

FACULTY OF SCIENCE

INCLUDING SCHOOL OF COMPUTER SCIENCE

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1 The Faculty

1.1 Location

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

Telephone: (514) 398-4210

Faculty Website: <http://www.mcgill.ca/science>

Student Affairs Office Website: http://www.mcgill.ca/arts_science

The Student Affairs Office and the Office of the Associate Dean of the Faculty of Science are located in Dawson Hall, Room 115.

The Student Affairs Office serves students in both the Faculty of Science and the Faculty of Arts.

1.2 Faculty Administrative Officers

ALAN G. SHAVER, B.Sc.(Car.), Ph.D.(M.I.T.)	Dean
MORTON J. MENDELSON, B.Sc (McG.), A.M., Ph.D.(Harv.)	Associate Dean
JOSIE D'AMICO	Assistant to the Dean
SHARON BEZEAU, B.A.(Tor.), M.A.(C'dia)	Recorder
DONALD SEDGWICK, B.Sc., M.Sc.(McG.)	Senior Adviser

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 recent Science Undergraduate Society initiative launched Operation Open Access, a project that gives Science students universal access to email, 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; fulfilment of the minimum requirements does not guarantee acceptance. Admission criteria are described in the General University Information [section 2](#), beginning on [page 10](#).

There are also two Diploma programs offered in Science. The Diploma in Environment, a 30-credit program available to holders of a B.Sc. or B.A., is described in the section on the McGill School of Environment, [page 463](#). 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. For more information, see Atmospheric and Oceanic Sciences, [page 349](#). 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.

2 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 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 fulfil all Faculty and program requirements as indicated below:

- Minimum Credit Requirement (section 2.1)
- Residency (section 2.2)
- CGPA (section 2.3)
- Time Limit for the Completion of the Degree (section 2.4)
- Program Requirements (section 2.5)
- Course Requirements (section 2.6)

2.1 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. Normally, Quebec students who have completed the Diplôme d'études collégiales (DEC) or equivalent diploma are admitted to a three-year program requiring the completion of 90 credits. Students from outside Quebec 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 International Baccalaureate, French Baccalaureate, 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 CGPA will be calculated. The Associate Dean, 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, in consultation with the department, may approve exemption from any new requirements.

2.2 Residency

To obtain a B.Sc. degree, students must satisfy the following residency requirements: a minimum of 60 credits of courses 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 (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.

2.3 Cumulative Grade Point Average (CGPA)

Each candidate for the degree must achieve a minimum cumulative grade point average (CGPA) of 2.0.

2.4 Time Limit for the Completion of the Degree

Students registered in 90-credit programs are expected to complete their program in no more than eight terms after their initial registration for the degree. Students who exceed these limits must receive permission from the Faculty to continue their studies. Permission for exceeding the time 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.

2.5 Program Requirements

2.5.1 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 semesters each of calculus, general chemistry, and general physics, and one semester of biology.

Students who have completed 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 requirements. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits.

For a more detailed description of the Science Freshman Program, students should consult the *Arts and Science Freshman Student Handbook* available from the Student Affairs Office, Dawson Hall, Room 110, and on the Internet (http://www.mcgill.ca/arts_science).

2.5.2 Faculty, Major, and Honours Programs

Science students who need 96 or fewer credits to complete their degree requirements are required to have an approved degree program and 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 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 in two subjects that can constitute the Science component of the Concurrent B.Sc./B.Ed. Program. For more information about this program, please consult [section 2.5.5 on page 339](#).

Honours programs typically involve an even higher degree of specializing, often include supervised research, and require students to maintain a high academic standard. Although Honours programs are specially designed to prepare students for graduate study, graduates of the other degree programs are also normally admissible to most graduate schools. Students who intend to pursue graduate studies in their discipline should consult a departmental advisor regarding the appropriate selection of courses in their field.

2.5.3 Minor and Minor Concentrations Programs

In addition to the above degree programs, students in the Faculty of Science may select a Minor 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 normally consist of 24 credits. Up to six credits of overlap with the degree program are normally allowed, but in some cases no overlap is permitted.

Arts Minor Concentrations consist of 18 credits, with no overlap permitted.

2.5.4 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.

