



**Faculty of Agricultural and Environmental
Sciences, including School of Dietetics and
Human Nutrition (Graduate)**

Programs, Courses and University Regulations

2011-2012

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Note: Throughout this publication, "you" refers to students newly admitted, readmitted or returning to McGill.

Publication Information

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1 Dean's Welcome

To Graduate Students and Postdoctoral Fellows:

I am extremely pleased to welcome you to McGill University. With over 250 doctoral and master's degree programs, McGill is committed to providing world-class graduate education and postdoctoral training in a full range of academic disciplines and professions. Graduate and Postdoctoral Studies (GPS) provides strategic leadership and works in collaboration with the Faculties and other administrative and academic units to deliver the very highest level of teaching and research across the University. GPS is responsible for the admission and registration of graduate students, disbursing graduate fellowships, supporting postdoctoral fellows, and facilitating the graduation process, including the examination of theses.

As a student-centred research institution, McGill places singular importance upon the quality of graduate education and postdoctoral training. As Associate Provost (Graduate Education), as well as Dean of Graduate and Postdoctoral Studies, I work closely with the central administration, Faculties, graduate students, professors, researchers, postdoctoral fellows, and staff to enhance the graduate and postdoctoral experience and provide a supportive, stimulating, and enriching academic environment.

McGill is ranked as one of Canada's most intensive research universities and among the world's top 25. We recognize that these successes come not only from our outstanding faculty members, but also from the quality of our graduate students and postdoctoral fellows - a community into which we are very happy to welcome you.

I invite you to join us in advancing this heritage of excellence at McGill.

Martin Kreiswirth, Ph.D.

Associate Provost (Graduate Education)

Dean, Graduate and Postdoctoral Studies

2 Graduate and Postdoctoral Studies

2.1 Administrative Officers

Martin Kreiswirth; B.A.(Hamilton), M.A.(Chic.), Ph.D.(Tor.)	Associate Provost (Graduate Education) and Dean (Graduate and Postdoctoral Studies)
Heather Durham; M.Sc.(W. Ont.), Ph.D.(Alta.)	Associate Dean (Graduate and Postdoctoral Studies) (until Sept. 2011)
Meyer Nahon; B.Sc.(Qu.), M.Sc.(Tor.), Ph.D.(McG.), Eng.	Associate Dean (Graduate and Postdoctoral Studies)
Lisa deMena Travis; B.A.(Yale), Ph.D.(MIT)	Associate Dean (Graduate and Postdoctoral Studies) (as of Sept. 2011)
Shari Baum; B.A.(C'neil), M.Sc.(Vermont), Ph.D.(Brown)	Associate Dean (Graduate and Postdoctoral Studies)
Charlotte E. Légaré; B.Sc.(Montr.), M.Sc.(Sher.), M.B.A.(McG.)	Director (Graduate and Postdoctoral Affairs)
Lissa B. Matyas; B.F.A., M.Sc.(C'odia)	Director (Recruitment and Retention)

2.2 Location

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Note: For inquiries regarding specific Graduate programs, please contact the appropriate department.

2.3 General Statement Concerning Higher Degrees

Graduate and Postdoctoral Studies (GPS) administers all programs leading to graduate diplomas, certificates and higher degrees. It is responsible for the admission of candidates, the supervision of their work and for recommending to Senate those who may receive the degrees, diplomas and certificates.

3 Important Dates 2011-2012

For all dates relating to the academic year, consult www.mcgill.ca/importantdates.

4 Graduate Studies at a Glance

McGill University offers graduate and postdoctoral programs in the following units (organized by their administering home faculty):

Agricultural and Environmental Sciences

section 11.1: Agricultural Economics

section 11.2: Animal Science

section 11.3: Bioresource Engineering

section 11.4: Dietetics and Human Nutrition

section 11.5: Food Science and Agricultural Chemistry

section 11.6: Natural Resource Sciences

section 11.7: Parasitology

section 11.8: Plant Science

Arts

: Anthropology

: Art History

Classics, see *: History and Classical Studies*

: Communication Studies

: East Asian Studies

: Economics

: English

: French Language and Literature

: Geography

: German Studies

: Hispanic Studies

: History and Classical Studies

: Institute for the Study of International Development

: Islamic Studies

: Italian Studies

: Jewish Studies

: Linguistics

: Mathematics and Statistics

: Philosophy

Arts

- : Political Science*
- : Psychology*
- : Russian and Slavic Studies*
- : Social Studies of Medicine*
- : Social Work*
- : Sociology*

Dentistry

- : Dentistry*

Desautels Faculty of Management

- : Desautels Faculty of Management*

Education

- : Educational and Counselling Psychology*
- : Information Studies*
- : Integrated Studies in Education*
- : Kinesiology and Physical Education*

Engineering

- : Architecture*
- : Chemical Engineering*
- : Civil Engineering and Applied Mechanics*
- : Electrical and Computer Engineering*
- : Mechanical Engineering*
- : Mining and Materials Engineering*
- : Urban Planning*

Law

- : Law*

McGill School of Environment

- : Environment*

Medicine

- : Anatomy and Cell Biology*
- : Biochemistry*
- : Bioethics*
- : Biomedical Engineering*
- : Communication Sciences and Disorders*
- : Epidemiology and Biostatistics*
- Experimental Medicine, see : *Medicine, Experimental*
- : Human Genetics*
- : Medical Physics*

Medicine

- : Microbiology and Immunology*
- : Neuroscience (Integrated Program in)*
- : Nursing*
- : Occupational Health*
- : Otolaryngology – Head and Neck Surgery*
- : Pathology*
- : Pharmacology and Therapeutics*
- : Physical and Occupational Therapy*
- : Physiology*
- : Psychiatry*
- : Surgical Research*

Religious Studies

- : Religious Studies*

Schulich School of Music

- : Schulich School of Music*

Science

- : Atmospheric and Oceanic Sciences*
- : Biology*
- : Chemistry*
- : Computer Science*
- : Earth and Planetary Sciences*
- : Geography*
- : Mathematics and Statistics*
- : Physics*
- : Psychology*

4.1 Graduate Diplomas and Certificates

Graduate diplomas and graduate certificates are programs of study under the academic supervision of Graduate and Postdoctoral Studies. They have as a prerequisite an undergraduate degree in the same discipline.

McGill University offers other diploma and certificate programs under the supervision of the relevant faculties and their Calendars should be consulted for further details.

Graduate Diplomas are offered in:

Clinical Research (Experimental Medicine)	Primary Care Nurse Practitioner
Epidemiology and Biostatistics	Professional Performance
Islamic Studies	Public Accountancy (C.A.)
Library and Information Studies	Registered Dietician Credentialing (R.D.)
Mining Engineering	School and Applied Child Psychology (post-Ph.D.)
Nursing	Surgical Health Care Research

These diploma programs consist of at least two terms of full-time study or the equivalent.

Graduate Certificates are offered in:

Assessing Driving Capabilities	Educational Leadership 2
Air and Space Law	Library and Information Studies
Bioresource Engineering (IWRM)	Post-M.B.A.
Biotechnology	Teaching English as a Second Language
Comparative Law	Theory in Primary Care
Educational Leadership 1	Theory in Neonatology

All graduate regulations apply to graduate diploma and certificate candidates.

4.2 Master's Degrees

Two categories of programs lead to higher degrees at McGill University, master's programs, and doctoral programs.

The following master's degrees are offered (see below for more information about sub-specializations):**Prerequisites:**

Master of Architecture (M.Arch)	M.Arch. (professional degree) – McGill B.Sc.(Arch.) degree, or equivalent; M.Arch. (post-professional degree) – an M.Arch. (professional degree) or equivalent professional degree.
Master of Arts (M.A.)	Bachelor of Arts in the subject selected for graduate work. See appropriate unit.
Master of Business Administration (M.B.A.)	An undergraduate degree from an approved university. See Management.
Joint program: Master of Business Administration (M.B.A.) with integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)	See Management.
Concurrent Master of Business Administration with Doctor of Medicine / Master of Surgery (M.B.A. with M.D.,C.M.)	See Management.
Master of Manufacturing Management (M.M.M.)	See Management.
Master of Education (M.Ed.)	A bachelor's degree with specialization related to the subject chosen for graduate work, plus a Permanent Quebec Teaching Diploma or its equivalent for some of the above degrees. See appropriate department.
Master of Engineering (M.Eng.)	Bachelor of Engineering or equivalent, with specialization appropriate for the subject selected for graduate study. See appropriate department.
Master of Laws (LL.M.)	An acceptable degree in Law or equivalent qualifications. See Law.
Master of Library and Information Studies (M.L.I.S.)	At least a bachelor's degree from a recognized university. See Library and Information Studies.
Master of Management (M.M.)	See Management.
Master of Music (M.Mus.)	Bachelor of Music or Bachelor of Arts with concentration in the area selected for graduate study. See Music.
Master of Sacred Theology (S.T.M.)	B.A. with specialization in religious studies or theology. See Religious Studies.
Master of Science (M.Sc.)	Bachelor of Science in the subject selected for graduate work. See appropriate unit.
Master of Science, Applied (M.Sc.A.)	A bachelor's degree in the subject selected for graduate work. See appropriate unit.
Master of Science, Applied (OT) (M.Sc.A. (OT))	A bachelor's degree in the subject selected for graduate work. See appropriate unit.
Master of Science, Applied (PT) (M.Sc.A. (PT))	A bachelor's degree in the subject selected for graduate work. See appropriate unit.
Master of Social Work (M.S.W.)	Bachelor's degree in Social Work including courses in statistics and social science research methods. See Social Work.
Joint program: Master of Social Work (M.S.W.) with integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)	See School of Social Work.
Master of Urban Planning (M.U.P.)	Bachelor's degree in any one of the following: Anthropology, Architecture, Economics, Civil Engineering, Geography, Law, Management, Political Science, Social Work, Sociology or Urban Planning, with adequate knowledge of quantitative techniques. See Urban Planning.

