, diminished passing chords, half step shifts, voice leading extensions, quartal and modal voicing, sight reading of standard jazz repertoire.

MUJZ 222 Jazz Improvisation/Musicianship 1.
(3) (3 hours) (Prerequisite: none.) (Restriction: Open only to Jazz Performance Majors) Basic improvisational concepts with emphasis on time feel, phrasing, articulation, melodic development, voice leading, harmonic control and stylistic nuance. Memorization and aural recognition of standard jazz repertoire also stressed. The aural tradition of the music is emphasized through rhythmic/melodic dictation.

MUJZ 224 Jazz Improvisation/Musicianship 2.
(3) (3 hours) (Prerequisite: MUJZ 222.) (Restriction: Open only to Jazz Performance Majors) Continuation of Jazz Improvisation/Musicianship MUJZ 223.

MUJZ 261 Jazz Arranging.
(6) (3 hours) (Corequisite: MUJZ 223) (Restriction: Open only to Jazz Performance Majors) Introduction to concepts and techniques commonly used in jazz arranging. Notation, calligraphy and score preparation are discussed; class lectures include study of classic and contemporary scores by prominent jazz arrangers. Student writing projects for ensembles ranging from two horns to full jazz ensemble are recorded and discussed in class.

MUJZ 261D1 (3), MUJZ 261D2 (3) Jazz Arranging.
(Students must register for both MUJZ 261D1 and MUJZ 261D2.) (No credit will be given for this course unless both MUJZ 261D1 and MUJZ 261D2 are successfully completed in consecutive terms) (MUJZ 261D1 and MUJZ 261D2 together are equivalent to MUJZ 261) Introduction to concepts and techniques commonly used in jazz arranging. Notation, calligraphy and score preparation are discussed; class lectures include study of classic and contemporary scores by prominent jazz arrangers. Student writing projects for ensembles ranging from two horns to full jazz ensemble are recorded and discussed in class.

MUJZ 261N1 Jazz Arranging.
(3) (Students must also register for MUJZ 261N2) (No credit will be given for this course unless both MUJZ 261N1 and MUJZ 261N2 are successfully completed in a twelve month period) (MUJZ 261N1 and MUJZ 261N2 together are equivalent to MUJZ 261) Introduction to concepts and techniques commonly used in jazz arranging. Notation, calligraphy and score preparation are discussed; class lectures include study of classic and contemporary scores by prominent jazz arrangers. Student writing projects for ensembles ranging from two horns to full jazz ensemble are recorded and discussed in class.

MUJZ 261N2 Jazz Arranging.
(3) (Prerequisite: MUJZ 261N1) (No credit will be given for this course unless both MUJZ 261N1 and MUJZ 261N2 are successfully completed in a twelve month period) (MUJZ 261N1 and MUJZ 261N2 together are equivalent to MUJZ 261) See MUJZ 261N1 for course description.

MUJZ 340 Jazz Composition.
(6) (3 hours) (Prerequisites: MUJZ 224 and MUJZ 261.) (Restriction: Open only to Jazz Performance Majors) A writing course based on the stylistic concepts of leading jazz composers. Development of a personal and creative compositional style and of control of factors such as: rhythmic, harmonic, and melodic continuity, vertical modal, and linear modal harmony, polychordal techniques, and non-functional harmonic concepts. Analysis and discussion of selected compositions.

MUJZ 340D1 (3), MUJZ 340D2 (3) Jazz Composition.
(Students must register for both MUJZ 340D1 and MUJZ 340D2.) (No credit will be given for this course unless both MUJZ 340D1 and MUJZ 340D2 are successfully completed in consecutive terms) (MUJZ 340D1 and MUJZ 340D2 together are equivalent to MUJZ 340) A writing course based on the stylistic concepts of leading jazz composers. Development of a personal and creative compositional style and of control of factors such as: rhythmic, harmonic, and melodic continuity, vertical modal, and linear modal harmony, polychordal techniques, and non-functional harmonic concepts. Analysis and discussion of selected compositions.

MUJZ 356 Jazz Pedagogy.
(3) (3 hours) (Prerequisites: MUHL 393 and MUJZ 224.) (Restriction: Open only to Jazz Performance Majors) Techniques for development of school, community-based and post-secondary jazz programs. Topics include: philosophy of jazz instruction, curriculum development, rhythm section, musical materials, techniques to develop improvisation and aural skills, jazz styles, idiomatic instrumental techniques, score preparation, rehearsal techniques and administration of jazz programs. May include coaching opportunities.

MUJZ 423 Jazz Improvisation/Musicianship 3.
(3) (3 hours) (Prerequisite: MUJZ 224.) (Corequisite: MUJZ 340.) (Restriction: Open only to Jazz Performance Majors) Refinement of improvisational concepts in conjunction with ear training, leading towards the establishment of a personal style of playing. Complex forms and harmonies, and contemporary
MUMT 201 Introduction to Music Technologies.  
(3) (Prerequisite: none) (Restriction: Not open to students in the following programs: B.Mus. Honours in Music Technology; B.Mus. Minor in Music Technology; B.A. Minor Concentration in Music Technology; B.Sc. Minor in Music Technology) A general introduction to the history and techniques of music technology to include: synthesis, MIDI, sequencing, sampling, digital audio, music and audio for the Internet, sound recording, interactive music systems, and notation systems.

MUMT 202 Fundamentals of New Media.  
(3) (Prerequisites: none) (Restriction: Open only to students in Music Technology, including those in Minor Programs, and students in Sound Recording, and Composition) Combining theory and practice, the course covers the areas of MIDI, sound/image/MIDI sequencing, sampling, mixing, soundfile processing and editing, elementary music systems programming, and use of the Internet for sound/music/image.

MUMT 203 Introduction to Digital Audio.  
(3) (Prerequisite: MUMT 202) An introduction to the theory and practice of digital audio. Topics include: sampling theory; digital sound synthesis methods (additive, subtractive, summation series); sound processing (digital mixing, delay, filters, reverberation, sound localization); software-based samplers; real-time sound processing; interactive audio systems. Hands-on exercises are included.

MUMT 301 Music and the Internet.  
(3) (Prerequisites: MUMT 201 OR MUMT 202) Technologies and resources of the Internet (access tools, data formats and media) and Web authoring (HTML) for musicians; locating, retrieving and working with information; putting information online; tools for music research, music skills development, technology-enhanced learning, music productivity, and promotion of music and musicians. Evaluation of Internet music resources.

MUMT 302 New Media Production 1.  
(3) (Prerequisites: MUMT 201 OR MUMT 202) (Restriction: Not open to students in B.Mus. Honours in Music Technology) Methods and techniques for producing and modifying musical and audiovisual content in new media applications. Media formats: audiovisual sequences (QuickTime), CD-ROMs and interactive CD-ROMs, DVD, surround sound audio. Also covered: software-based synthesis and sampling, techniques for image scanning, audio capture, content manipulation, media compression and format conversion.

MUMT 303 New Media Production 2.  
(3) (Prerequisites: MUMT 201 OR MUMT 202) (Restriction: Not open to students in B.Mus. Honours in Music Technology) A continuation of MUMT 302. Students produce new media objects of increasing complexity and scope, integrating several types of content.

(3) (Prerequisites: MUMT 202 and MUMT 203. Pre-/Co-requisite: COMP 251) Concepts, algorithms, data structures, and programming techniques for the development of music and audio software, ranging from musical instrument design to interactive music performance systems. Student projects will involve the development of various music and audio software applications.

(3) (Prerequisite: MUMT 306) Advanced programming techniques for the development of music and audio software, and system components (plugins), Development of audio and control systems. Advanced data structures, object-oriented programming, optimization of source code for DSP. Debugging techniques. Projects will involve the development of various musical and audio software applications and plugins.

MUMT 402 Advanced Multimedia Development.  
(3) (Prerequisite: MUMT 307) Design, programming, and deployment of music and audio in multimedia production. Topics include: compression and decompression schemes, music and audio support in C++, JAVA, and applications languages. Development of platform independent software for interactive and networked music and audio.

MUMT 475 Special Project.  
(3) (Prerequisite: permission of Dept. of Theory) Undergraduate research project in music technology.

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MUPG 305 Vocal Music Practices.

MUPG 302 Seminar in Piano Pedagogy.

Standard idioms from historical treatises will be introduced. Both MUPG 372D1 and MUPG 372D2 are successfully completed in consecutive terms. Enrolment limited to 4. (Students must register for both MUPG 372D1 and MUPG 372D2.) (No credit will be given for this course unless both MUPG 372D1 and MUPG 372D2 are successfully completed in consecutive terms) Emphasis on classical repertoire (Haydn, Mozart, Beethoven). Practical analysis and score preparation, style, and interpretation. Development of clear and expressive technique. Some practical experience.

MUPG 370 Keyboard Improvisation 1.

(2) (2 hours) (Prerequisites: audition and Piano Major Performance 1 Examination or audition for students in programs other than Performance. Open to all keyboard instruments except Jazz) Development of harmonic skills necessary for simple improvised accompaniment, using classical folk and popular music examples. Left-hand accompaniment in varied metres. Different forms of arpeggiation and left-hand accompaniment. Modal materials. Pedal-point. Free improvisation within simple formal structures. Recordings and published materials used to support individual development.

MUPG 371 Keyboard Improvisation 2.

(2) (2 hours) (Prerequisite: MUPG 370) Free Improvisation within extended formal structures. Assignments based on skills acquired in MUPG 370. Considerations and imitations of various classical periods, jazz, and popular music, with the characteristic forms of each, are the course's main focus. Recordings and published materials used to support individual development.

MUPG 473 Special Project in Performance.

(1) For details, contact the Department of Performance.

MUPG 474 Special Project in Performance.

(2) For details, contact the Department of Performance.

MUPG 475 Special Project in Performance.

(3) For details, contact the Department of Performance.

MUPG 541 Senior Piano Seminar 1.

(2) (3 hours) (Prerequisite(s): MUNI 331 and 4 semesters of MUEN 493) (Restriction: Only open to Faculty of Music Piano Performance students) In-class performance and analysis of solo and ensemble repertoire, including historical and modern recordings.

MUPG 542 Senior Piano Seminar 2.

(2) (3 hours) (Prerequisite: MUPG 541) (Restriction: Only open to Faculty of Music Piano Performance students.) Issues of piano pedagogy and preparation for competitions.

MUPG 315D1 (2), MUPG 315D2 (2) Introduction to Orchestral Conducting.

(2 hours) (Prerequisites: MUTH 211, MUSP 229, MUCO 261, MUGT 215, and permission of instructor) (Students must register for both MUPG 315D1 and MUPG 315D2.) (No credit will be given for this course unless both MUPG 315D1 and MUPG 315D2 are successfully completed in consecutive terms) Emphasis on classical repertoire (Haydn, Mozart, Beethoven). Practical analysis and score preparation, style, and interpretation. Development of clear and expressive technique. Some practical experience.

MUPG-Performance Offered by: Performance

MUPG 100 Life as Professional Musician.

(1) (1 hour) (Prerequisite: none. May not be taken for elective credit in B.Mus. or Artist Diploma programs) An introduction to the responsibilities and skills required of a professional musician; job options, stage presence, rehearsal etiquette, contracts, professional organizations, freelancing, auditions, special health problems, etc.

MUPG 201 Basic Lyric Diction 1.

(1) (2 hours.) (Restriction(s): for voice concentration students, and others with permission of instructor. Not available to vocal performance students.) Practical application of the fundamentals of English, Italian and Latin pronunciation in singing, utilizing the International Phonetic Alphabet in song, opera, oratorio and choral texts.

MUPG 202 Basic Lyric Diction 2.

(1) (Restriction(s): for voice concentration students, and others with permission of instructor. Not available to vocal performance students.) Practical application of the fundamentals of German, French and Spanish pronunciation in singing, utilizing the International Phonetic Alphabet in song, opera, oratorio and choral texts.

MUPG 210 Italian Diction.

(2) (2 hours) (Prerequisite: none) Study of International Phonetic Alphabet. Study of Italian pronunciation in singing using song and opera texts.

MUPG 211 French Diction.

(2) (2 hours) (Prerequisite: MUPG 210) Study of French pronunciation in singing using song and opera texts.

MUPG 212 English Diction.

(2) (2 hours) (Prerequisite: none) Study of International Phonetic Alphabet in singing using song and opera texts with a special emphasis on problematic vowels, diphthongs and consonants.

MUPG 213 German Diction.

(2) (2 hours) (Prerequisite: MUPG 212) Study of German pronunciation in singing using song and opera texts.

MUPG 214 Diction - East European Languages.

(2) (2 hours) Basic rules of pronunciation utilizing the International Phonetic Alphabet.

MUPG 272D1 (2), MUPG 272D2 (2) Continuo.

(2 hours) (Prerequisites: MUTH 111 AND permission of instructor). Enrolment limited to 6. (Students must register for both MUPG 272D1 and MUPG 272D2.) (No credit will be given for this course unless both MUPG 272D1 and MUPG 272D2 are successfully completed in consecutive terms) An historically-oriented study of the principles of figured-bass. The student will realize at sight elementary bass patterns. Standard idioms from historical treatises will be introduced.

MUPG 302 Seminar in Piano Pedagogy.

(1)

MUPG 305 Vocal Music Practices.

(3)
MUPP 384, except by permission of instructor) Issues in performance practice of prenineteenth-century music. Topics may include rhythmic interpretation, voices and instruments in Medieval and Renaissance polyphony, ornamentation, improvisation, performance venues and context. Sources include original notation and modern editions, treatises, iconography, organology, analysis, criticism, and recordings.

MUPP 385: Performance Practice after 1800.
(3) (3 hours) (Enrolment limited to 20) Nineteenth- and twentieth-century performance traditions, as found in a variety of sources (documents, editions, and recordings.) Special attention is given to how traditions change, and how this is reflected in repertoires and among composers in different generations.

MUSP-Musicianship

Offered by: Theory

MUSP 129 Musicianship 1.
(2) (2 hours, plus 2 hours Choral Solfège Lab) (Prerequisite: Admission to the B.Mus. or L.Mus. program through audition and placement tests in Musicianship (including Keyboard Proficiency) and Theory. Open to students from other Faculties with permission of Musicianship Co-ordinator; McGill Conservatory Secondary V or equivalent level in Ear Training. Corequisites: MUTH 110 and MUSP 170) Rhythm (basic duple-triple divisions); Isolated Sonorities (intervals, triads, tonal-modal collections); Instrumental Textures (voice, studied with emphasis on memorization and transposition of diatonic sequences; use of seventh chords in diatonic and chromatic contexts; augmented sixth and Neapolitan sixth chords, pivot chords, enharmonic and common-tone modulation; practical command of orchestral score analysis at the keyboard.

MUSP 129D1 (1), MUSP 129D2 (1) Musicianship 1.
(Students must register for both MUSP 129D1 and MUSP 129D2.) (Prerequisite: Admission to the B.Mus. or L.Mus. program through audition and placement tests in Musicianship (including Keyboard Proficiency) and Theory. Open to students from other Faculties with permission of Musicianship Co-ordinator; McGill Conservatory Secondary V or equivalent level in Ear Training. Corequisites: MUTH 110 and MUSP 170) Rhythm (basic duple-triple divisions); Isolated Sonorities (intervals, triads, tonal-modal collections); non-modulating Tonal Melodic Structures; Score Reading with treble-bass-alto-tenor clefs; Atonal Structures (cells with intervals to fifth excluding tritone); species-counterpoint-like Multipart Structures; Repertoire Building (MUTH 110).

MUSP 129D1 (1), MUSP 129D2 (1) Musicianship 1.
(2) (2 hours, plus 2 hours Choral Solfège Lab) (Prerequisite: Admission to the B.Mus. or L.Mus. program through audition and placement tests in Musicianship (including Keyboard Proficiency) and Theory. Open to students from other Faculties with permission of Musicianship Co-ordinator; McGill Conservatory Secondary V or equivalent level in Ear Training. Corequisites: MUTH 110 and MUSP 170) Rhythm (basic duple-triple divisions); Isolated Sonorities (intervals, triads, tonal-modal collections); non-modulating Tonal Melodic Structures; Score Reading with treble-bass-alto-tenor clefs; Atonal Structures (cells with intervals to fifth excluding tritone); species-counterpoint-like Multipart Structures; Repertoire Building (MUTH 110).

MUSP 131 Musicianship 2.
(2) (2 hours, plus 2 hours Choral Solfège Lab) (Prerequisite: MUSP 129.) (Corequisites: MUTH 111 and MUSP 171) (Students must complete three of five Listening Tasks (one of which must be Tonal Melodic Structures) in the final segments of both MUSP 129 and MUSP 131 before proceeding to the next Musicianship course.) Rhythm (quadruple-mixed divisions); Isolated Sonorities (voiced triads, dominant sevenths); chromatically-embellished modulating Tonal Melodic Structures; Score Reading with treble-bass-alto-tenor clefs; Atonal Structures (cells with intervals to seventh); diatonic Harmonic Progressions; Repertoire Building (MUTH 111).

MUSP 170 Keyboard Proficiency.
(1) (1 hour) (Prerequisite: Admission to the B.Mus. or L.Mus. program through audition and placement tests in Musicianship and Theory) A remedial piano skills course for students who have been admitted to the B.Mus. or L.Mus. program but who were unable to pass the basic Keyboard Proficiency Test administered to all incoming students (with the exception of those students whose principal instrument is keyboard, who are automatically exempt from MUSP 170). The course focuses on preparing students to retake the Test (see Keyboard Proficiency Test).

MUSP 171 Keyboard Lab 1.
(1) (1 hour) (Prerequisite: completion of, or concurrent re-enrolment in, MUSP 170.) (Corequisites: MUTH 111 and MUSP 131.) (Restriction: All students admitted to B.Mus. or L.Mus. programs, including those with keyboard or guitar as their principal instrument, are required to take MUSP 171 Keyboard Lab, unless exempt on the basis of a placement test. Students who are exempt from MUTH 111 through placement tests must still take MUSP 171 (unless exempt) since this course forms the foundation of keyboard-based musicianship tasks at upper levels. (All Majors in Jazz Performance substitute MUJZ 171 for MUSP 171. Students in Jazz Performance who have completed MUJZ 170 and MUJZ 171, and who transfer to a Department of Theory program, will be required to complete MUSP 171.) Students who do not achieve a continuation pass in MUSP 171 must reregister for the course in the semester immediately following. Students who do not achieve a continuation pass after repeating the course will not be allowed to proceed with further Musicianship or Theory studies until a continuation pass is achieved. Tests for MUSP 171 are held in August-September, December-January, and April-May [as well as during the Summer Session when course(s) offered], the exact dates determined by the Department of Theory.) Course contents parallel those of MUTH 111 with emphasis on memorization of diatonic paradigmatic harmonic progressions (prolongational and cadential) and on their combination in phrases; realization of elementary figured bass; additional tasks include harmonization of simple melodies and elementary score reading using treble, bass, and alto clefs (also some tenor clef).

MUSP 172 Keyboard Lab 2.
(1) (Prerequisites: MUSP 131, MUSP 171 and MUTH 111.) (Corequisites: MUSO 172, MUTH 210.) (Course contents parallel those of MUTH 210, MUSP 229.) Keyboard studies with emphasis on memorization and transposition of diatonic sequences; use of seventh chords in diatonic and chromatic contexts; augmented sixth and Neapolitan sixth chords, pivot chords, enharmonic and common-tone modulation; practical command of orchestral score analysis at the keyboard.

MUSP 229 Musicianship 3.
(2) (2 hours) (Prerequisite: MUSP 131.) (Corequisites: MUTH 210 and MUSP 172.) Rhythm (six-, five- and seven-part subdivisions); Isolated Sonorities (triads, dominant, supertonic, leading-tone sevenths); Tonal Melodic Structures tonizing V, III (also vi, v); Score Reading with treble-bass-alto-tenor clefs; Atonal Structures (basic cell combinations); dance-suite Multipart Structures; Harmonic Progressions including sequential paradigms; Repertoire Building (MUTH 210).

MUSP 231 Musicianship 4.
(2) (2 hours, plus Keyboard lab) (Prerequisite: MUSO 172 and MUSP 229.) (Corequisites: MUTH 211) Rhythm (eight-part subdivisions, smaller note values); Isolated Sonorities (applied, neapolitan, augmented sixth chords); Tonal Melodic Structures tonizing related scale-steps; Score Reading with treble-bass-alto-tenor-soprano clefs; Atonal Structures (basic cell combinations); instrumental-texture Multipart Structures; applied chords and tonizations in Harmonic Progression; Repertoire Building (MUTH 211).

MUSP 329 Musicianship 5.
(2) (2 hours) (Prerequisite: MUSP 231.) (Corequisite: MUTH
310 or MUTH 327) Rhythm (mixed divisions, basic polyrhythms); Isolated Sonorities (dominant ninths, thirteenth, diminished sevenths, augmented sixths); chromaticism, mixture, enharmonicism in 19th-century Tonal Melodic Structures; Atonal Structures (extended melodies with basic cells); instrumental-texture Multapart Structures; Harmonic Progression with early-19th-century uses of chromatic chords; Score Reading (19th-century repertoire).

MUSR 331 Musicianship 6.
(2) (2 hours) (Prerequisite: MUSP 329.) (Corequisite: MUSP 311 or MUSP 427) Rhythm (20th-century practices); Isolated Sonorities (trichordal set-classes); chromatically-complex shorter or longer common-practice Tonal Melodic Structures; Atonal Structures (20th-century repertoire items); two-part 20th-century Multapart Structures; Harmonic Progression with late-19th-century chromatic and extended-modulatory paradigms; Score Reading (20th-century repertoire).

MUSR-Sound Recording
Offered by: Theory

MUSC 232 Introduction to Electronics.
(3) (2 hours lecture plus 2 hours laboratory.) (Prerequisite or corequisite: MATH 112. Available as Arts/Science elective in B.Mus. programs.) (Restriction: Not open to students who have taken MUMT 232.) Basics of electricity including: Ohm’s law, electronic components, DC circuits, block diagram, amplifiers, filters, power supplies, electrical measurements (frequency levels, distortion). Emphasis will be placed on electronics applied to audio.

MUSR 300D1 (3), MUSR 300D2 (3) Introduction to Music Recording.
(3 lecture hours plus 4 hours studio time.) (Prerequisite: MUCO 242 or MUCO 341. Prerequisites or corequisites: MUTH 211 and permission of instructor.) (It is recommended that all students taking this course register concurrently for PHYS 224 Physics and Psychophysics of Music if they do not already have a background in this subject.) (Students must register for both MUSR 300D1 and MUSR 300D2.) (No credit will be given for this course unless both MUSR 300D1 and MUSR 300D2 are successfully completed in consecutive terms.) (Restriction: Not open to students who have taken MUMT 300D1/D2.) The theory and practice of music recording including a study of recording environments, equipment and studio techniques. The analysis of music scores and recordings with respect to the requirements and possibilities of the recording studio. Studio work will include recording sessions, recording of live concerts, editing, mixing and music p.a.

MUSR 339 Introduction to Electroacoustics.
(3) (2 hours lecture plus 2 hours laboratory.) (Prerequisite: MUSR 232 (previously MUMT 232). Available as Arts/Science elective in B.Mus. programs.) (Restriction: Not open to students who have taken MUMT 339.) Basic principles of operation and design of electroacoustical devices and systems; transducers and signal processing devices; magnetic tape sound recording - reproducing systems; disc recording, motion picture sound recording and reproducing systems; practical demonstration of some of these devices and associated measuring, testing and analyzing equipment and techniques.

MUTH-MUSIC THEORY AND ANALYSIS

MUTH-Music Theory and Analysis
Offered by: Theory

MUTH 110 Melody and Counterpoint.
(3) (4 hours) (Prerequisite: Matriculation Music or McGill Conservatory Theory Secondary V or its equivalent. Corequisites: MUSP 129 and MUSP 170 or permission of co-ordinator or instructor) Introduction to principles of melodic and contrapuntal structure through the traditional species of counterpoint: first through fifth species in two parts; first species in three parts. Analysis and compositional modelling of counterpoint in medieval-renaissance and 20th-century idioms. Notation, elementary acoustics, review of rudiments.

MUTH 111 Elementary Harmony and Analysis.
(3) (4 hours) (Prerequisite: MUTH 110.) (Corequisites: MUSP 131 and MUSP 171) Diatonic chords, harmonic progression, the concept and practice of tonality, simple modulation, seventh chords and secondary dominants. Small forms from c.1700 to the early 19th Century will be analyzed. Written four-part exercises will be required.

MUTH 210 Tonal Theory and Analysis 1.
(3) (3 hours) (Prerequisites: MUTH 110 and MUTH 111.) (Corequisite: MUSP 229.) (Prerequisite or corequisite: MUSP 171.) Compositional resources of early and mid-18th Century music. Thorough review of elementary harmonic procedure. Introduction to chromatic alteration and linear chords, and to analysis of imitative and invertible counterpoint. Analysis of common forms of the period c.1700 - 1770, including principal Baroque forms, but not including the Classical sonata.

MUTH 211 Tonal Theory and Analysis 2.
(3) (3 hours) (Prerequisite: MUTH 210.) (Corequisite: MUSP 231) Compositional resources of late 18th and early 19th Century music. Analysis of forms common to the period c.1770 - 1830, including Classical sonata forms in several media. Writing of short pieces for keyboard, piano and voice, and string quartet.

MUTH 301 Modal Counterpoint 1.
(3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Polyphonic techniques of the Renaissance period studied through analysis of works by Palestrina and others and through written exercises in two to three voices.

MUTH 302 Modal Counterpoint 2.
(3) (3 hours) (Prerequisite: MUTH 301) Continuation of Modal Counterpoint 1. Study of more advanced techniques through further analysis and written exercises in three or more voices.

MUTH 303 Tonal Counterpoint 1.
(3) (3 hours) (Prerequisite: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) The contrapuntal techniques of J.S. Bach studied through detailed technical analysis of his work and through written exercises in two to three parts.

MUTH 304 Tonal Counterpoint 2.
(3) (3 hours) (Prerequisite: MUTH 303) Continuation of Tonal Counterpoint 1. Further analysis and written exercises in three to four parts with special emphasis on fugal techniques.

MUTH 310 Mid and Late 19th-Century Theory and Analysis.
(3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Expanded harmonic resources of the late 19th Century (e.g., foreign modulation, chromatic harmony). Analysis of characteristic small and large forms. Development of writing and analytical skills with a goal toward perceiving how levels of musical structure interact.
MUTH 311 20th-Century Theory and Analysis.
(3) (Prerequisite: MUTH 310) Exploration of 20th-Century systems of pitch organization and attitudes toward counterpoint (e.g., polytonality, modal systems, neo-classical tonality, serialism, linear counterpoint, etc.). Examination of the relationship of these systems to earlier practices. Development of written and analytical skills for the purpose of gaining insight into 20th-Century principles and techniques.

MUTH 312 19th-Century Theory and Analysis/Jazz Majors.
(3) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231) Harmonic analysis of the 19th-Century (e.g., foreign modulation, harmonic and chromatic dissonance, analysis of characteristic small and large forms, development of writing and analytical skills with a goal toward perceiving how levels of musical structure interact. This course is oriented towards students with jazz theoretical background.

MUTH 313 20th-Century Theory and Analysis/Jazz Majors.
(3) (Prerequisite: MUTH 312) (Restriction: Open only to Jazz Performance Majors) 20th-Century systems of musical organization (e.g., polytonality, modal systems, neo-classical tonality, serialism, linear counterpoint) and their relationship to earlier practices. Development of writing and analytical skills to gain insight into 20th-Century principles and techniques. This course is oriented towards students with jazz theoretical background. Unless otherwise indicated the following courses are prerequisites to 300-, 400- and 500- level theory courses: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171.

MUTH 327 19th-Century Analysis.
(4) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) An analysis of representative works of the 19th Century, selected from various genres of the period encompassed by late Beethoven, Schubert, and Berlioz to Mahler and Wolf. Some preliminary work in Schenkerian analysis will be undertaken.

MUTH 327D1 (2), MUTH 327D2 (2) 19th-Century Analysis.
(Students must register for both MUTH 327D1 and MUTH 327D2.) (No credit will be given for this course unless both MUTH 327D1 and MUTH 327D2 are successfully completed in consecutive terms) (MUTH 327D1 and MUTH 327D2 together are equivalent to MUTH 327) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) The analysis of representative works of the 19th Century, selected from various genres of the period encompassed by late Beethoven, Schubert, and Berlioz to Mahler and Wolf. Some preliminary work in Schenkerian analysis will be undertaken.

MUTH 426 Analysis of Early Music.
(3) (Prerequisites: MUTH 211, MUHL 184) Music from before 1700 is analyzed using recently developed techniques as well as materials gathered from treatises contemporaneous with the music. The implications of analysis for performance are considered.

MUTH 427D1 (2), MUTH 427D2 (2) 20th-Century Analysis.
(2 hours) (Prerequisites: MUTH 427D1 and MUTH 427D2) (No credit will be given for this course unless both MUTH 427D1 and MUTH 427D2 are successfully completed in consecutive terms) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Analysis of a cross-section of 20th Century music from Debussy and Mahler to the present to: 1) provide analytical tools necessary for the understanding of pitch organization, form, rhythm, timbre, etc., in individual works; 2) introduce salient theoretical approaches pertaining to 20th Century music.

MUTH 461 Choral and Keyboard Arranging.
(2) (Prerequisite: MUTH 311 OR permission of instructor) An introduction to arranging techniques, and their application in settings for keyboard and choral resources. Materials include folksongs, carols, popular and originally composed melodies. The emphasis is on creative arrangement as opposed to transcription.

MUTH 462 Instrumental Arranging.
(3) (Prerequisites: MUTH 461 AND MUJZ 261, MUIT 202, MUIT 203 and MUIT 204 OR permission of instructor) The application of the general techniques studied in MUTH 461 to woodwind, brass and string ensembles, to various of which may be added keyboard, chorus, and percussion. Major assignments are prepared and recorded in workshops, and are subsequently discussed in class.

MUTH 473 Special Studies: 20th-Century Theory and Composition.
(3) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171)

MUTH 475 Special Project.
(3) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) For details contact the Department of Theory.

MUTH 475D1 (1.5), MUTH 475D2 (1.5) Special Project.
(Students must register for both MUTH 475D1 and MUTH 475D2) (No credit will be given for this course unless both MUTH 475D1 and MUTH 475D2 are successfully completed in consecutive terms) (MUTH 475D1 and MUTH 475D2 together are equivalent to MUTH 475) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) For details contact the Department of Theory.

MUTH 476 Special Project.
(6) (For details contact the Department of Theory.

(3) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171)

MUTH 502 Theory Review 2.
(3) (For incoming graduate students who, on the basis of placement tests, are deemed deficient in tonal theory and analysis; may not be taken by students enrolled in B.Mus. programs; may not be taken as elective in M.Mus. and M.A. programs) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Analytical approaches to larger forms of 18th- and 19th-century repertoire, particularly sonata and other forms in solo, chamber, and orchestral genres. Various analytical methods are applied to the study of advanced chromatic vocabulary and syntax, and to large-scale tonal and formal design.

MUTH 503 Theory Review 3.
(3) (For incoming graduate students who, on the basis of placement tests, are deemed deficient in post-tonal theory and analysis; may not be taken by students enrolled in B.Mus. programs; may not be taken as elective in M.Mus. and M.A. programs) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Analytical approaches to 20th-century repertoire in extended tonal, atonal, twelve-tone, and later idioms. Analysis of pitch and pitch-class structure, and of rhythmic, timbral, and formal developments in 20th-century compositions.

MUTH 523D1 (3), MUTH 523D2 (3) Advanced Harmony.
(3) (Prerequisites: MUTH 304 and MUTH 327 OR MUCO 240) (Students must register for both MUTH 523D1 and MUTH 523D2) (No credit will be given for this course unless both MUTH 523D1 and MUTH 523D2 are successfully completed in consecutive terms) An investigation of pitch
systems from the late 19th Century to the present with special reference to Fauré, Mahler, Berg, Scriabin, Delius and Messiaen. The students' work will consist equally of analysis and short written exercises.

**MUTH 528 Schenkerian Techniques.**
(3) (3 hours) (Prerequisite: MUTH 310 or MUCO 240 OR Corequisite: MUTH 327 OR permission of instructor.) (Restriction: Limited enrolment with preference given to students in Honours Theory) Introduction to the principles and techniques of Schenkerian analysis. Interpretation and construction of reductive graphs through the analysis of a diversified repertoire of tonal works. Comparison with traditional methods of harmonic analysis (Rameau, Riemann, etc.).

**MUTH 529 Proseminar in Music Theory 1.**
(3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) (Corequisites: MUTH 327 and MUHL 570 OR permission of instructor. Preference given to students in Honours Theory) A survey of various topics in contemporary music theory, including experimental aesthetics, indeterminacy, information theory, linguistics, microtonality, music technology, psycho-acoustics, and rhythmic theory.

**MUTH 538 Mathematical Models/Musical Analysis.**
(3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) A survey of the theoretical and analytical writings from 1955 to the present, with emphasis on the following topics: a) atonal music (the works of Forte, Lewin, Rahn, Clough, Benjamin); b) twelve-tone music (Babbitt, Lewin, Mead); c) contour theory (Friedmann, West Marvin, Morris); and d) mathematical groups and transformational models (Lewin, Morris, Starr).
Faculty of Religious Studies

RELG-Religious Studies

Offered by: Religious Studies

RELG 201 Religions of the Ancient Near East.
(3) (Fall) Introduction to the religions of Mesopotamia, Egypt and Syria-Palestine (excluding Israelite religion) from the fourth to first millennium B.C.E. Themes that will be discussed include: gods and goddesses, divine kingship, defamation of kings, temple cult, death and afterlife, magic, piety, oracles, prayer, lament, myth and epic.

RELG 202 Religion of Ancient Israel.
(3) (Winter) (Restriction: Not open to students who are required to take or have taken RELG 302) An examination of the religion of Ancient Israel by a study of selected texts (narratives, laws, prophetic sayings, wisdom traditions, and psalms) from the Hebrew Scriptures/Old Testament in translation.

RELG 203 Bible and Western Culture.
(3) (Fall and Winter) To provide students of the humanities with knowledge of the Bible as a tool for interpreting religious references in Western literature, art and music. Biblical stories (e.g. Creation, Exodus), key figures (e.g. David, Job, Mary), and common motifs (e.g. Holy City, Pilgrimage, Bride) are explored, then illustrated by later cultural forms.

RELG 204 Judaism, Christianity and Islam.
(3) (Winter) An introduction to the beliefs, practices, and religious institutions of these three world religions.

RELG 207 The Study of World Religions 1.
(3) (Fall and Winter) An introduction to the study of Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity, Islam and Primal Religions.

RELG 210 Jesus of Nazareth.
(3) (Fall) A critical study of selected ancient and modern accounts of the aims and person of Jesus. Attention will be given also to the question of the historical sources and to the relationship between faith and history.

RELG 232 Eastern Orthodox Mysticism and Contemporary Literature.
(3) (Winter) A survey of Eastern Orthodox mystical thought in 19th-20th century authors studied against the background of early texts (in translation) of the Syro-Byzantine and Russian spiritual tradition and examined in light of modern literary-religious trends.

RELG 252 Hinduism and Buddhism.
(3) (Fall) The interaction of Hinduism and Buddhism in India with special reference to the law of Karma, caste, women, ritual, death, yoga, and liberation. Determination of interpretative principles for understanding the religious psychology of Hindus and Buddhists.

RELG 253 Religions of East Asia.
(3) (Winter) Harmony with nature, society, and cosmos to be explored through the religions of the Far East (Confucianism, Taoism, Buddhism and Shinto).

RELG 254 Introduction to Sikhism.
(3) (Winter) An introduction to the historical and religious context in which the Sikh religion developed, its principal doctrines, practices and institutions and its evolution from its origins to the present, both inside and outside India.

RELG 256 Women in Judaism and Islam.
(3) (Winter) The role of women in Judaism and Islam from the point of view of institutionalized religious traditions and of women’s religious subjectivity; how women’s spiritual and social roles within their religious traditions are shaped by Revealed Law, Holy Text and the Authority of Interpretation. Comparative sociology of religion approach.

RELG 257D1 (3), RELG 257D2 (3) Introductory Sanskrit.
(Students must register for both RELG 257D1 and RELG 257D2.) (No credit will be given for this course unless both RELG 257D1 and RELG 257D2 are successfully completed in consecutive terms) To develop basic language and reading skills.

RELG 264 Introductory Tibetan 1.
(3) (Fall) An introduction to the language of Classical Tibetan, specifically Tibetan script and basic grammar.

RELG 265 Introductory Tibetan 2.
(3) (Winter) (Prerequisite: RELG 264) A continuation of the introduction to the language of Classical Tibetan, specifically Tibetan script and basic grammar.

RELG 270 Religious Ethics and the Environment.
(3) (Fall: Macdonald Campus. Winter: Downtown.) Survey of issues and debates in environmental ethics. The challenge posed to human and religious values by the present ecological crisis and some ethical and religious responses to this challenge, Native American spirituality, Eastern and African religions, ecofeminism and liberation theology will be discussed, as will recent environmental debates concerning technology and large scale development projects. Lectures supplemented by guest speakers and audiovisual presentations.

RELG 271 Sexual Ethics.
(3) (Fall, Winter and Summer) A study of the social construction of sexual identity and of selected issues regarding sexual behaviour.

(6) (Summer) (Open to students in the Honours and Major programs in Religious Studies. Other Arts and Science students may take the course as an elective outside their faculty, in accordance with Arts and Science regulations) An introduction to the grammar and syntax of New Testament Greek.

(Students must register for both RELG 280D1 and RELG 280D2.) (No credit will be given for this course unless both RELG 280D1 and RELG 280D2 are successfully completed in consecutive terms) (RELG 280D1 and RELG 280D2 together are equivalent to RELG 280) An introduction to the grammar and syntax of New Testament Greek.

RELG 285 The Gnostic Worldview.
(3) (Summer) On the basis of newly-discovered gnostic writings, forms of gnosticism will be studied in their relationship to Platonists, Jewish and Christian circles in the Graeco-Roman world. Attention to Manicheism, Mandeism and some medieval and modern representatives of the gnostic worldview.

RELG 300 Post-Biblical Jewish Tradition.
(3) (Fall) The origins of Rabbinic Judaism: a survey of Jewish history and thought from Ezra to the Tannaim; oral tradition; Torah interpretation in the Mishnah and Midrashim.

RELG 301 Jewish Thought 200 B.C.E - 200 C.E.
(3) (Prerequisite: RELG 300 or the consent of the instructor) The religion and literature of sectarian groupings: Apocalyptic thought; Wisdom; Dead Sea Scrolls; Josephus.

RELG 302 Old Testament Studies 1.
(3) (Fall) An introduction to the literature of Ancient Israel in English translation. Reading and interpreting representative selections.

RELG 303 Literature of Ancient Israel 2.
(3) (Winter) Approaches to historical-critical scholarship and

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

• Denotes courses taught only in alternate years.
• Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
† Denotes courses not available as Education electives.
‡ Professional Practice (Stage) in Dietetics involving special prerequisites
◆ Indicates that departmental approval/permission must be obtained by a student prior to registration.
△ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
▲ Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
❉ Denotes courses taught only in alternate years.
to the historical background of the Old Testament. Part of the course will be an examination of methods of biblical analysis through the use of learning cells.

RELG 306 Rabbinic Judaism. (3) (Fall) (Prerequisite: RELG 202 or RELG 204 or permission of instructor) (Restriction: Not open to students who have taken RELG 206) The beliefs, practices and religious institutions of the Jews from ancient times to the present.

＊RELG 307 Scriptural Interpretation. (3) (Winter) Jewish, Christian, Moslem responses to the Hebrew Bible. The debates, polemics, interpretative strategies and intellectual and spiritual sharings produced by these three religions in explaining, applying, amplifying, modifying, and selectively rejecting the sacred literature of Ancient Israel.

RELG 308 Ancient Bible Translations. (3) (Prerequisites: One of RELG 202, 302 or JWST 211, 327, 328, 329, 330.) Canonical changes, literary alterations, translation techniques, hermeneutical strategies, variant readings, and textual histories of the books of the Hebrew Bible as evidenced in the ancient versions, primarily the Septuagint. (No knowledge of Greek or Hebrew is required.)


RELG 313 Topics in Biblical Studies 1. (3) (Fall, Winter and Summer).

RELG 314 Topics in Biblical Studies 2. (3) (Fall, Winter and Summer) Topics of current interest in or between world religions.

RELG 315 Special Topics in Religion 1. (3) (Fall, Winter and Summer) (Prerequisites: RELG 204 or RELG 252 or RELG 253) (Restriction: Not open to students who have taken RELG 496) Topics of current interest in or between world religions.

RELG 316 New Religious Movements. (3) (Prerequisites: RELG 204 or RELG 252 or RELG 253) A critical analysis of the origins, character and influence of one or more religious movements of the 19th C. and beyond, with special attention to their religious principles and social function.

RELG 317 Special Topics in Religion 2. (3) (Summer) (Prerequisites: RELG 204 or RELG 252 or RELG 253) (Restriction: Not open to students who have taken RELG 496) Topics of current interest in, or between, world religions.

RELG 318 Special Topics in Religion 3. (3) (Summer) (Prerequisites: RELG 204 or RELG 252 or RELG 253) (Restriction: Not open to students who have taken RELG 496) Topics of current interest in, or between, world religions.

RELG 319 Special Topics in Religion 4. (3) (Summer) (Prerequisites: RELG 204 or RELG 252 or RELG 253) (Restriction: Not open to students who have taken RELG 496) Topics of current interest in, or between, world religions.

RELG 322 The Church in History 1. (3) (Fall) A survey of major developments in the history of Christianity from the end of the apostolic age to 1500. Selected readings from primary and secondary sources will be used.

RELG 323 The Church in History 2. (3) (Winter) Significant events and persons in the history of western Christianity from 1500 - 1948 will be studied. Attention is focused on mainline denominations in Britain and continental Europe.