2.5.5 Concurrent B.Sc./B.Ed. program

This program was designed to provide students with the opportunity to obtain both a Bachelor of Science degree and a Bachelor of Education degree after a minimum of 135 credits of study. In the B.Sc. component, students must major in one of the following subject combinations: Mathematics and Physics, Mathematics and Chemistry, Chemistry and Physics, Biology and Physics, Biology and Geography. For more information about this program, students should refer to [section 11.28 on page 415](#) and to the Faculty of Education [section 6.1.4](#).

2.5.6 Internship Program for Engineering and Science (YES)

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 (refer to [section 10](#)). Students from other departments are also eligible to apply for an internship year, but this will not be part of their degree designation. For program details, students should refer to the Faculty of Engineering [section 2.8](#).

2.5.7 McGill School of Environment

The Faculty of Science is one of the three faculties in partnership with the McGill School of Environment. Please see the School section on [page 457](#) of this Calendar.

2.6 Course Requirements

All required and complementary courses used to fulfil 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 may appeal to the Associate Dean 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.

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.

2.6.1 Course Overlap

Students will not receive credit towards their degree for any course where the content overlaps substantially with any other course for which the student receives credit or which the student has already passed at CEGEP or another university or elsewhere. It is the stu-

dent's responsibility to consult the Office of the Associate Dean as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course descriptions 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: 154-227D, 154-257D, 166-350A, 186-215B, 189-203A, 198-219A, 204-204A/B, 280-271A/B.
- 2) Credit will be given for only one of the following intermediate statistics courses: 154-227D, 154-257D, 166-461, 183-351B, 189-204B, 204-435B, 280-272B.
- 3) Students who have already received credit for one of the courses listed in (2) above will not subsequently receive credit for 177-373A.
- 4) Credit will be given for only one of the following: 154-227D, 154-257D, 189-204B, 204-305A/B, 280-272B.
- 5) Students in mathematics or computer science programs, and students who have already received credit for 189-324B, will not receive credit for any of the following: 154-227D, 154-257D, 166-350A, 177-373A, 186-215B, 189-203A, 189-204B, 198-219A, 204-204A/B, 204-305A/B, 280-271A/B, 280-272B.
- 6) Credit for statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science.

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

- Credit for courses offered by the School of Computer Science is governed by rules specified as "Notes" in the School's section.
- Credit for computer courses offered by faculties other than Science requires the permission of the Associate Dean of Science.

2.6.2 Project Courses

Students may normally receive no more than 12 credits for individual project or independent study courses toward a B.Sc. degree.

2.6.3 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 of Science. The regulations are posted in the Student Affairs Office, Dawson Hall, and on the Internet (http://www.mcgill.ca/arts_science). 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. Request for permission to take courses that are not on either list should be addressed to the Associate Dean.

The regulations are as follows:

- courses taught in other faculties *and* specifically listed in the Arts or Science section are considered as courses taught in Arts or Science;
- 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;
- credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science;
- students who use MARS to register for a course that exceeds the specified limitations or that is not approved will have the course flagged for no credit;

- 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.

2.6.4 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. For more information, students should consult the General University Information [section 5.12.3 on page 25](#).

2.6.5 Courses in English as a Second Language (ESL)

ESL courses are 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 Science may normally take a maximum of 6 credits of ESL courses, including academic writing courses for non-anglophones. Students who feel they need to take more than 6 credits of ESL courses must appeal to the Associate Dean of Science.

3 Advising

Fall-term 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 on [page 4](#) 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 the *Welcome* book, which is available from the Admissions, Recruitment and Registrar's Office.

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, students should refer to the *Welcome* booklet, which is available from the Admissions, Recruitment and Registrar's Office, as well as the *Arts and Science Freshman Handbook*, which students receive prior to the start of classes from the Student Affairs Office. The Handbook is also available on the Internet (http://www.mcgill.ca/arts_science).

Advising for all returning students takes place in March for the coming academic year. For more information, students should refer to the *Arts and Science Registration Handbook*, which is distributed in March in the Arts Lobby and is available on the Internet, http://www.mcgill.ca/arts_science.

Advising is also available by email. The address is advisor@artsci.lan.mcgill.ca.

4 Registration

All students register by MARS, McGill's automated registration system.