Master of Architecture Degrees

M.Arch. programs offered:

M.Arch. (professional degree) (Non-Thesis) in Design Studio and Design Studio – Directed Research

M.Arch. (post-professional degree) (Non-Thesis); specializations in Architectural History and Theory, Cultural Mediations and Technology, Urban Design and Housing

Master of Arts Degrees

Programs leading to the degree of Master of Arts are offered in the following areas:

Anthropology (Thesis and Non-Thesis); options in Development Studies, Environment, Gender and Women's Studies, Medical Anthropology

Art History (Non-Thesis); option in Gender and Women's Studies (Non-Thesis)

Classics (Thesis and Non-Thesis)

Communication Studies (Thesis and Non-Thesis); option in Gender and Women's Studies

Economics (Thesis and Non-Thesis); options in Development Studies (Non-Thesis) and Social Statistics (Non-Thesis)

Education (Thesis and Non-Thesis)

English (Thesis and Non-Thesis)

French (Thesis and Non-Thesis); option in Gender and Women's Studies

Geography; options in Development Studies, Environment, Gender and Women's Studies, Neotropical Environment, Social Statistics

German Studies (Thesis and Non-Thesis)

Hispanic Studies (Thesis and Non-Thesis)

History (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), European Studies (Thesis and Non-Thesis), Gender and Women's Studies (Thesis and Non-Thesis), History of Medicine (Non-Thesis)

Islamic Studies; option in Gender and Women's Studies

Italian Studies (Thesis and Non-Thesis)

Jewish Studies (Thesis and Non-Thesis)

Kinesiology and Physical Education (Thesis and Non-Thesis)

Linguistics (Non-Thesis)

Mathematics and Statistics (Thesis and Non-Thesis)

Music (Thesis and Non-Thesis)

Philosophy; option in Bioethics

Political Science (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), European Studies (Thesis and Non-Thesis), Gender and Women's Studies (Non-Thesis), Social Statistics (Non-Thesis)

Psychology

Religious Studies (Thesis and Non-Thesis); options in Bioethics and Gender and Women's Studies

Russian

Sociology (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), Environment, Gender and Women's Studies (Thesis and Non-Thesis), Medical Sociology (Thesis and Non-Thesis), Social Statistics (Non-Thesis), Neotropical Environment

Master of Business Administration Degrees

A program leading to the degree of Master of Business Administration (M.B.A.) is offered in the following concentrations:

Finance

Global Strategy and Leadership

Marketing

Technology and Innovation Management

An E.M.B.A. is also offered (joint with HEC).

Special programs:

M.B.A. with M.D.,C.M.

M.B.A. with B.C.L. and LL.B.

Master of Manufacturing Management (see Management and Mechanical Engineering)

Master's Degrees in Education

Three types of master's degrees are offered: M.A. (Thesis and Non-Thesis), M.Ed. (Non-Thesis) and M.Sc. (Thesis and Non-Thesis).

The M.A. may be taken in the following areas:

Counselling Psychology (Thesis and Non-Thesis): Counselling Psychology – Professional/Internship (Non-Thesis), Counselling Psychology – Project (Non-Thesis)

Education and Society (Thesis and Non-Thesis); options in Gender and Women's Studies (Thesis and Non-Thesis) and Jewish Studies (Thesis and Non-Thesis)

Educational Psychology (Thesis and Non-Thesis)
 Educational Leadership (Thesis, Non-Thesis, and Non-Thesis Coursework); option in Gender and Women's Studies (Thesis and Non-Thesis)
 Kinesiology and Physical Education (Thesis and Non-Thesis)
 Second Language Education (Thesis and Non-Thesis); option in Gender and Women's Studies (Thesis and Non-Thesis)
 Teaching and Learning (MATL) (Non-Thesis)

The M.Ed. may be taken in the following area:

Educational Psychology

The M.Sc. may be taken in the following area:

Kinesiology and Physical Education (Thesis and Non-Thesis)

Master's Degree in Engineering

Programs leading to the degree of Master of Engineering are offered in the following areas:

Aerospace Engineering (Project)
 Biomedical Engineering; option in Bioinformatics
 Chemical Engineering (Thesis and Project); option in Environmental Engineering (Project)
 Civil Engineering and Applied Mechanics (Thesis and Project); option in Environmental Engineering (Project)
 Electrical Engineering (Thesis and Project); option in Computational Science and Engineering
 Mechanical Engineering (Thesis and Project); option in Computational Science and Engineering
 Mining and Materials Engineering (Thesis and Non-Thesis); options in Environmental Engineering (Non-Thesis), Mining (Non-Thesis), and Metals and Materials (Non-Thesis)

Other degrees:

Master of Management (M.M.) is offered in Manufacturing Management (see Department of Mechanical Engineering and Faculty of Management).
 Master of Science (M.Sc.) is offered in Chemical Engineering, Civil Engineering, Mechanical Engineering, and Mining and Materials.

Master's Degrees in Law

The degree of Master of Laws is offered in:

Law (Thesis and Non-Thesis); options in Bioethics, Comparative Law (Thesis and Non-Thesis), Environment (Thesis and Non-Thesis), and European Studies
 Air and Space Law (Thesis and Non-Thesis)

Master of Library and Information Studies Degree

The Graduate School of Library and Information Studies offers a postgraduate professional program in librarianship. Two years of full-time study or the equivalent are required.

Master's Degrees in Music

Programs leading to the degrees of Master of Arts and Master of Music are offered in the Faculty of Music.

The M.A. may be taken in:

Music Technology
 Musicology (Thesis and Non-Thesis); option in Gender and Women's Studies
 Music Education (Thesis and Non-Thesis)
 Theory (Thesis and Non-Thesis); option in Gender and Women's Studies

The M.Mus. may be taken in:

Composition
 Performance (various options) (Non-Thesis)
 Sound Recording (Non-Thesis)

Applicants to the Performance program are required to pass auditions in their speciality.

Master's Degrees in Nursing

Two types of master's degrees are offered: Master of Science (Applied) and Master of Science (with thesis). These two-year programs are designed to prepare clinicians and researchers for the expanding function of nursing within the health care delivery system.

Master's Degrees in Religious Studies

A program leading to the degree of Sanctae Theologiae Magister (S.T.M.) is given in the Faculty of Religious Studies. This degree is primarily for those who intend to enter the ministry of the Christian Church or another religious institution, or to proceed to teaching in schools. A Master of Arts program (thesis and non-thesis) is also available.

Master of Science Degrees

Programs leading to the degree of Master of Science are provided in the following areas:

Agricultural Economics
Animal Science
Atmospheric and Oceanic Science; options in Computational Science and Engineering, and Environment
Biochemistry; options in Bioinformatics, and Chemical Biology
Biology; options in Bioinformatics, Environment, and Neotropical Environment
Bioresource Engineering; options in Environment, Integrated Water Resource Management (Non-Thesis), and Neotropical Environment
Cell Biology and Anatomy
Chemical Engineering
Chemistry; option in Chemical Biology
Civil Engineering and Applied Mechanics
Communication Sciences and Disorders
Computer Science (Thesis and Non-Thesis); options in Bioinformatics, and Computational Science and Engineering
Dental Science (Thesis and Non-Thesis); option in Oral and Maxillofacial Surgery
Earth and Planetary Sciences; option in Environment
Entomology; options in Environment, and Neotropical Environment
Epidemiology and Biostatistics (Thesis and Non-Thesis); option in Environment (Non-Thesis)
Food Science and Agricultural Chemistry (Thesis and Non-Thesis)
Geography; options in Environment, and Neotropical Environment
Genetic Counselling (Non-Thesis)
Human Genetics; option in Bioinformatics
Human Nutrition
Kinesiology and Physical Education (Thesis and Non-Thesis)
Mathematics and Statistics (Thesis and Non-Thesis); options in Bioinformatics, and Computational Science and Engineering
Mechanical Engineering
Medical Radiation Physics
Medicine, Experimental; options in Bioethics, Environment, and Family Medicine
Microbiology and Immunology
Microbiology (Macdonald Campus); option in Environment
Mining and Materials Engineering
Neuroscience
Nursing
Otolaryngology
Parasitology; options in Bioinformatics, and Environment
Pathology
Pharmacology and Therapeutics; option in Chemical Biology
Physics
Physiology; option in Bioinformatics
Plant Science; options in Bioinformatics, Environment, and Neotropical Environment
Psychiatry
Psychology
Rehabilitation Sciences (Thesis and Non-Thesis)
Renewable Resources; options in Environment, Environmental Assessment (Non-Thesis), and Neotropical Environment
Surgery, Experimental

Master of Science, Applied, Degrees

This degree was designed to provide postgraduate training of a professional and vocational character, with less emphasis on theoretical knowledge and research than in Master of Science programs, but with no lower standards either for admission or completion of requirements. Two years of full-time study or equivalent are normally required with an emphasis on coursework.

Programs are available in:

Animal Science
Bioresource Engineering; options in Environment, Environmental Engineering, and Neotropical Environment
Biotechnology
Chemistry

Communication Sciences and Disorders
 Human Nutrition
 Nursing
 Occupational Health
 Occupational Therapy
 Plant Science
 Physical Therapy

Other degrees:

Master of Science, Applied (OT)
 Master of Science, Applied (PT)

Master of Social Work Degrees

The M.S.W. degree (Thesis and Non-Thesis options) represents a second level of professional study in which students build competence in a chosen field of practice.