RELG 324 Armenian Apostolic Tradition. (3) (Prerequisite: RELG 322) History of the Armenian Orthodox Apostolic Church from its foundation to the present: apostolic beginnings; St Gregory the Illuminator and the establishment of Christianity in Armenia in the fourth century; development of doctrine, ecumenical discussions; theology, mystical thought, liturgy, sacred art and architecture.

RELG 325 Varieties Religious Experience in Christianity. (3) (Summer)

＊RELG 326 Ancient Christian Church AD54 - AD604. (3) (Fall) (Restriction: Not open to students who have taken RELG 322 or RELG 323) Significant persons and events from Nero’s reign to the papacy of Gregory I. Attention to major Christian centres within the Roman Empire before Constantine, to the development of the Eastern Byzantine Church, and to the growth of the papacy in the West. Leading Christian theologians and thinkers will be studied.

RELG 328 Topics in Church History. (3)

RELG 329 Topics: History of Christianity. (3)

RELG 330 Reformed Theology. (3) (Fall) Selected topics illustrating the Reformers’ theological agenda, with special reference to Luther, Zwingli and Calvin.

RELG 332 Principles of Christian Theology 1. (3) (Winter) An introduction to the central categories of Christian theology. The course will include discussion of the nature of theology, and of all the primary areas of doctrine (Theology, Christology, Pneumatology, Anthropology, Ecclesiology, Eschatology). Throughout, a conscious attempt will be made to reflect on the Christian faith in the light of the contemporary apologetic situation.

RELG 334 The Christian Faith. (3) (Fall) (Prerequisites: One of RELG 202, 204, 210, 302, 311, 312 or the equivalent.) A study of core Christian ideas and their relation to doxology, morality, history and culture.

RELG 336 Contemporary Theological Issues. (3) (Fall, Winter and Summer) (Prerequisite: RELG 320 or RELG 338 or permission of instructor) Topic for Fall 2006: Women + God-Talk = Feminist Theology. Explores theological avenues traditionally ignored in religious studies through the works of contemporary Christian feminist theologians. Discussions focus on the methodologies, experiences and critiques of western, multi-cultural and international (Asian, African, Latin American) scholars. The works of a few Jewish and Moslem feminist scholars are also surveyed to examine similarities/differences in their focal areas of interest/concern.

RELG 337 Themes in Buddhist Studies. (3) (Winter) (Prerequisite: RELG 252 or RELG 253 or permission of instructor) A focussed examination of major themes within a branch of Theravada, Mahayana or Vajrayana Buddhism. Emphasis will be placed on both the close study of primary texts (in translation) in historical context and the application of recent methods to fundamental Buddhist concepts, ritual practices and community institutions.

RELG 338 Women and the Christian Tradition. (3) (Fall) (Core course for the Women's Studies Minor program) Topic for Fall 2006: Survey of women's involvement in the study of Christian theology and practice.
Christian tradition. Topics include feminist interpretation of scripture, ideas of virginity, marriage and motherhood, mysticism, asceticisms, European witchhunts, contemporary women's liberation theories. Survey of women's involvement in the Christian tradition. Topics include feminist interpretation of scripture, ideas of virginity, marriage and motherhood, mysticism, asceticisms, European witchhunts, contemporary women's liberation theories.

RELG 339 Hindu and Buddhist Images of Feminine. (3) (Fall and Summer) (Core course for the Women's Studies Minor program) An analysis of the richness (and ambivalence) of feminine imagery from three perspectives: mythic (goddesses, epic figures); philosophic (material nature, the power to create, wisdom, compassion); human (mothers, wives, daughters, temptresses, nuns).

RELG 340 Religion and the Sciences. (3) (Fall and Summer) Philosophies of science and of religion have created a more positive dialogue on questions of method, symbolism and rationality. Examines key issues (e.g. creation and evolution; objectivity and involvement; determinism and freedom) raised by natural and social sciences, and various possible solutions.

RELG 341 Introduction: Philosophy of Religion. (3) (Fall) Introduction to the subject. Faith and reason, theistic arguments, values and destiny, the problem of evil, religious language.

RELG 342 Theravada Buddhist Literature. (3) (Fall) (Prerequisite: RELG 252 or permission of instructor) The evolution of doctrines, practices and institutions explored through critical survey of Pali Canon (in translation), focusing on the dialogues of Gotama Buddha and his community during its first five centuries and on the historical accounts contained in the codes of monastic discipline.

RELG 343 Topics: Philosophy of Religion. (3) (Fall and Summer)

RELG 344 Mahayana Buddhism. (3) (Fall) The development of Buddhist sects examined through accounts of the first pan-Buddhist councils in India and an investigation of Mahayana through key sutras (in translation).

RELG 345 Religion and the Arts 1. (3) (Fall, Winter and Summer) Topics of current interest in Religion and the Arts.

RELG 346 Myth and Symbol in Hindu and Buddhist Art. (3)

RELG 347 Topics in Religion and the Arts. (3) (Winter)

RELG 348 Classical Hinduism. (3) (Fall) (Prerequisite: RELG 252 or permission of the instructor) The study of classical Hindu values in historical context with reference to the goals and stages of life, traditional Hindu laws, ethics (including biomedical ethics), axiology and moral dilemmas in the Epics, gender differences, notions of orthodoxy, and the expansion of Hinduism.

RELG 350 Bhakti Hinduism. (3) (Fall) (Prerequisite: RELG 252 or permission of the instructor) Foundation of theism in the Upanishads, Epics, Gita and puranas; image worship and temple religion in the Agamas; Vaisnavism, Saivism, Saktism, and competition with Buddhism and Jainism; the relation of Bhakti and Tantra; interaction of Hinduism, Islam, and Sikhism.

RELG 352 Japanese Religions. (3) (Winter) (Prerequisite: RELG 253 or permission of instructor) A study of early Shinto mythology, Shinto-Buddhist syncretism, Neo-Confucianism and its influence upon the resurgence of Shinto during the Tokugawa period, folk religion and the New Religions.

RELG 353 Gandhi: His Life and Thought. (3) (Summer)

RELG 354 Chinese Religions. (3) (Fall) This course studies the Confucian classics, philosophical and religious Taoism, and Neo-Confucianism and also examines the syncresis between the Chinese religions and Indian Buddhism.

RELG 355 Religion and the Arts 2. (3) (Summer) Topics of current interest in Religion and the Arts.

RELG 356 Religion and Sexuality in India. (3) (Fall and Summer) Love and sexual desire have been exalted in Hinduism, which also stresses denial and withdrawal from worldly desire. This ambiguity will be explored through mythic uses of sexuality; dharma and sexual practice; women, goddesses and ritual sex; "in between sexes": alternate sexualities; divine and human bodies; and eroticism in literary and performing arts.

RELG 357D1 (3), RELG 357D2 (3) Sanskrit 2. (Prerequisite: RELG 257 or permission of the instructor) (Students must register for both RELG 357D1 and RELG 357D2.) (No credit will be given for this course unless both RELG 357D1 and RELG 357D2 are successfully completed in consecutive terms) Advanced grammar and vocabulary with readings in epic and similar texts.

RELG 358 Religious Behaviour. (3) (Winter) A study of the psychological origins of religion, of some aspects of the religious life (e.g. prayer, conversion, mystical experiences), and of some contemporary religious phenomena (e.g. marginal religious groups, the charismatic movement, glosolalia). The views of Freud and Jung are also considered.

RELG 361 Hindu and Buddhist Images of Feminine. (3) (Fall and Summer) (Core course for the Women's Studies Minor program) An analysis of the richness (and ambivalence) of feminine imagery from three perspectives: mythic (goddesses, epic figures); philosophic (material nature, the power to create, wisdom, compassion); human (mothers, wives, daughters, temptresses, nuns).

RELG 362 Intermediate Tibetan 1. (3) (Fall) (Prerequisite: RELG 265 or permission of the instructor.) Advanced Tibetan grammar, and translation of selected Tibetan texts.

RELG 363 Religion and the Arts in India. (3) (Winter) Please contact Prof. Soneji regarding changes to course content. Prof. Soneji can be reached at davesh.soneji@mcgill.ca. Aspects of the arts in India (dance, music, drama, novels, film, sculpture and/or painting) as they relate to Hinduism.

RELG 364 Intermediate Tibetan 2. (3) (Winter) (Prerequisite: RELG 364 or permission of the instructor.) Continuation of advanced Tibetan grammar and translation of selected Tibetan texts.

RELG 365 Ethics of Violence/Non-Violence. (3) (Winter) Forms of violence and the reaction of religious groups are assessed both for their effectiveness and for their fidelity to their professed beliefs. Different traditions, ranging from the wholesale adoption of violent methods (e.g. the Crusades) to repudiation (e.g. Gandhi; the Peace Churches).

RELG 366 Introduction to Sociology of Religion. (3) (Fall) (Prerequisite: RELG 252 or permission of the instructor) A study of contemporary developments within sociology of religion, including changes in academic focus, the use of theories and methods from other social sciences, and current problems of methodological and conceptual uncertainty.

RELG 367 Indian Buddhism. (3) (Fall) This course studies the Buddhist classics, the development of monasticism, and the spread of Mahayana through China and Japan, focusing on the dialogues of Gotama Buddha and his community during its first five centuries and on the historical accounts contained in the codes of monastic discipline.

RELG 368 Chinese Religions. (3) (Fall) This course studies the Confucian classics, philosophical and religious Taoism, and Neo-Confucianism and also examines the syncresis between the Chinese religions and Indian Buddhism.

RELG 371 Ethical and Moral Problems in Philosophy of Religion. (3) (Winter) Forms of violence and the reaction of religious groups are assessed both for their effectiveness and for their fidelity to their professed beliefs. Different traditions, ranging from the wholesale adoption of violent methods (e.g. the Crusades) to repudiation (e.g. Gandhi; the Peace Churches).

RELG 372 Hindu Goddesses. (3) (Fall) The mythology, theology, soteriology, history,
ritual, and texts of the goddess-centred (Sakta) branches of Hinduism.

RELG 374 Topics: Philosophy of Religion.
(3)

RELG 375 Religion and Society.
(3) (Restriction: U2 and U3 students) A study of the sociology of religion in the light of the contemporary debates regarding secularization, the relation of religion and politics, and the emergence of new religious movements.

RELG 376 Religious Ethics.
(3) (Winter) A discussion of ethical theory will provide the background for an analysis of the relationship between religious world views and moral reason. Attention will be given to the way in which the dominant religious traditions view the exemplars of religious virtue, and to how the virtues exemplified are related to and justified by the faith tradition in which they operate.

RELG 377 Religious Controversies.
(3) (Fall) A comparative survey of types and topics of argumentation developed in the literature of controversy. Texts discussed include disputations, missionary sermons and polemical treatises.

RELG 381 Advanced New Testament Greek.
(3) (Prerequisite: RELG 280 or equivalent, with a minimum grade of 70%) A review of grammar and syntax with an emphasis on rapid reading of sections chosen from different parts of the New Testament.

RELG 389 Introduction to the Bahá’í Faith.
(3) (Summer) A study of the Bahá’í Faith with an emphasis on its sacred practices, philosophical principles, practical ethics, history (including historical precedents), administrative structure, sacred texts, and theology of other regions.

RELG 390 Elementary Biblical Hebrew.
(6) (Summer) An introduction to the grammar and syntax of Biblical Hebrew. Emphasis is placed on both the oral and the written language.

RELG 390D1, RELG 390D2 (3) Elementary Biblical Hebrew.
(Students must register for both RELG 390D1 and RELG 390D2.) No credit will be given for this course unless both RELG 390D1 and RELG 390D2 are successfully completed (in consecutive terms) An introduction to the grammar and syntax of Biblical Hebrew. Emphasis is placed on both the oral and the written language.

RELG 397 Christian Spirituality.
(3) (Winter) Seminar exploring the phenomenon of internal religious experience in their relation to received formularies of Christian thought and practice.

RELG 404 Post Exilic Biblical Literature.
(3) (Fall)

RELG 407 The Writings.
(3) (Prerequisites: RELG 202, or RELG 302 and RELG 303, or equivalent) A study of Job with some attention to Proverbs and Ecclesiastes (in English translation).

RELG 408 The Prophets.
(3) (Fall) (Prerequisites: RELG 202, or RELG 302 and RELG 303) A study of significant texts selected from the prophetic tradition in the Old Testament.

(3) (Winter) (Prerequisites: RELG 311 and RELG 312) A seminar in exegesis on the basis of representative passages chosen from different parts of the New Testament in English.

RELG 420 Canadian Church History.
(3) (Winter) (Prerequisite: RELG 323) A survey of the major Christian traditions in Canada from the settlement of New France to the present. Lectures and seminars with use, where possible, of primary source materials.

RELG 423 Reformation Thought.
(3) (Fall) An examination of persons and issues in Europe and the British Isles that contributed to ecclesiastical and social change during the 16th and early 17th centuries.

RELG 434 Principles of Christian Theology II.
(3) (Fall) (Prerequisite: RELG 333) This course is a continuation of RELG 333.

RELG 438 Topics in Jewish Theology.
(3) (Winter) A topic in Jewish Theology will be studied from a variety of approaches, including historical sociological and phenomenological.

RELG 439 Religious Dialogues.
(3) (Winter) (Prerequisite: RELG 204 or RELG 207.) A comparative survey of the literature of Western religious dialogues, addressing the history and diversity of debates concerning religion. Texts to be discussed include dialogues by Plato, Cicero, Augustine, Boethius, Anselm, Cusanus, Leo Hebraeus, Erasmus, Thomas More, Jean Bodin, Leibniz and Hume.

RELG 442 Pure Land Buddhism.
(3) (Fall) (Prerequisites: RELG 252 and RELG 253, or RELG 342 or RELG 344, or permission of instructor) The concept of Buddha Countries and Pure Lands in Buddhism, the Western Pure Land of Amida (Jodokyo) and its basic scriptures, the Chinese Buddhist schools, the introduction to Japan and the foundation of the Pure Land school by Honen, the Pure Land School of Shinran and its development, and the other Pure Land related schools.

RELG 443 Japanese Esoteric Buddhism.
(3) (Fall) (Prerequisites: RELG 252 and RELG 253, or RELG 342 or RELG 344) The development of esoteric Buddhism in India and Tibet; its Chinese formation and introduction to Japan; Kukai, Shingonshu and Tendai esotericism; the Tachikawa traditions of sexual esotericism; Mandai, iconography and liturgy.

RELG 451 Zen: Maxims and Methods.
(3) (Fall) (Prerequisites: RELG 252, RELG 342 or RELG 344, or permission of instructor) Through the reading of such key Zen writings as The Platform Sutra and selections from Zen Masters Chnin of Korea and Dogen of Japan, an attempt will be made to relate Zen anacode to meditative practice.

RELG 452 East Asian Buddhism.
(3) (Winter) (Prerequisite: RELG 253 or RELG 344) Topic for 2000: Precept and Ritual in East Asian Buddhism and Confucianism.

RELG 454 Modern Hindu Thought.
(3) (Prerequisite: RELG 252) A study of the developments in religious thought with special reference to such thinkers as Ram Mohan Roy, Dayananda Saraswati, Ramakrishna, Vivekananda, Gandhi, Tilak, Aurobindo, and Radhakrishnan.

RELG 456 Theories of Religion.
(3) (Fall and Winter) (Restriction: For Religious Studies Majors and Honours students or with permission of the Chair of the Religious Studies B.A. Committee) The history of the academic study of religion from its beginnings in the 19th century until the present. Key texts by figures such as Max Muller, Sigmund Freud, EmilieDurkheim, Max Weber, Mircea Eliade, Claude Levi-Strauss and Clifford Geertz will be studied.

RELG 457D1, RELG 457D2 (3) Advanced Sanskrit.
(Prerequisite: RELG 357 or permission of instructor) (Students must register for both RELG 457D1 and RELG
RELG 464 Advanced Tibetan 1.
(3) (Fall) (Prerequisite: RELG 365 or permission of instructor.) Translation of specially selected Tibetan texts.

RELG 465 Advanced Tibetan 2.
(3) (Winter) (Prerequisite: RELG 464 or permission of the instructor.) Continuation of translation of specially selected Tibetan texts.

RELG 470 Theological Ethics.
(3) (Fall) (Prerequisite: RELG 341 or RELG 333) A study of the biblical and theological foundations of Christian ethics, and the nature, application and relevance of the Christian norm.

RELG 479 Christianity in Global Perspective.
(3) (Winter) This course examines traditional Western Christianity, aiming at theological integration in light of religious and cultural pluralism and with reference to issues of world wide concern (e.g. gender, ethnicity, poverty, work, environment).

RELG 482 Exegesis of Greek New Testament.
(3) (Winter) (Prerequisite: RELG 381 or equivalent, and RELG 311, RELG 312) An intensive seminar in exegesis on the basis of representative passages chosen from different parts of the New Testament.

RELG 491 Hebrew Texts.
(3) (Fall) Translation and exegesis of selected texts.

RELG 492 Hebrew Texts.
(3) (Winter) Translation and exegesis of selected texts.

(3) (Fall) (Prerequisite: permission of the Chair of the B.Th. Committee) Open to students in the final year of B.Th. Honours. Provides opportunity for advanced development of research interests and methods in the student's area of Honours specialization.

RELG 495 B.Th. Honours Seminar 2.
(3) (Winter) (Prerequisite: RELG 494 and permission of the Chair of the B.Th. Committee) Open to students in the final year of B.Th. Honours. Provides further opportunity for advanced development of research interests and methods in the student's area of Honours specialization.

RELG 496 Special Studies.
(3) (Fall and Winter)

RELG 497 Research Seminar.
(3) (Fall and Winter) (Students wishing to take this course must have the permission of the Religious Studies Adviser)

RELG 498 Special Studies.
(3) (Fall and Winter) (Prerequisite: permission of the Chair of the B.Th. Committee)

RELG 499 Research Seminar.
(3) (Fall and Winter) (Prerequisite: permission of the Chair of the B.Th. Committee)

RELG 500 Methodology Colloquium.
(3)

RELG 501 Honours Seminar.
(3) (Summer)

RELG 520 Biblical Theology.
(3) (Fall and Winter) (Restriction: Limited to S.T.M. students.) Tutorials and guided reading in the field of Biblical Theology.

RELG 530 Church History.
(3) (Fall and Winter) Limited to S.T.M. students. Tutorials and guided reading in the field of church history.

RELG 531 Christian Theology.
(3) (Fall and Winter) Limited to S.T.M. studies. Tutorials and guided reading in the field of Christian Theology.

RELG 532 History of Christian Thought 1.
(3) (Prerequisite: At least six (6) credits at the 300-level in Christianity or the Christian Bible.) (Restriction: Not open to students who have taken RELG 327) The development of Christian theology in the Patristic and Medieval periods. Focus on the controversial development of Christian doctrines and disciplines through intensive exposure to primary texts.

RELG 533 History of Christian Thought 2.
(3) (Prerequisite: At least six (6) credits at the 300-level in Christianity or the Christian Bible.) (Restriction: Not open to students who have taken RELG 327) The development of Christian theology in the Reformation, Post Reformation and Modern periods through intensive exposure to primary texts.

RELG 540 Philosophy of Religion.
(3) (Winter) (Restriction: Limited to S.T.M. students.) Tutorials and guided reading in the field of Philosophy of Religion.

RELG 541 Theological Ethics.
(3) (Fall and Winter) (Restriction: Limited to S.T.M. students.) Tutorials and guided reading in the field of Theological Ethics.

RELG 546 Indian Philosophy.
(3) (Fall) (Prerequisites: 6 credits in Indian religions, philosophy of religion, philosophy, or permission of the instructor) Introduction to the orthodox systems of Hindu Philosophy leading up to Vedanta i.e. Nyaya, Vaisesika, Sankhya, Yoga and Mimamsa, which will include discussion of such topics as: grounds for belief and disbelief in God, the nature of revelation, means of knowledge, etc.

RELG 547 Hindu Philosophy 2.
(3) (Prerequisites: 6 credits in Indian religions, philosophy of religion, philosophy, or permission of the instructor) Introduction to Vedanta, especially Advaita, with focus on it as a living tradition and as constituting an Indian philosophy of religion.

RELG 548 Indian Buddhist Philosophy.
(3) (Prerequisites: RELG 252 or RELG 342 or permission of instructor) The rise of buddhist schools of philosophy, especially the Terastrada and Sauntrantika, as an attempt to systematize the canonical teachings and defend Buddhism against its critics.

RELG 549 Japanese Buddhist Philosophy.
(3) (Prerequisites: RELG 344, or RELG 451, or permission of the instructor.) (Note: Taught in alternate years.) Major figures of the Kyoto School of Buddhist philosophy (Nishida, Tanabe, Nishitani), emphasizing their intellectual debts to both modern European philosophy (Hegel, Neitzsche, Heidegger) and Mahayana Buddhism (Zen and Pure Land Buddhism).

RELG 550 Comparative Religion.
(3) (Fall, Winter and Summer) Tutorials and guided reading in the field of Comparative Religion.

RELG 551 Indian Logic 1.
(3)

RELG 552 Advaita Vedanta.
(3) (Fall) (Prerequisites: 6 credits in Indian religions) The relation of Nyaya-Vaisesika and Mimamsa to Kavmalıdırvāta with concentration on Sankara's Brahmatattvabhasya, Pada 1 and 2.

RELG 553 Religions of South India 1.
(3) (Winter) (Prerequisite: 6 credits in Indian religions) Topics include: definitions of Tamil identity, the relation of...
akam to bhakti poetry, the theology of the Alvars and Nayanmars, 
inter-religious and sectarian competition, the motif of 
pilgrimage, questions of caste and women.

★RELG 554 Religions of South India 2.
(3) (Winter) (Prerequisite: RELG 553) (Course will be held 
in India. Please contact Prof. Soneji, daveshe.soneji@mcgill.ca, 
for more information.) Analysis of the following: sampradaya; 
ubhayavedanta; comparison of Visistadvaita and Saiva Siddhanta 
with reference to selected themes that illustrate the Tamil 
contribution; the relationship of theology to the sociology of 
knowledge in Tamilnad.

RELG 555 Honours Seminar.
(3) (Winter) (Restriction: For Religious Studies Honours 
students or with permission of the Chair of the Religious 
Studies B.A. Committee) Current trends in the study of 
religion, including the approaches of critical theory, feminism, 
post-modernism, and post-colonialism.

RELG 556 Issues in Buddhist Studies.
(3) (Fall and Winter) (Prerequisite: permission of instructor) A 
graduate seminar taught by the Numata Visiting Professor on 
critical issues in contemporary Buddhist Studies. Emphasis will 
be placed on the intensive application of different methods - 
philological, philosophical or social scientific - to some area 
of modern Buddhist research.

RELG 557 Asian Ethical Systems.
(3) (Fall) (Prerequisites: RELG 252, RELG 253, or 
permission of instructor) An examination of the ethical ideals 
that have evolved in Asia with reference to Hinduism, Buddhism, 
Confucianism, and Taoism. Issues to be explored include 
competing views of the individual’s duties to social and 
political institutions, the individual’s right to 
non-conformity, the relationship between morality and 
metaphysics, and a comparison of moral principles in theistic 
and atheistic contexts.

RELG 558 Indian Tantric Traditions.
(3) (Winter) (Prerequisites: Any two 300-level courses in 
Hinduism or Buddhism.) Study of esoteric Tantric culture 
(philosophy, ritual, pilgrimage, art, and iconography) with 
focus on either Hindu or Buddhist Tantric traditions.

RELG 571 Religion and Medicine.
(3) (Fall) A study of the resources of major world religions 
(Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism and 
Shinto) for thinking about ethical issues related to modern 
medicine, e.g., health, illness, suffering; new reproductive 
technologies; genetic engineering; euthanasia; palliative care; 
animal research; transplants.

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Faculty of Science

ANAT-Anatomy & Histology

ANAT 205 Astrobiology.
(3) (Winter) (3 hours lecture) (Restriction: Not open to students who have taken or are taking EPSC 205) Astrobiology is the search for life's origin, evolution, and future in the universe. The course will provide insight into the formation and evolution of habitable worlds, the evolution of life and the biogeochemical cycles in the Earth's oceans and atmosphere, and the potential for biological evolution beyond an organism's planet of origin.

ANAT 212 Molecular Mechanisms of Cell Function.
(3) (Winter) (Prerequisite: BIOL 200) (Restriction: This course is also listed as BIOC 212. Not open to students who have taken or are taking BIOC 212 or BIOL 201) An introductory course describing the biochemistry and molecular biology of selected key functions of animal cells, including: gene expression; mitochondrial production of metabolic energy; cellular communication with the extra-cellular environment; and regulation of cell division.

ANAT 214 Systemic Human Anatomy.
(3) (Fall) (2 hours lectures, 2 hours practical tutorial) (Restriction: Open to students in biological sciences) Introduction to the gross anatomy of the various organ systems of the human body, head, neck and trunk regions of the human body. Practical tutorials include studies of prepared specimens, use of the anatomical museum and audio-visual materials. This course is limited in size to the number of students (other than those requiring the course as part of their program) will be made after the first lecture. (Admission is guaranteed for all students enrolled in programs in the Department of Anatomy and Cell Biology for which ANAT 214 is a required course.

ANAT 261 Introduction to Dynamic Histology.
(4) (Fall) (3 hours lectures, 2 hours laboratory) (Must be taken in U1 by students in Anatomy and Cell Biology programs) (Restriction: Open to students in biological sciences and others by special permission) An introduction to light and electron microscopic anatomy in which cell and tissue dynamics will be explored in the principal tissues and organs of the body.

ANAT 262 Introductory Molecular and Cell Biology.
(3) (Winter) (3 hours lecture) (Corequisites: ANAT 212 or BIOC 212 or BIOL 201) (Restriction: Open to students in biological sciences and others by special permission) The architectural, functional and temporal continuity of organelles and the cytoskeleton of mammalian cells is introduced as well as their functional integration in the phenomena of exocytosis, endocytosis, protein trafficking and cell motility and adhesion.

ANAT 315 Anatomy/Limbs and Back.
(4) (Fall) (2 hours lectures, 4 hours laboratory) (Restriction: Open to students in Physical and Occupational Therapy; and to Honours students in Anatomy and Cell Biology, with permission of instructor.) The regional human gross anatomy of the skeleton, joints, muscles and neurovascular structures of the limbs and back.

ANAT 316 Human Visceral Anatomy.
(2) (Winter) (2 hour lecture, 2 hours laboratory) (Prerequisite: ANAT 315) (Restriction: Open to students in Physical and Occupational Therapy, and to others by special permission) The gross anatomy of the various organ systems of the human body, with emphasis on those aspects of greatest relevance to physical and occupational therapists. Laboratories include studies of prepared specimens, use of the anatomical museum and audiovisual materials.

ANAT 321 Circuitry of the Human Brain.
(3) (Fall) (2 hour lectures, 2 hours laboratory/tutorial) (Prerequisite: at least one 3-credit university level course in biology or psychology) (Restriction: Open to U3 students only, except for P&OT students.) This course explores the functional organization of the human brain and spinal cord. The course focuses on how neuronal systems are designed to subserve specific motor, sensory, and cognitive operations.

ANAT 322 Neuroendocrinology.
(3) (Winter) (2 hours lectures, 1 hour conference) (Prerequisite: ANAT 261.) A lecture course describing brain-endocrine relationships. Emphasis on modern experimental evidence and conceptual developments within the field.

ANAT 365 Cellular Trafficking.
(3) (Fall) (2 hours lectures, 2 hours conference) (Prerequisites: ANAT 261, BIOC 200, BIOL 201 or by special permission.) An intensive study of the processes of protein secretion and cell membrane biogenesis. Emphasis on morphological aspects of the above processes, and on the major techniques which have provided experimental evidence, namely, subcellular fractionation, cytochemistry and quantitative electron microscope radioautography.

ANAT 381 Basis of Embryology.
(3) (Winter) (2 hours lectures, 2 hours laboratory or conference) (Prerequisites: ANAT 261, or permission of instructor.) The basic processes of reproduction and embryonic development, such as molecular signaling; cell-cell interaction; differentiation; cell fate determination; genetic and epigenetic control of embryonic development.

ANAT 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

ANAT 423 Honours Research Project.
(9) (Summer) (Restriction: For students in the Honours program.) Supervised honours research project in biological sciences.

ANAT 423D1 (4.5), ANAT 423D2 (4.5) Honours Research Project.
(Restriction: For students in the Honours program.) (Students must register for both ANAT 423D1 and ANAT 423D2.) (No credit will be given for this course unless both ANAT 423D1 and ANAT 423D2 are successfully completed in consecutive terms) (ANAT 423D1 and ANAT 423D2 together are equivalent to ANAT 432) Supervised honours research project in biological sciences.

ANAT 458 Membranes and Cellular Signaling.
(3) (Winter) (3 hours lectures) (Prerequisites: BIOC 212 or ANAT 381 Basis of Embryology.) An intensive study of the processes of protein secretion and cell membrane biogenesis. Emphasis on morphological aspects of the above processes, and on the major techniques which have provided experimental evidence, namely, subcellular fractionation, cytochemistry and quantitative electron microscope radioautography.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
ANAT 212 or BIOL 201. ANAT 262, one of PHGY 201, PHGY 209 or BIOL 205; one of BIOL 312 or ANAT 365; BIOC 311 recommended) (Restriction: This course is also listed as BIOC 458. Not open to students who are taking or who have taken BIOC 458) An integrated treatment of the properties of biological membranes and of intracellular signaling, including the major role that membranes play in transducing and integrating cellular regulatory signals. Biological membrane organization and dynamics; membrane transport; membrane receptors and their associated effectors; mechanisms of regulation of cell growth, morphology, differentiation and death.

ANAT 499 Supervised Library Research.
(1) (Prerequisite: ANAT 262, BIOL 202, or by permission of the instructor.) Supervised exploration of the current scientific literature as it pertains to the advanced field of anatomy and cell biology.

ANAT 541 Cell and Molecular Biology of Aging.
(3) (Winter) (2 hours lecture, 2 hours conference) (Prerequisites: ANAT 212 (or BIOL 212 or BIOL 201), ANAT 261, ANAT 262, or permission of instructor.) (Corequisite: BIOC 301.) Complex aging process, including theories and mechanisms of aging, animal model systems used to study aging, age-dependent diseases, for example, Alzheimer's, osteoporosis, and cancer, and age-related diseases, for example, Werner's syndrome and dyskeratosis congenita.

ATOC-Atmospheric & Oceanic Sciences
Offered by: Atmospheric & Oceanic Sciences

ATOC 104 The Earth System.
(3) (Winter) (Restriction: Not open to students who are taking or have taken EPSC 104 or GEOG 104.) Earth system science examines the complex interactions among the atmosphere, biosphere, geosphere and hydrosphere. It focuses on physical, chemical and biological processes that extend over spatial scales ranging from microns to the size of planetary orbits, and spans time scales from fractions of a second to billions of years.

● ATOC 199 FYS: Weather, Climate, History.
(3) (Winter) (2 hours lectures; 1 hour seminar) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them) (Maximum 25) A seminar course on how weather and climate have influenced human history. The impact of weather and climate on agriculture, disease, demography, economic cycles and history. The Little Ice Age in Europe will be used as an example for study. Methods to establish linkage between weather, climate and history.

ATOC 210 Introduction to Atmospheric Science.
(3) (Fall and Winter) (3 hours lectures) (Restriction: Open to all students except those who have taken ATOC 214) A survey of the Earth's atmosphere, weather and climate system. Topics include the fundamental processes that determine interactions between the atmosphere, ocean and biosphere; anthropogenic effects such as global warming, the ozone hole and acid rain; a perspective on future climate change.

(3) (Fall) (3 hours lectures) (Prerequisite: CEGEP Physics) An introduction to physical meteorology designed for students in the physical sciences. Topics include: composition of the atmosphere; heat transfer; the upper atmosphere; atmospheric optics; formation of clouds and precipitation; instability; adiabatic charts.

ATOC 215 Oceans, Weather and Climate.
(3) (Winter) (3 hours lectures) (Prerequisite: CEGEP Physics or permission of the instructor) Laws of motion, geostrophic wind, gradient wind. General circulation of the atmosphere and oceans, local circulation features. Air-sea interaction, including hurricanes and sea-ice formation, extra-tropical weather systems and fronts, role of the atmosphere and oceans in climate.

● ATOC 219 Introduction to Atmospheric Chemistry.
(3) (Winter) (3 hours lectures) (Prerequisite: CEGEP DEC in Science or permission of instructor) (Restriction: Not open to students who have taken CHEM 219, CHEM 419 or ATOC 419) An introduction to the basic topics in atmospheric chemistry. The fundamentals of the chemical composition of the atmosphere and its chemical reactions. Selected topics such as smog chamber, acid rain, and ozone hole will be examined.

ATOC 220 Introduction to Oceanic Sciences.
(3) (Fall and Winter) (3 hours lectures) (Restriction: Not open to students who have taken or are taking CHEM 360 or CHEM 560) Air-sea interaction; oceanic properties; global climate change, carbon cycle; polar oceans, sea ice, polynyas; El Niño; remote sensing of oceans; physical control of biological processes in the sea.

● ATOC 230 Climate and Climate Change.
(3) (3 hours lectures) (Prerequisite: CEGEP Physics or GEOG 203) The atmosphere, ocean and sea-ice distribution characteristic of the current climate, as seen through observational data and computer model results. Physics of naturally occurring variability on time scales of months to years, such as El Niño. Global circulation models of the atmosphere, ocean and coupled atmosphere-ocean system, and global warming simulations.

ATOC 240 Science of Storms.
(3) (Winter) Physical processes associated with severe and hazardous weather affecting the Earth. Topics are taught at a fundamental level, without equations, to provide a complete and up-to-date understanding of such extreme events as blizzards, ice storms, tornadoes, hurricanes, floods and droughts.

ATOC 250 Natural Disasters.
(3) (Fall) (3 hours lectures) (Restriction: Not open to students who have taken or are taking EPSC 250) This course examines the science behind different types of disasters and our ability or inability to control and predict such events. From this course the student will gain an appreciation of natural disasters beyond the newspaper headlines, and will better understand how the effects of disasters can be reduced.

ATOC 308 Principles of Remote Sensing.
(3) (Fall) (3 hours lectures) (Restriction: Not open to students who have taken or are taking GEOG 308) A conceptual view of remote sensing and the underlying physical principles are presented. Ground-based and satellite systems and various components of the acoustic and electromagnetic spectrum - from visible to microwave - are discussed. Substantial emphasis is devoted to the application of remote sensed data in geography and atmospheric sciences.

ATOC 309 Weather Radars and Satellites.
(3) (Winter) (3 hours lecture) (Prerequisite: ATOC 215) Basic notions of radiative transfer and applications of satellite and radar data to mesoscale and synoptic-scale systems are discussed. Emphasis will be put on the contribution of...
remote sensing to atmospheric and oceanic sciences.

**ATOC 315 Water in the Atmosphere.**
(3) (Fall) (3 hours lectures) (Prerequisite: ATOC 214)

*ATOC 330 Physical Meteorology.*
(3) (Fall) (3 hours lectures) (Prerequisite: ATOC 214 OR permission of instructor.) (Restriction: Not open to students who have taken ATOC 320 and ATOC 321) Atmospheric thermodynamics. Solar and terrestrial radiative transfer in the atmosphere. Physics and chemistry of clouds and precipitation. Turbulence and diffusion in the atmospheric boundary layer. Meteorological factors affecting air pollution.

**ATOC 396 Undergraduate Research Project.**
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

**ATOC 400D1 (1.5), ATOC 400D2 (1.5) Independent Study of an Environmental Problem.**
(Restriction: students taking a joint program in Atmospheric and Environmental Science or with permission of Department) (Students must register for both ATOC 400D1 and ATOC 400D2.) (No credit will be given for this course unless both ATOC 400D1 and ATOC 400D2 are successfully completed in consecutive terms) A reading or research project, conducted under the guidance of an instructor, on the meteorological processes related to an environmental problem. A written report will be required. Students should consult the departmental undergraduate student adviser for the names of available supervisors.

**ATOC 412 Atmospheric Dynamics.**
(3) (Prerequisites: MATH 314, MATH 315,) Equations of motion in rotating coordinates, elementary applications, circulation and vorticity, the planetary boundary layer, synoptic scale motions, Rossby waves and inertial oscillations.

*ATOC 419 Advances in Chemistry of Atmosphere.*
(3) (Winter) (3 hours lectures) (Prerequisites: CHEM 213, CHEM 273, MATH 222 and MATH 315 or equivalents, or permission of instructor) (Restriction: Not open to students who have taken CHEM 419, CHEM 619, and ATOC 619) (Offered in odd years. Students should register in CHEM 419 in even years) Selected areas of atmospheric chemistry from field and laboratory to theoretical modelling are examined. The principles of atmospheric reactions (gas, liquid and solid phase), and heterogeneous phases in aerosols and clouds, and issues related to chemical global change will be explored.

**ATOC 480 Honours Research Project.**
(3) (Restriction: U3 Honours students) The student will carry out a research project under the supervision of a member of the staff. The student will be expected to write a report and present a seminar on the work.

**ATOC 512 Atmospheric and Oceanic Dynamics.**
(3) (Fall) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) Introduction to the fluid dynamics of large-scale flows of the atmosphere and oceans. Stratification of atmosphere and oceans. Equations of state, thermodynamics and momentum. Kinematics, circulation, and vorticity. Hydrostatic and quasi-geostrophic flows. Brief introduction to wave motions, flow over topography, Ekman boundary layers, turbulence.

**ATOC 513 Waves and Stability.**

**ATOC 515 Turbulence in Atmosphere and Oceans.**
(3) (Fall) (3 hours lectures) (Prerequisite (Undergraduate): ATOC 512 or permission of instructor) Application of statistical and semi-empirical methods to the study of geophysical turbulence. Reynolds' equations, dimensional analysis, and similarity. The surface and planetary boundary layers: Oceanic mixed layer. Theories of isotropic two- and three- dimensional turbulence: energy and enstrophy inertial ranges. Beta turbulence.

**ATOC 530 Climate Dynamics 1.**
(3) (Fall) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Introduction to the components of the climate system. Review of paleoclimates. Physical processes and models of climate and climate change.

**ATOC 531 Climate Dynamics 2.**
(3) (Winter) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) The general circulation of the atmosphere and oceans. Atmospheric and oceanic general circulation models. Observations and models of the El Niño and Southern Oscillation phenomena.

**ATOC 540 Synoptic Meteorology 1.**
(3) (Fall) (2 hours lectures; 2 hours laboratory) (Prerequisite (Undergraduate): Permission of instructor) Analysis of current meteorological data. Description of a geostrophic, hydrostatic atmosphere. Ageostrophic circulations and hydrostatic instabilities. Kinematic and thermodynamic methods of computing vertical motions. Tropical and extratropical condensation rates. Barotropic and equivalent barotropic atmospheres.

**ATOC 541 Synoptic Meteorology 2.**
(3) (Winter) (2 hours lectures; 2 hours laboratory) (Prerequisite (Undergraduate): ATOC 512 and ATOC 540 or permission of instructor) Analysis of current meteorological data. Quasi-geostrophic theory, including the omega equation, as it relates to extratropical cyclone and anticyclone development. Frontogenesis and frontal circulations in the lower and upper troposphere. Cumulus convection and its relationship to tropical and extratropical circulations. Diagnostic case study work.

**ATOC 546 Current Weather Discussion.**
(1) (Fall) (2 hours) (Prerequisite (Undergraduate): ATOC 540 or permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by...
special permission.) Half-hour briefing on atmospheric general circulation and current weather around the world using satellite data, radar observations, conventional weather maps, and analyses and forecasts produced by computer techniques.

ATOC 550 Special Topics Meteorology and Oceanography.
(1) (Fall) (1 hour lecture) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Lectures and seminars on special topics such as hydrology, agricultural meteorology, the limits of predictability, planetary atmospheres, atmospheric and oceanic pollution, coastal currents, and research reviews.

● ATOC 558 Numerical Methods and Laboratory.
(3) (Winter) (1 hour lecture; 4 hours laboratory) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Numerical simulation of atmospheric and oceanic processes. Finite difference, finite element, and spectral modelling techniques. Term project including computer modelling of convection or large-scale flows in the atmosphere or ocean.

● ATOC 568 Ocean Physics.
(3) (Winter) (3 hours lectures) (Prerequisite (Undergraduate): ATOC 512 or permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Research methods in physical oceanography including data analysis and literature review. Course will be divided into five separate modules focussing on temperature-salinity patterns, ocean circulation, boundary layers, wave phenomena and tides.

BIOC-Biochemistry
Offered by: Biochemistry

BIOC 212 Molecular Mechanisms of Cell Function.
(3) (Winter) (Prerequisite: BIOL 200) (Restrictions: A non-terminal course intended to be followed by BIOC 311; BIOC 312 in the U2 year. Not open to students who have taken or are taking BIOL 201 or ANAT 212.) An introductory course describing the biochemistry and molecular biology of selected key functions of animal cells, including: gene expression; mitochondrial production of metabolic energy; cellular communication with the extra-cellular environment; and regulation of cell division.

BIOC 300D1 (3), BIOC 300D2 (3) Laboratory in Biochemistry.
(Fall/Winter) (1 lecture and one 6-hour lab per week) (Prerequisites: BIOL 200 and BIOL 201 or BIOC 212, CHEM 222; CHEM 257D1/CHEM 257D2 recommended.) (Corequisites: BIOC 311 and BIOC 312.) (Restriction: Not open to students who have taken or are taking BIOC 312 or BIOC 450.) This laboratory is designed to provide problems in the study of complex biochemical systems which require a modest level of expertise. The laboratory extends the study of selected topics in carbohydrate, lipid and nitrogen metabolism; complex lipids and biological membranes; hormonal signal transduction.

BIOC 312 Biochemistry of Macromolecules.
(3) (Winter) (Prerequisites: BIOC 311, BIOL 200, BIOL 201 or BIOC 212) Gene expression from the start of transcription to the synthesis of proteins, their modifications and degradation. Topics covered: purine and pyrimidine metabolism; transcription and its regulation; mRNA processing; translation; targeting of proteins to specific cellular sites; protein glycosylation; protein phosphorylation; protein turn-over; programmed cell death (apoptosis).