New students register in August prior to the first day of classes. For detailed information about registration, students should refer

to the General University Information [section 5 on page 21](#), as well as to the *Welcome* book and on the Internet (http://www.mcgill.ca/arts_science).

Returning students register in March for the coming academic year. For detailed information about registration, students should refer to the General University Information [section 5 on page 21](#) as well as to the *Arts and Science Registration Handbook* on the Internet (http://www.mcgill.ca/arts_science).

Students who fall into unsatisfactory standing at the end of the academic year will have their registration cancelled. They may not reregister in the Faculty, but may be readmitted after appealing to the Associate Dean of Science. For more information, students should consult the Student Affairs Office, Dawson Hall, or read the information on the Internet (http://www.mcgill.ca/arts_science).

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 then subsequently take summer courses without paying the fees, will have their registration cancelled. Registration on MARS will be denied until these debts are paid in full. Students with financial problems should consult the Student Aid Office, Powell Student Services Building.

Students who decide not to return to McGill after initiating registration through MARS must either complete a withdrawal form in person or write a letter addressed to the Student Affairs Office, Faculty of Science, Dawson Hall, Room 115, 853 Sherbrooke Street West, Montreal, Quebec, H3A 2T6. Scholarship students should note that scholarship money is deposited directly into their University fee account; the University requires a formal request for withdrawal before the scholarship money can be released from the fee account.

4.1 Program Registration

Students should refer to the *Welcome* book or the *Arts and Science Registration Handbook* for information on how to register for programs on MARS.

See [section 10](#) for a list of programs which can be taken by Science students. MARS Program Codes are included with the program outlines in the units' entries unless the program is one for which program registration cannot be done on MARS, e.g. Minor in Management.

4.2 Course Registration

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

Since the MARS 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 as "not for credit towards the B.Sc.". As a result, the students' expected date of graduation may be delayed.

Some courses may require the permission of the instructor owing to space limitations or program requirements. Students should consult this Calendar and/or the timetable to determine if permission is required of the instructor, the department, or the Faculty, or if password cards must be obtained, for any course they wish to take.

Students who have valid reasons to take a course that is normally closed to Science students must obtain permission from the Associate Dean of Science before registering for the course. Only the Associate Dean or, on appeal, the Committee on Student Standing, can make exceptions to the Faculty rules.

4.2.1 Registration for First-Year Seminars

Registration for First-Year Seminars is limited to students in their first year of study at McGill. 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 through MARS. The maximum number of students in any seminar is 25. Students may take only one seminar. Please consult the departmental listings for course descriptions and availability.

- 177-199A Species Diversity, see Biology
- 180-199A Why Chemistry?, see Chemistry
- 183-199A People, Place and Environment, see Geography
- 189-199A Chaos, Fractals and Complexity,
see Mathematics and Statistics
- 198-199B Physics and Biology, see Physics
- 308-199A Excursions in Computer Science,
see Computer Science
- 552-198A Feedback & Rhythms in Physiology,
see Physiology
- 552-199A History of Genetic Engineering, see Physiology
- 555-199A Mental Illness and the Brain, see Psychiatry

The First-Year Seminars offered by the Faculty of Arts are also open to Science students. For a complete listing, please consult Arts [section 4.2.1](#).

4.3 Registration for Graduation

Students in their final year must indicate their expected date of graduation on MARS and must verify this date both on MARS and on verification forms. When final-year students change their expected date of graduation, they must notify the Student Affairs Office immediately.

Students who complete their degree requirements at any time after their last registered term at McGill must apply to the Associate Dean 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.

5 Grading and Credit

Before the end of the course change (drop/add) period, each instructor will inform students of the following:

- 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 semester;
- whether letter grades or percentages will be given in the course;
- whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses normally have supplemental examinations, and 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.

5.1 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: A, B, D courses: April 30
- non-graduating students: A courses: April 30
B, D 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. Please consult the General University Information [section 5.12 on page 25](#) for more information about grading and credit.

6 Examinations

Students should refer to *the* General University Information [section 6 on page 26](#) for information about final examinations and deferred examinations.