Special program:

M.S.W. with B.C.L. and LL.B.

Master of Urban Planning Degree

The program requires a minimum of two years residence and a three-month internship with a member of a recognized planning association.

Options: Transportation Planning and Urban Design.

4.3 Doctoral Degrees

Two categories of programs lead to higher degrees at McGill University: master's programs and doctoral programs.

The following doctoral degrees are offered (see below for more information about sub-specializations): Prerequisites:

Doctor of Civil Law (D.C.L.)	B.C.L. or LL.B. and usually LL.M. See Law.
Doctor of Music (D.Mus.)	M.A. in Composition (D.Mus. in Composition) or an master's degree in Performance, and professional and teaching experience (D.Mus. in Performance). See Music.
Doctor of Philosophy (Ph.D.)	An undergraduate degree relevant to the subject chosen for graduate work. Some departments require all Ph.D. candidates to hold a master's degree in the same subject. Departments may recommend to Graduate and Postdoctoral Studies that candidates of undoubted promise should be allowed to proceed directly to the Ph.D. degree without being required to submit a master's thesis.

Doctor of Civil Law Degrees

Doctoral programs are offered in Air and Space Law and Law (Comparative Law). Both are predominantly research degrees awarded on the basis of a thesis that represents an original contribution to the development of legal science.

Doctor of Music Degrees

The Doctor of Music degree is offered in Composition. The Doctoral thesis consists of a musical composition of major dimensions together with a written analysis of the work. The composition is presented by the candidate in concert. The regulations set forth for the Ph.D. generally apply also to the D.Mus.

The Doctor of Music degree is also offered in Performance. It is offered to professional musicians who wish to teach at the university level and to develop a specialization in a particular repertoire, approach, or discipline (musicology, music theory, music education and pedagogy, or music technology).

Doctor of Philosophy Degrees

Programs leading to the degree of Doctor of Philosophy are offered in the following areas:

Anatomy and Cell Biology
 Animal Science; option in Bioinformatics
 Anthropology; option in Neotropical Environment
 Architecture
 Art History; option in Gender and Women's Studies
 Atmospheric and Oceanic Sciences
 Biochemistry; options in Bioinformatics, and Chemical Biology

Biology; options in Bioinformatics, Developmental Biology, Environment, and Neotropical Environment
Biomedical Engineering; option in Bioinformatics
Bioresource Engineering; options in Environment, and Neotropical Environment
Chemical Engineering
Chemistry; option in Chemical Biology
Civil Engineering and Applied Mechanics
Classics
Communication Studies; option in Gender and Women's Studies
Communication Sciences and Disorders; option in Language Acquisition
Computer Science; option in Bioinformatics
Counselling Psychology
Earth and Planetary Sciences; option in Environment
Economics
Educational Psychology
Educational Studies; option in Gender and Women's Studies
Electrical Engineering
English
Entomology; options in Environment, and Neotropical Environment
Epidemiology and Biostatistics
Food Science and Agricultural Chemistry
French; option in Gender and Women's Studies
Geography; options in Environment, Gender and Women's Studies, and Neotropical Environment
German
Hispanic Studies
History
Human Genetics; option in Bioinformatics
Human Nutrition
Information Studies
Islamic Studies; option in Gender and Women's Studies
Linguistics; option in Language Acquisition
Management
Mathematics and Statistics; option in Bioinformatics
Mechanical Engineering
Medicine, Experimental; option in Environment
Microbiology and Immunology
Microbiology (Macdonald Campus); options in Bioinformatics, and Environment
Mining and Materials Engineering
Music; option in Gender and Women's Studies
Neuroscience
Nursing; option in Psychosocial Oncology
Occupational Health Sciences
Parasitology; options in Bioinformatics, and Environment
Pathology
Pharmacology and Therapeutics; option in Chemical Biology
Philosophy; options in Environment, and Gender and Women's Studies
Physics
Physiology; option in Bioinformatics
Plant Science; options in Bioinformatics, Environment, and Neotropical Environment
Political Science
Psychology; options in Language Acquisition, and Psychosocial Oncology
Rehabilitation Science
Religious Studies; option in Gender and Women's Studies
Renewable Resources; options in Environment, and Neotropical Environment
Russian
School/Applied Child Psychology
Social Work
Sociology; options in Environment, and Gender and Women's Studies
Surgery, Experimental

The following joint Ph.D. programs are offered:

Nursing (McGill/Université de Montréal)
 Management (McGill/Concordia/H.E.C./UQAM)
 Social Work (McGill/Université de Montréal)

4.4 Postdoctoral Research

See [section 8: Postdoctoral Research](#) for information about postdoctoral research at McGill University.

5 Program Requirements

5.1 Master's Degrees

Residence Requirements – Master's Degrees

Refers to the number of terms (or years) students must be registered on a full-time basis to complete their program. Students are NOT permitted to graduate until they have fulfilled the residence requirement (or paid the corresponding fees) in their program.

- The following master's programs have a minimum residence requirement of **three full-time terms**: M.Arch, M.A., M.Eng., LL.M., M.Mus. (**except** M.Mus. in Sound Recording), M.Sc., M.S.W., M.Sc.A. (**except** M.Sc.A. in Communication Sciences and Disorders).
- The following master's programs have a **minimum** residence requirement of **four full-time terms**: M.L.I.S.; M.Mus. in Sound Recording; M.U.P.; M.A. (60 credits – Counselling Psychology – thesis; 78 credits – Educational Psychology); M.A. Teaching and Learning – Non-Thesis; M.Sc.A. in Communication Sciences and Disorders; S.T.M., Religious Studies.
- The residence requirement for the master's program in Education (M.Ed.); Library and Information Studies (M.L.I.S.); Management (M.B.A.); Religious Studies (S.T.M.); M.A. Counselling Psychology – Non-Thesis; M.A. Teaching and Learning – Non-Thesis; M.Sc. in Public Health – Non-Thesis; M.Sc.A. Nursing; M.Sc.A. Occupational Therapy; M.Sc.A. Physical Therapy; and students in part-time programs is determined on a per course basis. Residence requirements are fulfilled when students complete all course requirements in their respective programs.
- For master's programs structured as Course, Project or Non-Thesis options where the program is pursued on a part-time basis, residence requirements are normally fulfilled when students complete all course requirements in their respective programs (minimum 45 credits or a minimum of three full-time terms) and pay the fees accordingly.

These designated periods of residence represent minimum time requirements. There is no guarantee that the work for the degree can be completed in this time. Students must register for such additional terms as are needed to complete the program.

Coursework – Master's Degrees

Program requirements are outlined in the relevant departmental sections of the Graduate and Postdoctoral Studies Calendar available at www.mcgill.ca/study.

The department concerned will examine the student's previous training and then decide which of the available courses in the area of specialization or related fields are required to bring the candidate to the proper level for the master's degree. Due account will be taken of relevant courses passed at any recognized university.

As a rule, no more than one-third of the McGill program formal coursework (not thesis, project, stage, or internship) can be credited with courses from another university.

Non-thesis degrees normally specify the course program which the candidate must follow.

The candidate is required to pass, with a mark of B- or better, all those courses which have been designated by the department as forming a part of the program, including additional requirements.

Students taking courses at another university must obtain a minimum grade of B- (65%) if the course is to be credited toward their McGill degree. In the cases where only a letter grade is used, a B- is the minimum passing grade and no equivalent percentage will be considered. In the cases where only a percentage grade is used, 65% is the minimum passing grade.

If courses were not used for a degree, they could be **credited** toward a McGill degree keeping in mind that a maximum of one-third of the course work (not thesis, project, stage, internship, and practicum) can be credited. If an **exemption** is granted, it must be replaced by another graduate course at McGill toward the degree. No double counting is ever allowed. This regulation also applies to doctoral programs.

Research and Thesis – Master's Degrees

All candidates for a research degree must present a thesis based on their own research. The total number of credits allotted to the thesis in any master's program must not be less than 24. The title of the thesis and names of examiners must be forwarded on a *Nomination of Examiners* form, in accordance with the dates on www.mcgill.ca/importantdates, through the Chair of the department concerned at the same time as the thesis is submitted to Graduate and Postdoctoral Studies. A thesis for the master's degree, while not necessarily requiring an exhaustive review of work in the particular field of study, or a great deal of original scholarship, must show familiarity with previous work in the field and must demonstrate the ability to carry out research and to organize results, all of which must be presented in good literate style. The thesis will not normally exceed 100 pages; in some disciplines, shorter texts are preferred. Guidelines and deadlines are available at www.mcgill.ca/gps/students/thesis/guidelines.

Language Requirements – Master's Degrees

Most master's degree programs do not include language requirements, but candidates who intend to proceed to a doctoral degree should take note of any language requirements and are strongly advised to take the examinations in at least one language while working for the master's degree.

5.2 Doctoral Degrees

Residence Requirements – Doctoral

Refers to the numbers of terms (or years) students must be registered on a full-time basis to complete their program. Students are not permitted to graduate until they have fulfilled the residence requirement (or paid the corresponding fees) in their program.

Candidates entering Ph.D. 1 must follow a program of at least three years residency at the University; this is a minimum requirement, and there is no guarantee that the work of the degree can be completed in this time, but students are expected to complete within the maximum specified period. Only exceptional candidates holding a bachelor's degree will be considered for direct admission to Ph.D. 1 level.

It is required that candidates spend the greater part of each summer working on their theses, and those who do not do so are unlikely to complete a satisfactory thesis in the prescribed minimum time (see "Vacation Policy for Graduate Students and Postdocs").