BIOC 310 Biochemistry of Macromolecules.
(3) (Winter) (Prerequisites: BIOC 311, BIOC 312 or and/or sufficient organic chemistry.) (Restriction: Intended primarily for students at the U3 level) Primary, secondary, tertiary and quaternary structure of enzymes. Active site mapping and site-specific mutagenesis of enzymes. Enzyme kinetics and mechanisms of catalysis. Multienzyme complexes.

BIOC 312 Biochemistry of Macromolecules.
(3) (Winter) (Prerequisites: BIOC 311, BIOC 312 or permission of instructor) Chemistry of RNA and DNA, transcription and splicing of RNA and their control; enzymology of DNA replication. Special topics on transgenics, genetic diseases and cancer.

BIOC 455 Neurochemistry.
(3) (Winter) (Prerequisites: BIOC 311, BIOC 312 or permission of instructor) Covers biochemical mechanisms underlying central nervous system function. Introduces basic neuroanatomy, CNS cell types and morphology, neuronal excitability, chemically mediated transmission, glial function. Biochemistry of specific neurotransmitters, endocrine effects on brain, brain energy metabolism and cerebral ischemia (stroke). With examples, where relevant, of biochemical processes disrupted in human CNS disease.

BIOC 458 Membranes and Cellular Signaling.
(3) (Winter) (Prerequisites: BIOC 311, BIOL 200, one of PHGY 201, PHGY 209 or BIOL 205; one of BIOC 312 or ANAT 365; and BIOC 311 or permission of instructors) (Restriction: This course is also listed as ANAT 458. Not open to students who have taken or are taking ANAT 458 or BIOC 456) An integrated treatment of the properties of biological membranes and of intracellular signaling, including the major role that membranes play in transducing and integrating cellular regulatory signals. Biological membrane organization and dynamics: membrane transport; membrane receptors and their associated effectors; mechanisms of regulation of cell growth, morphology, differentiation and death.

BIOC 460 Advanced Lab in Biochemistry.
(6) (Fall) Students will select one project, employing advanced as well as standard biochemical techniques, to be performed in a research laboratory in the Department. Each student will also write a research-review paper with the advice of a professor and perform student projects in the teaching laboratory.
BIOL 491 Independent Research.
(6) (Winter) (Restriction: Registration by departmental permission only) (Prerequisite: BIOL 460) Individual work on a project to be performed in a research laboratory.

BIOL 503 Immunochemistry.
(3) (Winter) (Prerequisites: BIOL 311, BIOL 312) This course, presented in lecture format, emphasizes the molecular, genetic and structure function events that occur in the humoral immune response. Interleukins and other mediators of inflammation, a field in which rapid changes are occurring, are discussed. The clinical significance of fundamental biochemical findings is described.

BIOL-Biology

Offered by: Biology

BIOL 101 Organismal Biology Laboratory.
(1) (Fall) (3 hours laboratory) (Prerequisite: Permission of the Associate Dean (Student Affairs), Faculty of Science.) (Restriction: Not open to students who have taken, or are taking BIOL 111.) Laboratory component of BIOL 111. May be taken only by transfer students who have completed elsewhere the lecture component but not the laboratory of BIOL 111. May be taken only with permission of the Associate Dean (Student Affairs) of Science.

BIOL 102 Cell and Molecular Biology Methods.
(1) (Winter) (3.5 hours laboratory) (Prerequisite: Permission of the Associate Dean (Student Affairs), Faculty of Science.) (Restriction: Not open to students who are taking, or have taken BIOL 112.) The laboratory component of BIOL 112. May be taken only by transfer students who have completed elsewhere the lecture component but not the laboratory of BIOL 112 and only with permission of the Associate Dean (Student Affairs) of Science.

BIOL 111 Principles: Organismal Biology.
(3) (Fall) (2 hours lecture and 3 hours laboratory) (Prerequisite: none.) (Restriction: Not open to students who have taken CEGEP objective 00UK or equivalent; or BIOL 115.) (This course serves as an alternative to CEGEP objective code 00UK) (May require departmental approval.) (Attendance at first lab is mandatory to confirm registration in the course.) An introduction to the structure, function and adaptation of plants and animals in the biosphere.

BIOL 112 Cell and Molecular Biology.
(3) (Winter) (2 hours lecture and 3.5 hours laboratory/seminar) (Prerequisite: none.) (Restriction: Not open to students who have taken or are taking CEGEP objective 00UX or equivalent; or BIOL 115) (May require departmental approval.) (Attendance at first lab is mandatory to confirm registration in the course.) The cell: ultrastructure, division, chemical constituents and reactions. Bioenergetics: photosynthesis and respiration. Principles of genetics, the molecular basis of inheritance and biotechnology.

BIOL 115 Essential Biology.
(3) (Fall) (3 hours lecture) (Prerequisites: none.) (Restrictions: Open only to non-Science students; not open to students who have had BIOL 111, BIOL 112, or equivalents.) An introduction to biological science that emphasizes the manner in which scientific understanding is achieved and evolves and the influence of biological science on society. Topics will include cell structure and function, genetics, evolution, organ physiology, ecology and certain special topics that change from year to year.

BIOL 200 Molecular Biology.
(3) (Fall) (3 hours lecture, 1 hour optional tutorial) (Prerequisite: BIOL 112 or equivalent.) (Corequisite: CHEM 212 or equivalent) The physical and chemical properties of the cell and its components in relation to their structure and function. Topics include: protein structure, enzymes and enzyme kinetics; nucleic acid replication, transcription and translation; the genetic code, mutation, recombination, and regulation of gene expression.

BIOL 201 Cell Biology and Metabolism.
(3) (Winter) (3 hours lecture, 1 hour optional tutorial) (Prerequisite: BIOL 200.) (Restriction: Not open to students who have taken or are taking BIOL 212 or ANAT 212) This course introduces the student to our modern understanding of cells and how they work. Major topics to be covered include: photosynthesis energy metabolism and metabolic integration; plasma membrane including secretion, endocytosis and contact mediated interactions between cells; cytoskeleton including cell and organelle movement; the nervous system; hormone signalling; the cell cycle.

BIOL 202 Basic Genetics.
(3) (Winter) (3 hours lecture, 1 hour optional tutorial) (Prerequisite: BIOL 200.) (Restriction: Not open to students who have taken or are taking CELL 204.) Introduction to basic principles, and to modern advances, problems and applications in the genetics of higher and lower organisms with examples representative of the biological sciences.

BIOL 205 Biology of Organisms.
(3) (Winter) (3 hours lecture, optional conference hour) (Prerequisites: BIOL 200 or permission.) (Corequisite: BIOL 201 or BIOL 212/ANAT 212) (Restriction: Not open to students who are taking or have taken PLNT 201.) Unified view of form and function in organisms from all five kingdoms. Focus on the principal functions that all organisms must achieve to ensure their survival.

BIOL 206 Methods in Biology of Organisms.
(3) (Fall) (1.5 hours lecture and 4 hours laboratory) (Prerequisite: BIOL 111 or equivalent) Introduction to methods used in organismal biology, including ecological sampling, use of keys, measurements, use of statistics and computers in numerical analysis, microbiological methods, basic histological techniques, use of microscopes and library searching procedures. Lecture and Field trip in week one.

BIOL 210 Perspectives of Science.
(3) (Fall) (3 hours lecture) This course is an introduction to the thinking, language and practices of scientists. Its objective is to bridge the gap between science and the humanities, and in particular to allow students enrolled in the Minor Concentration in Science for Arts to pursue their interests in specific scientific disciplines.

BIOL 215 Introduction to Ecology and Evolution.
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 111) (Restrictions: Not open to students who have taken BIOL 208, BIOL 304 or BIOL 305. Not open to students who have taken ENVR 203 and/or ENVR 202) An introduction to the fundamental processes of ecology and evolution that bear on the nature and diversity of organisms and the processes that govern their assembly into ecological communities and their roles in ecosystem function.

BIOL 240 Monteregian Flora.
(3) (Summer) (Prerequisite: BIOL 111 or permission) (Restriction: Not open to students who have taken BIOL 358...
 BIOL 300 Molecular Biology of the Gene.
(3) (Fall) (3 hours lecture, optional conferences) (Prerequisites: BIOL 200, BIOL 201) A survey of current knowledge and approaches in the area of gene structure and function. Topics include: gene isolation and characterisation, gene structure and replication, mechanism of gene expression and its regulation in pro- and eukaryotes.

 BIOL 301 Cell and Molecular Laboratory.
(4) (Fall or Winter) (1 hour lecture and one 6-hour laboratory) (Prerequisites: BIOL 200, BIOL 201, BIOL 202. BIOL 206 recommended.) (Restrictions: Not open to students who have taken or are taking BIOC 300. Requires departmental approval.) A practical introduction to laboratory techniques. Focus is on the experimental methods used to develop fundamental biological principles. Techniques involving enzyme characterization, DNA isolation and manipulation and genetic analysis are covered. Metabolism and regulation of cell systems are analyzed and by which biological macro-molecules are purified and characterized.

 BIOL 303 Developmental Biology.
(3) (Winter) (3 hours lecture and 1 hour optional tutorial) (Prerequisites: BIOL 200 and BIOL 201. Corequisite: BIOL 202) A consideration of the fundamental processes and principles operating during embryogenesis. Experimental analyses at the molecular, cellular, and organismal levels will be presented and analyzed to provide an overall appreciation of developmental phenomena.

 BIOL 304 Evolution.
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 205 and BIOL 215 or ENVR 202) This course will show how the theory of evolution by natural selection provides the basis for understanding the whole of biology. The first half of the course describes the process of selection, while the second deals with evolution in the long term.

 BIOL 305 Animal Diversity.
(3) (Winter) (2 hours lecture and 1 three-hour laboratory) (Prerequisite: BIOL 215 or both ENVR 200 and ENVR 202) The characteristics of the major groups of animals, their ancestry, history and relationship to one another. The processes of speciation, adaptive radiation and extinction responsible for diversity. Methods for constructing of phylogenies, for comparing phenotypes, and for estimating and analyzing diversity.

 BIOL 306 Neurobiology and Behaviour.
(3) (Fall) (3 hours lecture) (Prerequisites: BIOL 201, BIOL 205) Mechanisms of animal behaviour; ethology; cellular neurophysiology, integrative networks within nervous systems; neural control of movement; processing of sensory information.

(3) (Winter) (2 hours lecture and 1 hour conference) (Prerequisites: BIOL 205 and BIOL 215 or permission) The relationship between animal behaviour and the natural environment in which it occurs. This course introduces the subject of ecology at the level of the individual organism. Emphasis on general principles which relate to feeding, predator avoidance, aggression, reproduction and parental care of animals including humans.

 BIOL 308 Ecological Dynamics.
(3) (Fall) (3 hours lecture, 1 hour tutorial) (Prerequisite: BIOL 215 or both ENVR 200 and ENVR 202) (Restriction: Not open to students who have taken BIOL 208.) Principles of population, community, and ecosystem dynamics: population growth and regulation, species interactions, dynamics of competitive interactions and of predator/prey systems; evolutionary dynamics.

 BIOL 309 Mathematical Models in Biology.
(3) (Fall) (3 hours lecture) (Prerequisite: Elementary calculus. An additional course in calculus is recommended) Application of finite difference and differential equations to problems in cell and developmental biology, ecology and physiology. Qualitative, quantitative and graphical techniques are used to analyze mathematical models and to compare theoretical predictions with experimental data.

 BIOL 310 Eukaryotic Cell Biology.
(3) (Winter) (3 hours lecture and 1 hour optional tutorial) (Prerequisites: BIOL 200 and BIOL 201 (or ANAT/BIOL 212) and BIOL 202) Cell biology of eukaryotes focusing on the assembly and function of cellular structures, the regulation of transcription; the dynamics of the cytoskeleton and its motors; mechanics of cell division; cell cycle checkpoints; nuclear dynamics; chromosome structure and behaviour and experimental techniques.

 BIOL 311 Molecular Biology of Oncogenes.
(3) (Fall) (3 hours lecture) (Prerequisites: BIOL 200; BIOL 201 or BIOL 215) The genes that cause cancer are altered versions of genes present in normal cells. The origins of these oncogenes, their genetic structure, regulation, and the biochemical properties of the oncogene-encoded proteins will be analyzed in an attempt to understand the origins of human and animal cancers.

 BIOL 312 Ecological Genetics.
(3) (Fall) (2 lecture hour, 1 hour seminar) (Prerequisite: BIOL 202) This course presents evolutionary genetics within an ecological context. The course covers theoretical topics together with relevant data from natural populations of plants and animals.

 BIOL 328 Biological Diversity in Africa.
(3) (Winter) (7 hours lecture, 5 hours project.) (Prerequisite: BIOL 205 or permission of instructor.) (Corequisite: NRSC 300.) (Restriction: Students must be enrolled in the African Field Study Semester.) Biological diversity as exemplified by a particular taxonomic group chosen by the instructor. Using field setting in East Africa to impart training in species identification, field research, and principles embodied in the phylogeny, systematics, biogeography, ecology, physiology and/or behaviour of the organisms concerned.

 BIOL 329 East African Ecology.
(3) (Winter) (Prerequisite: BIOL 215 or equivalent.) (Corequisite: NRSC 300) (The course is to be taught in Africa as a component of the Africa Field Study Semester. Students must register for the Africa Field Study Semester.) Marine, terrestrial, conservation, or restoration ecology in East Africa.

 BIOL 331 Ecology/Behaviour Field Course.
(3) (Fall) (Prerequisites: BIOL 206 and BIOL 215) (Note: Preregistration in March and April. See Course web page: http://ww2.mcgill.ca/biology/undergrad/C331A/index.htm. Meets 12-days just before the fall term, with a project report early in the fall term.) Methods of sampling natural populations. Testing hypotheses in nature.

 BIOL 334D1 (1.5), BIOL 334D2 (1.5) Applied Tropical Ecology.
(Winter, Summer) (Students must register for both BIOL
334D1 and BIOL 334D2.) (No credit will be given for this course unless both BIOL 334D1 and BIOL 334D2 are successfully completed in consecutive terms) (BIOL 334D1 and BIOL 334D2 together are equivalent to BIOL 334) (Prerequisites: BIOL 206 and BIOL 215 and permission)

Relevant to agriculture, forestry, fisheries and conservation of natural resources. Field component taught at the University’s Bellairs Research Institute in Barbados, for two weeks in early May. The course is organized in a series of small-group field projects of 2-3 days each. Interested students should contact the Undergraduate Office and fill out an application form.

BIOL 335 Marine Mammals.
(3) (Summer) (Prerequisite: BIOL 205) Biology of marine mammals with special emphasis on seals and whales of the Bay of Fundy. Taught at the Huntman Marine Science Centre, St. Andrews, N.B., for three weeks in August. The course combines lectures, laboratory exercises, field trips, and individual projects. See S. Gabe, W4/8.

BIOL 350 Insect Biology and Control.
(3) (Fall) (Restriction: Not open to students who have taken or are taking ENTO 330) A lecture course designed to introduce insect structure, physiology, biochemistry, development, systematics, evolution, ecology and control. The course stresses interrelationships and integrated pest control.

❄ BIOL 352 Vertebrate Evolution.
(3) (Winter) (2 hours lecture, 3 hours laboratory) (Prerequisites: BIOL 304 or permission) The origin and evolution of the major groups of vertebrates; their anatomy, phylogeny and zoogeography.

❄ BIOL 355 Trees: Ecology & Evolution.
(3) (Fall) (3 hours lecture) (Prerequisites: BIOL 205 and BIOL 215 or permission of instructor.) (Restriction: Not open to students who have taken or are taking BIOL 555.) Functional ecology and evolution of trees: patterns in the diversity of tree form and function, the nature of tree adaptation to environment from the scale of habitat to global biogeography.

❄ BIOL 370 Human Genetics Applied.
(3) (Fall) (3 hours lecture; 1 hour conference optional) (Prerequisites: BIOL 200 and BIOL 201, BIOL 202) A contemporary view of what genetics can do when applied to human beings.

BIOL 373 Biometry.
(3) (Fall) (2 hours lecture and 2 hours laboratory) (Prerequisite: MATH 112 or equivalent) (You may not be able to receive credit for this course and other statistics courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Elementary statistical methods in biology. The aim of this course is to introduce students to the analysis of biological data. Emphasis is placed on the assumptions behind statistical tests and models. The course is designed to give a student the ability to intelligently use the statistical techniques typically available on computer packages such as SYSTAT or SPSS. Preference given to Biology students; laboratory sections assigned at term’s start.

BIOL 377 Independent Studies 1.
(3) (Fall, Winter or Summer) (Restriction: Open to U2 or U3 Biology students only) (Please see regulations concerning Project Courses, under “Project Courses” in the Faculty Degree Requirements section) For course details, see BIOL 477.

BIOL 385 Plant Growth and Development.
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 205.) (Restriction: Not open to students who have taken BIOL 357 or BIOL 485.) Processes involved in growth and development of the plant body; formation of new tissues and organs, photomorphogenesis; fruit growth and ripening, programmed cell death and senescence, plant responses to environmental stresses, biotechnology of crop improvement.

BIOL 389 Laboratory in Neurobiology.
(3) (Winter) (1 hour lecture; 5 hours laboratory) (Prerequisites: BIOL 306 or PHGY 311 or PSYC 308 or NEUR 310 or permission) Methods of neurobiological research, including extracellular and intracellular recordings, electrical stimulation, and the study of neuro-behavioural problems.

BIOL 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

BIOL 413 Reading Project.
(1) (Fall, Winter or Summer) (3 hours independent work) (Prerequisites: BIOL 200, BIOL 201, BIOL 202, BIOL 205, BIOL 208, BIOL 304) Under the guidance of an instructor with the relevant expertise, the student explores the literature on a special topic and develops a written review in scientific format. Registration form required as for BIOL 477.

BIOL 416 Genetics of Mammalian Development.
(3) (Winter) (3 hours lecture) (Prerequisites: BIOL 202, BIOL 300, BIOL 303; permission) (Restriction: Not open to students who have taken BIOL 516) This course aims to examine problems, theories, and experimental evidence on several concepts of mammalian developmental processes at molecular to organogenesis levels. Most topics are in the mouse model system, where various techniques for genetic manipulation are available.

BIOL 427 Herpetology.
(3) (Fall) (2 hours lecture; 3 hours laboratory) (Prerequisite: BIOL 205 and BIOL 305 or permission of instructor.) (Restriction: Not open to students who have taken BIOL 327.) Principles of biology as exemplified by amphibians and reptiles. Topics include: adaptation, social behaviour, reproductive strategies, physiology, biomechanics, ecology, biogeography and evolution. Laboratories will emphasize structure, systematics and identification of local and world herpetofauna as well as field methods.

BIOL 432 Limnology.
(3) (Fall) (2 hours lecture; 2 weekends at field station equivalent to 3 hours laboratory per week) (Prerequisites: BIOL 206 and BIOL 215 or permission of instructor.) A study of the physical, chemical and biological properties of inland waters, with emphasis on their functioning as systems.

BIOL 435 Natural Selection.
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 304 or permission of instructor.) Explains how the selection of undirected variation accounts for some of the leading features
of the natural world. Its main focus is evolutionary change and adaptation, but it will also include material from ecological, economic, biochemical and computer systems. It emphasizes experimental studies of evolution.

** • BIOL 441 Biological Oceanography.**
(3) (Winter) (2 hours lecture, 3 hours laboratory/conference) (Prerequisites: BIOL 206 and BIOL 215.) An introduction to how the ocean functions biologically: biology and ecology of marine plankton; regulation, extent and fate of production in the sea.

** • BIOL 442 Marine Biology.**
(3) (Winter) (2 hours lecture, 1 hour laboratory or conference) (Prerequisites: BIOL 205 and BIOL 215.) An introduction to marine benthic communities. Topics include structure and dynamics of hard and soft bottom communities; bioturbation, feeding strategies and trophodynamics; ecology of seagrasses, mangrove and coral reef ecosystems; marine pollution.

**BIOL 465 Conservation Biology.**
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 215) Discussion of relevant theoretical and applied issues in conservation biology. Topics: biodiversity, population viability analysis, community dynamics, biology of rarity, extinction, habitat (fragmentation, isolation), socio-economic issues.

**BIOL 469D1 (4.5), BIOL 469D2 (4.5) Independent Studies 2.**
(Fall and Winter) (13.5 hours per week research) (Prerequisites: BIOL 206 or BIOL 301 or other suitable 300-level biology course.) (Restrictions: Restricted to Biology students. Projects must be arranged privately with a professor in the Biology department and a form from the undergraduate office (STBIO W4/8) must be completed.) (Students must register for both BIOL 469D1 and BIOL 469D2.) (No credit will be given for this course unless both BIOL 469D1 and BIOL 469D2 are successfully completed in consecutive terms.) Research project under the guidance of a staff member in the Biology Department.

**BIOL 471 Independent Studies 3.**
(6) (Fall, Winter or Summer) (Restriction: Open only to U3 Biology students) (Prerequisite: BIOL 206 or BIOL 301 or other suitable laboratory course) (Projects must be arranged individually with a staff member of the Biology Department and a form from Ms. A. Comeau, Room W4/8, Stewart Building, must be completed to receive credit for the course) Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy must be submitted to Ms. Comeau.

**BIOL 471D1 (3), BIOL 471D2 (3) Independent Studies 3.**
(Fall, Winter) (Restriction: Open only to U3 Biology students) (Prerequisite: BIOL 206 or BIOL 301 or other suitable laboratory course) (Projects must be arranged individually with a staff member of the Biology Department and a form from Ms. A. Comeau, Room W4/8, Stewart Building, must be completed to receive credit for the course) (Students must register for both BIOL 471D1 and BIOL 471D2.) (No credit will be given for this course unless both BIOL 471D1 and BIOL 471D2 are successfully completed in consecutive terms) (BIOL 471D1 and BIOL 471D2 together are equivalent to BIOL 471) Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy must be submitted to Ms. Comeau.

**BIOL 477 Independent Studies 4.**
(3) (Fall, Winter or Summer) (Restriction: Open only to U3 Biology students) (Prerequisite: BIOL 206 or BIOL 301 or other suitable laboratory course. Projects must be arranged individually with a staff member of the Biology Department and a form from Ms. Comeau, Room W4/8, Stewart Building, must be completed to receive credit for the course) Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy must be submitted with the mark to Ms. Comeau.

**BIOL 478 Independent Studies 5.**
(3) (Fall, Winter or Summer) (Prerequisite: BIOL 206 or BIOL 301 or other suitable laboratory course. Projects must be arranged individually with a staff member of the Biology Department and a form from Ms. Comeau, Room W4/8, Stewart Building, must be completed to receive credit for the course) Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy must be submitted with the mark to Ms. Comeau.

**BIOL 479D1 (4.5), BIOL 479D2 (4.5) Biology Honours Project 1.**
(Fall, Winter) (8-12 hours per week research project and related seminars) (Restriction: Biology Honours students. Projects must be arranged individually with, and accepted by a staff member of the Biology Department) (Students must register for both BIOL 479D1 and BIOL 479D2.) (No credit will be given for this course unless both BIOL 479D1 and BIOL 479D2 are successfully completed in consecutive terms) The major objective of the course is to provide an introduction to the design, execution and reporting of research. The quality of projects is examined by at least two members of the Biology Department.

**BIOL 480D1 (6), BIOL 480D2 (6) Biology Honours Project 2.**
(Fall and Winter) (10-15 hours per week research project and related seminars) (Restriction and course description: as for BIOL 479) (Students must register for both BIOL 480D1 and BIOL 480D2.) (No credit will be given for this course unless both BIOL 480D1 and BIOL 480D2 are successfully completed in consecutive terms)

**BIOL 499D1 (2), BIOL 499D2 (2) Honours Seminar in Biology.**
(Fall, Winter) (Students must register for both BIOL 499D1 and BIOL 499D2.) (No credit will be given for this course unless both BIOL 499D1 and BIOL 499D2 are successfully completed in consecutive terms) Honours students in Biology attend a selected series of guest speaker seminars of general interest and prepare reports. In addition, students give a seminar on their research.

** • BIOL 505 Diversity and Systematics Seminar.**
(3) (Winter) (3 hours seminar) (Prerequisites: BIOL 215 and BIOL 304 or permission) A course dealing in depth with a particular aspect of biological diversity and/or systematics. Topics may include the systematics of a particular taxon, issues in biodiversity, systematics theory and practice, etc. The class will discuss aspects of the chosen topic and prepare individual seminar reports.

**BIOL 507 Animal Communication.**
(3) (Fall) (3 hours lecture) (Corequisites: BIOL 307 or equivalent and one of BIOL 306 or NEUR 310 or PHGY 311 or PSYC 308; or permission of instructor. Since all corequisites may not be offered in the same term, students are advised that they may have to plan their schedules so that they may register in these courses in the term prior to BIOL 507.) Introduction to communication between animals, including humans. Physical and phylogenetic contraints on the evolution of communication systems will be discussed. The
BIOL 510 Advances in Community Ecology. (3) (Fall) (3 hours lecture/seminar) (Prerequisites: BIOL 308 or GEOG 350 or permission of instructor.) The origin, maintenance and consequences of biological diversity within ecological communities.

BIOL 518 Advanced Topics in Cell Biology. (3) (Winter) (2 hours seminar) (Prerequisite: BIOL 313 and permission) Conserved processes in Eukaryotic organisms, including the cytoskeleton, the cell cycle, complex traits/disease, global analysis/bioinformatics, and innovative studies/techniques in cell biology.

BIOL 520 Gene Activity in Development. (3) (Winter) (3 hours lecture and discussion) (Prerequisites: BIOL 300 and BIOL 303 or permission) An analysis of the role and regulation of gene expression in several models of eukaryotic development. The emphasis will be on critical evaluation of recent literature concerned with molecular or genetic approaches to the problems of cellular differentiation and determination. Recent research reports will be discussed in conferences and analyzed in written critiques.

BIOL 524 Topics in Molecular Biology. (3) (Fall) (Prerequisites: BIOL 300 and BIOL 303 or permission.) Molecular genetics and molecular, cellular and developmental biology, including signal transduction, cell differentiation and function, genetic diseases in eukaryotes.

BIOL 530 Neural Basis of Behaviour. (3) (Winter) (3 hours seminar) (Prerequisite: BIOL 306 or PHGY 311 or PSYC 308 or NEUR 310.) Neural mechanisms underlying behaviours such as communication, visual behaviour, escape, orientation, neurogenetics and locomotion.

BIOL 531 Neurobiology Learning Memory. (3) (Fall) (3 hours lecture and discussion) (Prerequisite: BIOL 306 or PHGY 311 or PSYC 308 or NEUR 310 or permission of instructor.) Properties of nerve cells that are responsible for learning and memory. Recent advances in the understanding of neurophysiological, biochemical and structural processes relevant to neural plasticity. Emphasis on a few selected model systems involving both vertebrate and invertebrate animals.

BIOL 532 Developmental Neurobiology Seminar. (3) (Winter) (1 hour lecture, 2 hours seminar) (Prerequisites: BIOL 303 and BIOL 308 or permission) Discussions of all aspects of nervous system development including pattern formation, cell lineage, pathfinding and targeting by growing axons, and neuronal regeneration. The basis for these discussions will be recent research papers and other assigned readings.

BIOL 534 Theoretical Ecology. (3) (Winter) (2 hours laboratory) (Prerequisites: BIOL 308 and either BIOL 309 or BIOL 373; or permission of instructor.) Advanced topics in theoretical ecology. Mathematical and computational tools available to explore the dynamical behaviour of model populations and communities. Models addressing major ecological theories: population stability, diversity and community functioning, epidemic and disturbance dynamics; spatial models, game theory, complex system theories.

BIOL 540 Ecology of Species Invasions. (3) (Winter) (3 hours lecture) (Prerequisite: BIOL 308 or permission of instructor) (Restriction: Not open to U1 or U2 students) (Restriction: Not open to students who are taking or have taken ENV 540.) Causes and consequences of biological invasion, as well as risk assessment methods and management strategies for dealing with invasive species.

BIOL 544 Genetic Basis of Life Span. (3) (Fall) (1 hour lecture, 2 hours seminar) (Prerequisites: BIOL 202, BIOL 300; BIOL 303 recommended or permission) The course will consider how gene action is determining the duration of life in various organisms focusing on the strengths and limitations of the genetic approach. The course will focus particularly on model organisms such as yeast, Caenorhabditis, Drosophila and mouse, as well as on the characterization of long-lived mutants.

BIOL 553 Neotropical Environments. (3) (Winter) (24 hours lecture and 36 hours field work over a 4-week period) (Prerequisites: HISP 218, MATH 203, and BIOL 208/308, or equivalents, and permission of Program Coordinator.) (Corequisites: ENVR 451, GEOG 404 and SOCI 565.) (Restriction: location in Panama. Students must register for a full semester of studies in Panama) Ecology revisited in view of tropical conditions. Exploring species richness. Sampling and measuring biodiversity. Conservation status of ecosystems, communities and species. Indigenous knowledge.

BIOL 555D1 (1.5), BIOL 555D2 (1.5) Functional Ecology of Trees. (Fall and Winter) (Prerequisites: BIOL 304, BIOL 308 or permission.) (Students must register for both BIOL 555D1 and BIOL 555D2.) (No credit will be given for this course unless both BIOL 555D1 and BIOL 555D2 are successfully completed in consecutive terms.) (BIOL 555D1 and BIOL 555D2 together are equivalent to BIOL 555.) Discussion of the interactions among traits that underpin the survival of woody plants in diverse environments: physiology, anatomy, architecture, seasonality and phenology, reproductive ecology, life history trade-offs, and the phylogenetic basis of functional diversification.

BIOL 568 Topics on the Human Genome. (3) (Winter) (3 hours lecture) (Prerequisites BIOL 202, BIOL 300, BIOL 370, or permission.) Cellular and molecular approaches to characterization of the human genome.

BIOL 569 Developmental Evolution. (3) (Winter) (3 hours lecture) (Prerequisites: BIOL 303 and BIOL 304; or permission of instructor.) The influence of developmental mechanisms on evolution. This course draws on recent examples from plants and invertebrate and vertebrate animals. Topics include homology, modularity, dissociation, co-option, evolutionary novelty, evolution of genetic cis-regulation, developmental constraint and evolvability, heterochrony, phenotypic plasticity, and canalization.

BIOL 570 Advanced Seminar in Evolution. (3) (Fall) (3 hours seminar) (Restriction: Open to undergraduates by permission) Detailed analysis of a topic in evolutionary biology, involving substantial original research.

BIOL 571 Experimental Evolution/Ecology. (3) (Winter) (1 hour lecture, 4 hours laboratory) (Prerequisite: BIOL 435 or equivalent) (Restriction: Restricted to U3 and Graduate students.) Basic principles and processes of evolution and ecology will be demonstrated using microbial model systems. Topics include mutation, fitness, selection, adaptive radiation, properties of mixtures and community assembly.

BIOL 572 Molecular Evolution. (3) (Fall) (3 hours lecture/seminar) (Prerequisite: BIOL 300) Evolutionary change in DNA and proteins and its implications for cellular, organismal, and population/species
evolution.

BIOL 573 Vertebrate Palaeontology Field Course.
(3) (Summer) (Prerequisites: BIOL 304 and BIOL 352 or permission of instructor) (Notes: Field course with completed project and presentation in the early Fall. Given in a selected early Cretaceous Alberta site. Enrolment limited to 10 students.) Terrestrial vertebrate fossils (i.e. dinosaurs, crocodiles and other reptiles) and palaeocommunity analysis, including practical training with fossil identification, mapping, collecting, and stratigraphic interpretation.

BIOL 575 Human Biochemical Genetics.
(3) (Winter) (3 hours lecture) (Prerequisites: BIOL 202 and BIOL 300) Topics on the study of human systems that have led to advances in basic biology.

**BIOL 588 Molecular/Cellular Neurobiology.
(3) (Fall) (1 1/2 hours lecture, 1 1/2 hours seminar) (Prerequisite: BIOL 300 and BIOL 306 or permission) Discussion of fundamental molecular mechanisms underlying the general features of cellular neurobiology. An advanced course based on lectures and on a critical review of primary research papers.

BIOL 592 Integrated Bioinformatics.
(3) (Fall) (3 hours lecture) (Prerequisite: BIOL 301 or permission of instructor.) (Restriction: Not open to students who have taken or are taking BINF 511.) 'Post-genomic' bioinformatics. Concepts behind large-scale computational analysis and comparison of genomes/proteomes (and beyond), and the implications for our understanding of the basic processes of molecular and cell biology and the evolution of these processes.

** BIOL 594 Advanced Evolutionary Ecology.
(3) (Fall) (Prerequisite: BIOL 304 and BIOL 308) (Restriction: U3 students) Current methods and recent advances in biological, medical, agricultural and engineering aspects of biotechnology will be described and discussed. An extensive reading list will complement the lecture material.

BIOT-Biotechnology
Offered by: Biology

BIOT 505 Selected Topics in Biotechnology.
(3) (Fall) (Restriction: U3 students) Current methods and recent advances in biological, medical, agricultural and engineering aspects of biotechnology will be described and discussed. An extensive reading list will complement the lecture material.

**CHEM-Chemistry
Offered by: Chemistry

CHEM 110 General Chemistry 1.
(4) (Fall) (3 lectures and laboratory) (Prerequisites/corequisites: College level mathematics and physics or permission of instructor; CHEM 120 is not a prerequisite) (Each lab section is limited enrolment) A study of the fundamental principles of atomic structure, valence theory and periodic table.

CHEM 112 General Chemistry Laboratory.
(1) (Fall) (2 1/2 hours laboratory) (Open only to entering students who have the lecture equivalent of CHEM 110) (Each lab section is limited enrolment) Illustrative experiments. Laboratory section of CHEM 110. New students will be issued lab sections in OM 1 on the first day of classes.

CHEM 120 General Chemistry 2.
(4) (Winter) (3 lectures and laboratory) (Prerequisites/corequisites: College level mathematics and physics, or permission of instructor: CHEM 110 is not a prerequisite) (Each lab section is limited enrolment) A study of the fundamental principles of physical chemistry.

CHEM 122 General Chemistry Laboratory.
(1) (Winter) (2 1/2 hours laboratory) (Open only to entering students who have the lecture equivalent of CHEM 120) Illustrative experiments. Laboratory section of CHEM 120.

CHEM 150 World of Chemistry: Food.
(3) (Winter) (3 lecture hours/week) (No prerequisites) (Restriction: Science and B.A. & Sc. students may take for credit only two of: CHEM 150, CHEM 160, CHEM 170, CHEM 180. These courses can be taken independently of each other.) A series of lectures on the historical, practical, and simple chemical aspects of: food, food additives; vitamins; minerals, diet and cancer; dieting; water.

CHEM 160 World of Chemistry: Technology.
(3) (Fall) (3 lecture hours/week) (No prerequisites) (Restriction: Science and B.A. & Sc. students may take for credit only two of: CHEM 150, CHEM 160, CHEM 170, CHEM 180. These courses can be taken independently of each other.) Aspects of chemical technology including publishing of scientific articles, rocketry, chemistry of space travel, materials (metals, ceramics, wood, plastic), genetic engineering chemistry, forensic science, art and money.

CHEM 170 World of Chemistry: Drugs.
(3) (Fall) (3 lecture hours/week) (No prerequisites) (Restriction: Science and B.A. & Sc. students may take for credit only two of: CHEM 150, CHEM 160, CHEM 170, CHEM 180. These courses can be taken independently of each other.) Aspects of drugs including drug history, over the counter drugs (e.g. aspirin, cough remedies, allergy preparations), and street drugs. Significant attention will be paid to prescription drugs such as heart remedies and antibiotics.

CHEM 180 World of Chemistry: Environment.
(3) (Winter) (3 lecture hours/week) (No prerequisites) (Restriction: Science and B.A. & Sc. students may take for credit only two of: CHEM 150, CHEM 160, CHEM 170, CHEM 180. These courses can be taken independently of each other.) Water, air pollution, sick-building syndrome, the chemistry of the car, energy (fossil fuel, nuclear), household products, quackery (18th century to the internet), computers and cosmetics.

CHEM 199 FYS: Why Chemistry?
(3) (Fall) (2 lectures and 1 seminar) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) A lecture/seminar course which is expected to deal with a) colour, from gemstones to lasers; b) microscopes that see atoms - with demonstrations; c) the atmosphere: the greenhouse effect, and acid rain, and d) scientific ethics in research and publication.

CHEM 201 Modern Inorganic Chemistry 1.
(3) (Fall) (3 lectures) (Prerequisites: CHEM 110 and CHEM 120 or equivalent.) (Restriction: Not open to Honours or Majors in chemistry) (Restriction: Not open to students who have taken or plan to take CHEM 281) Systematic survey of the chemistry of the main group elements and their compounds. Basic concepts of electronic structure, bonding and structure will be
developed and applied to the understanding of common materials. Emphasis on elements such as oxygen, nitrogen, silicon and others in order to understand their role in everyday lives.

CHEM 203 Survey of Physical Chemistry.
(3) (Fall and Summer) (3 lectures) (Prerequisites: CHEM 110 and CHEM 120 or equivalent.) (Restriction: Intended for students in biological science programs requiring only one course in physical chemistry) (Restriction: Not open to students who have taken or are taking CHEM 204 or CHEM 213) A survey of the principles and methods of physical chemistry with emphasis on the use of biological examples. Topics will include thermodynamics, transport properties, kinetics, molecular structure and interactions, and spectroscopy.

CHEM 204 Physical Chemistry/Biological Sciences 1.
(3) (Fall and Winter) (3 lectures) (Prerequisites: CHEM 110 and CHEM 120 or equivalent and one full course in calculus) (Restriction: Not open to students who are taking or have taken CHEM 203 or CHEM 213) Similar to CHEM 213. Emphasis on the use of biological examples to illustrate the principles of physical chemistry. The relevance of physical chemistry to biology is stressed.

CHEM 211 Organic Chemistry 1 Lectures.
(3) (Fall and Winter and Summer) (3 lectures) (Prerequisites: CHEM 110 or equivalent.) (Corequisite: CHEM 120 or equivalent.) (Restriction: Not open to students who are taking or have taken CHEM 212.) Permission of Department of Chemistry is required. (Note: Some CEGEP programs provide equivalency for this course. For more information, please see the Department of Chemistry's Webpage (http://www.chemistry.mcgill.ca/advising/outside/equivalencies.htm). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis, and stereochemistry.

CHEM 212 Introductory Organic Chemistry 1.
(4) (Fall and Winter and Summer) (3 lectures and a laboratory) (Prerequisites: CHEM 110 or equivalent.) (Corequisite: CHEM 120 or equivalent.) (Restriction: Not open to students who are taking or have taken CHEM 211.) (Each lab section is limited enrolment) (Note: Some CEGEP programs provide equivalency for this course. For more information, please see the Department of Chemistry's Webpage (http://www.chemistry.mcgill.ca/advising/outside/equivalencies.htm). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis, and stereochemistry.

CHEM 213 Introductory Physical Chemistry.
(3) (Winter) (3 lectures) (Prerequisites: CHEM 110, CHEM 120 and MATH 222 or equivalent.) (Restriction: Not open to students who have taken or are taking CHEM 203 or CHEM 204) Gas laws, kinetic theory. First law of thermodynamics, enthalpy, thermochemistry, bond energies. Second law of thermodynamics; the entropy and the free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Topics may include: chemical kinetics, electrochemistry and others.

CHEM 214 Physical Chemistry/Biological Sciences 2.
(3) (Winter) (3 lectures) (Prerequisites: CHEM 213 or CHEM 204) Emphasis is placed on the use of biological examples to illustrate the principles of physical chemistry. The relevance of physical chemistry to biology is stressed.

CHEM 217 General Analytical Chemistry Lab 1.
(1) (Fall) (3 hours) (Prerequisites: CHEM 110 and CHEM 120 or equivalent) Laboratory portion of an individualized program in analytical chemistry.

CHEM 219 Introduction to Atmospheric Chemistry.
(3) (Winter) (3 lectures) (Prerequisite: CEGEP DEC in Science or permission of instructor) (Restriction: Not open to students who have taken ATOC 219, CHEM 418, or ATOC 419) (Offered in even years. Students should register in ATOC 219 in odd years) An introduction to the basic topics in atmospheric chemistry. The fundamentals of the chemical composition of the atmosphere and its chemical reactions. Selected topics such as: a smog chamber, acid rain, and the ozone hole, will be examined.

CHEM 222 Introductory Organic Chemistry 2.
(4) (Fall and Winter and Summer) (3 lectures and a laboratory) (Prerequisite: CHEM 212 or equivalent.) (Restriction: Not open to students who have taken Chemistry 302 or equivalent at CEGEP.) Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.

CHEM 224 Organic Chemistry Laboratory 1.
(1) (Fall and Winter and Summer) (4 hours laboratory) (Open only to students who have the lecture equivalent of CHEM 212) Illustrative experiments in organic chemistry. Laboratory section of CHEM 212.

CHEM 232 Organic Chemistry Principles.
(3) (Restriction: Only open to students in the BN Program) (Restriction: Not open to students in the B.Sc. Program) Concepts of modern organic chemistry, its application to biological processes and everyday life, principles of bonding, structure/stereochemistry, and reaction mechanisms will be presented. Their application to reaction of all of the main functional groups and to biologically important substances will be described.

CHEM 233 Topics in Physical Chemistry.
(3) (Winter) ((3-0-6)) (Restriction: For Chemical Engineers only) Introduction to chemical kinetics, surface and colloid chemistry and electrochemistry. The topics to be discussed will be of particular interest to students in chemical engineering.

CHEM 234 Topics in Organic Chemistry.
(3) (Fall and Winter and Summer) (3-0-6) (Prerequisite: CHEM 212 or equivalent) (Restriction: For Chemical Engineers only or Permission of Department) Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.