7 Supplemental Assessments

7.1 Supplemental Examinations

Students may apply for permission to write supplemental examinations for certain courses. 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 supplementals totalling 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; the instructor will announce the arrangements to be used for the course by the end of the change of course period;
- 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.

The supplemental examination period for A courses is during the months of April and May, and for B and D courses during the last week of August. Supplemental applications are available at the Student Affairs Office. The deadline for submission of applications is March 1 for A courses and July 15 for B and D courses. 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.

7.2 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 applications are available in the Student Affairs Office. The deadline for submission of applications is March 1 for A courses and July 15 for B and D courses. A non-refundable fee is payable for each course at the time of application. Students should consult the Student Affairs Office for further information.

7.3 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 as well as the right to discuss this submission with the examiner.

If, after discussion with the instructor, students request a formal final examination re-read, they must apply in writing to the Student Affairs Office. The following conditions apply:

- requests for rereads in more than one course per term will not be permitted;
- grades may be either raised or lowered as the result of a reread;
- rereads in courses not in the Faculty of Science 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.

8 Academic Standing

Academic standing is a calculation of students' grade point average (GPA), which is based on their fall and/or winter-term grades. Academic standing is calculated immediately following the winter-term examination period and determines if students will be allowed to continue their studies in the following academic year and if there will be any conditions attached to their studies.

Satisfactory Standing

Students in satisfactory standing may continue in their program.

- New students are admitted to satisfactory standing;
- students whose GPA and CGPA are both 2.0 or greater are in satisfactory standing;
- students who were previously in probationary standing will return to satisfactory standing if their GPA is 2.5 or greater;
- students who were previously in unsatisfactory standing and who were readmitted on probation by the Associate Dean or the Committee on Student Standing will return to satisfactory standing if they satisfy the conditions specified in their letter of re-admission.

Probationary Standing

Students in probationary standing may continue in their program but must carry a reduced load (maximum 12 credits per term) and raise their sessional and cumulative GPA. Probationary students should see their departmental adviser to change their course selection accordingly.

- Students who were previously in satisfactory standing will be placed in probationary standing if their GPA falls between 1.5 and 1.99;
- students who were previously in probationary standing will remain in probationary standing if their GPA falls between 1.5 and 1.99 and their CGPA is 2.0 or higher;
- students who were previously in unsatisfactory standing and who are readmitted by the Associate Dean or the Committee on Student Standing are placed in probationary standing.

Unsatisfactory Standing

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 should be addressed to the Associate Dean 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).

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 if their GPA falls below 1.5;
- students who were previously in probationary standing will be placed in unsatisfactory standing if their GPA falls below 2.5 and their CGPA is below 2.0;
- students who were previously in unsatisfactory standing and who were readmitted to probationary standing by the Associate Dean or the Committee on Student Standing and who have not satisfied the conditions specified in the letter of readmission will be placed in unsatisfactory standing;
- students in unsatisfactory standing for the second time must withdraw permanently.

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 semester, 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 11.28](#).

Incomplete Standings

Standing awaits deferred exam
Must clear K's, L's or SUPPS
Standing Incomplete

Students with incomplete standings may register for the following term, but their standing must be resolved by the end of course change period for that term; otherwise, their registration will be cancelled. Students whose incomplete standing changes to satisfactory or probationary 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.

- Students whose records in any year show a mark of K, L, or && will have no GPA or CGPA calculated for that year. If the outstanding mark will not affect the result, a standing decision of satisfactory, probationary, or unsatisfactory will be made in June. Otherwise, the standing decision will only be made once final marks for K or L have been submitted.
- If marks to clear Ks have not been submitted to the Student Affairs Office by the end of April for fall-term courses or by the end of July for winter-term courses, the K is automatically changed to a KF and counts as an F in the GPA.
- Marks to clear Ls are normally submitted to the Student Affairs Office three days after the end of the deferred and supplemental exam periods in May and August.

9 Awards and Honourary Designations

9.1 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 3.0;
- 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 GPA is below 3.0 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.

9.2 Distinction or Great Distinction

Students in Faculty or Major programs whose academic performance is appropriate may be awarded their degrees with *Distinction* or *Great Distinction* under the following conditions:

- students must have completed a minimum of 60 McGill credits 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.

9.3 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 to be considered;
- students must be in the top 10% of the Faculty's graduating students;
- 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.