A student who has obtained a master's degree at McGill University or at an approved institution, in a relevant subject and is proceeding to a Ph.D. degree will, on the recommendation of the department, be admitted to Ph.D. 2; in this case, the residency requirement for the program is two years.

In the doctoral program, students must be registered on a full-time basis for one more year after completion of the residency (i.e., Ph.D. 4 year) before continuing as additional session students until completion of the program.

Note: The master's degree must have been awarded before initial registration in the doctoral program; otherwise, the admission level will be at Ph.D. 1 and residency will be extended to three years. Once the level of admission is approved by Graduate and Postdoctoral Studies, it will not be changed after obtaining the master's degree if the date falls after registration in the program. If a previous awarded degree is a condition of admission, it must be fulfilled before registration in another program.

As a rule, no more than one-third of the McGill program formal coursework can be credited with courses from another university.

Comprehensive Examinations – Doctoral

A comprehensive examination or its equivalent is usually held near the end of Ph.D. 2. The results of this examination determine whether or not students will be permitted to continue in their programs. The methods adopted for examination and evaluation and the areas to be examined are specified by departmental regulations approved by the Dean of Graduate and Postdoctoral Studies. It is the responsibility of students to inform themselves of these details at the commencement of their programs. For more information, see "Ph.D. Comprehensives Policy".

Language Requirements – Doctoral

Most graduate departments in the Faculties of Agricultural and Environmental Sciences, Education, Engineering, Management, Medicine, and Science do not require a language examination. Students should inquire in their departments if there are any such requirements or whether any other requirements have been substituted for those relating to languages.

Graduate departments in the Faculties of Arts, Music and Religious Studies usually require proficiency in one or two languages other than English. In all cases **students should consult departmental regulations concerning language requirements.**

Language requirements for the Ph.D. degree are met through demonstrated reading knowledge. The usual languages are French, German, or Russian, but in particular instances another language may be necessary.

All language requirements must be fulfilled and the marks reported to Graduate and Postdoctoral Studies **before** submission of the thesis to GPS (Thesis Section).

Students must contact their departments to make arrangements to take the Language Reading Proficiency Examinations. Students may, however, demonstrate competence by a pass standing in two undergraduate language courses taken at McGill (see departmental regulations).

Candidates are advised to discharge their language requirements as early in their program as possible.

Students expecting to enrol in Professional Corporations in the province of Quebec are advised to become fluent in both spoken and written French.

Courses in French language are available at the English and French Language Centre. The teaching is intensive and class sizes are kept small. While undergraduate students are given preference, graduate students who are certain they can devote sufficient time to the work may enrol.

Thesis – Doctoral

The thesis for the Ph.D. degree must display original scholarship expressed in good literate style and must be a distinct contribution to knowledge. **Formal notice of a thesis title and names of examiners must be submitted to the Thesis Section of GPS on the *Nomination of Examiners* form in accordance with the dates on www.mcgill.ca/importantdates, at the same time as the thesis is submitted.** The list of examiners must be approved by the Department Chair, the supervisor and the student. The Thesis Section of GPS should be notified of any subsequent change of title as early as possible. Guidelines and deadlines are available at www.mcgill.ca/gps/students/thesis/guidelines.

Seven copies of the thesis must be provided by the candidate. Of these, two copies will be retained by the University and five copies returned to the candidate. Some departments may require one or more additional copies. The final corrected copy is submitted electronically.

Special regulations for the Ph.D. degree in particular departments are stated in the entries of those departments.

Thesis Oral Examination – Doctoral

After the thesis has been received and approved, a final oral examination is held on the subject of the thesis and subjects intimately related to it. This is conducted in the presence of a Committee of at least five members presided over by a Pro-Dean nominated by Graduate and Postdoctoral Studies. The Chair of the candidate's department and the Thesis Supervisor are regularly invited to be members of the Committee; at least one member of the Committee is appointed from outside the candidate's department. Guidelines are available at www.mcgill.ca/gps/students/thesis/guidelines.

5.3 Ad Hoc Programs

In exceptional cases, an applicant who wishes to pursue a master's (Thesis option only) or Ph.D. program in an academic department which is not currently authorized by the *Ministère de l'Éducation, du Loisir et du Sport* (MELS) to offer graduate programs, may be admitted to an *Ad Hoc* program. The application, including a research proposal, is examined by an Admissions Committee in the department which has familiarity with the proposed research area and experience in directing graduate studies.

Once the Admissions Committee makes a favourable recommendation, Graduate and Postdoctoral Studies confirms an Advisory Committee (recommended by the academic unit) to be responsible for program planning and monitoring of research progress. The regulations are fully described in the document "Procedures for Admission in *Ad Hoc* Master's and Doctoral Programs", available from GPS.

5.4 Ad Personam Programs (Thesis Option only)

In very rare circumstances, an applicant who wishes to engage in master's (Thesis option only) or Ph.D. studies of an interdisciplinary nature involving joint supervision by two departments, each of which is authorized by the *Ministère de l'Éducation, du Loisir et du Sport* (MELS) to offer its own graduate programs, may be admitted to an *Ad Personam* program. The regulations are fully described in a document available from GPS.

5.5 Coursework for Graduate Programs, Diplomas, and Certificates

Upper-level undergraduate courses (excluding 500-level) may not be considered for degrees, diplomas, and certificates unless they are already listed as required courses in the approved program description. If an upper-level undergraduate course (excluding 500-level) is taken by a graduate student, it must come as a recommendation from the Graduate Program Director in the department. The recommendation must state if the undergraduate course is an additional requirement for the program (must obtain B- or better) or if the course is extra to the program (will be flagged as such on the record and fees will be charged). See document at www.mcgill.ca/gps/staff/registration.

English and French language courses offered by the French Language Centre (Faculty of Arts) or the School of Continuing Studies may not be taken for coursework credits toward a graduate program.

All substitutions for coursework in graduate programs, diplomas, and certificates must be approved by GPS.

Courses taken at other institutions to be part of the requirements of a program of studies must be approved by GPS before registration. Double counting is not permitted.

6 General Admission for Graduate Studies



Note: The following admission requirements and application procedures are the minimum standard for applicants to McGill's Graduate and Postdoctoral Studies programs. Some graduate units may require additional qualifications or a higher minimum CGPA; prospective students are strongly urged to consult the unit concerned regarding specific requirements set for their program of interest.

Website: www.mcgill.ca/gradapplicants

Email: servicepoint@mcgill.ca

Deadline: Admission to graduate studies operates on a rolling basis; complete applications and their supporting documentation must reach departmental offices on or before the date for guaranteed consideration specified by the department. To be considered for entrance fellowships, where available, applicants must verify the deadlines with individual departments. Meeting minimum admission standards does not guarantee admission.

6.1 Application for Admission

Application information and the online application form are available at www.mcgill.ca/gradapplicants/apply. Applicants (with some exceptions) are required to ask two instructors familiar with their work to send letters of recommendation. All applicants must themselves send, or ask the appropriate university authorities to send, two official or certified copies of their complete academic record from each university-level institution attended to date. McGill graduates do not need to submit McGill transcripts. Letters of recommendation and official transcripts must be sent **directly** to the department concerned. Please note

that all documents submitted to McGill University in support of an application to be admitted, including, but not limited to transcripts, diplomas, letters of reference and test scores, become the property of McGill University and will not be returned to the applicant or issuing institution under any circumstance.

A **non-refundable** fee of \$100 in Canadian funds **must** accompany each application, otherwise **it cannot be submitted**. This sum must be paid by credit card and is non-refundable when submitting the online application form. Candidates for Special, Visiting Student, and Qualifying status must apply and pay the application fee every year (i.e., every Fall term).

It is recommended that applicants submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. **Transcripts written in a language other than English or French must be accompanied by a translation prepared by a licensed translator.** An explanation of the grading system used by the applicant's university is essential. The applicant should also indicate the major subject area in which further study is desired.

Completed applications, with supporting documents, must reach departmental offices according to individual department dates for guaranteed consideration. Applicants should contact the department concerned, or see: www.mcgill.ca/gradapplicants/programs. International students are advised to apply well in advance of the date for guaranteed consideration as immigration procedures may be lengthy. Applications received after the prescribed dates for guaranteed consideration may or may not be considered, at the discretion of the department. Candidates will be notified of acceptance or refusal by Graduate and Postdoctoral Studies as quickly as possible.

Admission to graduate programs at McGill is highly competitive and the final decision rests with Graduate and Postdoctoral Studies. Admission decisions are not subject to appeal or reconsideration.

6.2 Admission Requirements (minimum requirements to be considered for admission)

Applicants should be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

The applicant must present evidence of academic achievement: a minimum standing equivalent to a cumulative grade point average (CGPA) of 3.0 out of a possible 4.0 or a CGPA of 3.2/4.0 for the last two full-time academic years. High grades are expected in courses considered by the department to be preparatory to the graduate program. Some departments impose additional or higher requirements.

See www.mcgill.ca/gradapplicants/apply/prepare/requirements/international-degree-equivalency for information on mark/grade equivalencies and degree requirements from countries in Europe and around the world.

Admission to graduate programs at McGill is highly competitive and the final decision rests with Graduate and Postdoctoral Studies. Admission decisions are not subject to appeal or reconsideration.

6.3 Admission Tests

Graduate Record Examination (GRE)

The Graduate Record Examination (GRE) (Educational Testing Service, Princeton, NJ 08540) consists of a relatively advanced test in the candidates' specialty, and a general test of their attainments in several basic fields of knowledge for which no special preparation is required or recommended. It is offered at many centres, including Montreal, several times a year; the entire examination takes about eight hours, and there is a registration fee. Refer to www.ets.org/gre for further information. Only some departments require applicants to write the GRE examination, but all applicants who have written either the general aptitude or the advanced test are advised to submit the scores along with their other admission material.