CHEM 237 General Analytical Chemistry Lab 2.
(1) (Winter) (3 hours) (Prerequisite: CHEM 217) Laboratory portion of an individualized program in analytical chemistry.

CHEM 244 Organic Chemistry Laboratory 2.
(1) (Fall and Winter and Summer) (4 hours laboratory) (Prerequisite: CHEM 234 or equivalent) Laboratory section of CHEM 222.

CHEM 257D1, CHEM 257D2 (2) Introductory Analytical Chemistry.
(Fall) (1 lecture, 1 homework tutorial and 4 hours laboratory) (Prerequisites: CHEM 110 and CHEM 120 or equivalent) (Restriction: Not open to students who have taken or are taking CHEM 277D1/D2) (Each lab section is limited enrolment) (Students must register for both CHEM 257D1 and CHEM 257D2) (No credit will be given for this course unless both CHEM 257D1 and CHEM 257D2 are successfully completed in consecutive terms) A survey of analytical chemistry including the theory and practice of representative gravimetric, volumetric and instrumental methods.
CHEM 273 Chemical Kinetics.
(1) (Winter) (1 lecture) (Prerequisites: CHEM 110 and CHEM 120 or equivalent.) (Restriction: For Honours and Major Chemistry students. Other students with permission of instructor.) Order, molecularity, reaction mechanisms and rate constants. Determination of order, effect of temperature on rate, activated state theory. Collision theory. Reactions in solution, homogeneous catalysis, upper atmosphere kinetics, drug kinetics.

CHEM 277D1 (1.5), CHEM 277D2 (1.5) Analytical Chemistry.
(Fall) (2 lectures and 4 h laboratory) (Prerequisites: CHEM 110 and CHEM 120 or equivalent.) (Restriction: For Chemistry Honours and Majors students only) (Restriction: Not open to students who have taken or are taking CHEM 257D1/D2) (Each lab section is limited enrolment.) (Students must register for both CHEM 277D1 and CHEM 277D2). (No credit will be given for this course unless both CHEM 277D1 and CHEM 277D2 are successfully completed in consecutive terms) Qualitative and quantitative analysis. A survey of methods of analysis including theory and practice of semimicro qualitative analysis and representative gravimetric, volumetric and instrumental methods.

CHEM 281 Inorganic Chemistry 1.
(3) (Fall) (3 lectures) (Prerequisites: CHEM 110 and CHEM 120 or equivalent) (Restriction: Not open to students who have taken or plan to take CHEM 201) Basic concepts of electronic structure and molecular bonding will be developed and applied to the understanding of common materials. Acid-base chemistry. Survey of the chemistry of the main group elements. Introduction to coordination and organometallic chemistry.

● CHEM 301 Modern Inorganic Chemistry 2.
(3) (3 lectures) (Prerequisites: CHEM 110 and CHEM 120 or equivalent) (Restriction: Not open to students who have taken or plan to take CHEM 381) The chemistry of the transition metals and the properties of coordination compounds from the viewpoint of structural, bonding, chemical, mechanistic and spectroscopic behaviour. The biochemical and pollution aspects of transition metals.

(3) (Fall and Winter) (3 lectures) (Prerequisite: CHEM 222) Topics covered may include the following: aromatics and heterocyclics, carbanions, rearrangements, molecular orbital considerations, polymers and biomolecules.

● CHEM 307 Analytical Chemistry of Pollutants.
(2) (2 lectures and laboratory with field trips) (Prerequisites: One course in analytical chemistry) Description of current analytical practices in air and water pollution; critical evaluation of the reliability of the methods, with particular emphasis on interfering substances; rudiments of automated instrumentation; toxicological analysis as it relates to pollution.

CHEM 334 Advanced Materials.
(3) (Fall) (Prerequisites: CHEM 110/CHM 120 and PHYS 101/PHYS 102 or PHYS 131/PHYS 142 or CEPEG 251) Physics and Chemistry, or equivalent. Prerequisite or Corequisite: one of CHEM 203, CHEM 204, CHEM 213, CHEM 214 or equivalent; or one of PHYS 230 and PHYS 232, or equivalent; or permission of instructor.) (Restriction: Not open to students who have taken or are taking PHYS 334) The physicochemical properties of advanced materials. Topics discussed include photonics, information storage, ‘smart’ materials, biomaterials, clean energy materials, porous materials, and polymers.

CHEM 345 Molecular Properties and Structure 1.
(3) (Fall) (3 lectures) (Prerequisites: CHEM 213 and MATH 315.) (Restriction: For Chemistry Honours and Majors only) An introduction to quantum chemistry covering the historical development, wave theory, methods of quantum mechanics, and applications of quantum chemistry.

CHEM 352 Structural Organic Chemistry.
(3) (Winter) (3 lectures) (Prerequisite: CHEM 302) Modern methods of structure determination employing spectroscopic techniques; stereochemistry.

CHEM 355 Molecular Properties and Structure 2.
(3) (Winter) (3 lectures) (Prerequisite: CHEM 345) A survey of the principles of electronic, vibrational and rotational spectroscopy. Magnetic resonance methods.

CHEM 362 Advanced Organic Chemistry Laboratory.
(2) (Fall and Winter) (4 hours) (Prerequisite or corequisite: CHEM 302. Not open to Honours or Majors in Chemistry) An advanced laboratory with experiments related to the theoretical principles and synthetic methods of modern organic chemistry.

CHEM 363 Physical Chemistry Laboratory 1.
(2) (Fall and Winter) (3 lectures) (Prerequisites: CHEM 213 and CHEM 273) (Each lab section is limited enrolment) Selected experiments to illustrate physico-chemical principles.

CHEM 365 Statistical Thermodynamics.
(2) (Winter) (2 lectures) (Prerequisite: CHEM 345) Molecular basis of thermodynamics with applications to ideal gases and simple solids. Topics to be covered will include: calculation of thermodynamic functions, chemical equilibrium constants, Einstein and Debye models of solids, absolute reaction rate theory, Debye-Hückel theory of strong electrolytes.

CHEM 367 Instrumental Analysis 1.
(3) (Fall) (2 lectures and 4 hours of laboratory) (Prerequisite: CHEM 257 or CHEM 277) (Each lab section is limited enrolment) An introduction to modern methods of instrumental analysis emphasizing chromatography and electrochemical methods. Analytical methods to transaxion metal chemistry.

CHEM 371 Inorganic Chemistry Laboratory.
(2) (Fall and Winter) (4 hours) (Prerequisite: CHEM 362; prerequisite/corequisite: CHEM 381.) (Restriction: Not open to students who have taken CHEM 392) Modular format incorporating self-paced and selfguided instructions. In consultation with the instructors, a program of experimental modules is chosen covering projects related to theoretical principles, synthetic techniques and those instrumental methods used in modern inorganic and organometallic chemistry.

CHEM 371D1 (1), CHEM 371D2 (1) Inorganic Chemistry Laboratory.
(Fall) (Prerequisite: CHEM 362; prerequisite/corequisite: CHEM 381.) (Restriction: Not open to students who have taken CHEM 392) (Students must register for both CHEM 371D1 and CHEM 371D2) (No credit will be given for this course unless both CHEM 371D1 and CHEM 371D2 are successfully completed in consecutive terms) CHEM 371D1 and CHEM 371D2 together are equivalent to CHEM 371) Modular format incorporating self-paced and selfguided instructions. In consultation with the instructors, a program of experimental modules is chosen covering projects related to theoretical principles, synthetic techniques and those instrumental methods used in modern inorganic and organometallic chemistry.
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Denotes courses taught only in alternate years.

Denotes courses not available as Education electives.

Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor students.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts

Denotes courses taught only in alternate years.

‡ Professional Practice (Stage) in Dietetics involving special prerequisites

▲ Denotes courses with limited enrolment.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts

Denotes courses not available as Education electives.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts

Denotes courses taught only in alternate years.

Denotes courses not available as Education electives.

Denotes courses with limited enrolment.

Start the application process well before the start of the term to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.

CHEM 377 Instrumental Analysis 2.
(3) (Winter) (2 lectures and 4 hours of laboratory) (Prerequisite: CHEM 367) (Each lab section is limited enrolment) Spectroscopic methods of analysis will be studied with respect to fundamentals, operational aspects and instrument design. Topics will range from UV-visible to x-ray spectrometry. Methodologies will be evaluated with respect to their applications in spectrometric systems. Laboratory automation will be studied and applied in the laboratory.

CHEM 381 Inorganic Chemistry 2.
(3) (Fall) (3 lectures) (Prerequisite: CHEM 281.) (Restriction: For Honours and Major Chemistry students) (Restriction: Not open to students who have taken or plan to take CHEM 301) Introduction to transition metal chemistry, coordination numbers and geometry, and nonenclenture will be followed by a discussion of crystal field theory and its applications to problems in spectroscopy, magnetocochemistry, thermodynamics and kinetics. Several aspects related to applications of organometallic compounds in catalysis and bioinorganic systems will be discussed.

CHEM 382 Organic Chemistry: Natural Products.
(3) (Winter) (3 lectures) (Prerequisite/corequisite: CHEM 302) Structure, synthesis, stereochemistry and biosynthesis.

CHEM 392D1, CHEM 392D2 (1.5, 1.5) Integrated Inorganic/Organic Laboratory.
(Fall) (Prerequisite/corequisites: CHEM 381 and CHEM 302. Advanced laboratory for Chemistry Honours and Major students. Students enrolled in CHEM 392 are strongly advised to choose the D option.) (Restriction: Not open to students who have taken CHEM 362.) Modular format of self-paced and self-guided instruction. A program of modules selected in consultation with the laboratory staff. The experimental modules consist of projects related to the theoretical principles, synthetic techniques and instrumental methods used in modern organic, inorganic and organometallic chemistry.

CHEM 393 Physical Chemistry Laboratory 2.
(2) (Fall and Winter) (3 hours) (Prerequisite: CHEM 363) (Each lab section is limited enrolment.) Selected experiments to illustrate physico-chemical principles more advanced than those of CHEM 363.

CHEM 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

CHEM 400 Independent Study in Chemistry.
(1) (Prerequisites: CHEM 213, CHEM 222. CHEM 277D1/D2, CHEM 281, plus at least one course in Chemistry at 300 level or higher.) (Restrictions: Registration is restricted to Honours and Major students in Chemistry and requires the approval of the Director of the Undergraduate Studies in the Department of Chemistry.) Supervised research.

CHEM 419 Advances in Chemistry of Atmosphere.
(3) (Winter) (3 lectures) (Prerequisites: CHEM 213, CHEM 273, MATH 222 and MATH 315 (or equivalents), or permission of instructor) (Restriction: Not open to students who have taken ATOC 419, CHEM 619, or ATOC 619) (Offered in even years. Students should register in ATOC 419 in odd years.) Selected areas of atmospheric chemistry from field and laboratory to theoretical modelling are examined. The principles of atmospheric reactions (gas, liquid and heterogeneous phases in aerosols and clouds) and issues related to chemical global change will be explored.

CHEM 455 Introductory Polymer Chemistry.
(3) (Fall) (Prerequisites: CHEM 213, CHEM 273 or CHEM 233 (for engineering students only).) A survey course on the structure of polymers, kinetics and mechanisms of polymer and copolymer synthesis; characterization and molecular weight distributions; polymer microstructure, the thermodynamics of polymer solutions; the crystalline and amorphous states, rubber elasticity and structure-property relationships.

CHEM 462 Green Chemistry.
(3) (Fall) (3 lectures) (Prerequisites: CHEM 302 and CHEM 381) New reactions and methods which can be used for the production of chemicals from renewable feedstocks; the use of new environmentally benign solvents, catalysts and reagents; organic reactions in aqueous media and in supercritical carbon dioxide; bio-catalysis and bio-processes.

CHEM 470 Research Project.
(6) (Fall and Winter) (Prerequisite: registration by Departmental permission only) (Please see regulations concerning Project Courses, under “Project Courses” in the Faculty Degree Requirements section) A course designed to give students research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental and/or theoretical work, a written research report and an oral examination.

CHEM 470D1, CHEM 470D2 (3, 3) Research Project.
(Fall) (Students must register for both CHEM 470D1 and CHEM 470D2.) (Students must also register for CHEM 470D2) (No credit will be given for this course unless both CHEM 470D1 and CHEM 470D2 are successfully completed in consecutive terms) (CHEM 470D1 and CHEM 470D2 together are equivalent to CHEM 470) A course designed to give students research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental and/or theoretical work, a written research report

The project will consist of a literature survey, experimental and/or theoretical work, a written research report

The project will consist of a literature survey, experimental and/or theoretical work, a written research report
CHEM 480 Research Project. 
(3) (Fall) (Prerequisite or Corequisite: CHEM 490. Registration by Departmental permission only.) (Please see regulations concerning Project Courses, under "Project Courses" in the Faculty Degree Requirements section) A course designed to give Honours students research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental or theoretical work, a written research report and an oral examination.

CHEM 480D1 (1.5), CHEM 480D2 (1.5) Research Project. 
(Fall) (Students must register for both CHEM 480D1 and CHEM 480D2.) (No credit will be given for this course unless both CHEM 480D1 and CHEM 480D2 are successfully completed in consecutive terms) (CHEM 480D1 and CHEM 480D2 together are equivalent to CHEM 480) A course designed to give Honours students research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental or theoretical work, a written research report and an oral examination.

CHEM 490D1 (1.5), CHEM 490D2 (1.5) Research Project. 
(Fall) (Prerequisite or Corequisite: CHEM 480. Registration by Departmental permission only.) (Please see regulations concerning Project Courses, under "Project Courses" in the Faculty Degree Requirements section) (Students must register for both CHEM 490D1 and CHEM 490D2.) (No credit will be given for this course unless both CHEM 490D1 and CHEM 490D2 are successfully completed in consecutive terms) A course designed to give Honours students research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental or theoretical work, a written research report and an oral examination.

(3) (Prerequisite: CHEM 302) (Restriction: Not open to students who have taken CHEM 402.) This course will cover biologically relevant molecules, particularly nucleic acids, proteins, and their building blocks. In each case, synthesis and biological functions will be discussed. The topics include synthesis of oligonucleotides and peptides; chemistry of phosphates; enzyme structure and function; coenzymes, and enzyme catalysis; polyketides; antiviral and anticancer agents.

CHEM 503 Drug Design and Development 1. 
(3) (Fall) (Prerequisites: CHEM 302, BIOL 200, BIOL 201 or BIOL 212, PHAR 300 or PHAR 301 or PHAR 303 or permission of instructor) (Restriction: U3 and graduate students. Students can register only with permission of coordinators. Priority: students registered in the Minor in Pharmacology) (Restriction: Not open to students who are taking or have taken PHAR 503) Interdisciplinary course in drug design and development covering chemistry, mechanisms of action and steps in drug development, principles and problems in drug design.

CHEM 504 Drug Design and Development 2. 
(3) (Winter) (Prerequisite: CHEM 503 and permission of instructor) (Restriction: U3 and graduate students. Students can register only with permission of coordinators) (Restriction: Not open to students who are taking or have taken PHAR 504) Groups of 2-4 students with different backgrounds will form a team. Each team will select a lead compound, design the analogues, propose the preclinical and clinical studies, present possible untoward effects, and reasons for drug (dis)approval.

CHEM 514 Biophysical Chemistry. 
(3) (Winter) (Prerequisite: CHEM 203 or CHEM 204 or CHEM 213 or permission of instructor.) (Restriction: Not open to students who have taken CHEM 404.) Physical chemistry concepts needed to understand the function of biological systems at the molecular level, including the structure, stability, transport, and interactions of biological macromolecules.

CHEM 531 Chemistry of Inorganic Materials. 
(3) (Winter) (3 lectures) (Prerequisite: CHEM 381) Structure, bonding, synthesis, properties and applications of covalent, ionic, metallic crystals, and amorphous solids. Defect structures and their use in synthesis of specialty materials such as electronic conductors, superconductors, and solid electrolytes. Basic principles of composite materials and applications of chemistry to materials processing.

CHEM 532 Small Molecule Crystallography. 
(3) (Fall) (Prerequisite: CHEM 355 or permission of instructor.) Fundamentals of x-ray diffraction related to small molecule structure resolution, space groups, diffraction theory, strategies for structure solution, and refinement will be covered.

CHEM 534 Nanoscience and Nanotechnology. 
(3) (Fall) (Prerequisites: CHEM 334 or PHYS 334 or permission of instructor) (Corequisites: one of CHEM 345, PHYS 335, or PHYS 446 or permission of instructor) (Restriction: Not open to students who have taken or are taking PHYS 334) Topics discussed include scanning probe microscopy, chemical self-assembly, computer modelling, and microfabrication/micromachining.

CHEM 543 Chemistry of Pulp and Paper. 
(3) (Fall) (2 lectures plus a reading/research project.) (Prerequisite: CHEM 302 or permission of instructor.) The industrial processes for converting wood to paper are described with emphasis on the relevant organic, physical, surface chemistry and colloid chemistry. The structure and organization of the polymeric constituents of wood are related to the mechanical, optical and other requisite properties of paper.

CHEM 547 Laboratory Automation. 
(3) (Winter) (Two 1.5 hour lectures, lab) (Prerequisite: CHEM 377, equivalent or permission of instructor) Automation and data handling with respect to modern chemical laboratory instrumentation. Basic electronics, data acquisition, evaluation of laboratory needs, data processing methodologies.

CHEM 552 Physical Organic Chemistry. 
(3) (Fall) (Prerequisite: CHEM 302) The correlation of theory with physical measurements on organic systems; an introduction to photochemistry; solvent and substituent effects on organic reaction rates, etc.; reaction mechanisms.

CHEM 555 NMR Spectroscopy. 
(3) (Fall) (3 lectures) (Prerequisite: CHEM 355 or equivalent) Interpretation of proton and carbon-13 nuclear magnetic resonance spectroscopy in one dimension for structural identification.

CHEM 556 Advanced Quantum Mechanics. 
(3) (Fall) (3 lectures) (Prerequisites: CHEM 345 and PHYS 242) Quantum mechanical treatment of species of chemical interest. Introduction to perturbation theory, both time-dependent and time-independent. Treatment of the variational principle. Introduction to atomic spectra. Chemical bonding in terms of both the valence bond and molecular orbital theory. Elementary collision theory. Interaction of radiation...
with molecules.

**CHEM 567 Chemometrics: Data Analysis.**
(3) (Winter) (2 lectures and 3 hours of laboratory) (Prerequisite: Linear Algebra and experience in some computer programming language) Topics covered include; factorial analysis of chemical spectra, pattern recognition from multisensor data, linear and nonlinear optimization for the determination of optimal reaction conditions molecular modeling, multisensor calibration, etc.

**CHEM 571 Polymer Synthesis.**
(3) (Winter) (3 lectures) (Prerequisite: CHEM 302 or equivalent, or permission of instructor.) A survey of polymer preparation and characterization; mechanisms of chain growth, including free radical, cationic, anionic, condensation and transition metal-mediated polymerization, and the effects of these mechanisms on polymer architecture; preparation of alternating, block, graft and stereoblock copolymers; novel macromolecular structures including dendrimers and other nanostructures.

**CHEM 572 Synthetic Organic Chemistry.**
(3) (3 lectures) (Prerequisite: CHEM 382) Synthetic methods in organic chemistry and their application to the synthesis of complex molecules.

**CHEM 575 Chemical Kinetics.**
(3) (Winter) (3 lectures) (Prerequisites: CHEM 273 and CHEM 213) Kinetic laws, measurement of reaction rates, transition state and collision theory. Elementary reactions in gas solution and solid phases and on surfaces. Reaction mechanisms, laser techniques, molecular beams, chemiluminescence, explosions. Extensive use of computers to simulate the kinetic behaviour of chemical systems.

**CHEM 576 Quantum Chemistry.**
(3) (Lecture and/or reading course) (Prerequisite: CHEM 345) A survey of current theoretical approaches to relativistic quantum chemistry, molecular structure, spectroscopy and one electron properties.

**CHEM 581 Inorganic Topics 1.**
(3) (Winter) (Prerequisite: CHEM 381) An introduction to some areas of current interest in inorganic chemistry. Each year a selection of several particularly active areas will be chosen.

**CHEM 582 Supramolecular Chemistry.**
(3) (Prerequisites: CHEM 222, CHEM 381) Introduction to supramolecular organization will be followed by discussions on the nature of interactions and methodologies to create ordered aggregates of high complexity. Potential of supramolecular chemistry in fabricating smart materials will be explored using specific topics including inclusion chemistry, dendrimers, molecular self-assembly and crystal engineering.

**CHEM 585 Colloid Chemistry.**
(3) (Winter) (Prerequisites: CHEM 273 and CHEM 345, MATH 223 and MATH 315, PHYS 241 and PHYS 242 or permission of instructor) Principles of the physical chemistry of phase boundaries. Electrical double layer theory; van der Waals forces; Brownian motion; kinetics of coagulation; electrokinetics; light scattering; solid/liquid interactions; adsorption; surfactants; hydrodynamic interactions; rheology of dispersions.

**CHEM 587 Topics in Modern Analytical Chemistry.**
(3) (Fall) (Prerequisites: CHEM 367 and CHEM 377) Current theories of aqueous and nonaqueous solutions, with application to analytical chemistry; recent advances in analytical techniques. Topics may include: chromatography; applications of kinetics, solvent extraction and thermal analysis, with emphasis on their theoretical basis.

**CHEM 591 Bioinorganic Chemistry.**
(3) (Winter) (3 hours) (Prerequisite: CHEM 381) (Restriction: For Honours and Major Chemistry students or with permission) The roles of transition and main group elements in biology and medicine will be examined with an emphasis on using tools for structure and genome searching as well as becoming acquainted with experimental spectroscopic methods useful for bioinorganic chemistry such as macromolecular X-ray diffraction, EPR and EXAFS.

**CHEM 593 Statistical Mechanics.**
(3) (Winter) (3 lectures) (Research project) (Prerequisite: CHEM 345, Recommended: CHEM 365) Basic hypotheses of statistical thermodynamics; ideal monatomic, diatomic and polyatomic gases; Einstein and Debye models of solids; statistical theory of black-body radiation; Debye–Hückel theory of electrolyte solutions; absolute reaction rate theory of rate processes; theories of solutions.

**CHEM 597 Analytical Spectroscopy.**
(3) (Fall) (2 lectures; 3 hours lab) (Prerequisites: CHEM 367 and CHEM 377) The design and analytical use of spectroscopic instrumentation with respect to fundamental and practical limitations. Classical emission, fluorescence, absorption and chemical luminescence. Topics may include photo-acoustic spectroscopy, multielement analysis, X-ray fluorescence and modern multichannel detector systems.

**COMP-Computer Science**
Offered by: Computer Science

**COMP 102 Computers and Computing.**
(3) (2 hours lectures; 2 hours laboratory) (Prerequisite: high school level mathematics course on functions.) (Restrictions: Credit will not be given for COMP 102 if it is taken concurrently with, or after, any of: COMP 202, COMP 203, COMP 208, COMP 250. Management students cannot receive credit for COMP 102.) A course for students with no previous knowledge of computer science. The impact of computers on society. Web design and dynamic content. The inner workings of computers (hardware). Networking principles. Algorithm design and programming. A look at how computers store data (image, sound, and video). Software distribution policies and mechanisms.

**COMP 199 FYS: Excursions in Computer Science.**
(3) (3 hours) (Prerequisite: high school mathematics) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) This is a seminar format course intended for freshman and other beginning students. The topics are chosen to encourage critical discussion of fundamental ideas. Possible topics are computability, complexity, geometry, vision, AI, pattern recognition, machine models, cryptography and security and social implications of computing.

**COMP 202 Introduction to Computing 1.**
(3) (Fall and Winter) (3 hours) (Prerequisite: a CEGEP level mathematics course) (Restrictions: COMP 202 and COMP 208 cannot both be taken for credit. COMP 202 is intended as a general introductory course, while COMP 208 is intended for students interested in scientific computation. Credits for either of these courses will not count towards the 60-credit Major in Computer Science. COMP 202 cannot be taken for credit with or after COMP 250.) Overview of components of

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 Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
 Denotes courses not offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
 Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
microcomputers, the internet design and implementation of programs using a modern high-level language, an introduction to modular software design and debugging. Programming concepts are illustrated using a variety of application areas.

COMP 203 Introduction to Computing 2.
(3) (Fall and Winter) (3 hours) (Prerequisites: MATH 133 and COMP 202) (Restrictions: COMP 203 and COMP 250 are considered to be equivalent from a prerequisite point of view, and cannot both be taken for credit. Computer Science Major and Honours students are strongly advised to take MATH 240 with COMP 250 but before COMP 251. Students registered in a Core Group - with the exception of those in the Minor Concentration in Computer Science - or Mathematics Group program may NOT take this course.) Basic data structures. Representation of arrays, stacks, and queues. Linked lists and their applications to binary trees. Internal sorting. Graph representation. Elementary graph algorithms.

COMP 206 Introduction to Software Systems.
(3) (Fall and Winter) (3 hours) (Prerequisite: COMP 202 or COMP 250) Comprehensive overview of programming in C, use of system calls and libraries, debugging and testing of code; use of developmental tools like make, version control systems.

COMP 208 Computers in Engineering.
(3) (Fall and Winter) (3 hours) (Prerequisite: differential and integral calculus.) (Corequisite: linear algebra; determinants, vectors, matrix operations.) (Restrictions: COMP 202 and COMP 208 cannot both be taken for credit. COMP 202 is intended as a general introductory course, while COMP 208 is intended for students interested in scientific computations. Credits for either of these courses will not count towards the 60-credit Major in Computer Science. COMP 208 cannot be taken for credit with or after COMP 250.) Introduction to computer systems. Concepts and structures for high level programming. Elements of structured programming using FORTRAN 90 and “C”. Numerical algorithms such as root finding, numerical integration and differential equations. Non-numerical algorithms for sorting and searching.

COMP 250 Introduction to Computer Science.
(3) (Fall and Winter) (Prerequisites: Familiarity with a high level programming language and CEGET level Math.) (Restrictions: COMP 203 and COMP 250 are considered to be equivalent from a prerequisite point of view, and cannot both be taken for credit. Computer Science Major and Honours students are strongly advised to take MATH 240 with COMP 250 but before COMP 251.) An introduction to the design of computer algorithms, data structures, analysis of algorithms, and establishing correctness of programs. Overview of topics in computer science.

COMP 251 Data Structures and Algorithms.
(3) (Fall and Winter) (Prerequisites: MATH 240 and either COMP 250 or COMP 203) (Note: Computer Science Major and Honours students are strongly advised to take MATH 240 with COMP 250 but before COMP 251.) (Restrictions: Not open to students who have taken or are taking COMP 251.) A study of techniques for the description of various computational problems and the algorithms that can be used to solve them, along with their associated data structures. Proving the correctness of algorithms and determining their computational complexity.

COMP 272 Introduction to Computer Systems.
(3) (Fall and Winter) (Prerequisite: COMP 206) Number representations, combinational and sequential digital circuits, MIPS instructions and architecture datapath and control, caches, virtual memory, interrupts and exceptions, pipelining.

COMP 302 Programming Languages and Paradigms.
(3) (Fall and Winter) (3 hours) (Prerequisite: COMP 250 or COMP 203) Programming language design issues and programming paradigms. Binding and scoping, parameter passing, lambda abstraction, data abstraction, type checking. Functional and logic programming.

COMP 303 Programming Techniques.
(4) (Winter) (3 hours, 3 lab hours) (Prerequisites: COMP 206, COMP 250.) (Corequisite: COMP 302.) Software architecture, design patterns, object-oriented programming concepts, profiling and optimization. Students will implement a significant programming project.

COMP 304 Object-Oriented Design.
(3) (3 hours) (Prerequisites: COMP 206, COMP 251, COMP 302) The object model, objects and classes, verification and testing, object-oriented analysis, unified modeling language and design patterns.

COMP 310 Computer Systems and Organization.
(3) (Fall and Winter) (3 hours) (Prerequisite: COMP 272) Control and scheduling of large information processing systems. Operating system software - resource allocation, dispatching, processors, access methods, job control languages, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing.

COMP 330 Theoretical Aspects: Computer Science.
(3) (Fall) (3 hours) (Prerequisite: COMP 251.) Mathematical models of computers, finite automata, Turing machines, counter machines, push-down machines, computational complexity.

COMP 335 Software Engineering Methods.
(3) (Winter) (3 hours) (Corequisite: COMP 302) This course in software engineering teaches basic concepts and methods for software development. The focus is on engineering and analyzing requirements, design and code. Small software development exercises will be given where students would learn how to apply different methods.

COMP 350 Numerical Computing.

COMP 360 Algorithm Design Techniques.
(3) (Fall and Winter) (3 hours) (Prerequisite: Either COMP 251 or COMP 252, and either MATH 240 or MATH 235 or MATH 363.) (Restriction: Not open to students who have taken or are taking COMP 362.) A study of techniques for the
design and analysis of algorithms.

COMP 361 Systems Development Project. (3) (Winter) (Prerequisite: ECSE 321 or COMP 350 or COMP 353) Practical issues in systems programming including: inter-process communication, task scheduling, special purpose systems, multi-processor systems. Implementation of a large body of software to illustrate core concepts and provide substantial hands-on experience.

COMP 362 Honours Algorithm Design. (3) (Fall) (Prerequisite: COMP 252) (Restriction: Not open to students who have taken COMP 360.) (Note: COMP 362 can be used instead of COMP 360 to satisfy prerequisites.) Basic algorithmic techniques, their applications and limitations. Problem complexity, how to deal with problems for which no efficient solutions are known.

COMP 396 Undergraduate Research Project. (3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

COMP 400 Technical Project and Report. (3) (Fall and Winter) (Prerequisites: 15 Computer Science credits.) (Restriction: Not open to students who have completed COMP 396.) A computer-related project, typically a programming effort, along with a report will be carried out in cooperation with a staff member in the School of Computer Science.

COMP 409 Concurrent Programming. (3) (Prerequisites: COMP 251, COMP 302, and COMP 310 or ECSE 427) Characteristics and utility of concurrent programs; formal methods for specification, verification and development of concurrent programs; communications, synchronization, resource allocation and management, concurrency and integrity.


COMP 420 Secondary Storage Algorithms and Data Structures. (3) (Fall) (Prerequisite: COMP 251 or COMP 252.) Data structures and algorithms for persistent or very extensive data: sequential, logarithmic and direct-access files. Activity, volatility, and symmetry requirements of applications. Efficiency and cost analyses. Systems design. Programming language for secondary storage: basics of relational databases.

COMP 421 Database Systems. (3) (Winter) (Prerequisites: COMP 206, COMP 251, COMP 302) Database Design: conceptual design of databases (e.g., entity-relationship model), relational data model, functional dependencies. Database Manipulation: relational algebra, SQL, database application programming, triggers, access control. Database Implementation: transactions, concurrency control, recovery, query execution and query optimization.

COMP 423 Data Compression. (3) (Winter) (3 hours) (Prerequisites: COMP 251, MATH 223, MATH 323) Information Theory. Huffman, arithmetic and dictionary codes. Context Modelling. Lossy compression and quantization. Signal processing. Applications to text, image, speech, audio and video data.

COMP 424 Topics: Artificial Intelligence 1. (3) (3 hours) (Prerequisites: COMP 206, COMP 251, COMP 302) Introduction to search methods in AI problems. Mechanical theorem-proving techniques, game playing by computers, the minmax and alpha-beta algorithms, and heuristic approaches to state space search problems.

COMP 426 Automated Reasoning. (3) (3 hours) (Prerequisites: COMP 424; or COMP 302 with MATH 340) Representing and reasoning with knowledge. The case for logics. Introduction to Logic Programming and, for example, PROLOG. Introduction to some Artificial Intelligence applications of Logic Programming: Meta-interpreters, Expert Systems and their implementation, Planning, Natural Language Processing, Machine Learning.

COMP 428 Algorithms for Engineers. (3) (3 hours) (Prerequisites: ECSE 222 and MATH 363) (Restrictions: COMP 431 is open only to B.Eng. students in Electrical and Computer Engineering. Credit will be given for only one of: COMP 431, COMP 251, COMP 360.) Advanced data structures: heaps, binary search trees, graphs, algorithmic analysis: space-time analysis, worst-case and expected complexity. Examples of searching sorting and merging. Algorithm design: divide-and-conquer, dynamic programming, greedy methods, backtracking. Algorithms: set manipulation, tree traversals. Memory management: hashing, dynamic storage allocation and garbage collection.

COMP 435 Basics of Computer Networks. (3) (Winter) (3 hours) (Prerequisite: COMP 310) (COMP 435 and COMP 535 cannot both be taken for credit.) Exposition of the first four layers of the ISO model for computer network protocols. Internet protocol programming. Network administration and configuration and security issues.

COMP 462 Computational Biology Methods. (3) (3 hours) (Prerequisites: COMP 360 and MATH 323.) (Restriction: Not open to students who have taken COMP 562.) Application of computer science techniques to problems arising in biology and medicine, techniques for modeling evolution, aligning molecular sequences, predicting structure of a molecule and other problems from computational biology.

COMP 490 Introduction to Probabilistic Analysis of Algorithms. (3) (3 hours) (Prerequisites: COMP 251 and MATH 323) Fundamental tools from probability are used to analyze algorithms. Notions covered included independence, generating functions, probability inequalities, random walks and Markov chains. Analysis of probabilistic recurrences, Las Vegas algorithms, randomized approximation algorithms, random sampling methods, Monte Carlo techniques and algorithms for combinatorial search and graph theoretical problems.

COMP 505 Advanced Computer Architecture. (3) (3 hours) (Prerequisites: COMP 302 and COMP 273 or equivalent) Basic principles and techniques in the design of high-performance computer architecture. Topics include memory architecture: cache structure and design, virtual memory.
structures; pipelined processor architecture; pipeline control and hazard resolution, pipelined memory structures, interrupt, evaluation techniques; vector processing; RISC vs. CISC architectures; general vs. special purpose architectures; VLSI architecture issues.

COMP 506 Advanced Analysis of Algorithms.
(3) (Winter) (3 hours) (Prerequisite: COMP 330 or COMP 360 or COMP 431.) The study of computational complexity and intractability: Cook's Theorem, NP-completeness, oracles, the polynomial hierarchy, lower bounds, heuristics, approximation problems.

COMP 507 Computational Geometry.
(3) (Fall) (3 hours) (Prerequisite: COMP 360 or COMP 362 or permission of instructor or corequisite COMP 506.) Problems in computational geometry: worst-case complexity of geometric algorithms; expected complexity of geometric algorithms and geometric probability; geometric intersection problems; nearest neighbor searching; point inclusion problems; distance between sets; diameter and convex hull of a set; polygon decomposition; the Voronoi diagram and other planar graphs; updating and deleting from geometric structures.

• COMP 512 Distributed Systems.
(4) (Fall) (Prerequisites: COMP 310, COMP 251 or equivalent.) Models and Architectures. Application-oriented communication paradigms (e.g. remote method invocation, group communication). Naming services. Synchronization (e.g. mutual exclusion, concurrency control). Fault-tolerance (e.g. process replication, agreement protocols). Distributed file systems. Security. Examples of distributed systems (e.g. Web, CORBA). Advanced Topics.

COMP 520 Compiler Design.
(4) (Fall) (3 hours, 1 hour consultation) (Prerequisites: COMP 251, COMP 302, COMP 522 Modelling and Simulation.) Introduction to compiler design and implementation. Run-time implementation of various programming language constructs. Introduction to code generation for an idealized machine. Students will implement parts of a compiler.

COMP 522 Modelling and Simulation.
(4) (Fall) (3 hours) (Prerequisites: COMP 251, COMP 302, COMP 350) Simulation and modeling processes, state automata, Petri Nets, state charts, discrete event systems, continuous-time models, hybrid models, system dynamics and object-oriented modeling.

COMP 523 Language-based Security.
(3) (Winter) (Prerequisites: COMP 302, COMP 330.) State-of-the-art language-based techniques for enforcing security policies in distributed computing environments. Static techniques (such as type- and proof-checking technology), verification of security policies and applications such as proof-carrying code, certifying compilers, and proof-carrying authentication.

• COMP 524 Theoretical Foundations of Programming Languages.
(3) (3 hours) (Prerequisite: COMP 302, and MATH 340 or MATH 235) Operational and denotational semantics of programming languages. Equivalence theorems for first-order languages. Lambda calculus. Type-inference, typed lambda calculus. Polymorphism. Elements of domain theory and fixed-point induction.

COMP 525 Formal Verification.
(3) (Winter) (3 hours) (Prerequisites: COMP 251, COMP 310, COMP 330 and MATH 340) Propositional logic - syntax and semantics, temporal logic, other modal logics, model checking, symbolic model checking, binary decision diagrams, other approaches to formal verification.

COMP 526 Probabilistic Reasoning and AI.
(3) (Winter) (3 hours) (Prerequisites: COMP 206, COMP 360, COMP 424 and MATH 323) Belief networks, Utility theory, Markov Decision Processes and Learning Algorithms.

COMP 529 Software Analysis.
(4) (Prerequisite: COMP 303 or COMP 304.) Development, analysis, and maintenance of software architectures, with special focus on modular decomposition and reverse engineering.

COMP 531 Theory of Computation.

COMP 532 Object-Oriented Software Development.
(3) (Fall) (Prerequisites: COMP 335 or ECSE 321) Object-oriented, UML-based software development; requirements engineering based on use cases; using OCL and a coherent subset of UML to establish complete and precise analysis and design documents for a software system; Java-specific mapping strategies for implementation.

• COMP 534 Team Software Engineering.
(3) (3 hours) (Prerequisite: COMP 433 or equivalent) Team-work and team-processes for evolving software systems. Guided by defined processes, project teams will elicit new requirements, design code and test an enhanced software system. Team members will play various technical and managerial roles in carrying out their software project.

COMP 535 Computer Networks 1.
(3) (Fall) (3 hours) (Prerequisite: COMP 310) (Restriction: Students may not take both COMP 435 and COMP 535 for credit) Exposition of the first four layers of the ISO model for computer network protocols, i.e., the physical, data, network, and transport layers. Basic hardware and software issues with examples drawn from existing networks, notably SNA, DECnet, and ARPA.net.

• COMP 537 Internet Programming.
(3) (3 hours) (Prerequisites: COMP 251 and COMP 302, and any one of COMP 310, COMP 420, COMP 424, or COMP 433) Sockets, User Datagram Protocol (UDP), Transmission Control Protocol (TCP), Hypertext Transfer Protocol (HTTP), Internet resource database and search engines. Remote File Systems. Distributed objects, Common Object Request Broker Architecture (CORBA).

• COMP 538 Person-Machine Communication.
(3) (3 hours) (Prerequisites: COMP 251, COMP 302) Introduction to programming techniques and hardware design concepts that facilitate interaction between humans and computers. Theories and models for person-machine communication, object oriented design and software engineering of interfaces. Natural language facilities.

• COMP 540 Matrix Computations.
(3) (3 hours) (Prerequisite: MATH 327 or COMP 350) Designing and programming reliable numerical algorithms. Stability of algorithms and condition of problems. Reliable and efficient algorithms for solution of equations, linear least squares problems, the singular value decomposition, the eigenproblem and related problems. Perturbation analysis of problems. Algorithms for structured matrices.

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 professionnel Practice (Stage) in Dietetics involving special prerequisites.
 Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
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2006-2007 Undergraduate Programs Calendar, McGill University
COMP 574 Cryptography and Data Security.
(4) (Fall) (3 hours) (Prerequisites: COMP 360 or COMP 362, MATH 323.) This course presents an in-depth study of modern cryptography and data security. The basic information theoretic and computational properties of classical and modern cryptographic systems are presented, followed by a cryptanalytic examination of several important systems. We will study the applications of cryptography to the security of systems.

COMP 552 Combinatorial Optimization.
(3) (Winter) (3 hours) (Prerequisites: COMP 566 or MATH 343.) Algorithmic and structural approaches in combinatorial optimization with a focus upon theory and applications. Topics include: polyhedral methods, network flow, matroid theory, graph algorithms, matroid theory and submodular functions.

(3) (Prerequisite: MATH 223, COMP 251, COMP 206) The study of fundamental mathematical, algorithmic and representational issues in computer graphics. The topics to be covered are: overview of graphics process, projective geometry, homogeneous coordinates, projective transformations, quadtrees and tensors, line-drawing, surface modeling and object modeling. Students will select algorithms for connectivity, partitioning, texture mapping, polyhedral representations, procedural modeling, and animation.

COMP 558 Fundamentals of Computer Vision.
(3) (Winter) (3 hours) (Prerequisites: COMP 206, COMP 360, MATH 222, MATH 223) (Restriction: not open to students who have taken 308-766 before January 2001) Biological vision, edge detection, projective geometry and camera modeling, shape from shading and texture, stereo vision, optical flow, motion analysis, object recognition, graph theoretic methods, high level vision, applications.

COMP 560 Graph Algorithms and Applications.
(3) (Fall) (3 hours) (Prerequisite: COMP 206, COMP 360, MATH 431 or MATH 343) Algorithms for connectivity, partitioning, clustering, colouring and matching. Isomorphism testing. Algorithms for special classes of graphs. Layout and embedding algorithms for graphs and networks.

COMP 563 Molecular Evolution Theory.
(3) (Prerequisites: COMP 251 or COMP 252) (MATH 323 or equivalent; or by permission of instructor.) Population genetics; statistical inference from sequence data; phylogenetics, coalescent theory; models of mutation and selection.

COMP 564 Computational Gene Regulation.
(3) (Prerequisite: COMP 462.) This course examines computational problems related to gene regulation at the mRNA and protein level. With respect to RNA expression, topics include microarray analysis, SNP detection, and the inference of genetic networks. With respect to protein expression, topics include peptide sequencing, peptide identification, and the interpretation of interaction maps.

COMP 566 Discrete Optimization 1.
(3) (Fall) (3 hours) (Prerequisites: COMP 360 and MATH 223) Use of computer in solving problems in discrete optimization. Linear programming and extensions. Network simplex method. Applications of linear programming. Vertex enumeration. Geometry of linear programming. Implementation issues and robustness. Students will do a project on an application of their choice.