9.4 Medals and Prizes

Various medals, scholarships and prizes are open to 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 ARO website (<http://www.aro.mcgill.ca>). No application is required except in the case of the Moyses Travelling Scholarships.

10 List of Programs

FACULTY PROGRAMS

Anatomy and Cell Biology
 Biochemistry
 Biology
 Biology and Mathematics – see Biology
 Chemistry
 Chemistry and Biological Sciences – see Chemistry
 Chemistry and Mathematics – see Chemistry
 Mathematics and Computer Science – see Mathematics and Statistics
 Mathematics, Statistics and Computer Science – see Mathematics and Statistics
 Mathematics, Chemistry and Physics – see Mathematics and Statistics
 Microbiology and Immunology – application required, see departmental entry for information.
 Physics
 Physiology
 Psychology

MAJOR PROGRAMS

Anatomy and Cell Biology
 Atmospheric Science
 Biochemistry
 Biology
 Biology and Chemistry for Teachers – see Science for Teachers
 Biology and Geography for Teachers – see Science for Teachers
 Chemistry
 Chemistry (Bio-organic option)
 Chemistry (Environmental option)
 Chemistry (Materials)
 Chemistry and Physics for Teachers – see Science for Teachers
 Computer Science
 Earth and Planetary Sciences
 Environment (Atmospheric Environment and Air Quality domain) – see McGill School of Environment
 Environment (Biodiversity and Conservation domain) – see McGill School of Environment
 Environment (Earth Sciences and Economics domain) – see McGill School of Environment (Awaiting University Approval)
 Environment (Environmetrics domain) – see McGill School of Environment
 Environment (Renewable Resource Management domain) – see McGill School of Environment (Awaiting University Approval)
 Environment (Water Environments and Ecosystems domain) – see McGill School of Environment
 Geography
 Mathematics
 Mathematics and Chemistry for Teachers – see Science for Teachers
 Mathematics and Physics for Teachers – see Science for Teachers
 Microbiology and Immunology – application required, see departmental entry for information.
 Physics
 Physiology
 Psychology

JOINT MAJORS

Atmospheric Science and Physics
 Mathematics and Computer Science
 Physics and Geophysics
 Physiology and Mathematics
 Physiology and Physics

HONOURS PROGRAMS

Anatomy and Cell Biology
 Applied Mathematics
 Atmospheric Science
 Biochemistry
 Biology
 Chemistry
 Chemistry (Bio-organic option)
 Chemistry (Environmental option)
 Chemistry (Materials)
 Computer Science
 Earth and Planetary Sciences
 Earth Sciences
 Planetary Sciences
 Geography
 Immunology (Interdepartmental) – application required, see Faculty of Science entry for Immunology
 Mathematics
 Microbiology and Immunology
 Physics
 Physiology
 Probability and Statistics
 Psychology

JOINT HONOURS PROGRAMS

Mathematics and Computer Science
 Mathematics and Physics

MINOR PROGRAMS

Atmospheric Science
 Biotechnology
 Chemical Engineering – see Chemistry
 Chemistry
 Cognitive Science
 Computer Science
 Earth and Planetary Sciences
 Electrical Engineering – see Physics
 Environment
 Geochemistry – see Earth and Planetary Sciences
 Geography
 Management – application required, see Faculty of Science entry for Management
 Mathematics
 Music – see Faculty of Science entry for Music
 Music Technology – application required, see Faculty of Science entry for Music
 Neuroscience
 Pharmacology
 Psychology
 Statistics – see Mathematics and Statistics

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.

INTERNSHIP PROGRAMS - INTERNSHIP YEAR FOR ENGINEERING AND SCIENCE (IYES)

The following programs are also available with an Internship component. For more information, please see [section 2.8](#) in the Faculty of Engineering section.

Atmospheric and Oceanic Sciences

Major in Atmospheric Science
 Honours in Atmospheric Science

Computer Science

Major in Computer Science
 Honours in Computer Science

Physics

Faculty Program in Physics
 Major in Physics
 Honours in Physics
 Joint Honours Program in Physics & Mathematics
 Joint Faculty Program in Mathematics, Chemistry & Physics
 Joint Major Program in Atmospheric Science & Physics
 Joint Major Program in Physics & Geophysics

Mathematics and Statistics

Major in Mathematics
 Honours in Mathematics
 Honours in Applied Mathematics
 Honours in Probability & Statistics
 Joint Majors in Mathematics & Computer Science
 Joint Honours in Mathematics & Computer Science

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.