This credential is of special importance in the case of applicants whose education has been interrupted, or has not led directly toward graduate study in the subject selected. In such cases the department has the right to insist on a report from the Graduate Record Examination or some similar test. High standing in this examination will not by itself guarantee admission. The Miller Analogies Test may be used similarly. Some departments of the Faculty of Education also require the taking of various tests.

Graduate Management Admissions Test (GMAT)

Applicants to graduate programs in Management must submit scores from the Graduate Management Admissions Test (GMAT). The test is a standardized assessment offered by the Graduate Management Admission Council to help business schools assess candidates for admission. For further information see www.mba.com/mba/thegmat.

6.4 Competency in English

Applicants to graduate studies must demonstrate an adequate level of proficiency in English **prior to admission**, regardless of citizenship status or country of origin.

Normally, applicants meeting any one of the following conditions are NOT required to submit proof of proficiency in English:

1. Mother tongue (language first learned and still used on a daily basis) is English.
2. Has obtained (or is about to obtain) an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction.
3. Has obtained (or is about to obtain) an undergraduate or graduate degree from a recognized institution in Canada or the United States of America (anglophone or francophone).

4. Has lived and attended university, or been employed, for at least four consecutive years, in a country where English is the acknowledged primary language.

Applicants who do not meet any of the above-listed conditions must demonstrate proficiency in English using *one* of the following options:

1. TOEFL (Test of English as a Foreign Language): minimum acceptable scores are

Competency in English		
iBT (Internet-based test)	PBT (paper-based test)	CBT (computer-based test)*
86 overall, (no less than 20 in each of the four component scores)	550	* The CBT is no longer being offered and CBT results are no longer considered valid, or being reported by ETS.
N.B. an institutional version of the TOEFL is not acceptable.		

2. IELTS (International English Language Testing System): a band score of 6.5 or greater.
3. MELAB (Michigan English Language Assessment Battery): a mark of 85% or higher.
4. University of Cambridge ESOL Certificate in Advanced English (CAE): a grade of "B" (Good) or higher.
5. University of Cambridge ESOL Certificate of Proficiency in English (CPE): a grade of "C" (Pass) or higher.
6. Edexcel London Test of English - Level 5 - with an overall grade of at least "Pass".
7. McGill Certificate of Proficiency in English or McGill Certificate of Proficiency - English for Professional Communication: Certificate of Proficiency awarded. McGill Certificate of Proficiency in English or McGill Certificate of Proficiency - English for Professional Communication: Certificate of Proficiency awarded.

In each case, applicants must ensure that official test results are sent to McGill directly by the testing service. Applications cannot be considered if test results are not available. These scores are general minima; some departments may set higher requirements.

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6.5 Admission to a Qualifying Program

Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program for a Master's. The undergraduate-level courses to be taken in a Qualifying Program will be prescribed by the department concerned.

Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year (i.e., two full-time terms) is permitted.

In all cases, after the completion of a qualifying year or term, an applicant interested in commencing a degree program must apply for admission by the dates for guaranteed consideration. Successful completion of the work in the Qualifying Program (B- in all courses) does not automatically entitle the student to proceed toward a degree. Qualifying year students must apply for admission to the program for which they seek qualification.

In cases where a department recommends a change of registration from Qualifying Program (Fall) to Master's Degree First Year (Winter), **students must apply to the degree program by the Winter departmental dates for guaranteed consideration**. A Qualifying-Year applicant admitted to a Winter term as a first term of studies must apply for admission for a Fall term as his/her second term of studies.

Students who are ineligible for a Qualifying Program may apply to the appropriate undergraduate faculty for admission as regular or special students, and seek admission to graduate studies at a later date. The normal admission requirements must be met and the usual procedures followed.

6.6 Admission to a Second Degree Program

A candidate with a given higher degree may apply for admission to a second degree program at the same level but **in a different subject**. The normal admission requirements must be met and all the usual procedures followed.

6.7 Admission to Two Degree Programs

Students may, with special permission granted by Graduate and Postdoctoral Studies, be admitted to two degree programs or to two departments or faculties. Students are **never** permitted to pursue two **full-time** degree programs concurrently.

6.8 Admission to an Ad Personam Joint Program

Ad Personam joint graduate programs are restricted to master's Thesis option and Ph.D. programs. Students shall be admitted and registered by one department, to be known as the "first department". Approval for the joint program must be obtained from Graduate and Postdoctoral Studies. The request shall be signed by the Chairs of both departments involved and shall explicitly list the conditions imposed by the second department. The student shall undertake research under the joint supervision of both departments.

Students shall fulfil the degree requirements of the first department and shall complete all the requirements specified by the second department in the request for admission. This program is described in more detail in a document available from GPS.

6.9 Admission to an Ad Hoc Program (Thesis)

In exceptional cases, admission to an *Ad Hoc* program (Thesis) may be considered. Before Graduate and Postdoctoral Studies will authorize the admission of a student into an *Ad Hoc* program, it must receive a favourable report from a departmental committee constituted to examine the program in question.

Candidates, through the supervisor designated by the academic department most closely related to their research field, must submit a research proposal, an outline of the coursework needed including a comprehensive examination (for doctoral programs) in the relevant field, and the list of four supervisory committee members.

Once the request has been approved, the candidate may register following all the regular procedures. A fuller description of the admission procedure is available from GPS.

6.10 Reinstatement and Admission of Former Students

Students who have not been registered for a period of less than two years and who have not officially withdrawn from the University by submitting a signed Withdrawal Form to Graduate and Postdoctoral Studies are eligible to be considered for reinstatement into their program. The student's department must recommend, in writing, that the student be reinstated, stipulating any conditions for reinstatement that it deems appropriate. The final decision rests with GPS. Normally, GPS will approve the departmental recommendation. If the student's department chooses not to recommend reinstatement, the student may appeal to the Associate Dean (Graduate and Postdoctoral Studies). The decision of the Associate Dean (Graduate and Postdoctoral Studies) shall be final and not subject to further appeal.

Reinstatement fees will be charged in addition to the fees due for the academic session into which the student has been reinstated. The amount of the reinstatement fees is the tuition portion of fees owed for all unregistered terms, up to a maximum of two years just prior to the term of reinstatement.

If an individual has not registered for a period of more than two years, their student file will be closed. These individuals and those who have formally withdrawn may be considered for admission. Applicants' admission applications will be considered as part of the current admission cycle, in competition with other people applying during that cycle and in accordance with current graduate admission procedures and policies.

Procedure: Requirements for completion of the program will be evaluated. Some of these requirements may need to be redone or new ones may be added. Applicants must inquire about the fees that will be charged.

Revised – Council of February 9, 2004.

6.11 Deferral of Admission

Under exceptional circumstances, an admission for a particular semester can be considered for a deferral. This can be considered only if the student has not registered. If the student has already registered, no deferral can be granted. The student must withdraw from the University and apply for admission to a later term.

7 Fellowships, Awards, and Assistantships

Graduate and Postdoctoral Studies
(Fellowships and Awards Section)
James Administration Building, Room 400
845 Sherbrooke Street West
Montreal, QC H3A 2T5
Telephone: 514-398-3990
Fax: 514-398-2626

Email: graduate.fellowships@mcgill.ca

Website: www.mcgill.ca/gps/students (under Fellowships and Awards)

Graduate Fellowships and Awards Calendar: <http://coursecalendar.mcgill.ca/fellowships201112/wwhelp/wwhimpl/js/html/wwhelp.htm>

The Fellowships and Awards Section of Graduate and Postdoctoral Studies provides processing services for many sources of support for Canadian and non-Canadian students, both new to McGill and continuing. Further information on these and other sources of funding can be found in various publications on the Fellowships and Awards web pages. The *Graduate Fellowships and Awards Calendar* lists all internal awards as well as numerous external awards.

Entrance Fellowships are awarded on the basis of the application for admission, upon nomination by academic departments. Most internal fellowships are awarded in this manner – please contact the proposed academic department directly for further information.

Research Assistantships, Teaching Assistantships, and stipends from professors' research grants are handled by individual academic departments at McGill. Fellowships, assistantships, and stipends are used to make funding packages for graduate students. All assistantship and stipend inquiries should be directed to departments.

A small number of citizens from countries whose governments have entered into agreements on tuition fees with Quebec may be exempted from the supplemental tuition fees normally required of international students. All French citizens and a limited number of citizens of a country in the list, which can be found at www.mels.gouv.qc.ca/ens-sup/ens-univ/droits_scolaire-A_pays-organisations.pdf, are eligible for such exemptions. For more information and the necessary application materials, see this MELS website: www.mels.gouv.qc.ca/international/index_en.asp?page=progExemp. The list of organizations where students should apply can be accessed from this website.

Differential Fee Waivers (DFW's) for international students provide eligible non-Canadian graduate students with waivers of the international tuition fee supplement. There are no application forms for differential fee waivers, since these are awarded on the basis of departmental nominations made to the Fellowships and Awards Section. Eligible students should contact their McGill department.

8 Postdoctoral Research

Students must inform themselves of University rules and regulations and keep abreast of any changes that may occur. The *Postdoctoral Research* section of this publication contains important details required by students during their studies at McGill and should be periodically consulted, along with other sections and related publications.

8.1 Postdocs

Postdocs are recent graduates with a Ph.D. or equivalent (i.e., Medical Specialist Diploma) engaged by a member of the University's academic staff, including Adjunct Professors, to assist him/her in research.

Postdocs must be appointed by their department and registered with Graduate and Postdoctoral Studies in order to have access to University facilities (library, computer, etc.).