COMP 567 Discrete Optimization 2.
(3) (Winter) (3 hours) (Prerequisites: COMP 566 or MATH 417) Formulation, solution and applications of integer programs. Branch and bound, cutting plane, and column generation algorithms. Combinatorial optimization. Polyhedral methods. A large emphasis will be placed on modeling. Students will select and present a case study of an application of integer programming in an area of their choice.

COMP 575 Fundamentals of Distributed Algorithms.
(3) (Winter) (3 hours) (Prerequisite: COMP 310) Study of a collection of algorithms that are basic to the world of concurrent programming. Discussion of algorithms from the following areas: termination detection, deadlock detection, global snapshots, clock synchronization, fault tolerance (byzantine and self-stabilizing systems). Students will implement algorithms on the BBN butterfly and will present papers on topics in these areas.

• COMP 577 Distributed Database Systems.
(3) (Fall) (3 hours) (Prerequisites: COMP 421 and COMP 310) High-level communication paradigms (e.g. client/server, publish/subscribe). Architecture of distributed information systems. Distributed transactions: concurrency control, recovery, distributed agreement. Data Replication. Data Distribution. Distributed queries. Advanced topics.

EPSC-Earth & Planetary Sciences
Offered by: Earth & Planetary Sciences

EPSC 104 The Earth System.
(3) (Winter) (3 hours lectures) (Restriction: Not open to students who are taking or have taken ATOC 104 or GEOG 104.) Earth system science examines the complex interactions among the atmosphere, biosphere, geosphere and hydrosphere. It focuses on physical, chemical, and biological processes that extend over spatial scales ranging from microns to the size of planetary orbits, and spans time scales from fractions of a second to billions of years.

EPSC 200 The Terrestrial Planets.
(3) (Winter) (3 hours lectures) A comparative survey of the planets of our solar system with an emphasis on the terrestrial planets and their implications for the Earth as a planet. Topics include: structure and origin of the solar system, meteorites, and comparisons of the terrestrial planets in terms of their rotational properties, magnetic fields, atmospheres, surface histories, internal structure, chemical composition, volcanism, and tectonics.

EPSC 201 Understanding Planet Earth.
(3) (Fall or Winter) (3 hours lectures; afternoon field trips) Learn about Earth’s origin, its place in the solar system, its internal structure, rocks and minerals, the formation of metal and fossil fuel deposits, and the extinction of dinosaurs. Discover the impact of the volcanic eruptions, earthquakes and mountain chains on Earth’s past, present and future. Explore 125 million-year-old Mount Royal.

EPSC 203 Structural Geology 1.
(3) (Winter) (2 hours lectures, 3 hours laboratory) Primary igneous and sedimentary structures, attitudes of planes and lines, stress and strain, fracturing of rocks, faulting, homogeneous strain, description and classification of folds, foliation and lineation, orthogonarchic and stereographic projections.

EPSC 205 Astrobiology.
(3) (Winter) (3 hours lectures) (Restriction: Not open to students who have taken or are taking ANAT 205) Astrobiology is the search for the origin, evolution and destiny of life in
the universe. The course will provide insight into the formation and evolution of habitable worlds, the evolution of life and the biogeochemical cycles in the Earth's oceans and atmosphere, and the potential for biological evolution beyond an organism's planet of origin.

**EPSC 210 Introductory Mineralogy.**
(3) (Fall) (2 hours lectures, 3 hours laboratory) Crystal chemistry and identification of the principal rock-forming and ore minerals. Elementary crystallography. Optional 2-day field trip.

**EPSC 212 Introductory Petrology.**
(3) (Winter) (2 hours lectures, 3 hours laboratory) (Prerequisite: EPSC 210) A survey of igneous, sedimentary and metamorphic rocks and the processes responsible for their formation. The laboratory will emphasize the recognition of rocks in both hand-specimen and thin section using optical microscopes.

**EPSC 220 Principles of Geochemistry.**
(3) (Fall) (2 hours lectures, 3 hours laboratory) (Prerequisites: EPSC 201, EPSC 210) Basic concepts in geochemistry and the application of geochemical principles of chemistry to geological subdisciplines. Particular emphasis on origin of elements, controls on their distribution in Earth and cosmos, isotopes, organic geochemistry and water chemistry. Application of phase diagrams to geology.

**EPSC 221 General Geology.**
(3) (Fall) (2 hours lecture, 3 hours laboratory) (2-3-4) (Restriction: Open to Engineering students only.) An introductory course in physical geology designed for majors in civil and mining engineering. Properties of rocks and minerals, major geological processes, together with natural hazards and their effects on engineered structures are emphasized. The laboratory is an integral part of the course which includes rock and mineral identification, basic techniques of airphoto and geological map interpretation, and structural geology.

**EPSC 225 Properties of Minerals.**
(1) (Fall) (1 hour lecture, 1 hour laboratory) (Restriction: Open to Engineering students only) Survey of the physical and chemical properties of the main mineral groups. Discussion of their relationships to the chemical composition and structure of minerals. The practical exercises emphasize the physical and chemical properties that relate to industrial uses and environmental issues, and the identification of hand specimens.

**EPSC 231 Field School 1.**
(3) (Summer: Two-week field school in May) (Prerequisite: EPSC 203, EPSC 212, or equivalent) Geological mapping of selected areas, preparation of maps, reports from field notes, aerial photographs, etc.

**EPSC 233 Earth and Life History.**
(3) (Fall) (3 hours lectures) Interpretation of stratified rocks; history of Earth with special emphasis on the regions of North America; outline of the history of life recorded in fossils.

**EPSC 243 Environmental Geology.**
(3) (Fall or Winter) (3 hours lectures) Introduction to the relationship of geological processes and materials to the human environment; geologic hazards; hydrogeology; impacts of waste disposal, energy use, land resource development.

**EPSC 250 Natural Disasters.**
(3) (Fall) (3 hours lectures) (Restriction: Not open to students who have taken or are taking ATOC 250) This course examines the science behind different types of disasters and our ability or inability to control and predict such events. From this course the student will gain an appreciation of natural disasters beyond the newspaper headlines, and will better understand how the effects of disasters can be reduced.

**EPSC 312 Spectroscopy of Minerals.**
(3) (Winter) (6 hours laboratory and relevant in-lab lectures) (Prerequisite: EPSC 210) Interaction of minerals with electromagnetic radiation. Optical mineralogy on thin and polished sections. Demonstrations of other spectroscopic techniques applied to the identification of minerals and to the analysis of their composition and structure.

**EPSC 320 Elementary Earth Physics.**
(3) (Fall) (3 hours lectures) (Prerequisite: MATH 222) Physical properties of Earth and the processes associated with its existence as inferred from astronomy, geodesy, seismology, geology, terrestrial magnetism and thermal evolution.

**EPSC 330 Earthquakes and Earth Structure.**
(3) (Winter) (3 hours lectures, tutorial as required) (Prerequisites: MATH 314, EPSC 320) Seismic wave theory; body waves, surface waves and free oscillations; seismicity and earthquakes; seismology and Earth's internal structure.

**EPSC 331 Field School 2.**
(3) (Winter or Summer) (Two-week intensive field school to a range of national and international locations.) (Prerequisites: enrollment in U2 or U3 EPS program and permission of the instructor.) (Alternates years with EPSC 341.) Two week field studies in selected branches of the geosciences.

**EPSC 334 Invertebrate Paleontology.**
(3) (Winter) (2 lectures and one laboratory period) Preservation of fossils; the fossil record of invertebrates; use of fossils in stratigraphy and paleoecology; fossils in evolutionary studies. Fossils of invertebrates are studied in the laboratory.

**EPSC 341 Field School 3.**
(3) (Winter or Summer) (Two intensive field school to a range of national and international locations.) (Prerequisites: Enrolment in U2 or U3 EPS program and permission of the instructor.) (Alternates years with EPSC 331.) Two week field studies in selected branches of the geosciences to examine processes in geology.

**EPSC 350 Tectonics.**
(3) (Winter) (3 hours lectures) (Prerequisites: EPSC 320, Calculus 3 or equivalent) Rheology of the Earth, mechanics of the crust and mantle, convection in the mantle, evolution and kinematics and deformations of the oceanic and continental plates, thermal evolution of the Earth, the unifying theory of plate tectonics.

**EPSC 396 Undergraduate Research Project.**
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project.

**EPSC 423 Igneous Petrology.**
(3) (Winter) (2 hours lectures, 3 hours laboratory)

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EPSC 452 Mineral Deposits 2.
(3) (Fall) (2 lectures, 3 hours laboratory) (Prerequisite: EPSC 312, EPSC 220) A systematic review of the nature and origin of the major types of metallic and non-metalliferous mineral deposits; typical occurrences; geographic distribution; applications to exploration. Emphasis on magmatic ores, massive sulfides, iron formations.

EPSC 455 Sedimentary Geology.
(3) (Fall) (2 lectures, 3 hours laboratory) (Prerequisites: EPSC 210, EPSC 212) This course discusses the origin, diagenesis, classification and economic importance of sedimentary rocks. Students will learn about the physical properties of sedimentary rocks, including porosity and permeability, different techniques for analyzing those rocks (thin sections, hand specimens, wireline logs) and the types of sedimentary basins within which sediments accumulate.

EPSC 478 Short Research Project.
(1) (Fall or Winter) (Restrictions: Open only to U3 students. Students are expected to find an appropriate instructor for their project.) Supervised research project in earth and planetary sciences.

EPSC 480D1 (3), EPSC 480D2 (3) Honours Research Project.
(Fall) (Restriction: For Honours students in 3rd year) (Students must register for both EPSC 480D1 and EPSC 480D2) (No credit will be given for this course unless both EPSC 480D1 and EPSC 480D2 are successfully completed in consecutive terms) A written proposal outlining the studies to be undertaken must be submitted to the undergraduate Student Adviser by May 1st of the U-2 year. The proposal will be reviewed by a committee and a decision forwarded by mail. If approved the investigation will be supervised by a staff member, and the results must be presented in the form of an undergraduate thesis.

EPSC 482 Independent Studies 1.
(3) (Fall or Winter) (May not be taken concurrently with EPSC 480) Research and/or reading project in Earth and Planetary Sciences, designed by the student in consultation with a Faculty supervisor. A statement of the proposed project and the method of evaluation must be approved by the Director of Undergraduate studies before October 15. This statement will be included in the student's file.

EPSC 482D1 (1.5), EPSC 482D2 (1.5) Independent Studies 1.
(Fall) (Students must register for both EPSC 482D1 and EPSC 482D2) (No credit will be given for this course unless both EPSC 482D1 and EPSC 482D2 are successfully completed in consecutive terms) Research and/or reading project in Earth and Planetary Sciences, designed by the student in consultation with a Faculty supervisor. A statement of the proposed project and the method of evaluation must be approved by the Director of Undergraduate studies before October 15. This statement will be included in the student's file.

EPSC 483D1 (1.5), EPSC 483D2 (1.5) Independent Studies 2.
(Fall) (Students must register for both EPSC 483D1 and EPSC 483D2) (No credit will be given for this course unless both EPSC 483D1 and EPSC 483D2 are successfully completed in consecutive terms) Research and/or reading project on an environmental topic, designed by the student in consultation with a faculty supervisor. A statement of the proposed project and the method of evaluation must be approved by the Director of Undergraduate Studies by October 15. This statement will be included in the student's file.

EPSC 501 Crystal Chemistry.
(3) (Winter) (2 hours lectures, 1 hour seminar) (Prerequisite (Undergraduate): CHEM 203 or CHEM 213) Discussion of crystal structures and compositions of important mineral groups, especially oxides, sulfides and silicates. Solid solution.

EPSC 510 Geodynamics and Geomagnetism.
(3) (Fall) (3 hours lectures) (Prerequisites: EPSC 320, MATH 319 or permission of the instructor) (Corequisite: EPSC 350) The gravity field of the Earth and planets, body and orbital dynamics the Earth, moon and planets, tidal interactions of the Earth-moon-sun system, deformation of the Earth under static and dynamic loads, the magnetic field of the Earth and planets: the magnetosphere, the external radiation belts, magnetohydrodynamic models of the core dynamo, geochemical convection in the core, fluid dynamic motions of the outer core, dynamics of the inner core.

EPSC 519 Isotope Geology.
(3) (Fall) (3 hours lectures) (Prerequisites: U2 core program) Geochronology, the fractionation of the stable isotopes, and applications to petrology and mineral deposits.

EPSC 525 Subsurface Mapping.
(3) (Winter) (2 hours lectures, 3 hours laboratory) (Prerequisites: EPSC 455 or permission of instructor) This course will provide participants the opportunity to learn how different types of data (wireline logs, seismic, etc.) are employed to map geological features in the subsurface. Lectures will teach participants about the physical basis of each of the data types, and the basic mapping and analytical techniques (e.g., geostatistics, gridding) that are employed in subsurface mapping. The principal focus will be on applying these techniques and concepts to real-world data sets.

EPSC 530 Volcanology.
(3) (Fall) (2 hours lectures, 3 hours laboratory)
(Prerequisites: EPSC 212 and EPSC 312, or permission of instructor) The physical mechanisms which drive volcanoes and volcanic activity are presented. Descriptive, practical and theoretical approaches to the study of volcanoes are discussed.

EPSC 542 Chemical Oceanography.

EPSC 547 High-Temperature Geochemistry.
(3) (Winter) (2 hours lectures, 3 hours laboratory) (Prerequisites: CHEM 203, CHEM 204 or CHEM 213, or permission of instructor) The application of thermodynamic principles to igneous and metamorphic petrology and economic geology. Topics include but are not restricted to: solid solutions in minerals, behaviour of geological fluids, phase equilibria, flow processes, estimation of thermodynamic data.

EPSC 548 Processes of Igneous Petrology.
(3) (Fall) (2 hours lectures, 1 hour seminar) (Prerequisite: EPSC 423) Investigation of the primary mechanisms causing the diversity of igneous rock compositions on the Earth, other planets, asteroids, and meteorite parent bodies.

EPSC 549 Hydrogeology.

EPSC 550 Selected Topics 1.
(3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interest in Earth & Planetary Sciences.

EPSC 551 Selected Topics 2.
(3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interest in Earth & Planetary Sciences.

EPSC 552 Selected Topics 3.
(3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interest in Earth & Planetary Sciences.

EPSC 561 Ore-forming Processes 1.
(3) (Fall) (3 hours lectures) (Prerequisite: One course in ore petrology (EPSC 451 or EPSC 452) or permission of the instructor) Physicochemical controls of hydrothermal mineral deposition. Discussion of fluid inclusion theory and application; stable isotope systematics, wall-rock alteration; ore mineral solubility and speciation; and mechanisms of mineral deposition.

EPSC 562 Ore-forming Processes 2.
(3) (Winter) (3 hours lectures) (Prerequisite: One course in mineral deposits (EPSC 451 or EPSC 452) or permission of the instructor) Genesis of hydrothermal mineral deposits. Discussion of geological setting, fluid and metal sources, method of metal transport, and factors controlling metal concentration for a selection of hydrothermal mineral deposit types.

EPSC 570 Cosmochemistry.
(3) (Winter) (3 hours lectures) (Prerequisites: EPSC 220, EPSC 210 or permission of instructor) Examines the implications of phase equilibria and the compositions of meteorites and the solar system for the formation and internal differentiation of the terrestrial planets and the nature of chemical fractionation processes in both planetary interiors and the solar system as a whole.

EPSC 580 Aqueous Geochemistry.
(3) (Winter) (3 hours lectures) (Prerequisites: EPSC 210, EPSC 212 or permission of instructor) The use of chemical thermodynamics to study fluid-rock interactions with an emphasis on the aqueous phase. The course will introduce basic concepts and will discuss aqueous complexation, mineral surface adsorption, and other controls on crustal fluid compositions. Applications will range from considering contaminated groundwater systems to metamorphic reactions.

EPSC 590 Applied Geochemistry Seminar.
(3) (Winter) (3 hours seminar) (Prerequisite: permission of instructor) Seminar course devoted to field case studies that illustrate the applications of geochemical principles to solving geologic problems. Each student will prepare and lead a class devoted to a geochemical subject of their own choosing.

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EXMD-Experimental Medicine

Offered by: Medicine

EXMD 401 Physiology and Biochemistry Endocrine Systems.
(3) (Winter) (Prerequisite: BIOL 200 and BIOL 201)
Offered in conjunction with the Department of Physiology. The course provides a basic knowledge of endocrine systems encompassing biosynthesis, metabolism and physiological actions of hormones. Specific topics covered are hormones of the hypothalamus, pituitary, adrenals, thyroids, parathyroids, pancreas, gut and the gonads. The role of hormones and growth factors in pregnancy and fetal development are also discussed.

EXMD 502 Advanced Endocrinology.
(3) (Fall) (Prerequisite: Undergraduate): EXMD 301 or an equivalent course) This course is designed for U3 students who are in a major or honours program in anatomy, biology, biochemistry or physiology and for graduate students. A multidisciplinary approach will be used to teach biosynthesis and processing of hormones, their regulation, function and mechanism of action. The material will cover hypothalamic, pituitary, thyroid, atrial and adrenal hormones as well as prostaglandins and related substances.

EXMD 503 Advanced Endocrinology.
(3) (Winter) Study of the parathyroids, gut and pancreatic hormones and growth factors. In addition, the role of hormones and growth factors in reproduction and fetal maturation will be discussed.

EXMD 504 Biology of Cancer.
(3) (Fall) (Prerequisite: Undergraduate): A good knowledge of biology at the cellular and molecular level. Open to U3 and graduate students only) An introduction to the biology of malignancy. A multidisciplinary approach dealing with the etiology of cancer, the biological properties of malignant cells, the host response to tumour cell growth and the principles of cancer therapy.

EXMD 506 Advanced Applied Cardiovascular Physiology.
(3) (Winter) (Prerequisite: Undergraduate): PHGY 313 or by permission of Instructor) Offered in conjunction with the Department of Physiology. Current topics, methods and techniques for studying the cardiovascular system. Basic and applied cardiac electrophysiology, mechanisms of pacemaker activity, arrhythmias, the effects of drugs on cardiac functions, fetal circulation, coronary circulation, mechanics of blood flow, cardiovascular diseases, renal and neural control of the circulation, and cardiac assist devices.

EXMD 507 Advanced Applied Respiratory Physiology.
(3) (Fall) (Prerequisite: PHGY 313) Offered in conjunction with the Department of Physiology. In depth coverage of respiratory biology including: functional anatomy of the respiratory system, pulmonary statics and dynamics, chest wall and respiratory muscles, ventilation and perfusion, control of breathing, and defense mechanisms. This course is aimed at providing a solid grounding in pulmonary biology and its research applications.

EXMD 508 Advanced Topics in Respiration.
(3) (Winter) (Prerequisite: EXMD 507) Offered in conjunction with the Department of Physiology. In depth coverage of developmental physiology, pulmonary vascular physiology, biology of airway smooth muscle, respiratory epithelium and molecular biology of respiratory muscles. Dyspnea, mechanical ventilation and respiratory failure will also be covered. This course emphasizes application of respiratory biology to basic and applied research and touches on pulmonary pathophysiology.

EXMD 509 Gastrointestinal Physiology and Pathology.
(3) (Fall and Winter) (Prerequisite: Graduate students, U3 undergraduates) Course deals with various aspects of gastrointestinal and hepatic function in health and altered physiological states. The principal focus is on the recent literature pertaining to cell and molecular mechanisms underlying the motility secretory process, absorption and secretion. The molecular biology of the hepatic viruses and various aspects of colonic neoplasia will also be considered.

EXMD 510 Bioanalytical Separation Methods.
(3) (Fall) The student will be taught the capabilities and limitations of modern separation methods (gas and high-performance liquid chromatography, capillary electrophoresis, hyphenated techniques). Application of these techniques to solve analytical problems relevant to biomedical research will be emphasized, with special attention being paid to the processing of biological samples.

EXMD 511 Joint Venturing with Industry.
(3) (Winter) Offered in conjunction with the Centre for Continuing Education Using problem-based learning, the course examines the various business interactions between researchers and their business partners in support and development of research into commercial endeavours using models such as venture capital, business partnerships, or grants-in-aid.

GEOG-Geography

Offered by: Geography

GEOG 104 The Earth System.
(3) (Winter) (Restriction: Not open to students who are taking or have taken ATOC 104 or EPSC 104.) Earth system science examines the complex interactions among the atmosphere, biosphere, geosphere and hydrosphere. It focuses on physical, chemical, and biological processes that extend over spatial scales ranging from microns to the size of planetary orbits, and spans time scales from fractions of a second to billions of years.

GEOG 199 FY5: Geo-Environments.
(3) (Fall) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FY5. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25. Closed to Geography Majors) Geography studies the complex but crucial relationships between people and their physical and socio-cultural environments. The course is constructed around field trips and preparatory seminars which provide an opportunity for students to learn about a variety of physical environments and their utilisation.

GEOG 200 Geographical Perspectives: World Environmental Problems.
(3) (Winter and Summer) (3 hours) Introduction to geography as the study of nature and human beings in a spatial context. An integrated approach to environmental systems and the human organization of them from the viewpoint of spatial relationships and processes. Special attention to environmental problems as a constraint upon Third World development.

GEOG 201 Introductory Geo-Information Science.
(3) (Fall) (3 hours and lab) An introduction to Geographic Information Systems. The systematic management of spatial data. The use and construction of maps. The use of microcomputers and software for mapping and statistical work. Air photo and topographic map analyses.

GEOG 202 Statistics and Spatial Analysis.
(3) (Winter) (2.5 hours and lab) (You may not be able to receive
The course will examine research and simple regression. Problems associated with analysing spatial data such as the 'modifiable areal unit problem' and spatial autocorrelation. Statistics measuring spatial pattern in point, line and polygon data.

GEOG 203 Environmental Systems.
(3) (Fall) (3 hours) (Restriction: Because of quantitative science content of course, not recommended for B.A. and B.Ed. students in their U0 year.) An introduction to system-level interactions among climate, hydrology, soils and vegetation at the scale of drainage basins, including the study of the global geographical variability in these land-surface systems. The knowledge acquired is used to study the impact on the environment of various human activities such as deforestation and urbanisation.

GEOG 205 Global Change: Past, Present and Future.
(3) (Winter) (3 hours) An examination of global change, from the Quaternary Period to the present day involving changes in the physical geography of specific areas. Issues such as climatic change and land degradation will be discussed, with speculations on future environments.

GEOG 210 Global Places and Peoples.
(3) (Fall) (3 hours) Introduction to key themes in human geography. Maps and the making, interpretation and contestation of landscapes, 'place', and territory. Investigation of globalization and the spatial organization of human geo-politics, and urban and rural environments.

GEOG 216 Geography of the World Economy.
(3) (Fall) (3 hours) The course introduces the geography of the world economic system. It describes the spatial distribution of economic activities and examines the factors which influence their changing location. Case studies from both "developed" and "developing" countries will test the different geographical theories presented in lectures.

GEOG 217 The Canadian City.
(3) (Winter) (3 hours) An introduction to the social, economic, political and built environments of Canadian cities. Theories of the internal structure of cities, and relationships between urban places of various sizes. The course situates Canadian urbanism in the North American context, and emphasizes social and economic processes distinctive to Montreal.

GEOG 272 Earth's Changing Surface.
(3) (Fall) (3 hours) Introduction to the study of landforms as products of geomorphic and geologic systems acting at and near the Earth's surface. The process geomorphology approach will be used to demonstrate how landforms of different geomorphic settings represent a dynamic balance between forces acting in the environment and the physical properties of materials present.

GEOG 290 Local Geographical Excursion.
(1) (Fall) (1 credit) (Restriction: Open to first-year Geography Major and Honours students only. Not open to students who have taken GEOG 290 before.) Introduction to landscape interpretation and geographical site analysis in physical and human geography. A three-day fall excursion with preparatory and concluding seminars.

GEOG 300 Human Ecology in Geography.
(3) (Winter) (3 hours) (Prerequisite: GEOG 203 or ANTH 202 or BIOL 111) The course will examine research approaches in human ecology since its inception early in this century. Emphasis will be placed on the theoretical shifts that have led to its emergence as an important social science perspective. The course will also involve case studies to evaluate the methodological utility of the approach.

GEOG 301 Geography of Nunavut.
(3) (Fall) (3 hours) An introduction to the physical and cultural geography of Canada's newest territory. The course will emphasize the bio-physical heterogeneity of the natural environment and the cultural and political ecology of the human population.

GEOG 302 Environmental Management 1.
(3) (Fall and Summer) (3 hours) (Prerequisite: Any 200-level course in Geography or MSE or BIOL 208 or permission of instructor.) An ecological analysis of the physical and biotic components of natural resource systems. Emphasis on scientific, technological and institutional aspects of environmental management. Study of the use of biological resources and of the impact of individual processes.

GEOG 303 Health Geography.
(3) (Winter) (Prerequisite: One of the following: GEOG 201, GEOG 203, GEOG 210, GEOG 216, GEOG 217; or permission of instructor) Discussion of the research questions and methods of health geography. Particular emphasis on health inequalities at multiple geographic scales and the theoretical links between characteristics of places and the health of people.

GEOG 305 Soils and Environment.
(3) (Fall) (2 hours and laboratory) (Prerequisite: GEOG 203 or introductory course in biology or geology) Discussion of the major properties of soils; soil formation, classification and mapping; land capability assessment; the role and response of soils in natural and disturbed environments (e.g. global change, ecosystem disturbance).

GEOG 306 Raster Geo-Information Science.
(3) (Winter) (2 hours and laboratory) (Prerequisite: GEOG 201) Formal introduction to a computer-based Geographical Information System (GIS). Topics will focus on map analysis and on transforming and displaying spatial data. GIS will be used by students to solve problems in both physical and human geography.

GEOG 307 Socioeconomic Applications of GIS.
(3) (Winter) (2 hours and laboratory) (Prerequisites: GEOG 201, MATH 203 or equivalent) GIS applied to the spatial analysis of socioeconomic and market data. Topics include geographic market segmentation, geodemographics, spatial decision-support systems and modelling applications of GIS. Empirical focus is on analysing spatial patterns of population and consumption characteristics in cities and on facility location problems. Emphasis on visualization and problem solving.

GEOG 308 Principles of Remote Sensing.
(3) (Fall) (3 hours and laboratory periods) (Restriction: Not open to students who have taken or are taking ATOC 308) A conceptual view of remote sensing and the underlying physical principles are presented. Ground-based and satellite systems and the various components of the acoustic and electromagnetic spectrum - from visible to microwave - are discussed. Substantial emphasis is devoted to the application of remote sensed data in geography and atmospheric sciences.

GEOG 309 Geography of Canada.
(3) (Fall) (3 hours) An introduction to the geography of Canada. A comprehensive geographical interpretation of Canada's salient physical and human characteristics, including landscapes and
their evolution, climate, vegetation, society/land relationships and socio-economic attributes of the population.

**GEOG 311 Canada - A Geo-Economic Perspective.**
(3) (Winter) (3 hours) (Prerequisite: GEOG 216 or permission of instructor) A geographic interpretation of the Canadian economy and its regional and sectoral elements. The course provides an overview of the key theories and approaches to understanding Canada’s economic geography, focusing on the specific geo-economic features of Canada’s regions and their interaction with the global economy.

**GEOG 315 Urban Transportation Geography.**
(3) (Winter) (3 hours) (Prerequisite: GEOG 217 or permission of instructor) Discusses the urban transportation problem and proposed solutions from a geographic perspective. Specific topics include an analysis of the land use-transportation system in North American cities; its social environmental impacts; the analysis of urban travel behaviour; and the geographical implications of various policy alternatives.

**GEOG 316 Political Geography.**
(3) (Fall) (3 hours) The study of the spatial dimensions of political activities and developments at the regional, national and global levels in historical and contemporary perspective. Presentation of case studies relating to the theoretical framework of political geography.

**GEOG 321 Climatic Environments.**
(3) (Winter) (3 hours) (Prerequisite: GEOG 203 or ATOC 210 or permission of instructor) Scope of climatology, physical, dynamic and applied. The Earth/Atmosphere system, radiation and energy balances, governing meteorological processes. Movement and circulation of the atmosphere on a local and global scale. Resulting weather systems.

**GEOG 322 Environmental Hydrology.**
(3) (Winter) (3 hours) (Prerequisite: GEOG 203 or equivalent) Quantitative, experimental study of the principles governing the movement of water at or near the Earth's surface and how the research relates to the chemistry and biology of ecosystems.

**GEOG 331 Urban Social Geography.**
(3) (Fall) (3 hours) (Prerequisite: GEOG 216 or GEOG 217 or permission of instructor) Social space and social time. The reflection of social structure in the spatial organization of the city. Historical perspective on changing personal mobility, life cycle, family structure and work organization. The appropriation and alienation of urban spaces.

**GEOG 350 Ecological Biogeography.**
(3) (Fall) (3 hours) (Prerequisite: GEOG 203 or ENVR 200 or ENVR 202) The study of the patterns of distribution of organisms in space and time with emphasis on plant communities. Ecological, geographical, historical and anthropological factors affecting these distribution patterns will be discussed. Particular consideration is given to methods for description and classification of plant communities.

**GEOG 351 Quantitative Methods.**
(3) (Fall) (3 hours) (Prerequisite: MATH 203 or permission of instructor) (You may not be able to get credit for this course and other statistics courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Multiple regression and correlation, logit models, discrete choice models, gravity models, facility location algorithms, survey design, population projection.

**GEOG 370 Protected Areas.**
(3) (Winter) (3 hours) (Prerequisite: BIOL 208 or GEOG 203 or AEIt 205) Discussion of the goals of protected areas, focusing on the potential conflict between biodiversity conservation and use for recreation, education and sustainable extraction of resources. Principles and current issues in protected area design and management are reviewed. Examples are taken from developed and developing countries.

**GEOG 372 Running Water Environments.**
(3) (Fall) (3 hours) (Prerequisites: GEOG 203 and GEOG 272, or ENVR 200 and ENVR 202) The course focuses on the physical habitat conditions found in streams, rivers, estuaries and deltas. Based on the laws governing flow of water and sediment transport, it emphasizes differences among these environments, in terms of channel form, flow patterns, substrate composition and mode of evolution. Flooding, damming, channelisation, forestry impacts.

**GEOG 380 Adaptive Environmental Management.**
(3) (Winter) (3 hours) (Pre/co-requisites: GEOG 202 or equivalent, GEOG 203, ENVR 200, BIOL 215, or equivalent.) Articulates and evaluates competing hypotheses about the functioning of human-dominated ecosystems. Introduces the use of statistics, ecological modeling, and management in an integrated ecological management context. Case studies examine factors that impede and enhance adaptive management.

**GEOG 381 Geographic Thought and Practice.**
(3) (Winter) (3 hours) An overview of the philosophy of geography and its emergence as a discipline nationally and internationally with emphasis on current concepts and their application to geographical studies in local field work analyzing the impact of human environmental interactions.

**GEOG 382 Principles Earth Citizenship.**
(3) (Restrictions: Not open to students who have taken or are taking NRSC 374. Restricted to U2 or U3 students. Enrolment limited to 50.) Foundations and applications of earth citizenship. Foundations: sustainability, tragedy of the commons, dominion, privatization and public welfare, resilience, precautionary principle, and land ethic are critically considered. Applications: implications for relationship between human and natural economies; human population size and control; and morality of modern agricultural and forestry practices.

**GEOG 390 Managing Field Research.**
(3) (Fall) (Restrictions: Open to U2 or U3 students planning field research or internship as part of their university experience. Not open to U0 or U1 students except with permission of instructor.) Skills for making field research successful, especially where human communities are involved and/or where risk management is important. Topics: characteristics of field-based research, ethical issues, researcher bias, logistics and risk management, research planning, field methods, adapting in the field.

**GEOG 396 Undergraduate Research Project.**
(3) (Fall, Winter and Summer) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.)
Independent research project with a final written report.

- GEOG 398 Field Studies in Human Geography
  (3) (Winter) (3 hours) (Prerequisite: Any introductory human geography course; or by permission of the instructor)
  Introduction to basic field work techniques in human geography. Emphasis on field methods, observational techniques, data collection and processing.

- GEOG 404 Environmental Management 2.
  (3) (Winter) (3 hours) (Prerequisite: GEOG 302 or permission of instructor)
  Practical application of environmental planning, analysis and management techniques with reference to the needs and problems of developing areas. Special challenges posed by cultural differences and traditional resource systems are discussed. This course involves practical field work in a developing area (Kenya or Panama).

- GEOG 407 Issues in Geography.
  (3) (Fall) (3 hours) Treatment of contemporary issues in geographical research focusing on human-environmental relations and interactions. Instructor(s) and topics will be announced each term the course is given.

- GEOG 408 Geography of Development.
  (3) (Fall) (3 hours) (Prerequisite: GEOG 210 or GEOG 216 or permission of instructor)
  Examines the geographical dimensions of development policy, specifically the relationships between the process of development and human-induced environmental change. Focuses on environmental sustainability, struggles over resource control, population and poverty, and levels of governance (the role of the state, non-governmental organizations, and local communities).

- GEOG 410 Geography of Underdevelopment: Current Problems.
  (3) (Winter) (3 hours) (Prerequisite: GEOG 216 or permission of instructor)
  An examination of the cultural, political, and economic mechanisms and manifestations of contemporary underdevelopment and the response to it from different regional and national peripheral societies within the dominant world economic system.

- GEOG 416 Africa South of the Sahara.
  (3) (Winter) (Offered in Kenya as part of the African Field Studies semester.)
  A synthetic overview of physical and cultural geography examining particularly the relation of African peoples to their landscapes, the causes and consequences of environmental changes, and the idea of sustainable development as it applies to African landscapes, resource systems and economies.

- GEOG 424 Europe: Places and Peoples.
  (3) (Fall) (3 hours) (Prerequisite: At least one 300-level course in geography, anthropology, history, political science, sociology or permission of instructor.)
  The dynamics of change in distinct European landscapes, peoples and their cultures during the modern era with emphasis upon divergence/convergence of regional identities, emergent nationalism and their implications for contemporary issues of international cooperation.

- GEOG 470 Wetlands.
  (3) (Winter) (3 hours) (Restriction: Permission of instructor.)
  An examination of the structure, function and utility of wetlands. Topics include the fluxes of energy and water, wetland biogeochemistry, plant ecology in freshwater and coastal wetlands and wetlands use, conservation and restoration. Field trip(s) are envisaged to illustrate issues covered in class.

- GEOG 490 Geography: Independent Studies.
  (3) (Fall, Winter and Summer) (Restriction: Open to U3 Geography Major students only) (Please see regulations concerning "Project Courses" in the Faculty Degree Requirements section) Research or reading projects permitting independent study under the guidance of a staff member specializing in the field of interest. A project must be arranged with an instructor before registration.

- GEOG 490D1 (1.5), GEOG 490D2 (1.5) Geography: Independent Studies.
  (Fall) (Restriction: Open to U3 Geography Major students only) (Students must register for both GEOG 490D1 and GEOG 490D2) (No credit will be given for this course unless both GEOG 490D1 and GEOG 490D2 are successfully completed in consecutive terms) GEOG 490D1 and GEOG 490D2 together are equivalent to GEOG 490) Research or reading projects permitting independent study under the guidance of a staff member specializing in the field of interest. A project must be arranged with an instructor before registration.

- GEOG 491D1 (3), GEOG 491D2 (3) Honours Research.
  (Fall) (Prerequisite: 183-381) (Restriction: For U3 B.A. and B.Sc. Honours and Joint Honours Geography students) (Students must register for both GEOG 491D1 and GEOG 491D2) (No credit will be given for this course unless both GEOG 491D1 and GEOG 491D2 are successfully completed in consecutive terms) Supervised reading, research and preparation of an undergraduate thesis under the direction of a member of staff.

- GEOG 491N1 Honours Research.
  (3) (Winter) (Restriction: For U3 B.A. and B.Sc. Honours and Joint Honours Geography students) (Students must also register for GEOG 491N2) (No credit will be given for this course unless both GEOG 491N1 and GEOG 491N2 are successfully completed in a twelve month period) Supervised reading, research and preparation of an undergraduate thesis under the direction of a member of staff.

- GEOG 491N2 Honours Research.
  (3) (Fall) (Prerequisite: GEOG 491N1) (No credit will be given for this course unless both GEOG 491N1 and GEOG 491N2 are successfully completed in a twelve month period) See GEOG 491N1 for course description.

- GEOG 492D1 (1.5), GEOG 492D2 (1.5) Joint Honours Research.
  (Fall) (Restriction: Only for those U3 Joint Honours students in Geography who opt to enrol in a parallel course in another department) (Students must register for both GEOG 492D1 and GEOG 492D2) (No credit will be given for this course unless both GEOG 492D1 and GEOG 492D2 are successfully completed in consecutive terms) Supervised reading, research and preparation of an undergraduate thesis under the direction of a member of staff.

- GEOG 492N1 Joint Honours Research.
  (1.5) (Winter, Fall) (Students must also register for GEOG 492N2) (No credit will be given for this course unless both GEOG 492N1 and GEOG 492N2 are successfully completed in a twelve month period) Supervised reading, research and preparation of an undergraduate thesis under the direction of a member of staff.

- GEOG 492N2 Joint Honours Research.
  (1.5) (Fall) (Prerequisite: GEOG 492N1) (No credit will be given for this course unless both GEOG 492N1 and GEOG 492N2 are successfully completed in a twelve month period) See GEOG 492N1 for course description.

- GEOG 494 Urban Field Studies.
  (3) (Fall) (Prerequisites: One of the following: GEOG 201, GEOG 203, GEOG 210, GEOG 216, GEOG 217, GEOG 272, or permission of Instructor) Geographical research in urban public and semi-public spaces. Demonstration of techniques

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

- Denotes courses taught only in alternate years.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Denotes courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the academic concentration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
- Denotes courses with limited enrolment.
- Denotes courses not available as Education electives.
- Denotes Professional Practice (Stage) in Dietetics involving special prerequisites
- Indicates that departmental approval/permission must be obtained by a student prior to registration.

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of mapping, sampling, measurement, photography, interviewing. Attention to research design.

**GEOG 495 Field Studies - Physical Geography.**
(3) (Summer) (2-week field school) (Prerequisites: 6 credits from the following list of Systematic Physical Geography courses; GEOG 305, GEOG 321, GEOG 322, GEOG 350, GEOG 372) Field research projects in physical geography, held locally in Montréal or Eastern Township regions. The course is organized around field projects designed to formulate and test scientific hypotheses in a physical geography discipline. May summer session. Preregistration in Department required by March 14.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>GEOG 496 Geographical Excursion.</td>
<td>(3) (Winter) (Prerequisites: GEOG 290 and permission of instructor) Lecture course on the geography of a region and excursion through the selected country or region including landscape, interpretation and field study projects.</td>
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<tr>
<td>GEOG 497 Ecology of Coastal Waters.</td>
<td>(3) (Fall) (Students must register for a full semester of studies in the Bay of Fundy Field Semester. Enrolment is limited to 26.) (Exclusion: BIOL 542/BIOL 442) (Prerequisite: GEOG 203 or ENV R 200) and (GEOG 350 or BIOL 208 or AE BI 205) Study of ecology of coastal habitats such as salt marshes, rocky coasts, mud-flats, and shallow water environments of eastern Canada. Emphasis on processes and factors critical to sustaining resources harvested from coastal ecosystems.</td>
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<tr>
<td>GEOG 498 Humans in Tropical Environments.</td>
<td>(3) (Winter) (6 hours lecture for 4 weeks, 3 hours seminar, 2 hours laboratory, 8 hours conference) (Restriction: Location in Panama, Student must register for a full semester of studies in Panama) (Prerequisites: HSIP 218, MATH 203 or equivalents) Focus on understanding of inter-relations between humans and neotropical environments represented in Panama. Study of contemporary rural landscapes, their origins, development and change. Impacts of economic growth and inequality, social organization, and politics on natural resource use and environmental degradation. Site visits and field exercises in peasant/colonial, Amerindian, and plantation communities.</td>
</tr>
<tr>
<td>GEOG 499 Subarctic Field Studies.</td>
<td>(3) (Fall) (Prerequisite: GEOG 203 or GEOG 301) An introduction to the geography of the subarctic with emphasis on the application of field methods in physical and/or human geography.</td>
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<tr>
<td>GEOG 500 Geography of Regional Identity.</td>
<td>(3) (Fall) (3 hours) (Restriction: Graduate students and final year undergraduates and/or those who have taken GEOG 408) The response of diverse regional groups in Europe to the centrifugal tendencies of national institutions. The course draws upon examples from a variety of European regions. Contemporary regional issues will be contextualized within a spatial framework of historical geography.</td>
</tr>
<tr>
<td>GEOG 501 Modelling Environmental Systems.</td>
<td>(3) (Fall) (1.15 hours lecture, 0.58 hours seminar, 0.69 hours project, 0.58 hours laboratory) (Restriction: open only to U2 or U3 students who have completed six or more credits from courses at the 300 level of Atmospheric and Oceanic Sciences, Biology, Chemistry, Earth and Planetary Sciences, Geography, Natural Resource Sciences, or a McGill School of Environment domain, or permission of the instructor) (Prerequisites: MATH 139 or MATH 140, MATH 141, and MATH 203, or equivalent) (Enrolment limited to 20 students by availability of workstations) Most problems in environmental science deal with weak relationships and poorly defined systems. Model development and simulation will be used in this course to help improve understanding of environmental systems. Simulation of environmental systems is examined, focusing on problem definition, model development and model validation.</td>
</tr>
</tbody>
</table>

* Denotes courses taught only in alternate years.

† Professional Practice (Stage) in Dietetics involving special prerequisites

‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.

▲ Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

● Denotes courses not available as Education electives.

◆ Denotes courses with limited enrolment.

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and written permission of the instructor) Focus on the environmental and human spatial relationships in tropical rain forest and savanna landscapes. Human adaptation to variations within these landscapes through time and space. Biophysical constraints upon “development” in the modern era.