MAJOR CONCENTRATIONS

African Studies
 Anthropology
 Art History
 Canadian Studies
 Classics
 East Asian Studies
 Economics
 English – Literature
 English – Drama and Theatre
 English – Cultural Studies
 Langue et littérature françaises – Léttrés
 Langue et littérature françaises – Léttrés et traduction
 Geography (Urban Systems)
 German Language and Literature – see German Studies
 German Literature and Culture – see German Studies
 Contemporary German Studies – see German Studies
 Hispanic Literature and Culture – see Hispanic Studies
 Hispanic Languages – see Hispanic Studies
 History
 Humanistic Studies
 International Development Studies
 Italian Studies
 Italian Studies (Medieval and Renaissance)
 Jewish Studies
 Latin-American Studies
 Linguistics
 Middle East Studies
 Music
 North American Studies
 Philosophy
 Political Science
 Québec Studies
 Religious Studies – Scriptures and Interpretation
 Russian
 Sociology
 Women's Studies

MINOR CONCENTRATIONS

African Studies
 Socio-Cultural Anthropology – see Anthropology
 Anthropological Archaeology – see Anthropology
 Art History
 Canadian Ethnic Studies
 Canadian Studies
 Classics
 East Asian Language and Literature
 East Asian Cultural Studies
 Advanced East Asian Studies – see East Asian Studies
 Economics
 English – Literature
 English – Drama and Theatre
 English – Cultural Studies
 Langue et littérature françaises – Létres
 Langue et littérature françaises – Létres et traduction
 Langue et littérature françaises – Langue et traduction
 Langue et littérature françaises – Théorie et critique littéraires
 Geography
 German Literature – see German Studies
 German Literature and Culture in Translation – see German Studies
 Hispanic Languages – see Hispanic Studies
 Spanish Literature and Culture – see Hispanic Studies
 Spanish-American Literature and Culture – see Hispanic Studies
 History
 History and Philosophy of Science
 Humanistic Studies
 International Development Studies
 Italian Studies
 Italian Civilization – see Italian Studies
 Jewish Studies
 Theoretical Linguistics – see Linguistics
 Applied Linguistics – see Linguistics
 Middle East Studies – see Middle East Studies
 Middle East Languages – see Middle East Studies
 North American Studies
 Philosophy
 Political Science
 Political Science: Canada/Québec
 Comparative Politics – see Political Science
 International Relations – see Political Science
 Political Economy – see Political Science
 Politics, Law and Society – see Political Science
 South Asia – see Political Science
 Québec Studies
 Religious Studies – World Religions
 Religious Studies – Scriptural Languages
 Russian – see Russian and Slavic Studies
 Russian Civilization – see Russian and Slavic Studies
 Social Studies of Medicine
 Sociology
 Women's Studies