8.2 Guidelines and Policy for Academic Units on Postdoctoral Education

The general guidelines listed below are meant to encourage units to examine their policies and procedures to support postdoctoral education. Every unit hosting Postdocs should have explicitly stated policies and procedures for the provision of postdoctoral education as well as established means for informing Postdocs of policies, procedures, and privileges (e.g., orientation sessions, handbooks, etc.), as well as mechanisms for addressing complaints. Academic units should ensure that their policies, procedures and privileges are consistent with these guidelines and the Charter of Students' Rights. For their part, Postdocs are responsible for informing themselves of policies, procedures and privileges.

1. Definition and Status

i. Postdoctoral status will be recognized by the University in accordance with Quebec provincial regulations. Persons may only be registered with postdoctoral status for a period of up to five years from the date they were awarded a Ph.D. or equivalent degree. Time allocated to parental or health leave is added to this period of time. Leaves for other reasons, including vacation leave, do not extend the term. Postdocs must do research under the supervision of a McGill professor, including Adjunct Professors, who are a member of McGill's academic staff qualified in the discipline in which training is being provided and with the abilities to fulfil responsibilities as a supervisor of the research and as a mentor for career development. They are expected to be engaged primarily in research with minimal teaching or other responsibilities.

2. Registration

i. Postdocs must be registered annually with the University through Graduate and Postdoctoral Studies. Initial registration will require an original or notarized copy of the Ph.D. diploma. Registration will be limited to persons who fulfil the definition above and for whom there is an assurance of appropriate funding and where the unit can provide assurance of the necessary resources to permit postdoctoral education.

ii. Upon registration, the Postdoc will be eligible for a University identity card issued by Enrolment Services.

3. Appointment, Pay, Agreement of Conditions

- i. Appointments may not exceed your registration eligibility status.
 - ii. In order to be registered as a Postdoc, you must be assured of financial support other than from personal means during your stay at McGill University, equivalent to the minimal stipend requirement set by the University in accordance with guidelines issued by federal and provincial research granting agencies. There are no provisions for paid parental leave unless this is stipulated in the regulations of a funding agency outside the University.
 - iii. At the outset of a postdoctoral appointment, a written Letter of Agreement for Postdoctoral Education should be drawn up and signed by the Postdoc, the supervisor, and the department head or delegate (see template Letter of Agreement on the web at www.mcgill.ca/gps/postdocs and supporting document – commitments for Postdoctoral Scholars and Supervisors at www.mcgill.ca/files/gps/Commitments_of_Postdoctoral_Scholars_and_Supervisors_July_09.pdf). This should stipulate, for example, the purpose of the postdoctoral appointment (research training and the advancement of knowledge), the duration of the fellowship/financial support, the modality of pay, the work space, travel funds, and expectations and compensation for teaching and student research supervision. Leaves from postdoctoral education must comply with the Graduate and Postdoctoral Studies Policies for Vacation, Parental/Familial, and Health Leave (see Graduate and Postdoctoral Studies General Information [section 8.3: Vacation Policy for Graduate Students and Postdocs](#) and [section 9.6: Health and Parental/Familial Leave of Absence Policy](#)). Any breach of these conditions may result in grievance procedures or the termination of the postdoctoral appointment.
 - iv. Postdocs with full responsibility for teaching a course should be compensated over and above their fellowship at the standard rate paid to lecturers by their department.
 - v. The amount of research, teaching, or other tasks that Postdocs engage in over and above postdoctoral activities should conform to the regulations for Postdocs specified by the Canadian research council of their discipline. This applies to all Postdocs, including those whose funding does not come from the Canadian research councils.
- 4. Privileges**
- i. Postdocs have the same pertinent rights as the ones granted to McGill students in the *Handbook on Student Rights and Responsibilities* (“Green Book”), available at www.mcgill.ca/secretariat/policies/students.
 - ii. Postdocs have full graduate student borrowing privileges in McGill libraries through their identity card.
 - iii. As a rule, Postdocs who are Canadian citizens or who have Permanent Resident status may take courses for credit. Admission to such courses should be sought by submitting application documents directly to the appropriate program by the Postdoc. They must be admitted by the department offering the courses as Special Students. These Postdocs may only be enrolled as part-time students in non-degree granting programs. They will be charged fees for these courses.
 - iv. Postdocs may be listed in the McGill directory. The Computing Centre will grant Postdocs email privileges on the same basis as graduate students upon presentation of a valid identity card.
 - v. The Department of Athletics will grant Postdocs access to sports facilities upon presentation of their identity card. A fee will be charged on an annual or term basis.
 - vi. Postdocs are mandatory members of the Post-Graduate Students’ Society (PGSS) and an annual association fee is automatically charged. PGSS fees are mandatory. Postdocs are permitted membership in the Faculty Club; an annual fee will be charged for this membership.
 - vii. Postdocs are encouraged to participate in Professional Development Workshops provided by Graduate and Postdoctoral Studies and Teaching and Learning services. These sessions are usually free of charge.
 - viii. Postdocs have access to the services provided by the Ombudsperson.
 - ix. Postdocs may enrol as part-time students in the second language written and spoken English/French courses offered by the School of Continuing Studies/French Language Centre. Postdocs will be charged tuition for these courses. International Postdocs may be required to obtain a CAQ and a Study Permit.
 - x. Access to student services and athletic services are available to the Postdoc on an opt-in basis. Fees are applicable.

5. Responsibilities

- i. Postdocs are subject to the responsibilities outlined in the *Handbook on Student Rights and Responsibilities* (“Green Book”), available at www.mcgill.ca/secretariat/policies/students.
- ii. Each academic unit hosting Postdocs should clearly identify Postdocs’ needs and the means by which they will be met by the unit.
- iii. Each academic unit should assess the availability of research supervision facilities, office space, and research funding before recruiting Postdocs.
- iv. Some examples of responsibilities of the department are:
 - to verify the Postdoc’s eligibility period for registration;
 - to provide Postdocs with departmental policy and procedures that pertain to them;
 - to oversee the registration and appointment of Postdocs;
 - to assign departmental personnel (e.g., Postdoc coordinator and graduate program director) the responsibility for Postdocs;
 - to oversee and sign off on the Letter of Agreement for Postdoctoral Education;
 - to ensure that each Postdoc has a supervisor, lab and/or office space, access to research operating costs and necessary equipment;
 - to include Postdocs in departmental career and placement opportunities;
 - to refer Postdocs to the appropriate University policies and personnel for the resolution of conflict that may arise between a Postdoc and a supervisor.
- v. Some examples of responsibilities of the supervisor are:

- to uphold and transmit to their Postdocs the highest professional standards of research and/or scholarship;
- to provide research guidance;
- to meet regularly with their Postdocs;
- to provide feedback on research submitted by the Postdocs;
- to clarify expectations regarding intellectual property rights in accordance with the University’s policy;
- to provide mentorship for career development;
- to prepare, sign, and adhere to a Letter of Agreement for Postdoctoral Education.

vi. Some examples of responsibilities of Postdocs are:

- to inform themselves of and adhere to the University’s policies and/or regulations for Postdocs for leaves, for research, and for student conduct as outlined in the *Handbook on Student Rights and Responsibilities* and the *General Information, Regulations and Research Guidelines* Calendar of Graduate and Postdoctoral Studies;
- to submit a complete file for registration to Graduate and Postdoctoral Studies;
- to sign and adhere to their Letter of Agreement for Postdoctoral Education;
- to communicate regularly with their supervisor;
- to inform their supervisor of their absences.

vii. Some examples of the responsibilities of the University are:

- to register Postdocs;
- to provide an appeal mechanism in cases of conflict;
- to provide documented policies and procedures to Postdocs;
- to provide Postdocs with the necessary information on McGill University student services.

Approved by Senate, April 2000

8.3 Vacation Policy for Graduate Students and Postdocs

Graduate students and Postdocs should normally be entitled to vacation leave equivalent to university holidays and an additional total of fifteen (15) working days in the year. Funded students and Postdocs with fellowships and research grant stipends taking additional vacation leave may have their funding reduced accordingly.

Council of FGSR April 23, 1999

8.4 Leave of Absence for Health and Parental/Familial Reasons

A leave of absence may be granted by Graduate and Postdoctoral Studies for maternity or parental reasons or for health reasons (see [section 9.6: Health and Parental/Familial Leave of Absence Policy](#)).

Such a leave must be requested on a term by term basis and may be granted for a period of up to 52 weeks. Students and Postdocs must make a request for such a leave in writing to their department and submit a medical certificate. The department shall forward the request to GPS. See procedure under [section 9.6: Health and Parental/Familial Leave of Absence Policy](#). Students who have been granted such a leave will have to register for the term(s) in question and their registration will show as “leave of absence” on their record. No tuition fees will be charged for the duration of the authorized leave. Research supervisors are not obligated to remunerate students and Postdocs on leave. GPS has prepared a summary table of various leave policies (paid or unpaid) for students and Postdocs paid from the Federal and Quebec Councils through fellowships or research grants. The document is available at www.mcgill.ca/gps/postdocs/becoming/leave under “Information on the Funding Council Leave Policies for Graduate Students and Postdoctoral Fellows”.

8.5 Postdoctoral Research Trainees

Eligibility

If your situation does not conform to the *Quebec Ministère de l’Éducation, du Loisir et du Sport* (MELS) definition of Postdoctoral Fellow, you may be eligible to attend McGill as a Postdoctoral Research Trainee. While at McGill, you can perform research only (you may not register for courses or engage in clinical practice). Medical specialists who will have clinical exposure and require a training card must register through Postgraduate Medical Education of the Faculty of Medicine – not Graduate and Postdoctoral Studies.