● GEOG 513 Behavioural Geography.
(3) (Undergraduate) A course in introductory statistics. The development of behavioural approaches in geography. A survey of methods and findings in the area of environmental and spatial cognition, preference and choice behaviour. Models of disaggregate and aggregate travel demand.

● GEOG 522 Advanced Environmental Hydrology.
(3) (2 hours and 1 tutorial) (Prerequisite: GEOG 322, or permission of instructor) (Cross-listed with CASN 300) Surface and shallow ground water determine the availability of moisture and the chemical elements at the Earth’s surface. This course discusses the link between surface water and ground water flow systems and the role this link plays in stream flow production and biogeochemical cycling in lake, riparian and terrestrial ecosystems.

● GEOG 535 Remote Sensing and Interpretation.
(3) (Winter) (3 hours) (Prerequisite: GEOG 308 and written permission of instructor) Basic photogrammetry and interpretation procedures for aircraft and space craft photography and imagery.

● GEOG 536 Geocryology.
(3) (Fall) (3 hours) (Prerequisite: GEOG 272 and any 300-level geomorphology course approved by instructor) Study of the unique geomorphic aspects of periglacial and permafrost environments. The focus will be on processes in cold climates, the impact of human activity on permafrost landscapes and potential impacts of climatic change.

● GEOG 537 Advanced Fluvial Geomorphology.
(3) (Winter) (Undergraduate) permission of instructor) An examination of current advances in fluvial geomorphology: sediment entrainment and transport, alluviation and river channel evolution.

● GEOG 540 Topics in Geography 1.
(3) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) In-depth review of a current topic in physical geography.

● GEOG 541 Topics in Geography 2.
(3) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) In-depth review of a current topic in human geography.

● GEOG 542 Advanced Studies in Geography 1.
(1) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) Intensive review of a current topic or technique in physical geography.

● GEOG 543 Advanced Studies in Geography 2.
(1) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) Intensive review of a current topic or technique in human geography.

● GEOG 550 Historical Ecology Techniques.
(3) (Winter) (2 hours, laboratory and seminar) (Prerequisite: GEOG 350 or BIOL 215 or PLNT 460 or permission of instructor) Principles and methods of Quaternary paleoecology and vegetation reconstruction. Examination of ecosystem response to human disturbance and environmental change.

● GEOG 551 Environmental Decisions.
(3) (Winter) (2 hours seminar, 1 hour tutorial) (Prerequisites: GEOG 302, GEOG 306 or equivalents) This course deals with the role of geographic information, paradigms and modes of analysis - including but not restricted to GIS - in environmental impact assessment and decision making. The focus will be on community-based decision making, particularly where conservation issues are involved. Cross-cultural situations, developing areas and the role of non-government organizations.

MATH-Mathematics & Statistics

Offered by: Mathematics and Statistics

MATH 111 Mathematics for Education Students.
(3) (Winter) (Restriction: Open only to students in the B.Ed. program, not open to students who have successfully completed CEGEP course 201-101 or an equivalent. Not available for credit with MATH 112) (Offered by the Faculty of Science.) Note: all Science courses have limited enrolment) An overview of the nature of mathematics and its applications. Manipulative algebra, inequalities, linear and quadratic equations. Transformational geometry and symmetry. An intuitive discussion of area and volume. Sets and functions. A brief introduction to probability and statistics.

MATH 112 Fundamentals of Mathematics.
(3) (Fall) (Restriction: Not open to students who have taken CEGEP course 201-101) (Restriction: Open only to those students who are deficient in a pre-calculus background) Equations and inequalities, graphs, relations and functions, exponential and logarithmic functions, trigonometric functions and their use, mathematical induction, binomial theorem, complex numbers.

MATH 122 Calculus for Management.
(3) (3 hours lecture, 1 hour tutorial.) (Prerequisite: A course in functions.) (Restrictions: Not open to students who have taken or are taking MATH 130, MATH 131, MATH 139, MATH 140, MATH 150, MATH 139, MATH 140, MATH 141, MATH 150 and MATH 151 are not open to students who have taken or are taking MATH 122, except by special permission of the Department of Mathematics and Statistics. Open to Faculty of Management students only. Offered by the Faculty of Science.) Students intending to pursue one of the major or minor concentrations in Mathematics and Statistics in the Faculty of Management should take MATH 140 [or MATH 139] and MATH 141 instead.) Review of functions, exponents and radicals, exponential and logarithm. Examples of functions in business applications.Limits, continuity and derivatives. Differentiation of elementary functions. Antiderivatives. The definite integral. Techniques of Integration. Applications of differentiation and integration including differential equations. Trigonometric functions are not discussed in this course.

MATH 123 Linear Algebra and Probability.
(3) (3 hours lecture, 1 hour tutorial.) (Restrictions: Not open to students who have taken or are taking MATH 223, or MATH 133 or CEGEP objective 00UQ or equivalent. Open to Faculty of Management students only. Offered by the Faculty of Science.) Students intending to pursue one of the major or minor concentrations in Mathematics and Statistics in the Faculty of Management should take MATH 133 instead.) Geometric vectors in low dimensions. Lines and planes. Dot and cross product. Linear equations and matrices. Matrix operations, properties and

MATH 133 Vectors, Matrices and Geometry.
(3) (Fall and Winter and Summer) (3 hours lecture; 2 hours tutorial) (Prerequisite: a course in functions) (Requires Departmental Approval) (Restriction: Not open to students who have taken MATH 221 or CEGEP objective 00UQ or equivalent.) (Restriction Note B: Not open to students who have taken MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics.) Systems of linear equations, matrices, inverses, determinants; geometric vectors in three dimensions, dot product, cross product, lines and planes; introduction to vector spaces, linear dependence and independence, bases; quadratic loci in two and three dimensions.

MATH 139 Calculus.
(4) (Fall and Winter) (3 hours lecture; 2 hours tutorial) (Prerequisite: a course in functions) (Requires Departmental Approval) (Restriction: Not open to students who have taken MATH 120 or CEGEP objective 00UN or equivalent. This course is intended for students with no previous knowledge of Calculus; it is not open to students who have had one term of College level Calculus) (Restriction Note B: Not open to students who have taken MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics.) (Students continue in MATH 141) (Each Tutorial section is enrolment limited) Review of functions and graphs. Limits, continuity, derivative. Differentiation of elementary functions. Antidifferentiation. Applications.

MATH 140 Calculus 1.
(3) (Fall and Winter and Summer) (3 hours lecture, 1 hour tutorial) (Prerequisite: High School Calculus) (Restriction: Not open to students who have taken MATH 120, MATH 139 or CEGEP objective 00UN or equivalent) (Restriction Note B: Not open to students who have taken or are taking MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics.) (Each Tutorial section is enrolment limited) Review of functions and graphs. Limits, continuity, derivative. Differentiation of elementary functions. Antidifferentiation. Applications.

MATH 141 Calculus 2.
(4) (Fall and Winter and Summer) (3 hours lecture; 2 hours tutorial) (Prerequisites: MATH 139 or MATH 140 or MATH 150.) (Restriction: Not open to students who have taken MATH 121 or CEGEP objective 00UP or equivalent) (Restriction Note B: Not open to students who have taken or are taking MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics.) (Each Tutorial section is enrolment limited) The definite integral. Techniques of integration. Applications. Introduction to sequences and series.

MATH 150 Calculus A.
(4) (Fall) (3 hours lecture, 2 hours tutorial) (Students with no prior exposure to vector geometry are advised to take MATH 133 concurrently. Intended for students with high school calculus who have not received six advanced placement credits) (Restriction: Not open to students who have taken CEGEP objective 00UNU or equivalent) (Restriction Note B: Not open to students who have taken or are taking MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics) (MATH 150 and MATH 151 cover the material of MATH 139, MATH 140, MATH 141, MATH 222) Functions, limits and continuity, differentiation, L'Hôpital's rule, applications, Taylor polynomials, parametric curves, functions of several variables.

MATH 151 Calculus B.
(4) (Winter) (3 hours lecture; 2 hours tutorial) (Prerequisite: MATH 150) (Restriction: Not open to students who have taken CEGEP objective 00UP or equivalent) (Restriction: Not open to students who have taken or are taking MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics) (Restriction: Not open to students who have taken MATH 152) (Each Tutorial section is enrolment limited) Integration, methods and applications, infinite sequences and series, power series, arc length and curvature, multiple integration.

MATH 152 Calculus C.
(4) (Winter) (Prerequisite: MATH 150.) (Restrictions: Open only to students in the Faculty of Engineering. Not open to students who have taken CEGEP objective 00UP or equivalent. Not open to students who have taken or are taking MATH 122 or MATH 130 or MATH 131, except by permission of the Department of Mathematics and Statistics. Not open to students who have taken MATH 151.) (Integration, methods and applications, infinite sequences and series, power series and applications to ODE, arc length and curvature, tangent, normal and conformal and applications.)

MATH 199 FYS: Chaos, Fractals and Complexity.
(3) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) The mathematical concepts of chaos, fractals and complexity have attracted broad popular attention in magazines, books, and motion pictures. This course will expose the mathematical basis for these ideas and examine the implications in natural and social sciences, art, music, and literature. Students from diverse backgrounds will be expected to critically analyse readings and undertake projects related to their areas of interest.

MATH 203 Principles of Statistics 1.
(3) (Fall, Winter and Summer) (No calculus prerequisites) (Restriction: This course is intended for students in all disciplines. For extensive course restrictions covering statistics courses see Section 3.6.1 of the Arts and of the Science sections of the calendar regarding course overlaps.) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Examples of statistical data and the use of graphical means to summarize the data. Basic distributions arising in the natural and behavioural sciences. The logical meaning of a test of significance and a confidence interval. Tests of significance and confidence intervals in the one and two sample setting (means, variances and proportions).

MATH 204 Principles of Statistics 2.
(3) (Winter) (Prerequisite: MATH 203 or equivalent. No calculus prerequisites) (Restriction: This course is intended for students in all disciplines. For extensive course restrictions covering statistics courses see Section 3.6.1 of the Arts and of the Science sections of the calendar regarding course overlaps.) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the
MATH 222 Calculus 3.
(3) (Fall and Winter and Summer) (Prerequisite: MATH 141. Familiarity with vector geometry or:) (Corequisite: MATH 133) (Restriction: Not open to students who have taken CEPEG course 201-303 or MATH 150, MATH 151 or MATH 227) Taylor series, Taylor's theorem in one and several variables. Review of vector geometry. Partial differentiation, directional derivative, Extreme of functions of 2 or 3 variables. Parametric curves and arc length. Polar and spherical coordinates. Multiple integrals.

MATH 233 Linear Algebra.
(3) (Fall and Winter and Summer) (Prerequisite: MATH 133 or equivalent) (Restriction: Not open to students in Mathematics programs nor to students who have taken or are taking MATH 236, MATH 247 or MATH 251. It is open to students in Faculty Programs) Review of matrix algebra, determinants and systems of linear equations. Vector spaces, linear operators and their matrix representations, orthogonality. Eigenvalues and eigenvectors, diagonalization of Hermitian matrices. Applications.

MATH 235 Algebra 1.
(3) (Fall) (3 hours lecture; 1 hour tutorial) (Prerequisite: MATH 133 or equivalent) Sets and relations. Rings and fields. Integers, rationals, real and complex numbers; modular arithmetic. Polynomials over a field. Division theory for integers and polynomials. Linear equations over a field. Introduction to vector spaces.

MATH 236 Algebra 2.

MATH 240 Discrete Structures 1.
(3) (Fall) (Corequisites: MATH 133 and MATH 222. For Major and Honours students in Computer Science only. Others only with the instructor's permission. Not open to students who have taken or are taking MATH 235.) Mathematical foundations of logical thinking and reasoning. Mathematical language and proof techniques. Quantifiers. Induction. Elementary number theory. Modular arithmetic. Recurrence relations and asymptotics. Combinatorial enumeration. Functions and relations. Partially ordered sets and lattices. Introduction to graphs, digraphs and rooted trees.

MATH 242 Analysis 1.
(3) (Fall) (Prerequisite: MATH 141) A rigorous presentation of sequences and of real numbers and basic properties of continuous and differentiable functions on the real line.

MATH 243 Analysis 2.
(3) (Winter) (Prerequisite: MATH 242) Infinite series; power series. The Riemann integral in one variable. A rigorous development of the elementary functions.

MATH 247 Honours Applied Linear Algebra.
(3) (Winter) (Prerequisite: MATH 133 or equivalent,) (Restriction: Intended for Honours Physics and Engineering students) (Restriction: Not open to students who have taken or are taking MATH 236, MATH 223 or MATH 251) Matrix algebra, determinants, systems of linear equations. Abstract vector spaces, inner product spaces, Fourier series. Linear transformations and their matrix representations. Eigenvalues and eigenvectors, diagonalizable and defective matrices, positive definite and semidefinite matrices. Quadratic and Hermitian forms, generalized eigenvalue problems, simultaneous reduction of quadratic forms. Applications.

MATH 248 Honours Advanced Calculus.
(3) (Fall) (Prerequisites: MATH 133 and MATH 222 or consent of Department) (Restriction: Intended for Honours Mathematics, Physics and Engineering students) (Restriction: Not open to students who have taken or are taking MATH 314) Partial derivatives; implicit functions; Jacobians; maxima and minima; Lagrange multipliers. Scalar and vector fields; orthogonal curvilinear coordinates. Multiple integrals; arc length, volume and surface area. Line integrals; Green's theorem; the divergence theorem. Stokes' theorem; irrotational and solenoidal fields; applications.

MATH 249 Honours Complex Variables.
(3) (Winter) (Prerequisite: MATH 248.) (Restriction: Intended for Honours Physics and Engineering students) (Restriction: Not open to students who have taken or are taking MATH 316) Functions of a complex variable; Cauchy-Riemann equations; Cauchy's theorem and consequences. Taylor and Laurent expansions. Residue calculus; evaluation of real integrals; integral representation of special functions; the complex inversion integral. Conformal mapping. Schwarz-Christoffel transformation; Poisson's integral formulas; applications.

MATH 251 Honours Algebra 2.
(3) (Winter) (Prerequisites: MATH 235 or permission of the Department) (Restriction: Not open to students who are taking or have taken MATH 247) Linear maps and their matrix representation. Determinants. Canonical forms. Duality. Bilinear and quadratic forms. Real and complex inner product spaces. Diagonalization of self-adjoint operators.

MATH 255 Honours Analysis 2.
(3) (Winter) (Prerequisites: MATH 242 or permission of the Department) Series of functions including power series. Riemann integration in one variable. Elementary functions.

MATH 262 Intermediate Calculus.
(3) (Fall, Winter and Summer) ((3-1-5)) (Prerequisites: MATH 141, MATH 133 or equivalent,) (Restrictions: Open only to students in the Faculty of Engineering. Not open to students taking or having taken MATH 151, MATH 152, MATH 222 OR MATH 260.) Series and power series, including series solutions to ODEs at ordinary points. Brief review of vector geometry. Vector functions and curves. Partial differentiation and differential calculus for vector valued functions. Unconstrained and constrained extremal problems.

MATH 263 Ordinary Differential Equations and Linear Algebra.
(3) (Fall, Winter and Summer) ((3-1-5)) (Corequisite: MATH 262 or MATH 260.) (Restrictions: Open only to students in the Faculty of Engineering. Not open to students taking or having taken MATH 261, MATH 315, or MATH 325.) First Order ODEs. Second and higher order linear ODEs. Laplace Transforms. Linear Algebra: introduction to vector spaces, linear transformations, diagonalization of matrices (in particular symmetric matrices), applications to linear systems of differential equations.

MATH 264 Advanced Calculus.
(3) (Fall, Winter and Summer) ((3-1-5)) (Prerequisites: MATH
curvatures, surfaces of revolution with prescribed curvature, formulas. Local theory of surfaces: the first and second geometry. Local theory of plane and space curves: the Frenet 247, and MATH 314 or MATH 248) Review of Euclidean (3) (Fall) (Prerequisites: MATH 236 or MATH 223 or MATH 320 Differential Geometry.

MATH 314 Advanced Calculus. (3) (Fall and Winter and Summer) (Prerequisites: MATH 133, MATH 222) (Restriction: Not open to students who have taken or are taking MATH 248) Derivative as a matrix. Chain rule. Implicit functions. Constrained maxima and minima. Jacobians. Multiple integration. Line and surface integrals. Theorems of Green, Stokes and Gauss.

MATH 315 Ordinary Differential Equations. (3) (Fall and Winter and Summer) (Prerequisite: MATH 222.) (Corequisite MATH 133) (Restriction: Not open to students who have taken or are taking MATH 325) First order ordinary differential equations including elementary numerical methods. Linear differential equations. Laplace transforms. Series solutions.

MATH 316 Complex Variables. (3) (Fall) (Prerequisites: MATH 314 and MATH 243) (Restriction: Not open to students who have taken or are taking MATH 249, MATH 366, MATH 381 or MATH 466.) Algebra of complex numbers, Cauchy-Riemann equations, complex integral, Cauchy's theorems. Taylor and Laurent series, residue theory and applications.

MATH 317 Numerical Analysis. (3) (Fall) (Prerequisites: MATH 315 or MATH 325 or MATH 261 or MATH 263 and COMP 202 or equivalent.) Error analysis. Interpolation. Numerical solutions of equations by iteration. Numerical integration. Introduction to numerical solutions of differential equations. Programming assumed. Some lab work necessary.

MATH 318 Mathematical Logic. (3) (Fall) (Restriction: Not open to students who are taking or have taken PHIL 210) Propositional calculus, truth-tables, switching circuits, natural deduction, first order predicate calculus, axiomatic theories, set theory.

MATH 319 Partial Differential Equations. (3) (Winter) (Prerequisites: MATH 223 or MATH 236, MATH 314, MATH 315) First order equations, geometric theory; second order equations, classification; Laplace, wave and heat equations, Sturm-Liouville theory, Fourier series, boundary and initial value problems.

MATH 320 Differential Geometry. (3) (Fall) (Prerequisites: MATH 236 or MATH 223 or MATH 247, and MATH 314 or MATH 248) Review of Euclidean geometry. Local theory of plane and space curves: the Frenet formulas. Local theory of surfaces: the first and second fundamental forms, the shape operator, the mean and Gaussian curvatures, surfaces of revolution with prescribed curvature, ruled and developable surfaces. Geodesic curves on surfaces of revolution. The Gauss-Codazzi equations, rigidity.

MATH 322 Probability. (3) (Fall and Winter and Summer) (Prerequisites: MATH 141 or equivalent.) (Restriction: Intended for students in Science, Engineering and related disciplines, who have had differential and integral calculus) (Restriction: Not open to students who have taken or are taking MATH 356) Sample space, events, conditional probability, independent events, Bayes' Theorem. Basic combinatorial probability, random variables, introductory univariate and discrete multivariate distributions. Independence. Moment generating functions. Expectation, conditional expectation. Inequalities, the weak law of large numbers, central limit theorem. Information theory. Markov chains.

MATH 324 Statistics. (3) (Fall and Winter) (Prerequisite: MATH 323 or equivalent) (Restriction: Not open to students who have taken or are taking MATH 357) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Multivariate continuous distributions, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, contingency tables, nonparametric inference, regression, Bayesian inference.

MATH 325 Honours Ordinary Differential Equations. (3) (Fall and Winter) (Prerequisite: MATH 222) (Restriction: Intended for Honours Mathematics, Physics and Engineering programs.) (Restriction: Not open to students who have taken MATH 283 (formerly MATH 261), MATH 315) First and second order equations, linear equations, series solutions, Frobenius method, introduction to numerical methods and to linear systems, Laplace transforms, applications.

MATH 326 Nonlinear Dynamics and Chaos. (3) (Fall) (Prerequisites: MATH 222, MATH 223) (Restriction: Not open to students who have taken or are taking MATH 376) Linear systems of differential equations, linear stability theory. Nonlinear systems: existence and uniqueness, numerical methods, one and two dimensional flows, phase space, limit cycles, Poincare-Bendixon theorem, bifurcations, Hopf bifurcation, the Lorenz equations and chaos.

MATH 327 Matrix Numerical Analysis. (3) (Winter) (Prerequisites: MATH 223 or MATH 236 or MATH 247 or MATH 251, COMP 202 or consent of instructor.) An overview of numerical methods for linear algebra applications and their analysis. Problem classes include linear systems, least squares problems and eigenvalue problems.

MATH 328 Computability and Mathematical Linguistics. (3) (Winter) Calculability on an infinite abacus is compared with recursive functions and Turing machines. Categorial, context-free, generative and transformational grammars are studied for formal and natural languages, with some emphasis on English and French morphology. Machines for generating and recognizing sentences are discussed.

MATH 329 Theory of Interest. (3) (Winter) (Prerequisite: MATH 141) Simple and compound interest, annuities certain, amortization schedules, bonds, depreciation.

MATH 335 Computational Algebra. (3) (Prerequisites: MATH 235 and MATH 236.) (Note: This course is intended primarily for students in the Major Program in Mathematics and the Joint Major Program in Mathematics and Engineering programs.) (Restriction: Not open to students who have taken or are taking MATH 325) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) Multivariate continuous distributions, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, contingency tables, nonparametric inference, regression, Bayesian inference.

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Denotes courses taught only in alternate years.
Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
Computer Science.) Computational aspects of modern algebra. Computing in groups: algorithms, algorithmic problems in groups, finitely generated abelian groups, free groups and automata, finitely presented groups. Computing in rings: elementary notions of ring theory, ideals of polynomial rings in several variables, Groebner bases, elements of field theory.

MATH 338 History and Philosophy of Mathematics.
(3) (Fall) Egyptian, Babylonian, Greek, Indian and Arab contributions to mathematics are studied together with some modern developments they give rise to, for example, the problem of trisecting the angle. European mathematics from the Renaissance to the 18th century is discussed in some detail.

✦ MATH 339 Foundations of Mathematics.
(3) (Winter) (Prerequisites: MATH 235, MATH 318) A continuation of MATH 338. Topics are chosen mainly from 19th and 20th century mathematics, with some emphasis on philosophical and foundational problems. Sample topics are: progress in number theory, construction of the number system, infinity according to Cantor, logic and foundations from Aristotle to Cohen, Godel's incompleteness theorem, calculability and programs, formalism versus intuitionism, abstract mathematics and categories.

MATH 340 Discrete Structures 2.
(3) (Winter) (Prerequisites: MATH 235 or MATH 240.) (Corequisites: MATH 223 or MATH 236.) (Restriction: For Major and Honours students in Computer Science only. Others only with the instructor's permission) (Restriction: Not open to students who have taken or are taking MATH 343 or MATH 350.) Review of mathematical writing, proof techniques, graph theory and counting. Mathematical logic. Graph connectivity, planar graphs and colouring. Probability and graphs. Introductory group theory, isomorphisms and automorphisms of graphs. Enumeration and listing.

❄ MATH 346 Number Theory.
(3) (Winter) (Prerequisite: MATH 235 or consent of instructor) Divisibility. Congruences. Quadratic reciprocity. Diophantine equations. Arithmetical functions.

MATH 348 Topics in Geometry.
(3) (Fall and Summer) (Prerequisite: Previous course in Mathematics) Selected topics - the particular selection may vary from year to year. Topics include: isometries in the plane, symmetry groups of frieze and ornamental patterns, equidecomposibility, non-Euclidean geometry and problems in discrete geometry.

MATH 350 Graph Theory and Combinatorics.
(3) (Prerequisites: MATH 235 or MATH 240 and MATH 251 or MATH 223.) (Restrictions: Not open to students who have taken or are taking MATH 343 or MATH 340.) (Intended for students in mathematics or computer science honours programs.) Graph models. Graph connectivity, planarity and colouring. Extremal graph theory. Matroids. Enumerative combinatorics and listing.

✦ MATH 352 Problem Seminar.
(1) (Prerequisite: Enrolment in a math related program or permission of the instructor.) Seminar in Mathematical Problem Solving. The problems considered will be of the type that occur in the Putnam competition and in other similar mathematical competitions.

MATH 354 Honours Analysis 3.
(3) (Fall) (Prerequisite: MATH 255 or equivalent) Introduction to metric spaces. Multivariable differential calculus, implicit and inverse function theorems.

MATH 355 Honours Analysis 4.
(3) (Winter) (Prerequisite: MATH 255 or equivalent) Lebesgue measure on R^n and integration, convergence theorems, Fubini's theorem. Further topics in metric spaces. Introduction to Lp spaces, Fourier series.

MATH 356 Honours Probability.
(3) (Fall) (Prerequisite: MATH 255 or MATH 243) (Restriction: Not open to students who have taken or are taking MATH 323) Basic combinatorial probability. Introductory distribution theory of univariate and multivariate distributions with special reference to the Binomial, Poisson, Gamma and Normal distributions. Characteristic functions. Weak law of large numbers. Central limit theorem.

MATH 357 Honours Statistics.
(3) (Winter) (Prerequisite: MATH 356 or equivalent) (Restriction: Not open to students who have taken or are taking MATH 324) Data analysis. Estimation and hypothesis testing. Power of tests. Likelihood ratio criterion. The chi-squared goodness of fit test. Introduction to regression analysis and analysis of variance.

MATH 363 Discrete Mathematics.
(3) (3-0-6) (Prerequisites: MATH 264 or MATH 265 and either MATH 270 or consent of instructor) (Restriction: Open only to students in the Faculty of Engineering.) Logic and combinatorics. Mathematical reasoning and methods of proof. Sets, relations, functions, partially ordered sets, lattices, Boolean algebra. Propositional and predicate calculus. Recurrences and graph theory.

MATH 366 Honours Complex Analysis.
(3) (Prerequisite: MATH 248.) (Corequisite: MATH 354.) (Restriction: Not open to students who have taken or are taking MATH 466, MATH 249, MATH 316, MATH 381.) Functions of a complex variable, Cauchy-Riemann equations, Cauchy's theorem and its consequences. Uniform convergence on compacta. Taylor and Laurent series, open mapping theorem, Rouche's theorem and the argument principle. Calculus of residues. Fractional linear transformations and conformal mappings.

MATH 370 Honours Algebra 3.
(3) (Fall) (Prerequisite: MATH 251) Introduction to monoids, groups, permutation groups; the isomorphism theorems for groups; the theorems of Cayley, Lagrange and Sylow; structure of groups of low order. Introduction to ring theory; integral domains; fields, quotient field of an integral domain; polynomial rings; unique factorization domains.

MATH 371 Honours Algebra 4.
(3) (Winter) (Prerequisite: MATH 370) Introduction to modules and algebras; finitely generated modules over a principal ideal domain. Field extensions; finite fields; Galois groups; the fundamental theorem of Galois theory; application to the classical problem of solvability by radicals.

MATH 375 Honours Partial Differential Equations.
(3) (Fall) (Prerequisites: MATH 247 or MATH 251 or equivalent, MATH 248 or equivalent, MATH 325) First order partial differential equations, geometric theory, classification of second order linear equations, Sturm-Liouville problems, orthogonal functions and Fourier series, eigenfunction expansions, separation of variables for heat, wave and Laplace equations, Green's function methods, uniqueness theorems.

MATH 376 Honours Nonlinear Dynamics and Chaos.
(3) (Fall) (Prerequisites: MATH 222, MATH 223) (Intended primarily for Honours students. Not open to students who have taken or are taking MATH 326) This course consists of the lectures of MATH 326 together with a special project or
projects assigned after consultation between the instructor and the student.

**MATH 377 Honours Number Theory.**
(3) (Winter) (Prerequisite: Enrolment in Mathematics Honours program or consent of instructor) This course consists of the lectures of MATH 346 together with a special project or projects assigned after consultation between the instructor and student.

**MATH 380 Honours Differential Geometry.**
(3) (Winter) (Prerequisites: MATH 251 or MATH 247, and MATH 248 or MATH 314) In addition to the topics of MATH 320, topics in the global theory of plane and space curves, and in the global theory of surfaces are presented. These include: total curvature and the Fary-Milnor theorem on knotted curves, abstract surfaces as 2-d manifolds, the Euler characteristic, the Gauss-Bonnet theorem for surfaces.

**MATH 381 Complex Variables and Transforms.**
(3) (Fall and Winter) (13-1-5) (Prerequisite: Math 264 or MATH 265) (Restriction: Open only to students in the Faculty of Engineering.) Analytic functions, Cauchy-Riemann equations, simple mappings, Cauchy's theorem, Cauchy's integral formula, Taylor and Laurent expansions, residue calculus. Properties of one and two-sided Fourier and Laplace transforms, the complex inversion integral, relation between the Fourier and Laplace transforms, application of transform techniques to the solution of differential equations. The Z-transform and applications to difference equations.

**MATH 387 Honours Numerical Analysis.**
(3) (Fall) (Prerequisites: MATH 325 or 315, COMP 202 or COMP 250.) (Corequisites: MATH 255 or MATH 243.) (Restriction: Intended primarily for Honours students.) Error analysis. Interpolation. Nonlinear equations. Numerical integration. Introduction to numerical solutions of differential equations.

**MATH 396 Undergraduate Research Project.**
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

**MATH 397 Honours Matrix Numerical Analysis.**
(3) (Winter) (Prerequisites: MATH 251 or MATH 247, COMP 202 or permission of the instructor.) The course consists of the lectures of MATH 327 plus additional work involving theoretical assignments and/or a project. The final examination for this course may be different from that of MATH 327.

**MATH 407 Dynamic Programming.**
(3) (Winter) (Prerequisites: COMP 202; MATH 223 or MATH 236, MATH 314, MATH 315 and MATH 323) Sequential decision problems, resource allocation, transportation problems, equipment replacement, integer programming, network analysis, inventory systems, project scheduling, queuing theory calculus of variations, markovian decision processes, stochastic path problems, reliability, discrete and continuous control processes.

**MATH 410 Majors Project.**
(3) (Prerequisite: Students must have 21 completed credits of the required mathematics courses in their program, including all required 200 level mathematics courses.) A supervised project.

**MATH 417 Mathematical Programming.**
(3) (Fall) (Prerequisites: COMP 202, and MATH 223 or MATH 236, and MATH 314 or equivalent) An introductory course in optimization by linear algebra, and calculus methods. Linear programming (convex polyhedra, simplex method, duality, multi-criteria problems), integer programming, and some topics in nonlinear programming (convex functions, optimality conditions, numerical methods). Representative applications to various disciplines.

**MATH 420 Independent Study.**
(3) (Fall and Winter and Summer) (Requires Departmental Approval) (Please see regulations concerning Project Courses under Faculty Degree Requirements) Reading projects permitting independent study under the guidance of a staff member specializing in a subject where no appropriate course is available. Arrangements must be made with an instructor and the Chair before registration.

**MATH 423 Regression and Analysis of Variance.**

**MATH 430 Mathematical Finance.**
(3) (Restrictions: Not open to students who have taken MATH 330. Not open to students who have taken or are taking MATH 490.) Introduction to concepts of price and hedge derivative securities. The following concepts will be studied in both concrete and continuous time: filtrations, martingales, the change of measure technique, hedging, pricing, absence of arbitrage opportunities and the Fundamental Theorem of Asset Pricing.

**MATH 437 Mathematical Methods in Biology.**
(3) (Fall) (Prerequisites: MATH 315 or MATH 325, and MATH 323 or MATH 356, a CEQEP or higher level computer programming course) The formulation and treatment of realistic mathematical models describing biological phenomena through such qualitative and quantitative mathematical techniques as local and global stability theory, bifurcation analysis and phase plane analysis. Numerical simulation. Concrete and detailed examples will be drawn from molecular, cellular and population biology and mammalian physiology.

**MATH 447 Stochastic Processes.**
(3) (Winter) (Prerequisite: MATH 323) Random walk on the integers and gambler's ruin problem; the Galton-Watson branching process; Markov chains and their applications in the physical and social sciences; birth and death processes and their applications to biological growth problems and queueing systems.

**MATH 470 Honours Project.**
(3) (Fall and Winter and Summer) (Requires Departmental Approval) (Prerequisites: appropriate second year honours courses with approval of coordinator) (Please see regulations concerning Project Courses under Faculty Degree Requirements) The student will be assigned a project supervisor and a project topic at the beginning of the semester. The project will consist of a written report including a literature survey and will be

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* Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites included in the academic concentration.
‡ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
❉ Denotes courses taught only in alternate years.
tested by an oral examination.

- **MATH 470D1 (1.5), MATH 470D2 (1.5) Honours Project.** (Students must register for both MATH 470D1 and MATH 470D2.) (No credit will be given for this course unless both MATH 470D1 and MATH 470D2 are successfully completed in consecutive terms) (MATH 470D1 and MATH 470D2 together are equivalent to MATH 470) The student will be assigned a project supervisor and a project topic at the beginning of the semester. The project will consist of a written report including a literature survey and will be tested by an oral examination.

**MATH 480 Honours Independent Study.**

(3) (Fall and Winter and Summer) (Please see regulations concerning Project Courses under Faculty Degree Requirements) (Requires Departmental Approval) Reading projects permitting independent study under the guidance of a staff member specializing in a subject where no appropriate course is available. Arrangements must be made with an instructor and the Chair before registration.

**MATH 487 Honours Mathematical Programming.**

(3) (Fall) (Prerequisites: MATH 248, MATH 251 and COMP 202 or COMP 250 or permission of instructor.) Intended primarily for honours students. This course consists of the lectures of MATH 417 together with a special project or projects assigned after consultation between the instructor and the student.

- **MATH 488 Honours Set Theory.**

(3) (Fall) (Prerequisites: MATH 251 or MATH 255 or permission of instructor) Axioms of set theory. Operations on sets. Ordinal and cardinal numbers. Well-ordering, transfinite induction and recursion. Consequences of the axiom of choice. Boolean algebras. Cardinal arithmetic.

- **MATH 490 Mathematics of Finance.**

(3) (Prerequisites: MATH 222, MATH 323 or equivalent. (Intended primarily for honours students.)) (Restrictions: Not open to students who have taken MATH 330. Not open to students who have taken or are taking MATH 430.) This course consists of the lectures of MATH 430 together with a special project or projects assigned after consultation between the instructor and the student.

**MATH 523 Generalized Linear Models.**


**MATH 524 Nonparametric Statistics.**

(4) (Fall) (Prerequisite: MATH 324 or equivalent) (Restriction: Not open to students who have taken MATH 424) Distribution free procedures for 2-sample problem: Wilcoxon rank sum, Siegel-Tukey, Smirnov tests. Shift model: power and estimation. Single sample procedures: Sign, Wilcoxon signed rank tests. Nonparametric ANOVA: Kruskal-Wallis, Friedman tests. Association: Spearman's rank correlation, Kendall's tau. Goodness of fit: Pearson's chi-square, likelihood ratio, Kolmogorov-Smirnov tests. Statistical software packages used.

**MATH 525 Sampling Theory and Applications.**

(4) (Winter) (Prerequisite: MATH 324 or equivalent) (Restriction: Not open to students who have taken MATH 425) Simple random sampling, domains, ratio and regression estimators, superpopulation models, stratified sampling, optimal stratification, cluster sampling, sampling with unequal probabilities, multistage sampling, complex surveys, nonresponse.

- **MATH 550 Combinatorics.**

(4) (Intended primarily for honours and graduate students in mathematics.) (Restriction: Permission of instructor.) Enumerative combinatorics: inclusion-exclusion, generating functions, partitions, lattices and Moebius inversion. Extremal combinatorics: Ramsey theory, Turan's theorem, Dilworth's theorem and extremal set theory. Graph theory: planarity and colouring. Applications of combinatorics.

- **MATH 552 Combinatorial Optimization.**

(4) (Prerequisite: MATH 350 or COMP 362 (or equivalent)) (Restriction: Not open to students who have taken or are taking COMP 552.) Algorithmic and structural approaches in combinatorial optimization with a focus upon theory and applications. Topics include: polyhedral methods, network optimization, the ellipsoid method, graph algorithms, matroid theory and submodular functions.

- **MATH 555 Fluid Dynamics.**

(4) (Fall) (Prerequisite (Undergraduate): MATH 315 and MATH 319 or equivalent) Kinematics. Dynamics of general fluids. Inviscid fluids, Navier-Stokes equations. Exact solutions of Navier-Stokes equations. Low and high Reynolds number flow.

**MATH 556 Mathematical Statistics 1.**

(4) (Fall) (Prerequisite: MATH 357 or equivalent) Probability and distribution theory (univariate and multivariate). Exponential families. Laws of large numbers and central limit theorem.

**MATH 557 Mathematical Statistics 2.**

(4) (Winter) (Prerequisite: MATH 556) Sampling theory (including large-sample theory). Likelihood functions and information matrices. Hypothesis testing, estimation theory. Regression and correlation theory.

**MATH 560 Optimization.**


- **MATH 561 Analytical Mechanics.**

(4) (Prerequisites: MATH 354 and MATH 380 or instructor's approval) Basic differential geometry. Lagrangian formulation: Euler-Lagrange equations, Noether's theorem, Hamiltonian formalism: symplectic forms and Legendre transformation, symmetry and conserved quantities, completely integrable systems, Poisson brackets.

**MATH 564 Advanced Real Analysis 1.**

(4) (Fall) (Prerequisites: MATH 354, MATH 355 or equivalents) Review of theory of measure and integration; product measures, Fubini's theorem; Lp spaces; basic principles of Banach spaces; Riesz representation theorem for C(X); Hilbert spaces; part of the material of MATH 565 may be covered as well.

**MATH 565 Advanced Real Analysis 2.**

(4) (Winter) (Prerequisite: MATH 564) Continuation of topics from MATH 564. Signed measures, Hahn and Jordan decompositions. Radon-Nikodym theorems, complex measures,
differentiation in R^n, Fourier series and integrals, additional topics.

**MATH 566 Advanced Complex Analysis.**
(4) (Winter) (Prerequisites: MATH 366 (formerly MATH 466), MATH 564.) Simple connectivity, use of logarithms; argument, conservation of domain and maximum principles; analytic continuation, monodromy theorem; conformal mapping; normal families, Riemann mapping theorem; harmonic functions, Dirichlet problem; introduction to functions of several complex variables.

**MATH 570 Higher Algebra 1.**
(4) (Fall) (Prerequisite: MATH 371 or equivalent) Review of group theory; free groups and free products of groups. Sylow theorems. The category of R-modules; chain conditions, tensor products, flat, projective and injective modules. Basic commutative algebra; prime ideals and localization, Hilbert Nullstellensatz, integral extensions. Dedekind domains. Part of the material of MATH 571 may be covered as well.

**MATH 571 Higher Algebra 2.**
(4) (Winter) (Prerequisites: MATH 570 or consent of instructor) Completion of the topics of MATH 570. Rudiments of algebraic number theory. A deeper study of field extensions; Galois theory, separable and regular extensions. Semi-simple rings and modules. Representations of finite groups.

**MATH 574 Dynamical Systems.**

**MATH 575 Partial Differential Equations.**
(4) (Prerequisite: MATH 375) A continuation of topics introduced in MATH 375.

**MATH 576 Geometry and Topology 1.**
(4) (Fall) (Prerequisite: MATH 354) Basic point-set topology, including connectedness, compactness, product spaces, separation axioms, metric spaces. The fundamental group and covering spaces. Simplicial complexes. Singular and simplicial homology. Part of the material of MATH 577 may be covered as well.

**MATH 577 Geometry and Topology 2.**
(4) (Winter) (Prerequisite: MATH 576) Continuation of the topics of MATH 576. Manifolds and differential forms. De Rham\'s theorem. Riemannian geometry. Connections and curvatures 2-Manifolds and imbedded surfaces.

**MATH 578 Numerical Analysis 1.**
(4) (Fall) (Prerequisite: MATH 247 or MATH 251; and MATH 387; or permission of the instructor.) Development, analysis and effective use of numerical methods to solve problems arising in applications. Topics include direct and iterative methods for the solution of linear equations (including preconditioning), eigenvalue problems, interpolation, approximation, quadrature, solution of nonlinear systems.

**MATH 579 Numerical Differential Equations.**
(4) (Winter) (Prerequisites: MATH 375 and MATH 387 or permission of the instructor.) Numerical solution of initial and boundary value problems in science and engineering: ordinary differential equations; partial differential equations of elliptic, parabolic and hyperbolic type. Topics include Runge Kutta and linear multistep methods, adaptivity, finite elements, finite differences, finite volumes, spectral methods.

**MATH 580 Applied Partial Differential Equations 1.**
(4) (Fall) (Prerequisites: MATH 316, MATH 375 or equivalent.) (Restrictions: Not open to students who have taken MATH 586.) Linear and nonlinear partial differential equations of applied mathematics. Uniqueness, regularity, well posedness and classification for elliptic, parabolic and hyperbolic equations. Method of characteristics, conservation laws, shocks. Fundamental solutions, weak and strong maximum principles, representation formulae. Green\'s functions.

**MATH 581 Applied Partial Differential Equations 2.**
(4) (Winter) (Prerequisite: MATH 580.) Continuation of topics from MATH 580. Transform methods. Weak solutions. Advanced topics in partial differential equations.

**MATH 587 Advanced Probability Theory 1.**
(4) (Fall) (Prerequisite: MATH 356 or equivalent and approval of instructor) Probability spaces. Random variables and their expectations. Convergence of random variables in Lp. Independence and conditional expectation. Introduction to Martingales. Limit theorems including Kolmogorov\'s Strong Law of Large Numbers.

**MATH 589 Advanced Probability Theory 2.**
(4) (Winter) (Prerequisites: MATH 587 or equivalent) Characteristic functions: elementary properties, inversion formula, uniqueness, convolution and continuity theorems. Weak convergence. Central limit theorem. Additional topic(s) chosen (at discretion of instructor) from: Martingale Theory; Brownian motion, stochastic calculus.

**MATH 590 Advanced Set Theory.**
(4) (Prerequisites: MATH 318, either MATH 355 or MATH 371, or permission of the instructor.) (Restriction: Not open to students who have taken or are taking MATH 488.) Students will attend the lectures and fulfill all the requirements of MATH 488. In addition, they will study an advanced topic agreed on with the instructor. Topics may be chosen from combinatorial set theory, Goedel\'s constructible sets, forcing, large cardinals.