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.(Oxon.)
 James R. Brawer; B.S.(Tufts), Ph.D.(Harv.)
 M. Burnier; M.D., M.Sc., Ph.D.(Brazil) (*joint appt. with Ophthalmology*)
 Louis Hermo; B.A.(Loyola), M.Sc., Ph.D.(McG.)
 Donald Lawrence; B.Sc.(Bishop's), M.D., C.M.(McG.) (*joint appt. with Neurology & Neurosurgery*)
 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.)
 Richard Murphy; M.S.(Northeastern), Ph.D.(Rutgers) (*joint appt. with Neurology & Neurosurgery*)
 Dennis G. Osmond; B.Sc., M.B., Ch.B., D.Sc.(Brist.), F.R.S.C.
 Barry I. Posner; M.D.(Man.), F.R.C.P.(C) (*joint appt. with Medicine*)
 Charles E. Smith; D.D.S., Ph.D.(McG.) (*joint appt. with Dentistry*)
 Eugenia Wang; B.Sc.(Taiwan), M.A.(N.Mich.), Ph.D.(Case Western Reserve) (*joint appt. with Medicine*)
 Hershey Warshawsky; B.Sc.(Sir G.Wms.), M.Sc., Ph.D.(McG.)
Associate Professors
 Orest W. Blaschuk; B.Sc.(Winn.), M.Sc.(Manit.), Ph.D.(Tor.) (*joint appt. with Surgery*)
 Eugene Daniels; M.Sc., Ph.D.(Man.)
 Samuel David; Ph.D.(Man.) (*joint appt. with Neurology & Neurosurgery*)
 Michael F. Lalli; B.S., M.A.(Bowling Green), Ph.D.(McG.)
 Paul F. Lasko; A.B.(Harv.), Ph.D.(M.I.T) (*joint appt. with Biology*)
 Marc D. McKee; B.Sc., M.Sc., Ph.D. (McG) (*joint appt. with Dentistry*)
 Marilyn M. Miller; B.Sc.(Marquette), M.S., Ph.D.(Loyola) (*joint appt. with Obstetrics & Gynecology*)
 Carlos R. Morales; DVM.(U.N., Argentina), Ph.D.(McG.)
 Hojatolla Vali; B.Sc., M.Sc., Ph.D.(Munich) (*joint appt. with Earth and Planetary Sciences*)
Assistant Professors
 Chantel Autexier; B.Sc.(C'dia), Ph.D.(McG.) (*joint appt. with Medicine*)
 Danny Baranes; B.Sc., M.Sc., Ph.D. (Jerusalem)
 Philip Barker; Ph.D.(Alta.), B.Sc.(S.Fraser) (*joint appt. with Neurology & Neurosurgery*)
 Michael T. Greenwood; B.Sc., M.Sc.(C'dia), Ph.D.(McG) (*joint appt. with Medicine*)
 Timothy Kennedy; B.Sc.(McM.), M.Phil, Ph.D.(Columbia) (*joint appt. with Neurology & Neurosurgery*)
 Antonis E. Koromilas; B.Sc., Ph.D.(Aristotelian U., Greece) (*joint appt. with Oncology*)
 Nathalie Lamarche; B.Sc., Ph.D.(Montr.)
 Peter McPherson; B.Sc.(Manit.), Ph.D.(Iowa) (*joint appt. with Neurology & Neurosurgery*)
 Alfredo Riberio-da-Silva; M.D., Ph.D.(Oporto) (*joint appt. with Pharmacology and Therapeutics*)
 Jackson G. Snipes; Ph.D., M.D.(Vanderbilt) (*joint appt. with Neuropathology*)
 Wayne Sossin; S.B.(M.I.T.), Ph.D.(Stan.) (*joint appt. with Neurology & Neurosurgery*)
 Stefano Stifani; Ph.D.(Rome), Ph.D.(Alta.) (*joint appt. with Neurology & Neurosurgery*)
 Dominique Walker; B.Sc., Ph.D.(Geneva) (*joint appt. with Psychiatry*)
 Gary E. Wild; B.Sc., Ph.D., M.D., C.M.(McG.) (*joint appt. with Medicine*)

Adjunct Professors

Daniel Cyr; B.Sc., M.Sc.(C'dia), Ph.D.(Manit.)
 Jacques Drouin; B.Sc., D.Sc.(Laval)
 Sadayuki Inoue; M.Sc., Ph.D. (Hok. U.)
 André Nantel; B.Sc., M.Sc.(Laval), Ph.D.(Chapel Hill)
 David Y. Thomas; B.Sc.(Brist.); M.Sc., Ph.D.(Lond.)

The Department of Anatomy and Cell Biology offers courses which deal with cell biology, histology, embryology, neuroanatomy, and gross anatomy. The Honours Program is designed as the first

11 Academic Programs and Courses**11.1 Anatomy and Cell Biology (504)**

Strathcona Anatomy and Dentistry Building
 3640 University Street, Room 1/48
 Montreal, QC H3A 2B2
 Telephone: (514) 398-6335

Chair — John J.M. Bergeron

Emeritus Professor

Yves Clermont; B.Sc.(Montr.), Ph.D.(McG.), F.R.C.S.

Professors

Alain Beaudet; M.Sc., Ph.D., M.D.(Montr.) (*joint appt. with Neurology & Neurosurgery*)