The category of Postdoctoral Research Trainee is for:

Category 1: An individual who has completed requirements for the Doctoral degree or medical specialty, but the degree/certification has not yet been awarded. The individual will subsequently be eligible for registration as a Postdoctoral Fellow.

Category 2: An individual who is not eligible for Postdoctoral Registration according to the MELS definition, but is a recipient of an external postdoctoral award from a recognized Canadian funding agency.

Category 3: An individual who holds a professional degree (or equivalent) in a regulated health profession (as defined under CIHR-eligible health profession) and is enrolled in a program of postgraduate medical education at another institution. The individual wishes to conduct the research stage or elective component of his/her program of study at McGill University under the supervision of a McGill professor. The individual will be engaged in full-time research with well-defined objectives, responsibilities, and methods of reporting. The application must be accompanied by a letter of permission from the home institution (signed by the Department Chair, Dean or equivalent) confirming registration in their program and stating the expected duration of the research stage. Individuals who are expecting to spend more than one year are encouraged to obtain formal training (Master's or Ph.D.) through application to a relevant graduate program.

Category 4: An individual with a regulated health professional degree (as defined under CIHR-eligible health profession), but not a Ph.D. or equivalent or medical specialty training, but who fulfils criteria for funding on a tri-council operating grant or by a CIHR fellowship (up to maximum of five years post-degree).



Note: individuals who are not Canadian citizens or permanent residents must inquire about eligibility for a work permit.

General Conditions

- the maximum duration is three years;
- must be engaged in full-time research;
- must provide copies of official transcripts/diploma;
- must have the approval of a McGill professor to supervise the research and of the Unit;
- must have adequate proficiency in English, but is not required to provide official proof of English competency to Graduate and Postdoctoral Studies;
- must comply with regulations and procedures governing research ethics and safety and obtain the necessary training;
- will be provided access to McGill libraries, email, and required training in research ethics and safety. Any other University services must be purchased (e.g., access to athletic facilities);
- must arrange for basic health insurance coverage prior to arrival at McGill and may be required to provide proof of coverage.

9 Graduate Studies Guidelines and Policies

Students must inform themselves of University rules and regulations and keep abreast of any changes that may occur. The *General Studies Guidelines and Policies* section of this publication contains important details required by students during their studies at McGill and should be periodically consulted, along with other sections and related publications.



Note: The University Exam Regulations governed by the : *University Student Assessment Policy* (adopted by Senate in February 2011) are being updated for Fall 2011 and will be available at www.mcgill.ca/students/exams/regulations. The revised Regulations will be published in the *University Regulations and Resources* section of the 2012-2013 *Programs, Courses and University Regulations* publication. This "Note" applies to all subsections under this topic Graduate Studies Guidelines and Policies.

9.1 Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision

The general guidelines suggested below are meant to encourage units to examine their graduate programs and to specify their own policies and procedures. These guidelines are directed primarily toward thesis programs but will, in part, be appropriate for non-thesis programs as well.

Each academic unit should have explicitly stated policies and procedures regarding the advising and supervising of graduate students, as well as established means for informing students of procedures and deadlines (e.g., orientation sessions, handbooks) and mechanisms for addressing complaints. Academic units should ensure that their policies and procedures are consistent with the Charter of Students' Rights. For their part, graduate students are responsible for informing themselves of these policies and procedures.

1. Assignment of Advisers, Supervisors, and Committees

- i. Each unit should designate a member (or members) of the academic staff (usually the graduate program director) to monitor the progress of students throughout the graduate program, to ensure that all conditions of admission and requirements are fulfilled, to provide students with information on their program, their progress through it, sources of and policies on financial support, and to advise them how to resolve problems which may arise during their program.
- ii. As soon as possible, students should have a supervisor who has competence in the student's proposed area of research, and a program or thesis committee. Although procedures and timetables for choosing supervisors and committees may vary across programs, they should be consistent within

a particular program and should be made clear to incoming students. Thesis supervisors must be chosen from academic staff in tenure-track positions. Faculty Lecturers and Research Assistants may not act as supervisors but in exceptional cases, may be co-supervisors. Emeritus Professors and Adjunct Professors may co-supervise. Certain non-tenure track professors appointed in the Faculty of Medicine may be eligible to supervise or co-supervise graduate students with the approval of the unit and Graduate and Postdoctoral Studies. In the case of supervision, the academic unit in question must ensure continuity of appropriate supervision of their graduate students.

2. Program

- i. Early in their program, students should be informed of the phases through which they must pass toward the achievement of the graduate degree, the approximate amount of time each phase should take, the criteria for its successful completion, and any deadlines relating to these phases.
- ii. It is important that students are made aware of whatever courses are required to complete their programs, that these courses are available, and that they relate to students' proposed areas of research or to the development of related areas of scholarship.
- iii. Where relevant, students should also be informed early in their program of language requirements or comprehensive examinations. The guidelines, criteria and procedures for comprehensive examinations must be explicit and consistently applied in each program. Academic units should consider the rationale for language and comprehensive examinations and how they relate to the objectives of the graduate program.
- iv. Every effort should be taken to ensure that students choose, as soon as possible, realistic and appropriate areas of research commensurate with degree requirements.
- v. **There must be clear procedures established in every unit by which students receive guidance and constructive criticism on their progress on a regular basis through the program (e.g., regular meetings and/or email communication with supervisors and committees, attendance at research seminars, semester or annual reviews of student progress). In addition to regular meetings between the student and supervisor or advisory/thesis committee, each unit must establish a procedure to provide feedback to thesis students regarding their research progress. At least annually, there must be a meeting between the student, supervisor and advisory/thesis committee or, in the case where there is no such advisory/thesis committee, there must be a meeting between the supervisor and a departmental representative, at which objectives for the upcoming year are established and the prior year's research progress recorded and evaluated. A written record of such meetings must include the signature of the student, supervisor, and the advisory/thesis committee member or a departmental representative, and this record must be retained in the student's departmental file. (The Graduate Student Research Objectives Report Form, the Graduate Student Research Progress Record, and the Graduate Student Research Progress Report Form are to be utilized to keep a record of these meetings.) In the case where the student does not make expected progress, the advisory or thesis committee or, in the case where there is no such advisory or thesis committee, the student, supervisor and a departmental representative must meet at least once per semester for the subsequent twelve months to review progress and if appropriate to set new objectives. On the occasion of a second unsatisfactory progress report, the student may be required to withdraw from the program of study.**
- vi. Students should be made aware of the cost of living in Montreal and of sources of financial support (e.g., teaching or research assistantships, fellowships) and of the facilities available to them (e.g., study space, computers).
- vii. Students should receive guidance and encouragement in areas relating to their growth in scholarship, professional development and career planning. Examples may include, where appropriate, reporting research, writing abstracts, preparing papers for conference presentation or for publication, writing grant and fellowship applications, conducting a job search, and preparing for job interviews.
- viii. Units should be sensitive to special academic needs and concerns that may arise in the case of certain students, such as international students or students who undertake graduate studies after a long absence from university.

3. Responsibilities

Each unit should clearly identify the student's supervisory needs at each phase and the means by which these needs will be met. Some functions will be fulfilled by the Chair, some by the graduate program director, some by the supervisor and some by the committee. Each unit should clearly identify the specific responsibilities of each of these, as well as the responsibilities of students themselves.

- i. Each unit should consider the availability of student support, research facilities, space, and availability of potential supervisors in determining the number of students admitted into the program.
- ii. Some examples of the responsibilities of the graduate program director are to be knowledgeable about program requirements, the composition of committees, the procedures for comprehensive and oral defense examinations, and other policies relating to graduate studies; to maintain a dossier on each student's progress; and to be sensitive to graduation deadlines and students' career plans.
- iii. Some examples of the responsibilities of a supervisor are to uphold and to transmit to students the highest professional standards of research and/or scholarship; to provide guidance in all phases of the student's research; to meet with their students regularly; to provide prompt feedback when work is submitted including drafts of the thesis; and to clarify expectations regarding collaborative work, authorship, publication and conference presentations.
- iv. Some examples of the responsibilities of the students are to inform themselves of program requirements and deadlines; to work within these deadlines; to communicate regularly with the supervisor and committee; and to submit progress reports to the supervisor and committee.
- v. The Chair of the unit should ensure that procedures are in place to address serious disagreements that may arise, for example, between a student and a supervisor or between a supervisor and committee members. Such procedures should involve a neutral mediator who will ensure that all sides of a dispute are heard before any decision is made.

4. Quality of Supervision and Teaching

- i. Academic units and Graduate and Postdoctoral Studies should consider ways to assess and improve the quality of supervision and to help new supervisors, e.g., through workshops or mentoring models. Procedures for monitoring the quality of graduate student supervision and for providing constructive feedback for supervisors should be developed.
- ii. Graduate supervision should be recognized as an integral part of the academic responsibility of an academic unit and should be considered in the allocation of workload, as should the teaching of graduate courses.

- iii. Academic units should establish criteria of excellence in supervision and graduate teaching appropriate to their disciplines and should suitably reward those who meet these criteria, e.g., in decisions concerning tenure and promotion, or merit pay awards.
- iv. The maximum number of students under the direction of a single supervisor should be consistent with the ability of the supervisor to provide quality supervision, taking into account the workload of the supervisor and norms of the discipline.
- v. Procedures should be established for ensuring continuity in supervision when a student is separated from a supervisor – for example, when the supervisor takes a sabbatical leave, retires from McGill or changes universities or when the student leaves to complete field work or takes a job before submitting a thesis.