**MATH 591 Mathematical Logic 1.**
(4) (Winter) (Prerequisites: MATH 488 or equivalent or consent of instructor) Propositional logic and first order logic, completeness, compactness and Lowenheim-Skolem theorems. Introduction to axiomatic set theory. Some of the following topics: introduction to model theory, Herbrand\'s and Gentzen\'s theories, Lindström\'s characterization of first order logic.

**MATH 592 Mathematical Logic 2.**
(4) (Winter) (Prerequisites: MATH 488 or equivalent or consent of instructor) Introduction to recursion theory; recursively enumerable sets, relative recursiveness. Incompleteness, undecidability and undefinability theorems of Gödel, Church, Rosser and Tarski. Some of the following topics: Turing degrees, Friedberg-Muchnik theorem, decidable and undecidable theories.

**MIMM-Microbiology and Immunology**
Offered by: Microbiology & Immunology

**MIMM 211 Introductory Microbiology.**
(3) (Fall) (3 hours of lecture) (Corequisite: BIOL 200) A general treatment of microbiology bearing specifically on the biological properties of microorganisms. Emphasis will be on procaryotic cells. Basic principles of immunology and microbial genetics are also introduced.
MIMM 212 Laboratory in Microbiology.
(2) (Fall) (3 hours of laboratory, 1 hour of conference) (Corequisite: MIMM 211) This laboratory course is designed to complement MIMM 211. Sessions introduce general techniques peculiar to the handling of microorganisms.

MIMM 314 Immunology.
(3) (Winter) (3 hours of lecture) (Prerequisite: BIOL 200 and BIOL 201 or BIOL 212) An introduction to the immune system, antigens, antibodies and lymphocytes. The course will cover the cellular and molecular basis of lymphocyte development and mechanisms of lymphocyte activation in immune responses.

MIMM 323 Microbial Physiology.
(3) (Fall) (3 hours of lecture) (Prerequisite: MIMM 211) An introduction to the composition and structure of microbial cells, the biochemical activities associated with cellular metabolism and how these activities are regulated and coordinated. The course will have a molecular and genetic approach to the study of microbial physiology.

MIMM 324 Fundamental Virology.
(3) (Fall) (3 hours of lecture) (Prerequisites: MIMM 211, BIOL 200, BIOL 201 or BIOL 212) A study of the fundamental properties of viruses and their interactions with host cells. Bacteriophages, DNA- and RNA-containing animal viruses, and retroviruses are covered. Emphasis will be on phenomena occurring at the molecular level and on the regulated control of gene expression in virus-infected cells.

MIMM 386D1 (3), MIMM 386D2 (3) Laboratory in Microbiology and Immunology.
(Fall) (1 hour lecture, 6 hours laboratory, 1 hour follow-up) (Prerequisites: MIMM 211, MIMM 212. Corequisites: MIMM 314, MIMM 323, MIMM 324) (Students must register for both MIMM 386D1 and MIMM 386D2.) (No credit will be given for this course unless both MIMM 386D1 and MIMM 386D2 are successfully completed in consecutive terms) A series of illustrative exercises in bacterial classification, bacterial and viral molecular genetics and immunological techniques. The objective is to provide a practical introduction to microbiological and immunological research and technology.

MIMM 387 Applied Microbiology and Immunology.
(3) (Winter) (Prerequisite: MIMM 211) The ability to select and manipulate genetic material has led to unprecedented interest in the industrial applications of prokaryotic and eucaryotic cells. Beginning in the 1970s the introduction of and subsequent refinements to recombinant DNA technology and hybridoma technology transformed the horizons of the biopharmaceutical world. This course will highlight the important events that link basic research to clinical/commercial application of new drugs and chemicals.

MIMM 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrollment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

MIMM 413 Parasitology.
(3) (Winter) (Prerequisite: MIMM 314 or equivalent - ANAT 261 is strongly recommended) A study of the biology, immunological aspects of host-parasite interactions, pathogenity, epidemiology and molecular biological aspects of selected parasites of medical importance. Laboratory will consist of a lecture on techniques, demonstrations and practical work.

MIMM 414 Advanced Immunology.
(3) (Fall) (3 hour lecture) (Prerequisite: MIMM 314) An advanced course serving as a logical extension of MIMM 314. The course will integrate molecular, cellular and biochemical events involved in the ontogeny of the lymphoid system and its activation in the immune response. The course will provide the student with an up-to-date understanding of a rapidly moving field.

MIMM 465 Bacterial Pathogenesis.
(3) (Fall) (3 hours of lecture) (Prerequisites: MIMM 211, MIMM 314, MIMM 323, or the permission of the instructor) Organized by the McGill Centre for the Study of Host Resistance. This course focuses on the interplay of the host and the pathogen. The cellular and molecular basis of the host defense mechanism against infections will be considered in relationship to the virulence factors and evasion strategies used by bacteria to cause disease.

MIMM 466 Viral Pathogenesis.
(3) (Winter) (3 hours of lecture) (Prerequisites: MIMM 211, MIMM 324, MIMM 314) A study of the biological and molecular aspects of viral pathogenesis with emphasis on the human pathogenic viruses including the retroviruses HIV and HTLV-1; herpes viruses; papilloma viruses; hepatitis viruses; and new emerging human viral diseases. These viruses will be discussed in terms of virus multiplication, gene expression virus-induced cytopathic effects and host immune response to infection.

MIMM 499 Library Research Project.
(1) (Prerequisites: MIMM 314, MIMM 323, MIMM 324 and MIMM 386.) (Restriction: This course is intended for final year Microbiology students only. Students taking MIMM 502 are not eligible to take this course. (See section 3.6.2, “Project Courses” in the Science “Faculty Degree Requirements”.) Supervised exploration of the current scientific literature on an assigned topic of an advanced nature within the general areas of Bacteriology, Virology, Immunology or Parasitology.

MIMM 502D1 (6), MIMM 502D2 (6) Honours Research Project.
(Fall) (More than 18 hours per week for an independent research project) (Restriction: U3 Honours students and Majors students are eligible. Required CGPA: 3.30 or higher) (Please see regulations concerning Project Courses) (Students must register for both MIMM 502D1 and MIMM 502D2.) (No credit will be given for this course unless both MIMM 502D1 and MIMM 502D2 are successfully completed in consecutive terms) An information meeting about the course is held annually in January for students who intend to apply for registration. Subject to the availability of space and resources, professors in the Department of Microbiology and Immunology provide research opportunities for registrants in this course. Students present their research findings in a seminar and a final written report is required. Because this is a 12 credit course, students are expected to devote at least 40% of their academic effort towards their research.

MIMM 509 Inflammatory Processes.
(3) (Winter) (3 hours of seminar) (Prerequisite: MIMM 314.)

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

- Denotes courses taught only in alternate years.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Denotes courses offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

• Denotes courses taught only in alternate years.
† Professional Practice (Stage) in Dietetics involving special prerequisites
‡ Indicates that departmental approval/permission must be obtained by a student prior to registration.
† Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
▲ Denotes courses not offered by the Faculty of Education which, if appropriate to the student’s program, may be included in the academic concentration.
❖ Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.

NEUR-Neurology and Neurosurgery
Offered by: Neurology And Neurosurgery

NEUR 310 Cellular Neurobiology. (3) (Winer) (2 lectures each week) (Prerequisite or corequisite: BIOL 200 and BIOL 201, or PHGY 209, or PHGY 210) A survey of the functional organization of nerve cells, signalling in the nervous system, and principles of neural development. Topics include cell polarity, neurotransmitters, neurotrophins, receptors and second messengers, cell lineage, guidance of axon outgrowth, and nerve regeneration. Emphasis will be placed on analysis of neurons at the molecular level.

NEUR 550 Free Radical Biomedicine. (3) (Prerequisite: BIOL 200, BIOL 201, BIOC 311, BIOC 312, PHAR 209, PHAR 210 or Permission of Instructor.) An interdisciplinary course on the biochemistry and cellular/molecular biology of free radicals, transition metals, oxidative stress and antioxidants and their roles in health and disease.

NUTR-Nutrition and Dietetics
Offered by: Dietetics & Human Nutrition

● NUTR 307 Human Nutrition. (3) (Prerequisites: BIOL 201 or AEBI 202, CHEM 212 or FDSC 230 or permission of the instructor.) (Restriction: Not open to students who have taken ANSC 330) (3 lecture hours) Cellular and organisinal aspects of nutrition with emphasis on biochemical and physiological roles of carbohydrates, lipids, proteins, minerals and vitamins in disease prevention and promotion of optimal health.

PATH-Pathology
Offered by: Pathology

PATH 300 Human Disease. (3) (Winter) (Prerequisites: BIOL 200, BIOL 201 or BIOL 212, PHGY 209, Pre-/co-requisite: PHGY 210) Provides a fundamental understanding of the diseases prevalent in North America, for upper level students in the biological sciences. Includes: general responses of cells and organ systems to injury; assessment of individual diseases by relating the causes, symptoms, diagnosis, treatment and prevention to the primary biological abnormalities in each disorder.

PHAR-Pharmacology and Therapeutics
Offered by: Pharmacology And Therapeutics

PHAR 300 Drug Action. (3) (Fall) (Prerequisites: BIOL 200 and BIOL 201 or BIOL 212, PHGY 209 and PHGY 210 or permission of instructor) This course covers the fundamental principles of pharmacology and toxicology. Frequently encountered drugs are used as a focus to illustrate sites and mechanisms of action, distribution, metabolism, elimination and adverse effects.

PHAR 301 Drugs and Disease. (3) (Winter) (Prerequisites: BIOL 200, BIOL 201 or BIOL 212, PHGY 209 and PHGY 210 and PHAR 300 or permission of instructor) This course further explores the basic principles of pharmacology as illustrated by drugs used in the treatment of disease. Emphasis is placed on drugs used for diseases prevalent in North America.

PHAR 303 Principles of Toxicology. (3) (Winter) (Prerequisites: BIOL 200, BIOL 201 or BIOL 212, PHGY 209 and PHGY 210) Fundamental mechanisms by which toxic compounds damage a biological system (organelle, cell, organ, organism, ecosystem). Detection and quantification of toxicity and risk/benefit analysis are considered. Selected agents of current risk to human health or the environment are evaluated in depth.

PHAR 303 Drug Design and Development 1. (3) (Fall) (Prerequisites: CHEM 302, BIOL 200, BIOL 212, PHAR 300, PHAR 201, PHAR 303 or permission of coordinator) (Restriction: Not open to students who are taking or have taken CHEM 503) (Priority: students registered in the Minor in Pharmacology) Interdisciplinary course in drug design and development covering chemistry, mechanisms of drug action and steps in drug development, principles and problems in drug design.

PHAR 304 Drug Design and Development 2. (3) (Winter) (Prerequisite: PHAR 503/CHEM 503) (Restriction: U3 and graduate students. Students can register only with permission of coordinators) (Restriction: Not open to students who are taking or have taken CHEM 504) Interdisciplinary course in drug design and development in which teams of 2-4 students select a lead chemical compound, design the analogues, propose the preclinical and clinical studies, present possible therapeutic effects, and reasons for drug (dis)approval.

PHAR 562 General Pharmacology 1. (3) (Fall) (Prerequisites: PHGY 209 and PHGY 210, BIOL 200 and BIOL 201 or BIOL 311 and BIOL 312 or equivalent) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor Pharmacology Program) Principles of pharmacology as illustrated by current issues with an emphasis on the nervous system will be discussed. Drugs classified by their molecular target of action, their mechanism of action, and possibly a rationale for therapeutic use will be presented. Students will be required to examine and interpret scientific data, to write a paper and/or participate in small group discussions.

PHAR 563 General Pharmacology 2. (3) (Winter) (Prerequisites: PHGY 209 and PHGY 210, BIOL 200 and BIOL 201 or BIOL 311 and BIOL 312 or equivalent) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor in Pharmacology Program) Selected topics of basic interactions between chemicals and biological systems. Actions of drugs at the molecular and cellular levels. Principles of drug development. Chemotherapy of infections and of cancer. Toxicology and pharmacokinetics/dynamics. Drug metabolism.

PHAR 599 Research Projects in Pharmacology. (6) (Minimum of 12 hours per week to be spent in the lab and/or library.) (Pre-/co-requisite PHAR 562 and PHAR 563 or PHAR 300 and PHAR 301) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor Pharmacology Program. Students should be involved in ongoing research projects of their choosing.)
consult instructors 3 - 4 weeks before registration. Students may not register without prior approval of the course co-ordinator(s) (See regulations concerning Project Courses) This course involves individual research work. Students select a project under the supervision of a staff member. Areas of interest include toxicology, endocrine, developmental, cardiovascular, reproductive and neuropharmacology. This course requires a minimum of 6 hours per week for the full year course (PHAR 599D1/PHAR 599D2), and a minimum of 12 hours per week for the half year course (PHAR 599) to be spent in the laboratory and/or library.

PHAR 599D1 (3), PHAR 599D2 (3) Research Projects in Pharmacology. (Fall) (Minimum of 6 hours per week to be spent in the lab and/or library.) (Students must register for both PHAR 599D1 and PHAR 599D2.) (No credit will be given for this course unless both PHAR 599D1 and PHAR 599D2 are successfully completed in consecutive terms) (PHAR 599D1 and PHAR 599D2 together are equivalent to PHAR 599) This course involves individual research work. Students select a project under the supervision of a staff member. Areas of interest include toxicology, endocrine, developmental, cardiovascular, reproductive and neuropharmacology. This course requires a minimum of 6 hours per week for the full year course (PHAR 599D1/PHAR 599D2), and a minimum of 12 hours per week for the half year course (PHAR 599) to be spent in the laboratory and/or library.

PHGY-Physiology

Offered by: Physiology

PHGY 100 The Body Matters.
(3) (Fall) (3-hour seminar per week) (Restriction: Not open to students who have taken PHGY 201, PHGY 202, PHGY 209, PHGY 210, or PHGY 211) Designed for anyone with an interest in exercise, the course covers the principles of medicine and physiology as they apply to current lifestyles. Topics will include how and why injuries occur, the effects of exercise on the body, and general health considerations such as "Does exercise prevent or promote osteoarthritis?".

PHGY 198 FYS: Rhythms and Feedback in Biomedicine.
(3) (Fall) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25) (Corequisite: MATH 140) An interdisciplinary course about physiological rhythms and control systems. The concept of feedback will be introduced and applied to physiological systems such as white blood-cell production and control of respiration by CO2. Both normal physiological and abnormal pathophysiological rhythms will be treated.

PHGY 199 FYS: History of Genetic Engineering.
(3) (Winter) (3-hour seminar per week) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 20) The history of molecular biology and genetic engineering will be surveyed through a series of essays and reviews written by historic figures and prominent scientists of today. The course will trace key players and principal advances in our understanding of the gene, its manipulation, and the future of genetic engineering.

PHGY 201 Human Physiology: Control Systems.
(3) (Fall) (3 hours lecture weekly) (Prerequisites: collegial courses in biology and anatomy, and in chemistry and physics; with CHEM 212 or equivalent, as a pre-/co-requisite) (Restriction: For students in Physical and Occupational Therapy, Nursing, and others with permission of the course coordinator) (Restriction: Not open to students who have taken PHGY 209) Physiology of body fluids, blood, nerve and muscle, peripheral nerves, central nervous system, special senses, autonomic nervous system, defense mechanisms.

PHGY 202 Human Physiology: Body Functions.
(3) (Winter) (3 hours lecture weekly) (Prerequisites: collegial courses in biology and anatomy and in chemistry and physics; with CHEM 212 or equivalent, as a pre-/co-requisite) (Restriction: For students in Physical and Occupational Therapy, Nursing, Education, and others with permission of the course coordinator) (Restriction: Not open to students who took 552-201 in 1976-77 or earlier, or PHGY 210) Physiology of the cardiovascular, respiratory, excretory, endocrine, and digestive systems; organic and energy metabolism; nutrition; exercise and environmental stress.

PHGY 209 Mammalian Physiology 1.
(3) (Fall) (3 hours lectures weekly) (Prerequisites: as for PHGY 201 and PHGY 202. Pre-/co-requisites: BIOL 200, BIOL 201 or BIOC 212) (Restriction: Not open to students who have taken PHGY 211 or PHGY 201) (Restriction: For students in the Faculty of Science, and other students by permission of the instructor) The course covers the physiology of body fluids, blood, body defense mechanisms, peripheral and central nervous system, muscle. Students must be prepared to attend evening (19:00 - 20:00) class tests.

PHGY 210 Mammalian Physiology 2.
(3) (Winter) (3 hours lectures weekly) (Prerequisites: as for PHGY 201 and PHGY 202. Pre-/co-requisites: BIOL 200, BIOL 201 or BIOC 212) (Restriction: Not open to students who have taken PHGY 211 or PHGY 202) (Restriction: For students in the Faculty of Science, and other students by permission of the instructor) (Although PHGY 210 may be taken without the prior passing of PHGY 209, students should note that they may have some initial difficulties because of lack of familiarity with some basic concepts introduced in PHGY 209) Physiology of the autonomic nervous system; cardiovascular, respiratory, digestive and renal systems; exercise physiology.

PHGY 212 Introductory Physiology Laboratory 1.
(1) (One 3-hour lab and one 1-hour lecture every second week.) (Corequisite: PHGY 201.) (Restrictions: Required for Physiotherapy students enrolled in PHGY 209. Open to BA &Sc. students and to others by permission of the instructor. Not open to students who have taken PHGY 212D1/D2.) (Note: For students in a Physiology program, PHGY 212 should be taken concurrently with PHGY 209.) Exercises illustrating fundamental principles in physiology: Biological Signals Acquisitions, Blood, Immunology, Neurophysiology, Neuromuscular Physiology.

PHGY 213 Introductory Physiology Laboratory 2.
(1) (One 3-hour lab and one 1-hour lecture every second week.) (Corequisite: PHGY 210.) (Restrictions: Required for Physiotherapy students enrolled in PHGY 210. Open to BA &Sc. students and to others by permission of the instructor. Not open to students who have taken PHGY 212D1/D2.) (Note: For students in a Physiology program, PHGY 213 should be taken concurrently with PHGY 209.) Exercises illustrating fundamental principles in physiology: Biological Signals Acquisitions, Blood, Immunology, Neurophysiology, Neuromuscular Physiology.
concurrently with PHGY 210.) Exercises illustrating fundamental principles in physiology: Central Nervous System, Cardiovascular, Respiration, Exercise Physiology, Molecular Endocrinology.

PHGY 311 Intermediate Physiology 1.
(3) (Fall) (3 hours of lectures per week; 1-3 hours optional lab/demonstration/tutorial arranged for a maximum of 3 afternoons per term) (Prerequisites: PHGY 209 and PHGY 210 or equivalent, or permission of the instructor) In-depth presentation of experimental results and hypotheses under our current understanding of topics in immunology, kidney function and respiration explored beyond the introductory level.

PHGY 312 Intermediate Physiology 2.
(3) (Winter) (3 hours of lectures per week; 1-3 hours optional lab/demonstration/tutorial arranged for a maximum of 3 Wednesday afternoons per term) (Prerequisites: PHGY 209 and PHGY 210 or equivalent, PHGY 311 or permission of the instructor) In-depth presentation of experimental results and hypotheses under our current understanding of topics in membrane biophysics, radioimmunoassay, ion sensitive dyes, immunocytochemistry, localization techniques, protein measurement.

PHGY 313 Intermediate Physiology 3.
(3) (Winter) (3 hours of lectures per week; 1-3 hours optional lab/demonstration/tutorial arranged for a maximum of 3 Wednesday afternoons per term) (Prerequisites: PHGY 209 and PHGY 210 or equivalent, PHGY 311 or permission of the instructor) In-depth presentation of experimental results and hypotheses under our current understanding of the physiology of the cardiovascular system; blood physiology including hemostasis and thrombosis; transport of fluids and cells; general cell kinetics and regulation, and gastrointestinal physiology.

PHGY 314 Integrative Neuroscience.
(3) (Fall) (2 hour lecture and 3 hour lab weekly) (Prerequisites: PHGY 209 and PHGY 210) (Restriction: Not open to students who have taken or are taking PSYC 308.) In depth presentation of experimental results and hypotheses under our current understanding of how single neurons and ensembles of neurons encode sensory information, generate movement, and control cognitive functions such as emotion, learning, and memory, during voluntary behaviours.

PHGY 351 Research Techniques: Physiology.
(3) (Fall) (2 hour lecture and 3 hour lab weekly) (Prerequisites: PHGY 209, PHGY 210 and PHGY 311.) (Corequisites: PHGY 312 and PHGY 313) (Restriction: Honours Physiology students) Provides an overview of common research methods in Physiology, including critical analysis and practical experience with some of the methods. Topics include research ethics of animal experimentation, data analysis, membrane biophysics, radioimmunoassay, ion sensitive dyes, immunocytochemistry, localization techniques, protein measurement, cell sorting and molecular biology.

PHGY 359D1 (0.5), PHGY 359D2 (0.5) Tutorial in Physiology.
(Fall) (Prerequisites: PHGY 209 and PHGY 210 or equivalent.) (Corequisites: PHGY 311, PHGY 312 and PHGY 313) (Restriction: Enrolment restricted to Honours Physiology students) (Students must register for both PHGY 359D1 and PHGY 359D2.) (No credit will be given for this course unless both PHGY 359D1 and PHGY 359D2 are successfully completed in consecutive terms) The course consists of regularly scheduled meetings between each individual student and a chosen staff member, to consider current problems in biomedical research and to develop background for a research project to be carried out in U3. Brief written summaries of each meeting are required.

PHGY 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.)

PHGY 419D1 (4.5), PHGY 419D2 (4.5) Project and Seminar in Immunology.
(Fall) (15-18 hours lab, 1 hour seminar weekly) (Restriction: Enrolment restricted to U3 Honours Immunology students) (Students must register for both PHGY 419D1 and PHGY 419D2.) (No credit will be given for this course unless both PHGY 419D1 and PHGY 419D2 are successfully completed in consecutive terms) Individual research projects in immunology under the guidance of staff members in the three participating departments: Physiology, Biochemistry, and Microbiology and Immunology.

PHGY 423 Physiological Dynamics.
(3) (Fall) (Prerequisites: PHGY 209 and PHGY 210 or equivalent, and BIOL 309 or MATH 315, or permission of the instructor) The control of physiological system function from a theoretical standpoint. The basic roles of mass and momentum transport, pacemaker activity and wave propagation, and neural information processing are emphasized. These are related to the concepts of feedback, stability, and oscillation in normal and patho-physiological states.

PHGY 444 Theoretical Electrophysiology.
(3) (Fall) (3 hours lecture/seminar per week) (Prerequisites: PHGY 209 and PHGY 210 or equivalent; BIOL 309 or MATH 315) (Offered in even numbered years) Mathematical and numerical modelling of electrophysiological systems, concentrating on heart and brain. Bifurcation theory will be the focal point of the mathematical treatment. Students will be required to write a term paper, and make an oral presentation.

PHGY 451 Advanced Neurophysiology.
(3) (Fall) (3 hours lecture) (Prerequisites: PHGY 311 or equivalent and BIOL 301) (Restriction: Departmental approval required) Topics of current interest in neurophysiology including the development of neurons and synapses, physiology of ionic channels, presynaptic and postsynaptic events in synaptic transmission and neuronal interactions in CNS function.

PHGY 459D1 (3), PHGY 459D2 (3) Physiology Seminar.
(Fall) (2 hours seminar) (Prerequisite: permission of instructors) (Required course for U3 Honours students.) (Students must register for both PHGY 459D1 and PHGY 459D2.) (No credit will be given for this course unless both PHGY 459D1 and PHGY 459D2 are successfully completed in consecutive terms) Discussion of topics in mammalian, cellular and molecular physiology. Students will be required to write one essay and make at least one oral presentation per term. A final course essay is required.

PHGY 461D1 (4.5), PHGY 461D2 (4.5) Experimental Physiology.
(Fall) (Restriction: Departmental approval required) (Restriction: This course is a requirement for U3 students in microbiology. Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.

Denotes courses taught only in alternate years.

Denotes courses not available as Education electives.

Denotes courses with limited enrolment.

Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
PHGY 502 Exercise Physiology. (3) (Winter) (Prerequisites: PHGY 311, PHGY 312, and PHGY 313) Behaviour of physiological processes in response to physical effort, in areas such as structural basis of muscle contraction, thermoregulation during exercise, mechanics and energetics of muscle contraction, fuel utilization, fatigue, physiological adjustments during exercise and influence of training.

PHGY 508 Advanced Renal Physiology. (3) (Fall) (Prerequisite (Undergraduate): PHGY 312 or the equivalent) (Restriction: Open to advanced undergraduate and graduate students) Offered in conjunction with the Department of Medicine. Lectures and seminars will cover advanced concepts in selected areas of kidney physiology (glomerular and tubular function) as well as membrane and epithelial transport. Students will be expected to critically discuss selected experimental papers.

PHGY 513 Cellular Immunology. (3) (Winter) (3 hours lectures plus term paper) (Prerequisite: MIMM 314, or permission of the instructor) This course deals with cellular interactions, regulation and effector mechanisms of the normal immune response in relation to diseases and pathogenic processes. It is taught at an advanced level.

PHGY 515 Physiology of Blood 1. (3) (Fall) (2 hours lecture plus 1 hour seminar weekly) (Prerequisite: PHGY 313 or PHGY 312 or permission of the instructor) Study of the cell and molecular physiology of hemostasis and its pathophysiology (bleeding and thrombosis). Emphases on molecular mechanisms regulating clot formation, fibrinolysis, and cell adhesion/aggregation. Experimental approaches and specific clinical disorders will be analyzed. Weekly discussions, and a major term paper.

PHGY 516 Physiology of Blood 2. (3) (Winter) (2 hours lecture plus 1 hour seminar weekly) Bone marrow hematopoiesis, with emphasis on regulation of stem cell proliferation and differentiation along hematopoietic pathways. Formation and differentiation of red and white blood cells and some of the diseases associated with hematopoiesis will be covered. Emphasis will be given to the molecular mechanisms involved in the normal and pathological conditions.

• PHGY 517 Artificial Internal Organs. (3) (Winter) (Prerequisite (Undergraduate); permission of instructors.) Physiological, bioengineering, chemical and clinical aspects of artificial organs including basic principles and physiopathology of organ failure. Examples: oxygenator, cardiac support, vascular substitutes, cardiac pacemaker, biomaterials and tissue engineering, biocompatibility.

PHGY 518 Artificial Cells. (3) (Fall) (Prerequisite (Undergraduate); permission of instructors,) Physiology, biotechnology, chemistry and biomedical application of artificial cells, blood substitutes, immunoablized enzymes, microorganisms and cells, hemoperfusion, artificial kidneys, and drug delivery systems. PHGY 517 and PHGY 518 when taken together, will give a complete picture of this field. However, the student can select one of these.

● PHGY 520 Ion Channels. (3) (Winter) (Offered in even numbered years) (1 1/2 hour lecture, 1 1/2 hour seminar) (Prerequisite: PHGY 311) (Priority to Graduate and Honours students; others by permission of instructors.) A discussion of the principal theories and interesting new developments in the study of ion channels. Based on a textbook, computer exercises and critical reading and presentation of research papers. Topics include: Properties of voltage- and ligand-gated channels, single channel analysis, structure and function of ion channels.

PHGY 531 Topics in Applied Immunology. (3) (Winter) (Restriction: Permission of the instructor. U3 InterDept. Honours Immunology students, graduate students with strong immunology background i.e. PHGY 513 and BIOC 503) Seminar format course in which experts in immunologic mechanisms of resistance against a variety of infectious diseases, including AIDS, malaria, and tuberculosis oversee student moderators in their presentation of recent scientific literature in the field.

PHGY 550 Molecular Physiology of Bone. (3) (Fall) (1 hour of lecture, 2 hours of seminar per week) (Prerequisites: PHGY 311, and BIOL 202 or equivalent) (Restriction: U3 Physiology students, and graduate students in biomedical departments; others by permission of the instructor) Students will develop a working knowledge of cartilage and bone. Discussion topics will include: molecular and cellular environment of bone; heritable and acquired skeletal defects; research models used to study metabolic bone disease.

PHGY 552 Cellular and Molecular Physiology. (3) (Winter) (1 hour lecture, 2 hours seminar weekly) (Prerequisite: PHGY 311) (Preference will be given to Physiology Honours and Graduate students) Discussions of recent significant advances in our understanding of the gene products involved in diverse cellular signalling pathways. Topics will include cell-surface hormone receptors, nuclear steroid hormone receptors, and ion channels and transporters. Students will present and critically evaluate experimental approaches, results and interpretations of selected research publications.

PHGY 556 Topics in Systems Neuroscience. (3) (Winter) (Restriction: Permission of the instructor required.) (Restriction: Not open to students who have taken PHGY 456) Topics of current interest in systems neurophysiology and behavioural neuroscience including: the neural representation of sensory information and motor behaviours, models of sensory motor integration, and the computational analysis of problems in motor control and perception. Students will be expected to present and critically discuss journal articles in class.

PHYS-Physics

Offered by: Physics

PHYS 101 Introductory Physics - Mechanics. (4) (Fall) (3 hours lectures; 2 hours laboratory; tutorial sessions) (Restriction: Not open to students taking or having taken PHYS 131, CEGEP objective 00UR or equivalent) (Laboratory sections have limited enrolment) The object of this course is to give the student a basic understanding of the principles of physics, illustrating these, where possible, with current examples of their use in biology and medicine.

PHYS 102 Introductory Physics - Electromagnetism. (4) (Winter) (3 hours lectures; 2 hours laboratory; tutorial sessions) (Prerequisite: PHYS 101.) (Corequisite: MATH...
PHYS 125 Our Evolving Universe.
(3) (Fall) (Restrictions: Not open to students in a physics program. Not open to students who have taken PHYS 204.) An elementary course on astronomy and astrophysics. Positional astronomy and finding your way about the sky. Our evolving picture of the universe. Properties and origins of the solar system. The Big Bang and modern cosmology.

PHYS 206 The Milky Way Inside and Out.
(3) (Winter) (Restrictions: Not open to students in a Physics program. Not open to students who have taken PHYS 204.) An elementary course on astronomy. Star origins and star formation, supernovae, white dwarfs, neutron stars, and black holes. Galaxies, their structure and their interactions. Stellar clusters, the interstellar medium. Galactic classification and galaxy evolution.

PHYS 214 Introductory Astrophysics.
(3) (Fall) (Prerequisite: CEGEP Physics) (Restriction: Not open to students who have taken or are taking PHYS 204) An introduction to astrophysics with emphasis placed on methods of observation and current models. Stellar radiation and detectors, quasars, black holes. Galaxies, large scale structure of the universe, cosmology.

PHYS 224 Physics and Psychophysics of Music.
(3) (Fall) (3 hours lectures) (Designated for students in the Faculty of Music but suitable for students with an interest in music, and how it is perceived) (Prerequisite: none) An introduction to physics and psychophysics of music with demonstrations of the relevant phenomena and the theories explaining them. Pitch, loudness and timbre in the context of the physics properties of the human ear. The basic physics of music production including modes of oscillation of mechanical systems, resonance, feedback, transmission and reflection of sound. The human voice. Modern methods of sound production using electrical analogue devices and digital computers. Room reverberation and acoustics.

PHYS 225 Musical Acoustics.
(3) (Winter) (3 hours lectures) (Prerequisites: CEGEP physics or both MATH 112 and PHYS 224) (Designed for students in music who have interests in sound recording and reproduction and also suitable for students in science with an interest in music) Physical acoustics with applications to music. Resonators and radiators, acoustic impedance. Acoustic properties of strings, bars, membranes, pipes and horns. Application to selected musical instruments. Direction characteristics of sound sources. Room acoustics.

PHYS 230 Dynamics of Simple Systems.
(3) (Fall) (3 hours lectures) (Prerequisite: CEGEP physics.) (Corequisite: MATH 222) (Restriction: Not open to students taking or having passed PHYS 251) Translational motion under Newton's laws; forces, momentum, work/energy theorem. Special relativity; Lorentz transforms, relativistic mechanics, mass/energy equivalence. Topics in rotational dynamics. Noninertial frames.

PHYS 232 Heat and Waves.
(3) (Winter) (3 hours lectures) (Prerequisite: PHYS 230) (Restriction: Not open to students taking or having passed PHYS 253) First and second laws of thermodynamics, kinetic theory of gases, optical interference, polarization, electro-optics, physics of microscopic systems.

PHYS 241 Signal Processing.
(3) (Winter) (2 hours lectures; 3 hours laboratory alternate weeks) (Prerequisite: CEGEP physics) Linear circuit elements, resonance, network theorems, diodes, transistors, amplifiers, feedback, integrated circuits.

PHYS 242 Electricity and Magnetism.
(2) (Winter) (2 hours lectures) (Prerequisites: CEGEP Physics, MATH 222) Properties of electromagnetic fields, dipole and quadrupole fields and their interactions, chemical binding of molecules, electromagnetic properties of materials, Maxwell's equations and properties of electromagnetic waves, propagation of waves in media.

PHYS 251 Classical Mechanics 1.
(3) (Fall) (3 hours lectures) (Prerequisite: CEGEP physics.) (Corequisite: MATH 222) (Restriction: Not open to students program's failings, or Faculty of Science in 2006-07.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
PHYS 253 Thermal Physics.
(3) (Fall) (3 hours lectures) (Prerequisite: CEGEP physics.)
(Corequisite: MATH 222) (Restriction: Not open to students taking or having taken PHYS 232.) Energy, work, heat; first law. Temperature, entropy, second law. Absolute zero; third law. Equilibrium, equations of state, gases, liquids, solids, magnets; phase transitions.

PHYS 257 Experimental Methods 1.
(3) (Fall) (6 hours of laboratory and classroom work)
(Corequisite: PHYS 230 or PHYS 251) Introductory laboratory work and data analysis as related to mechanics, optics and thermodynamics. Introduction to computers as they are employed for laboratory work, for data analysis and for numerical computation. Previous experience with computers is an asset, but is not required.

PHYS 258 Experimental Methods 2.
(3) (Winter) (6 hours of laboratory and classroom work)
(Corequisite: PHYS 257) Advanced laboratory work and data analysis as related to mechanics, optics and thermodynamics. Computers will be employed routinely for data analysis and for numerical computation, and, particularly, to facilitate the use of Fourier methods.

PHYS 260 Modern Physics and Relativity.
(3) (Fall) (3 hours lectures) (Corequisite: MATH 222) History of special relativity; Lorentz transformations: kinematics and dynamics; transformation of electric and magnetic forces; introduction to topics in modern physics.

PHYS 271 Introduction to Quantum Physics.
(3) (Winter) ([3-0-6]) (Prerequisite: PHYS 251 or CIVE 281) (Restriction: This course is not available to any student enrolled in any Majors or Honours program involving Physics.) The observed properties of atoms and radiation from atoms. Electron waves. The Schroedinger Equation in one dimension. Quantum mechanics of the hydrogen atom. Angular momentum and spin. Quantum mechanics of many electron systems. Basic ideas of electrons in solids and solid state physics.

PHYS 328 Electronics.
(3) (Fall) (2 hours lectures; 3 hours laboratory) (Prerequisite: PHYS 241 or permission of instructor) Semiconductor devices, basic transistor circuits, operational amplifiers, combinatorial and sequential logic, integrated circuits, analogue to digital converters. The laboratory component covers design, construction and testing of basic electronic circuits.

PHYS 331 Topics in Classical Mechanics.
(3) (Winter) (3 hours lectures) (Prerequisite: PHYS 230.) (Corequisite: MATH 315) (Restriction: Not open to students having passed PHYS 451) Forced and damped oscillators, Newtonian mechanics in three dimensions, rotational motion, Lagrangian mechanics, small vibrations, normal modes. Introduction to Hamiltonian mechanics.

PHYS 332 Physics of Fluids.
(3) (Winter) (3 hours lectures) (Prerequisites: PHYS 230, MATH 223, MATH 314, MATH 315) The physical properties of fluids. The kinematics and dynamics of flow. The effects of viscosity and turbulence. Applications of fluid mechanics in biophysics, geophysics and engineering.

PHYS 333 Thermal and Statistical Physics.
(3) (Winter) (3 hours lectures) (Prerequisite: PHYS 232) (Restriction: Not open to students taking or having passed PHYS 362) Introductory equilibrium statistical mechanics. Quantum states, probabilities, ensemble averages. Entropy, temperature, Boltzmann factor, chemical potential. Photons and phonons. Fermi-Dirac and Bose-Einstein distributions; applications.

PHYS 334 Advanced Materials.
(3) (Fall) (Prerequisites: CHEM 110, CHEM 120 or CHEM 111, CHEM 121 and PHYS 101, PHYS 102 or PHYS 131, PHYS 142, or CEGEP Physics and Chemistry, or equivalent. Pre- or Co-requisite: one of CHEM 203, CHEM 204, CHEM 213, CHEM 214 or equivalent; or one of PHYS 230 and PHYS 232, or equivalent; or permission of instructor) (Restriction: Not open to students who have taken or are taking CHEM 334) The physicochemical properties of advanced materials. Topics discussed include photonics, information storage, "smart" materials, biomaterials, clean energy materials, porous materials, and polymers.

PHYS 339 Measurements Laboratory in General Physics.
(3) (Winter) (6 hours) (Prerequisite: PHYS 241) Introduction to modern techniques of measurement. The use of computers in performing and analysing experiments. Data reduction, statistical methods, report writing. Extensive use of computers is made in this laboratory; therefore some familiarity with computers and compiling is an advantage.

PHYS 340 Electricity and Magnetism.

PHYS 342 Electromagnetic Waves.
(3) (Winter) (3 hours lectures) (Prerequisites: PHYS 340 or PHYS 242, Mathematics MATH 314, MATH 315) (Restriction: Not open to students having passed ECSE 357) Maxwell's equations. The wave equation. The electromagnetic wave, reflection, refraction, polarization. Guided waves. Transmission lines and wave guides. Vector potential. Radiation. The elemental dipole; the half-wave dipole; vertical dipole; folded dipoles; Yagi antennas. Accelerating charged particles.

PHYS 350 Electromagnetism.
(3) (Fall) (3 hours lectures) (Prerequisites: MATH 248, MATH 325.) (Restriction: Honours students or permission of the instructor) Vector and scalar potentials; plane waves in homogeneous media; refraction and reflection; guided waves; radiation from simple systems; dipole and quadrupole radiation; introduction to fields of moving charges; synchrotron radiation; Bremsstrahlung.

PHYS 352 Electromagnetic Waves.
(3) (Fall) (3 hours lectures) (Prerequisite: PHYS 350.) (Restriction: Honours students, or permission of the instructor) Vector and scalar potentials; plane waves in homogeneous media; refraction and reflection; guided waves; radiation from simple systems; dipole and quadrupole radiation; introduction to fields of moving charges; synchrotron radiation; Bremsstrahlung.

PHYS 353 Quantum Physics 1.
(3) (Fall) (3 hours lectures) (Restriction: Honours students or permission of the instructor) (Restriction: Not open to students taking or having passed PHYS 446) Experimental basis for quantum mechanics; wave-packets; uncertainty principle. Hilbert space formalism. Schrodinger equation: eigenvalues and eigenvectors: applications to 1-d problems including the infinite and finite potential wells and the harmonic oscillator.
Tunneling. Time independent perturbation theory.

PHYS 359 Laboratory in Modern Physics. 
(3) (Winter) (6 hours) (Corequisite: PHYS 457. Honours students or permission of instructor) Advanced level experiments in modern physics stressing quantum effects and some properties of condensed matter.

PHYS 362 Statistical Mechanics. 
(3) (Winter) (3 hours lectures) (Prerequisites: MATH 248 or equivalents, PHYS 253.) (Restriction: Honours students, or permission of the instructor) (Restriction: Not open to students taking or having passed PHYS 333) Quantum states and ensemble averages. Fermi-Dirac, Bose-Einstein and Boltzmann distribution functions and their applications.

PHYS 396 Undergraduate Research Project. 
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/courses for more information about available projects and application forms and procedures.) Independent research project with a final written report.

PHY 413 Physical Basis of Physiology. 
(3) (Fall) (3 hours lectures) (Prerequisite: MATH 315, or MATH 325, and permission of the instructor) (Intended for Major or Honours students in Physics, Physiology, Physics and Biology, or Mathematics and others with permission) Analytic and computer simulation techniques are used to examine the role of nonlinearities and time delays in determining the dynamic behaviour of physiological control systems and their relation to normal and pathophysiological states. Examples drawn from the control of respiration, cellular proliferation and differentiation, biochemical feedback networks, thermoregulatory mechanisms, and neural feedback.

PHYS 434 Optics. 
(3) (Winter) (3 hours lectures) Geometrical optics, wave optics, lasers, Fourier transform spectroscopy, holography, optical data processing, stellar interferometry.

PHYS 436 Modern Physics. 
(3) (Winter) (3 hours lectures) (Prerequisite: PHYS 446) (Restriction: Not open to students in Honours Physics or in Joint Honours in Mathematics and Physics) One electron atoms, radiation, multielectron atoms, molecular bonds. Selected topics from condensed matter, nuclear and elementary particle physics.

PHYS 439 Laboratory in Modern Physics. 
(3) (Fall) (6 hours) (Prerequisite: PHYS 339.) (Corequisite: PHYS 446) (Restriction: Not open to students with credit in PHYS 359 except with permission of instructor) Advanced level experiments in modern physics stressing quantum effects and some properties of condensed matter.

PHYS 446 Quantum Physics. 
(3) (Fall) (3 hours lectures) (Prerequisite: PHYS 230 and PHYS 232, or PHYS 251) (Restriction: Not open to students taking or having taken PHYS 357 or PHYS 457) de Broglie waves, Bohr atom, Schroedinger equation, wave functions, observables. One dimensional potentials. Schroedinger equation in three dimensions. Angular momentum, hydrogen atom. Spin, experimental consequences.

PHYS 449 Majors Research Project. 
(3) (Winter or Summer) (6 hours) (Prerequisite: PHYS 328, PHYS 439) A supervised research project.

PHYS 451 Classical Mechanics. 
(3) (Winter) (3 hours lectures) (Prerequisite: PHYS 251.) (Restriction: Honours students, or permission of instructor) (Restriction: Not open to students having taken PHYS 331) Rigid bodies, angular momentum, gyroscope, moment of inertia, principal axes, Euler’s equations. Coupled oscillations and normal modes. Lagrangian mechanics and applications. Hamiltonian mechanics. Topics in advanced analytical mechanics.

PHYS 457 Quantum Physics 2. 
(3) (Winter) (3 hours lectures) (Restriction: Honours students or permission of instructor) (Restriction: Not open to students having taken PHYS 446) Angular momentum and spin operators. Operator methods in quantum mechanics. Coupling of spin and angular momenta. Variational principles and elements of time dependent perturbation theory (the Golden Rule). Solution of the Schroedinger equation in three dimensions. Applications to the hydrogen and helium atoms and to simple problems in atomic and molecular physics.

(3) (Fall) (6 hours) (Restriction: Honours students or permission of instructor) (Restriction: Not open to students having taken PHYS 446) Angular momentum and spin operators. Operator methods in quantum mechanics. Coupling of spin and angular momenta. Variational principles and elements of time dependent perturbation theory (the Golden Rule). Solution of the Schroedinger equation in three dimensions. Applications to the hydrogen and helium atoms and to simple problems in atomic and molecular physics.

PHYS 489 Special Project. 
(3) (Winter or Summer) (6 hours) (Prerequisite: PHYS 359) (Restriction: Not open to students taking PHYS 459) Advanced level experiments in modern physics stressing quantum effects and some properties of condensed matter. Continuation of PHYS 359.

PHYS 478 Short Research Project. 
(1) (Note: Students are expected to find an appropriate instructor for their project.) Supervised research project in physics.

PHYS 479 Honours Research Project. 
(3) (Winter or Summer) (6 hours) (Restriction: Honours students or permission of instructor) (Students must also register for PHYS 469 or PHYS 459.) (Credit for this course will only be given if student successfully completes either PHYS 469 or PHYS 459.) Honours supervised research project.

PHYS 489 Special Project. 
(3) (Winter) (6 hours) (Restriction: Only open to students in their final year of the Joint Major in Physics and Computer Science after consultation with the advisor(s) for the program) A project incorporating aspects of both physics and computer science, under the joint supervision of the two departments. The Physics aspect may be either laboratory-based or theoretical in nature. The Computational aspect will involve the development and implementation of algorithms arising from the investigation.

PHYS 514 General Relativity. 
(3) (Winter) (3 hours lectures) (Prerequisite: Honours students, or permission of the instructor) Transition from special to general relativity. Non-Euclidian geometry. The basic laws of Physics in co-variant form, Einstein’s equations. Gravitational waves; neutron stars; black holes; cosmology.

PHYS 521 Astrophysics. 
(3) (Fall) (3 hours) A quantitative course in galactic and
extragalactic astrophysics. Topics include observational techniques, stars and stellar evolution, compact objects, galaxy structure, kinematics, evolution and cosmology.

PHYS 534 Nanoscience and Nanotechnology.
(3) (Fall) Topics include scanning probe microscopy, chemical selfassembly, computer modeling, and microfabrication/micromachining.

PHYS 551 Quantum Theory.
(3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) General formulation, scattering theory, WKBJ approximation, time-dependent perturbation theory and applications, angular momentum, relativistic wave equations.

PHYS 557 Nuclear Physics.
(3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) General nuclear properties, nucleon-nucleon interaction and scattering theory, radioactivity, nuclear models, nuclear reactions.

PHYS 558 Solid State Physics.
(3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Properties of crystals, lattice vibrations and thermal properties of insulators, free electron model and band structure, semi-conductors, metals, optical properties.

PHYS 559 Advanced Statistical Mechanics.
(3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Self averaging and central-limit theorem; thermodynamic fluctuations; ensemble theory; surface roughening; broken symmetry and Goldstone's theorem; phase transitions; mean-field, Landau and Ornstein-Zernicke theory; Monte Carlo method; molecular dynamics; scaling; renormalization group; epsilon expansion; non-equilibrium theory.

PHYS 562 Electromagnetic Theory.
(3) (Winter) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) (Prerequisites (Graduate): U1 or U2 Honours Physics or permission of instructor.) Electrostatics, dielectrics, magnetostatics, timevarying fields, relativity, radiating systems, fields of moving charges.

PHYS 567 Particle Physics.
(3) (Winter) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Survey of elementary particles; hadrons, leptons and hadrons' constituents (quarks). Invariance principles and conservation laws. Detectors and accelerators. Phenomenology of strong, electromagnetic and weak interactions.

PHYS 580 Introduction to String Theory.
(3) (Prerequisite: Permission of instructor.) (Restriction: Honours students.) Introduction to bosonic string theory, with application to fundamental theories of particle physics. Gravity and electromagnetism in extra dimensions, dynamics of classical and quantum strings, worldsheet parametrization, conserved currents, light-cone gauge, string thermodynamics and black holes, D-branes.

PSYC-Psychology
Offered by: Psychology

PSYC 100 Introduction to Psychology.
(3) (Fall) (2 lectures; 1 conference) (Restriction: Not open to students who have passed an Introductory Psychology course in CEGEP: 350-101 or 350-102 or equivalent) Introduction to the scientific study of mind and behavior. Learning, perception, motivation and thinking are explained in a way which emphasizes the continuity of human behavior and the behavior of other species, and which emphasizes the role of the central nervous system in organizing and regulating behavior.

PSYC 204 Introduction to Psychological Statistics.
(3) (Fall and Winter) (2 lectures; 1 conference) (Restriction: Not open to students who have passed a CEGEP statistics course(s) with a minimum grade of 75%: Mathematics 201-307 or 201-337 or equivalent or the combination of Quantitative Methods 300 with Mathematics 300) (This course is a prerequisite for PSYC 305, PSYC 406, PSYC 310, PSYC 336) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) The statistical analysis of research data; frequency distributions; graphic representation; measures of central tendency and variability; elementary sampling theory and tests of significance.

PSYC 211 Introductory Behavioural Neuroscience.
(3) (Winter) (2 lectures) (Prerequisite: PSYC 100 or equivalent) An introduction to contemporary research on learning, memory and motivation, from behavioural, biological and evolutionary perspectives. Topics include: internal and external influences on behaviour, biological constraints on motivation and learning, conditioning and cognitive processes. Much of the material will be drawn from the experimental literature on research with animals.

PSYC 212 Perception.
(3) (Fall) (2 lectures; 1 conference) Perception is the organization of sensory input into a representation of the environment. Topics include: survey of sensory coding mechanisms (visual, auditory, tactile, olfactory, gustatory), object recognition, spatial localization, perceptual constancies and higher level influences.

PSYC 213 Cognition.
(3) (Winter) (2 lectures, 1 conference) (Prerequisite: PSYC 100 or one other course in Psychology.) The study of human information processing, the nature of thought, and how it arises in the mind and brain.

PSYC 215 Social Psychology.
(3) (Fall) (3 lectures) (Restriction: Not open to students who have taken PSYC 330, MGCR 221 or SOCI 216) The course offers students an overview of the major topics in social psychology. Three levels of analysis are explored beginning with individual processes (e.g., attitudes, attribution), then interpersonal processes (e.g., attraction, communication, love) and finally social influence processes (e.g., conformity, norms, roles, reference groups).

PSYC 301 Learning.
(3) (Fall) (Prerequisite(s): PSYC 211 or PSYC 213 or permission of instructor.) (Restriction: Not open to students who have taken PSYC 211 prior to 2000-01 academic year) An introduction to contemporary and historical psychological research on learning from a behavioural, cognitive and biological perspective. Topics include classical and instrumental conditioning, cognitive learning processes, and biological constraints. The status and history of North American behaviourism will be discussed and compared with cognitive and other approaches.

PSYC 304 Child Development.
(3) (Fall) (2 lectures, 1 conference) (Prerequisites: two courses from PSYC 211, PSYC 212, PSYC 213, and PSYC 215 or permission of the instructor) (This course is a prerequisite for PSYC 412, PSYC 413, PSYC 414, PSYC 416) Psychology of children, covering the issues, theories,
methods, and findings in areas such as prenatal and infant development, perceptual, cognitive, language, emotional, and social development.

**PSYC 305 Statistics for Experimental Design.**
(3) (Fall and Winter) (Prerequisite: PSYC 204 or equivalent) (This course is required of all students who propose to enter an Honours or Major program in Psychology) (You may not be able to receive credit for this course and other statistic courses. Be sure to check the Course Overlap section under Faculty Degree Requirements in the Arts or Science section of the Calendar.) An introduction to the design and analysis of experiments, including analysis of variance, planned and post hoc tests and a comparison of anova to correlational analysis.

**PSYC 308 Behavioural Neuroscience 1.**
(3) (Fall) (2 lectures, 1 conference) (Prerequisite: BIOL 111 or BIOL 112 or BIOL 115 or equivalent) (Restriction: Not open to students who have taken or are taking: ANAT 321 or PHGY 314.) The neural basis of mammalian behavior. Basic neuroanatomy, neurophysiology and neurochemistry. Sensory and motor systems. How the nervous system acquires and integrates information and uses it to produce behavior.

**PSYC 310 Human Intelligence.**
(3) (2 lectures, 1 conference) (Prerequisite: PSYC 204 or any equivalent course) An introduction to the measurement, structure, development, and correlates of human intelligence; the role of environment and heredity in its formation; social, cultural, and race differences will be explored.

**PSYC 311 Human Cognition and the Brain.**
(3) (Fall) (2 lectures; 1 conference) The course is an introduction to the field studying how human cognitive processes, such as perception, attention, language, learning and memory, planning and organization, are related to brain processes. The material covered is primarily based on studies of the effects of different brain lesions on cognition and studies of brain activity in relation to cognitive processes with modern functional neuroimaging methods.

**PSYC 316 Psychology of Deafness.**
(3) (Fall) (2 lectures; 1 conference) (Prerequisite: PSYC 100 or equivalent or permission of instructor) Basic introduction to the field of deafness from a psychological perspective. Topics include effect of deafness on sensory, perceptual, cognitive, intellectual and linguistic processes. Impact of deafness on children and families. Opportunity to learn basic concepts in American Sign Language (ASL) in the context of deaf culture.

**PSYC 317 Genes and Behaviour.**
(3) (Fall) (Pre-requisite: PSYC 211 or PSYC 308 or BIOL 306 or PHGY 314 or permission of instructor,) Focusses on current techniques employed to study which genes influence behaviour, and how they do so.

**PSYC 318 Behavioural Neuroscience 2.**
(3) (Winter) (2 lectures, 1 conference) (Prerequisite: PSYC 308 or PSYC 311 or BIOL 306 or PHGY 314) Physiological bases of motivation including feeding and drinking, sexual and parental behaviour. Physiological processes in reinforcement and learning.

**PSYC 329 Introduction to Auditory Cognition.**
(3) (3 lecture hours per week) (Prerequisites: PSYC 212 or PSYC 213 or permission of the instructor.) Listener’s response to sound. Higher-level mental principles including perception, attention, memory, motor control, and emotion. Sensation and perceptual organization of sound.

Perception/production of speech and language, music, and other auditory events.

**PSYC 331 Inter-Group Relations.**
(3) (Winter) (2 lectures) (Prerequisite: PSYC 215) The course focuses on the social psychology of societal groups such as racial minorities, aboriginal groups and women. The ideological biases of current theories is first established. This is followed by a review of current theories and finally current controversies are explored including new forms of racism and affirmative action.

**PSYC 332 Introduction to Personality.**
(3) (Winter) (3 lectures) (Prerequisite: PSYC 100) This course examines some of the major theories of personality, e.g., those of Freud, Rogers, and Bandura. Empirical research inspired by these theories will also be examined. Topics include the nature of human motivation, the role of the self-concept, and the consistency and stability of personality.

**PSYC 333 Personality and Social Psychology.**
(3) (Fall) (2 lectures) (Prerequisite: PSYC 215) The course will consider traditional approaches to person-situation interactions and a more dynamic approach based on recent research on goals and social cognition.

**PSYC 337 Introduction: Abnormal Psychology 1.**
(3) (Fall) (2 lectures, 1 conference) (This course is prerequisite for PSYC 338) A survey of the genetic, physiological and environmental origins of intellectual and emotional disorders.

**PSYC 338 Introduction: Abnormal Psychology 2.**
(3) (Winter) (2 lectures, 1 conference) (Prerequisite: PSYC 337) (This course is prerequisite for PSYC 491) An introduction to psychotic behaviour problems, character disorders and behaviour modification.

**PSYC 340 Psychology of Language.**
(3) (Winter) (Prerequisite: PSYC 212 or PSYC 213) A survey of issues in psycholinguistics, focusing on the nature and processing of language (e.g., how we understand speech sounds, words, sentences, and discourse). Also surveyed: language and thought, the biological foundations of language, and first language acquisition.

**PSYC 341 The Psychology of Bilingualism.**
(3) (Winter) (2 lectures) (Prerequisites: Introductory Psychology, and PSYC 340 or introduction to linguistics; or permission of instructor) This course will examine issues in bilingualism, including second language acquisition in children and adults, critical period hypothesis, cognitive consequences and correlates of bilingualism, social psychological aspects of bilingualism, and bilingual education.

**PSYC 342 Hormones and Behaviour.**
(3) (Winter) (2 lectures) (Prerequisite: BIOL 111, BIOL 112, BIOL 115 or equivalent) The role of hormones in organization of CNS function, as effectors of behaviour, in expression of behaviours and in mental illness.

**PSYC 343 Language Learning in Children.**
(3) (2 lectures plus conference) This course will examine the human capacities that make the profound feat of language acquisition possible. Topics will include analyses of empirical, methodological, and theoretical issues in language acquisition and will draw upon evidence from the cognitive neuroscience, psycholinguistic, linguistic and philosophical literatures.

**PSYC 351 Research Methods in Social Psychology.**
(3) (Fall) (1 hour lecture, 6 hour lab and/or field work) (Prerequisite: PSYC 215. Pre-/Co-requisite: PSYC 305.) (Restriction: U2 level and above. Requires departmental approval.)
(SCIENCE) PSYC-PSYCHOLOGY

approval.) (Students will be admitted on the basis of a written application on forms available from the Department (Room N7/9). Applications must be submitted by August 15) Designed to introduce students to the issues, strategies, and applications of various research methodologies in social psychology. Through demonstrations, exercises, and pilot studies, students will gain experience with lab and field methods using both correlational and experimental procedures. Classic and contemporary approaches will be examined.

PSYC 352 Cognitive Psychology Laboratory. (3) (Fall) (1 hour lecture, weekly lab) (Prerequisite: PSYC 213.) (Corequisite: PSYC 305 or equivalent.) (Restriction: Requires departmental approval.) (Students will be admitted on the basis of a written application on forms available from the Department (Room N7/9). Applications must be submitted by August 15) Introduction to research methods and experimental techniques in cognitive psychology for exploring topics such as attention, memory, categorization, reasoning, and language processing.

PSYC 353 Laboratory in Human Perception. (3) (Winter) (1 hour lecture plus 3 hour lab) (Prerequisites: PSYC 212, U2 level or above. Requires departmental approval.) (Students will be admitted on the basis of a written application on forms available from the Department (Room N7/9). Applications must be submitted by August 15) Students will be introduced to standard psychophysical procedures and data analysis techniques, and will have the opportunity to design and carry out their own experiments. Research topics include: visual acuity, form and motion perception, and visual search. Evaluation based on individually written reports on lab experiments.

PSYC 380D1 (4.5), PSYC 380D2 (4.5) Honours Research Project Seminar. (3 hour seminar) (Restriction: For U2 honours students only. Requires departmental approval.) (Students must register for both PSYC 380D1 and PSYC 380D2.) (No credit will be given for this course unless both PSYC 380D1 and PSYC 380D2 are successfully completed in consecutive terms) First laboratory research project.

PSYC 395 Psychology Research Project 1. (6) (Fall or Winter) (Prerequisites: 24 credits of the psychology program, PSYC 305 or equivalent and CGPA above 3.00.) (Restriction: Requires departmental approval.) (Restriction: Registration is by special arrangement with Psychology staff, and project proposals must be approved by the Department before registration.) (For more information see the Psychology Department website.) Supervised research project.

PSYC 396 Undergraduate Research Project. (3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.

PSYC 403 Modern Psychology in Historical Perspective. (3) (Fall) (2 lectures) A survey of the scientific and ideological influences on psychology from its philosophical beginnings through the period of the schools to its modern situation.

PSYC 406 Psychological Tests. (3) (Winter) (2 lectures) (Prerequisite: PSYC 204 or equivalent) An introduction to the theory and practice of psychological measurement in health, educational, clinical and industrial/organizational settings. Attention to procedures for developing and validating tests and questionnaires. Techniques include: intelligence tests, projective tests, questionnaires, structured interviews, rating scales, and behavioural/performance tests.

PSYC 408 Principles of Cognitive Behaviour Therapy. (3) (Fall) (2 lectures) (Prerequisites: PSYC 337 and PSYC 211 or permission of instructor) An introduction to the theory, research and practice of cognitive behaviour therapy. The experiential approach to understanding human behaviour is used to follow basic principles of learning and their clinical application. Certain psychiatric disorders such as alcoholism and depression are highlighted to illustrate how a behaviour therapist conceptualizes problems and formulates treatments.

PSYC 410 Special Topics in Neuropsychology. (3) (Winter) (2 lectures) (Prerequisites: PSYC 311 or PSYC 308. Knowledge of basic neuropsychology at the level covered in PSYC 311 is assumed) Developments in cognitive neuroscience and cognitive neuropsychiatry via readings from primary sources. Topics include the neural bases of memory, emotion, social cognition and neuropsychiatric diseases. Integrating knowledge from studies in clinical populations and functional neuroimaging studies.

PSYC 412 Deviations: Child Development. (3) (Fall) (2 lectures; 1 conference) (Prerequisite: PSYC 304 or PSYC 308. Knowledge of basic neuropsychology at the level covered in PSYC 311 is assumed) Developmental neuropsychology emphasizing disorders such as depressive spectrum disorders, anxiety disorders, conduct disorder, autism, schizophrenia, attention deficit hyperactivity disorder, eating disorders, and substance abuse.

PSYC 413 Cognitive Development. (3) (Winter) (3 hours) (Prerequisite: PSYC 304 or PSYC 213 or equivalent) In-depth exploration of cognitive development in infants and children including knowledge representation and processing, conceptual development, language development, and theories and principles of cognitive development.

PSYC 414 Social Development. (3) (Fall) (Prerequisites: PSYC 304 and PSYC 305) Advanced study of the development of social behaviour and social cognition in children. Topics include: socialization, attachment, aggression, exploration, role taking, communication, family and peer relations, self and person perception. The development of these social processes within the framework of three general theories of development: behaviour genetics, learning, and cognitive-developmental.

PSYC 416 Topics in Child Development. (3) (3 lectures) (Prerequisite: PSYC 304 or permission of instructor) Theory and recent research on child development. Topics will vary, but will concern psychological issues related to infants, children, and adolescents, and will take account of contexts, such as families, schools, peer groups, and cultures.

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- Denotes courses taught only in alternate years.
- Indicates that departmental approval/permission must be obtained by a student prior to registration.
- Denotes courses not offered by the Faculty of Agricultural and Environmental Sciences, Faculty of Arts or Faculty of Science in 2006-07.
- Denotes courses which, because they are scheduled around practice teaching, are open only to Bachelor of Education students.
PSYC 427 Sensorimotor Behaviour. (3) (Winter) (2 lectures) (Prerequisite: PSYC 308 or permission of instructor) A systematic examination of the sensorimotor system, drawing on models and data from both behavioural and physiological studies. Topics include: cortical motor areas, cerebellum, basal ganglia, spinal mechanisms, motor unit properties and force production, proprioception, muscle properties.

PSYC 429 Health Psychology. (3) (Winter) (2 lectures; 1 conference) (Prerequisite: PSYC 337 or, in the case of advanced undergraduates, permission of instructor) A survey of health psychology including a review of psychological factors involved in the development of physical illness. Assessment and intervention strategies for problems such as cardiovascular disease, cancer, diabetes, and headaches.

PSYC 436 Human Sexuality and its Problems. (3) (Fall) (Prerequisite: either PSYC 337 or permission of the instructor) This course will deal with typical sexual behavior and its variations. Topics will include the history of sex research, the sexual response cycle, sexual dysfunction, gender identity, sexual orientation, etc. Current research and theory will be emphasized.

PSYC 450D1 (4.5), PSYC 450D2 (4.5) Research Project and Seminar. (Prerequisites: PSYC 204, PSYC 305.) (Restriction: Requires departmental approval.) (Restriction: Only for Major or special students in U3 who intend to proceed to graduate school) (Students will be admitted on the basis of a written application on forms available from the Department (Room N7/9). Applications must be submitted by August 15) (Students must register for both PSYC 450D1 and PSYC 450D2.) (No credit will be given for this course unless both PSYC 450D1 and PSYC 450D2 are successfully completed in consecutive terms) Under supervision of an adviser approved by the Department, students design and carry out a research project. Students report their research in seminars throughout the year and in a final written report.

PSYC 451 Human Factors Research and Techniques. (3) (Fall) (2 lectures; 1 lab) (Prerequisites: PSYC 204, PSYC 211, PSYC 212, PSYC 213, PSYC 215 and PSYC 305 or permission of instructor) The application of psychology to the analysis and design of systems and products to increase efficiency and reduce the probability and risk of human error. Topics include: workload and vigilance, control-display relationships, task analysis, and workstation design.

PSYC 462 Special Topics: Personality Psychology. (3)

PSYC 463 Special Topics: Physiological Psychology. (3)

PSYC 464 Special Topics in Clinical Psychology. (3)

PSYC 465 Special Topics in Cognitive Psychology. (3)

PSYC 466 Special Topics: Developmental Psychology. (3)

PSYC 467 Special Topics: Quantitative Psychology. (3)

PSYC 470 Memory and Brain. (3) (Winter) (3 hour lectures) (Prerequisites: PSYC 308 and PSYC 318 or PHGY 311 or BIOL 308) Memory systems are studied with an emphasis on the neural computations that occur at various stages of the processing stream, focusing on the hippocampus, amygdala, basal ganglia, cerebellum and cortex. The data reviewed is obtained from human, non-human primates and rodents, with single unit recording, neuroimaging and brain damaged subjects.

PSYC 471 Human Motivation. (3) (Winter) (3 hours lecture) (Prerequisite: PSYC 215) The course is designed to explore questions such as "Why do people often fail to reach their personal goals?" Current goal-based and need-based theories of human motivation will be reviewed. The instructor will highlight the relevance of motivation research to the domains of education, sports and management.

PSYC 472 Scientific Thinking and Reasoning. (3) (2 lectures, 1 conference) (Prerequisites: U3 students only; BIOL 210 at least 2 courses in the Faculty of Science at the 200 level) (Restriction: Open to Arts and Science students) How do scientists think and reason? Are there strategies scientists use to make discoveries? Are there cognitive principles underlying science? Using research on the cognitive processes that scientists use, we will explore issues such as: hypothesis generation, conduct of experiments, linking theory to data, representing data, making errors, and women in science.

PSYC 473 Social Cognition and the Self. (3) (2 lectures) (Prerequisites: PSYC 215 and PSYC 333 or PSYC 331 or PSYC 474) (Restriction: Not open to students who have taken PSYC 411) This course examines the social psychological literature emphasizing a) social cognition - how people think about and make sense of their social experiences; and b) self theory - how people create and maintain a sense of identity. These frameworks will be applied to social psychological topics including close relationships, attitudes and self-esteem.

PSYC 474 Interpersonal Relationships. (3) (Winter) (Prerequisite: PSYC 215, PSYC 204, and PSYC 333 or permission of instructor) Psychological science approach to interpersonal relationships. Organized in terms of the development of relationships, focusing first on impression formation as a platform for the development of relationships. Then we focus on close relationships, examining interpersonal constructs (intimacy, trust, commitment) and reconsidering social cognitive constructs (attributions, schemas) in an interpersonal context.

PSYC 481D1 (3), PSYC 481D2 (3) Honours Thesis Research. (9 hours. Research) (Restriction: U3 Honours students only) (Please see regulations concerning Project Courses) (Prerequisite: PSYC 305D1) (Students must register for both PSYC 481D1 and PSYC 481D2.) (No credit will be given for this course unless both PSYC 481D1 and PSYC 481D2 are successfully completed in consecutive terms) Under the supervision of an advisor approved by the department, students design and carry out a research project and report their results in the form of an undergraduate thesis.

PSYC 482 Advanced Honours Seminar 1. (3) (Fall) (2 lectures, plus student presentations, debates, and discussions.) (Restrictions: Not open to students who have taken 204-480D. For Honours students only.) Ethical issues in Scientific and Clinical Psychology, Scientific Psychology and Social Policy; and in Search of a Unitary Theory of Psychology.

PSYC 483 Advanced Honours Seminar 2. (3) (Fall) (Restriction: Not open to students who have taken 204-480D) (2 lectures) (Restriction: For Honours students only) Design of clinical research studies, interviewing techniques and clinical diagnosis.

PSYC 488D1 (1.5), PSYC 488D2 (1.5) Special Topics Seminar. (Restriction: Requires departmental approval.) (Students must register for both PSYC 488D1 and PSYC 488D2.) (No credit will be given for this course unless both PSYC 488D1 and
PSYC 488D2 are successfully completed in consecutive terms. (Note: A written proposal detailing the plans for the seminar must be prepared by the student and the professor and must be approved by the undergraduate program director before registering for this course. This proposal must be received by the Director well before the beginning of the term. Consult the departmental handbook for additional information.) Topics in Psychology.

PSYC 491D1 (3), PSYC 491D2 (3) Advanced Study: Behavioural Disorders. (1-2 hours lecture or tutorial per week plus a field experience requirement) (Prerequisites: PSYC 337 and PSYC 338. Departmental permission required.) (Students will be admitted on the basis of a written application on forms available from the Department (Room N7/9). Applications must be submitted by August 15) (Students must register for both PSYC 491D1 and PSYC 491D2.) (No credit will be given for this course unless both PSYC 491D1 and PSYC 491D2 are successfully completed in consecutive terms) A critical examination of topics in abnormal and clinical psychology. Emphasis will be on analysis of theoretical positions and empirical findings as they relate to both etiology and treatment.

PSYC 492 Special Topics Seminar 1. (3) (Fall or Winter) (Restriction: U3 students. Requires departmental approval.) These seminars are offered by special arrangement between interested Psychology staff and students. Note: A written proposal detailing the plans for the seminar must be approved by the Department Curriculum Committee before the student is permitted to register for this course. This proposal must be received by the Department Curriculum Committee well before the beginning of the term for which the seminar is proposed. Consult the Departmental Handbook for additional information.

PSYC 493 Special Topics Seminar 2. (3) (Fall or Winter) (Restriction: U3 students. Requires departmental approval.) These seminars are offered by special arrangement between interested Psychology staff and students. Note: A written proposal detailing the plans for the seminar must be approved by the Department Curriculum Committee before the student is permitted to register for this course. This proposal must be received by the Department Curriculum Committee well before the beginning of the term for which the seminar is proposed. Consult the Departmental Handbook for additional information.

PSYC 494D1 (4.5), PSYC 494D2 (4.5) Psychology Research Project. (Prerequisites: 30 credits of the psychology program, PSYC 305 or equivalent and CGPA above 3.00.) (Restrictions: Requires departmental approval. Registration is by special arrangement with Psychology staff, and project proposals must be approved by the Department before registration.) (For more information see the Psychology Department website.) (Students must also register for PSYC 494N1.) (No credit will be given for this course unless both PSYC 494N1 and PSYC 494N2 are successfully completed in a twelve month period.) Supervised research project.

PSYC 495 Psychology Research Project 2. (6) (Fall or Winter) (Prerequisite: PSYC 494N1.) (No credit will be given for this course unless both PSYC 494N1 and PSYC 494N2 are successfully completed in a twelve month period.) See PSYC 494N1 for course description.

PSYC 496 Senior Honours Research 1. (6) (Prerequisite: PSYC 380D1/PSYC 380D2) Second laboratory research project.

PSYC 497 Senior Honours Research 2. (6) (Prerequisite: PSYC 380D1/PSYC 380D2) (Corequisite: PSYC 496) Third laboratory research project.

PSYC 498D1 (4.5), PSYC 498D2 (4.5) Senior Honours Research. (Students must register for both PSYC 498D1 and PSYC 498D2.) (No credit will be given for this course unless both PSYC 498D1 and PSYC 498D2 are successfully completed in consecutive terms) (Prerequisite: PSYC 380D1/PSYC 380D2) Second two-term laboratory research project.

PSYC 499 Reading Project. (1) (Prerequisites: PSYC 211, 212, 214, 215 and 305.) (Restriction: Open only to U3 students.) Under the guidance of an instructor with the relevant expertise, the student explores the literature on a special topic.

PSYC 501 Auditory Perception. (3) (2 lectures) (Prerequisite: PSYC 212 or equivalent, or permission of instructor.) Non-mathematical presentation of the acoustics biology and perception of: loudness, pitch, spatial location, frequency specificity, musical and speech sounds. Auditory scene analysis (segmentation of component sounds) in multi-sound environments. For graduate students and undergraduates in any department with some background in acoustics or perception. Lectures and student presentations.

PSYC 503 Computational Psychology. (3) (Prerequisite: Permission of instructor.) (Restriction: Not open to U0 or U1 students.) Application of computational methods to the simulation of psychological phenomena. Use of psychological ideas in robotic and other engineering applications. Comparison of natural and artificial intelligence. Symbolic and neural network techniques. Methods for evaluating simulations.

PSYC 505 The Psychology of Pain. (3) (Fall) (2 lectures; 1 conference) (Prerequisites: any two of the following: PSYC 308, PSYC 311, PSYC 318, PSYC 522, ANAT 321, BIOL 306, PHGY 314 or permission of instructor.) An introduction to pain research and theory, with emphasis on the interactions of psychological, cultural and physiological factors in pain perception. The role of these factors in clinical pain and its management by pharmacological and non-pharmacological means will be discussed.

PSYC 507 Emotions, Stress, and Illness. (3) (Fall) (Prerequisites: PSYC 337, PSYC 429 and...
PSYC 510 Statistical Analysis of Tests.
(3) (Fall) (3 lectures) (Prerequisite (Undergraduate): PSYC 305 or PSYC 536, PSYC 406 or permission of instructor.) This course aims to introduce students interested in developing or appraising tests to the important statistical problems and modern techniques associated with testing data. Testing situations discussed will range from one-shot classroom tests through special purpose scales to the highly refined large scale tests such as the SAT.

PSYC 511 Infant Competence.
(3) (1, 3 hour seminar) (Prerequisites: PSYC 351 or PSYC 352 or PSYC 353 or PSYC 380 or PSYC 450 and permission of instructor) Basic research on the nature of infant competence - both the development of mental representations/operations and expressive/communicative ability - will be examined. Implications for clinical assessment and intervention including information processing procedures as an alternative to conventional tests and treatment procedures for developmental delays will be covered.

PSYC 522 Neurochemistry and Behaviour.
(3) (2 lectures) (Prerequisites: any two of the following PSYC 308, PSYC 311, PSYC 318, ANAT 321, PHGY 314, BIOL 306) (Restrictions: Not open to students who have taken or are taking PHAR 562) Anatomical, biochemical and physiological aspects of neurotransmitter systems in the brain, current theories of the function of these systems in normal and abnormal behaviour, and the actions of psychototropic drugs.

PSYC 526 Advances in Visual Perception.
(3) (Fall) (2 lectures) We examine in detail the structure of the visual system, and its function as reflected in the perceptual abilities and behaviour of the organism. Parallels are also drawn with other sensory systems to demonstrate general principles of sensory coding.

PSYC 528 Vulnerability to Depression.
(3) (Prerequisite: PSYC 337 or PSYC 412 or permission of instructor. Requires departmental approval.) This course will examine in depth cognitive, behavioral, psychodynamic, biological, and developmental psychopathology models of the etiology of depression. Within each theoretical perspective, core issues, theoretical and methodological underpinnings, and research data will be examined.

PSYC 529 Music Cognition.
(3) (Fall) (Prerequisites: PSYC 212, PSYC 213, PSYC 204 (or equivalent)) Interdisciplinary study of music cognition and perception, with an emphasis on cognitive psychological and experimental approaches. Topics include: psychoacoustics, music memory, scales, tonality, neuropsychology of music, performance, talent and expertise, expectation and developmental aspects.

PSYC 530 Applied Topics in Deafness.
(3) (Fall) (Prerequisite: PSYC 340 or PSYC 316 or equivalent. Permission of instructor) Covers fundamental topics in deafness (sensory, perceptual, cognitive, social, linguistic, education and health issues) from an applied psychological perspective. Lectures and seminar presentations plus field work involving ASL/LSQ.

PSYC 531 Structural Equation Models.
(3) (Fall) (one 2-hour lecture plus one lab) (Prerequisite: PSYC 536, PSYC 651, or equivalent, or permission of instructor.) The course introduces basic concepts underlying structural equation models (SEM). SEM, which combine regression analysis and factor analysis, are quite useful and are currently very popular in analyzing data that arise in social, developmental and clinical psychology. The students are expected to get first-hand experiences in fitting SEM, and learn how to interpret and report the results from SEM.

PSYC 532 Cognitive Science.
(3) (Fall) (Prerequisites: Admission to the Cognitive Science Minor or permission of instructor. Students should ideally have some cognitive science background in at least two disciplines) The multi-disciplinary study of intelligent systems. Problems in vision, memory, categorization, choice, problem solving, cognitive development, syntax, language acquisition, and rationality. Rule-based and connectionist approaches.

PSYC 533 International Health Psychology.
(3) (Fall) (Prerequisites: PSYC 305 and PSYC 215 or PSYC 429 or PSYC 304 or ANTH 227) (Restriction: Departmental permission required.) The focus will be on health and illness in developing countries, in particular, on health problems (malnutrition, alcohol abuse, mental illness, family planning, and HIV) where psychosocial factors play a large role in the problem and the solution. Attempted solutions based on community participation, health education, non-governmental and international agencies will be discussed.

PSYC 534 Community Psychology.
(3) (Prerequisites: PSYC 337 and PSYC 338 or permission of instructor) (Restriction: Open to Graduate students or U3 undergraduates in Psychology) (Enrolment limited) Community psychology aims to promote health in groups and communities rather than expending resources solely on relieving dysfunction in individuals. The course reviews the conceptual rationale for community psychology and explores examples of both successful and unsuccessful prevention programs. It also discusses crisis intervention, informal caregivers, self-help groups, and mental health education through the media.

PSYC 535 Advanced Topics in Social Psychology.
(3) (Winter) (Prerequisites: PSYC 215, PSYC 333 and one additional course from the social and personality area of specialization, or PSYC 380.) (Restriction: Departmental permission required.) (Restriction: Graduate Students, enrolment limited) Classic and contemporary readings in a specific content area within social psychology will be assigned in order to examine the sub-area in depth. The focus will vary depending upon the specialty area of the instructor. These areas include interpersonal relationships, intergroup relations, the self, and social cognition.

PSYC 536 Correlational Techniques.
(3) (Winter) (Prerequisites: PSYC 204 and PSYC 305 or their equivalents, and MATH 133 or equivalent.) (Restriction: Requires departmental approval.) The statistical analysis of relations among a number of variables in situations common in psychology, ecology, and other fields. Methods include regression analysis, principal components analysis, and other techniques for modelling the structure of correlation matrices.

PSYC 537 Advanced Seminar in Psychology of Language.
(3) (Prerequisites: PSYC 213 and one of: PSYC 340, LING 200, or LING 201.) (Note: Prior background in the psychology of language, cognitive psychology, or linguistics is essential.) The neural basis of language, evolutionary approaches to language, pragmatics and figurative language processing, disordered language processing, models of spoken word recognition.

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PSYT 541 Multilevel Modelling.
(3) (Winter) (Prerequisite: PSYC 305 or equivalent or permission of the instructor.) (Limited enrolment.) Basic concepts of multilevel linear and nonlinear models and applying these methods to empirical data.

PSYT 545 Topics in Language Acquisition.
(3) (Winter) Psychological mechanisms and theories of first language acquisition in infancy and early childhood. Topics such as: infant speech perception, acquisition of grammar, word learning, pidgin and Creole languages, critical and sensitive periods, genetic and environmental bases of language.

PSYT 561 Methods: Developmental Psycholinguistics.
(3) (Winter) (3 hour lectures) (Prerequisites: PSYC 340 and LING 355 or equivalent or permission of instructor.) Approaches and methods used in investigations of the development of language and communication. A case study approach, observational-correlational approach versus experimental-manipulative approach, cross sectional design versus longitudinal design.

PSYT 562 Measurement of Psychological Processes.
(3) (Restriction: Not open to students who have taken PSYC 336.) The properties of measurements and techniques for the measurement of psychophysical variables such as brightness and loudness and of attitudinal variables such as similarity, preference, and utility. Data analysis tools of value to experimenters. Emphasis on current problems in experimental psychology.

PSYT-Psychiatry
Offered by: Psychiatry

PSYT 199 FYS: Mental Illness and the Brain.
(3) (1 hour lecture and 2 hours seminar weekly) (Restriction: Open only to newly admitted students in U0 or U1, who may take only one FYS. Students who register for more than one will be obliged to withdraw from all but one of them.) (Maximum 25. No prerequisites) This course will introduce the student to the fundamentals of neuroscience, and then use these principles to illustrate recent advances made on the biological causes of, and treatments for, mental disorders with a strong biological component: schizophrenia, depression, mania, anxiety disorders, obsessive-compulsive disorder, Alzheimer's and Parkinson's diseases and alcohol and drug abuse.

PSYT 301 Issues in Drug Dependence.
(3) (Winter) (3 hours) (Prerequisites: PHGY 201 or PHGY 209 or PHGY 210 or PSYC 100 or BIOL 201 or permission of instructor) The phenomenology and epidemiology of the use and abuse of alcohol, nicotine, opiates, stimulants, sedatives and psychotomimetic agents are discussed in relation to current theoretical and experimental issues. The perspective is multidisciplinary and the intention is to develop an understanding of the nature of the issues surrounding drug dependence.

PSYT 302 Psychiatry - ICM.
(1) This course will elaborate and reinforce introductory material in the field of psychiatry presented in early sections of the curriculum. In addition, it will provide students with the basic components of clinical psychiatry, preparatory to the Clerkships.

PSYT 401 Psychiatry - Clerkships.
(8) Eight-week block training to acquaint all students (Core program) with the examination of patients and understanding of some of the major factors involved in abnormal behaviour. Diagnostic procedures, psychotherapeutic and physical methods of treatment will be among the aspects covered. Students will be provided with tutors on an individual and group basis and will also have an opportunity to become conversant with certain more specialized areas of the field of psychiatry. An attempt will be made to provide a comprehensive exposure to current theoretical models and treatment approaches in psychiatry, to indicate the relevance of certain concepts and attitudes to non-psychiatric medical practice, and to supply well-supervised clinical experience which is patient-oriented and responsibility-centered.

PSYT 401D1 (4), PSYT 401D2 (4) Psychiatry - Clerkships.
(Students must register for both PSYT 401D1 and PSYT 401D2.) (No credit will be given for this course unless both PSYT 401D1 and PSYT 401D2 are successfully completed in consecutive terms) (PSYT 401D1 and PSYT 401D2 together are equivalent to PSYT 401) Eight-week block training to acquaint all students (Core program) with the examination of patients and understanding of some of the major factors involved in abnormal behaviour. Diagnostic procedures, psychotherapeutic and physical methods of treatment will be among the aspects covered. Students will be provided with tutors on an individual and group basis and will also have an opportunity to become conversant with certain more specialized areas of the field of psychiatry. An attempt will be made to provide a comprehensive exposure to current theoretical models and treatment approaches in psychiatry, to indicate the relevance of certain concepts and attitudes to non-psychiatric medical practice, and to supply well-supervised clinical experience which is patient-oriented and responsibility-centered.

PSYT 500 Advances: Neurobiology of Mental Disorders.
(3) (Winter) (3 hours) (Prerequisite (Undergraduate): BIOC 212 and BIOC 311, or BIOC 312, or BIOL 200 and BIOL 201, or PHGY 311, or PSYC 308 and an upper-level biological science course with permission of the instructors, or equivalent. Basic knowledge of cellular and molecular biology is required.) (Restriction: Open to U3 and graduate students only.) (Restriction: Graduate Studies: strongly recommended for M.Sc. students in Psychiatry.) Current theories on the neurobiological basis of most well known mental disorders (e.g. schizophrenia, depression, anxiety, dementia). Methods and strategies in research on genetic, physiological and biochemical factors in mental illness will be discussed. Discussion will also focus on the rationale for present treatment approaches and on promising new approaches.

PSYT 502 Brain Evolution and Psychiatry.
(3) (Fall) (Prerequisites: BIOC 115 or equivalent as authorized by instructor) The course will focus on the transcendental importance of evolution of nervous systems for normal and pathological behavior. Studies of allomeric brain growth and recent evolutionary theories of brain organization as they relate to normal and abnormal behavior will be emphasized.

REDM-Redpath Museum
Offered by: Biology

REDM 396 Undergraduate Research Project.
(3) (Restrictions: This course cannot be taken under the S/U option. Departmental permission required. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science only.) (Note: Enrolment may be limited. Students are advised to start the application process well before the start of the term.

Not all courses are offered every year, and changes are made after the printing of this calendar. Always check the Class Schedule at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.
and to plan for an alternative course in the case that no suitable project is available. Individual projects will be suggested each term which may have project-specific prerequisites. Some projects may be accessible to students in other disciplines. See http://www.mcgill.ca/science/ours for more information about available projects and application forms and procedures.) Independent research project with a final written report.