Revised by Council of FGSR, April 23, 1999 and October 6, 2003

9.2 Policy on Graduate Student Research Progress Tracking

This is a new mandatory policy and procedure to track the research progress of graduate students. The policy is referred to in the amended [section 9.1: Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision](#) in bold print. Documents to record progress can be found on the GPS website: www.mcgill.ca/gps/staff/forms.

The following is a summary of the main elements of the new **mandatory** policy. The following steps must be followed for each graduate student in a thesis program:

1. Annually, the student must meet with, at minimum, their supervisor(s) and a departmental representative. This meeting can occur in the context of an annual thesis or advisory committee in those departments that have thesis committees
2. At the first such meeting (to be held shortly after thesis students begin their programs), written objectives/expectations for the year must be recorded on the first of the three forms, Form #1 (Graduate Student Research Objectives Report Form). All three people at the meeting must sign this form. A student who does not agree to sign the form must write a statement detailing his/her objections to the expectations recorded on the form.
3. Approximately one year later, and every year thereafter, the student, supervisor(s) and the departmental representative should meet again to review the progress that has been achieved toward the recorded objectives. Prior to the meeting, the student should record his/her accomplishments and progress for the year by completing Form #2 (Graduate Student Research Progress Record). This completed form is then evaluated by the supervisor and the departmental representative on Form #3 (Graduate Student Research Progress Report Form). All parties sign Form #3. A student who does not agree to sign the form must write a statement detailing his/her objections. At this same meeting, objectives for the following year should be recorded on Form #1, as per the procedure described in point 2, above.
4. In the event that recorded research progress is unsatisfactory, a new set of objectives should be developed for the student at the meeting, and recorded on Form #1. These new, or interim, objectives apply only to the next semester. Evaluation of progress should take place after that semester has concluded, following the steps described in point 3, above.
5. In the event that a student has any two unsatisfactory evaluations they may be required to withdraw from their program of study. These two unsatisfactory evaluations need not be successive.
6. All forms are to be kept in departmental files.
7. Departments that already have progress tracking forms may continue to utilize them, but these must conform to the fundamental principles underlying this new policy. Specifically, any departmental procedure or forms to record graduate research progress must:
 - be used **annually**;
 - be used in a meeting with the supervisor and one other departmental representative, and signed by all parties;
 - include a written statement of expectations approximately one year before any evaluation. (Note: This can be one semester in the case of expectations following an unsatisfactory evaluation.);
 - permit the student to submit a minority report and not sign;
 - state clearly that any two unsatisfactory evaluations may be grounds for requiring a student to withdraw.

Please note this new University policy is **MANDATORY**. Students may grieve against a department that fails to adhere to the policy and procedures outlined above.

Senate, September 2003

9.3 Vacation Policy for Graduate Students and Postdocs

Graduate students and Postdocs should normally be entitled to vacation leave equivalent to university holidays and an additional total of fifteen (15) working days in the year. Funded students and Postdocs with fellowships and research grant stipends taking additional vacation leave may have their funding reduced accordingly.

Council of FGSR April 23, 1999

9.4 Ph.D. Comprehensives Policy

Preamble

The majority of doctoral programs at McGill require candidates to pass a comprehensive examination or set of examinations or equivalent, such as qualifying examinations, preliminary examinations, candidacy paper, comprehensive evaluation, thesis proposal, etc. The Calendar of Graduate and Postdoctoral Studies (GPS) includes the following statement:

A comprehensive examination or its equivalent is usually held near the end of Ph.D. 2. The results of this examination determine whether or not students will be permitted to continue in their programs. The methods adopted for examination and evaluation and the areas to be examined are specified by departmental regulations and approved by Graduate and Postdoctoral Studies. It is the responsibility of students to inform themselves of these details at the commencement of their programs.

It is recognized that expectations for the Ph.D. comprehensive will vary according to the needs of the discipline. It is important to make it clear to doctoral candidates what the expectations and procedures are for their Ph.D. comprehensive, and to maintain consistency within a given program.

1. General Policy

At the beginning of the relevant academic year, units must provide doctoral students with a written description of the Ph.D. comprehensive, covering the following issues: objectives and content, format, timing, assessment, grading and reporting, failures. (See below for details.)

2. All units that have a Ph.D. comprehensive must adopt an administrative course number for it, usually XXXX 701. One of the following forms of grading must be adopted and used consistently within the program: Pass/Fail or letter grades. ("Mixed" modes of grading are not permitted, i.e., some students within a program reported on a Pass/Fail basis and others by means of letter grades.)

Specific Issues

Objectives and Content

Units must specify the objectives of the Ph.D. comprehensive. Objectives may include assessing any of the following (or a combination), with a view to determining whether the student demonstrates the necessary research skills and academic achievements to be permitted to continue in the Ph.D. program. (This list is not intended to be exhaustive.)

- knowledge of the discipline (from the point of view of breadth)
- understanding of the proposed field of research
- ability to conduct independent and original research
- a thesis proposal
- professional skills
- ability to present and defend material orally

The content of the comprehensive must be consistent with the objectives and should be appropriately circumscribed. Students must be given an indication of the range of material that may be covered in the examination and suggestions as to how to cover this material (e.g., via reading lists, courses, etc.).

Format

The format of the comprehensive must be clearly stated and must be consistent across students within a particular program. The following list gives some of the more common formats, which are often combined. (This list is not intended to be exhaustive.)

- written examination of a specific duration
- take-home examination
- extended research paper(s)
- written research proposal
- oral exam (which may include or consist of a defense of a research paper or research proposal)

If the comprehensive consists of several parts, the relationship (if any) between them must be made clear.

Timing

Timing of the comprehensive must be specified, including the earliest and latest dates by which the comprehensive is to be completed. Students must be informed of the specific dates of the exam in sufficient time for them to prepare for it.

Given the importance of the Ph.D. comprehensive and the consequences of failure, the exam should be held reasonably early in the program, so that students do not spend several years preparing for it.

Prerequisites must be specified. For example, clarify whether all course work must have been completed prior to the comprehensive and whether the comprehensive is the final step before thesis research and writing.

Assessment, Grading and Reporting

Evaluation parameters must be made clear, including information about who sets the exam questions and who evaluates the student. If performance is assessed by a committee, clarify how the committee is appointed and who sits on it. In the case of written examinations, clarify whether the grading is done by one or more people.

Where there is more than one component to the examination (e.g., an oral exam plus a written exam), it must be made clear how these components are factored into the final grade. For example, make it clear whether each component counts equally, whether the assessment is global, and whether failure on one part of the comprehensive examination (or on one question) results in an overall failure.

Feedback

The assessment and reasons for the decision must be documented and provided to the student in sufficient detail to allow the student to understand the decision, including identifying strengths and weaknesses. (A number of units have developed short forms specifically for this purpose.) In the case of oral examinations, the student should also be given feedback on presentation, logical exposition, ability to answer questions, etc.

In the case of oral exams, units may wish to consider the following: ensure that there is a reasonably detailed written assessment of the student's performance; tape the oral examination; allow the student to select a faculty member to act as a neutral observer; have one faculty member serve as a neutral chair (equivalent to a Pro-Dean); have an "outside" committee member; have the oral examination open to other students and faculty members.

Plagiarism

McGill University values academic integrity, which is fundamental to achieving our mission of the advancement of learning. Therefore, all students must understand the issues associated with **academic integrity** (see www.mcgill.ca/students/srr/honest for more information).

Plagiarism in a Ph.D. comprehensive examination contravenes McGill University's academic goals and standards. Consequently, any student found guilty of plagiarism under the Code of Student conduct and Disciplinary Procedures (see the *Handbook on Students Rights and Responsibilities* available at www.mcgill.ca/secretariat/policies/students) in a Ph.D. comprehensive examination may face very serious penalties, even expulsion from the University without the degree.

Failures

i. Repeats

In the event of a failure, units must allow, without prejudice, one repeat of the comprehensive (in whole or in part). The first time a student fails, the student must be informed in writing by the department that he/she has failed the comprehensive and must be informed of conditions relating to a repeat of the examination. In such circumstances, the grade of HH (continuing) will be used. In the event of a second failure, a grade of F will be reported to Graduate and Postdoctoral Studies and the student will be asked to withdraw from the Ph.D. program.

Conditions for retaking the examination must be clearly stated, including the time frame, potential dates, nature of the re-examination, committee membership, etc.

Units have the right to specify further requirements in the event of failure (e.g., requiring students to take an additional course or courses in areas where they have shown weakness on the comprehensive).

ii. Plagiarism

If plagiarism is suspected, the case will be referred directly to the committee on Student Discipline in accordance with the code of Student Conduct, Part III (article 15) and Part V (A). If plagiarism is established by due University process, the student is considered to have failed the examination, with no possibility of repeat.

iii. Review and Reassessment

Rereads. In the case of written comprehensives, the Graduate Studies Reread Policy applies.

A student who fails an oral examination may request a review. In such cases, Graduate and Postdoctoral Studies will conduct a review of the examination process and procedures.

Other Relevant Policies/Offices

- Charter of Student Rights
- Graduate Studies Reread Policy
- Office for Students with Disabilities

Approved by Executive of Faculty of Graduate Studies and Research (FGSR) February 17, 1997 and Council of FGSR March 7, 1997

9.5 Graduate Studies Reread Policy

This policy applies only in the case of marks given for written work in 600- and 700-level courses. For 500-level courses and below, the reread policy of the appropriate undergraduate faculty applies.

Consultation

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, graduate students have the right, subject to reasonable administrative arrangements, "to consult any written submission for which they have received a mark and to discuss this submission with the examiner". Upon request by the student, the instructor of the course is obliged to conduct this consultation with the student.

(Note: Where materials have been graded by a TA and the student wants a reconsideration of the grade, the faculty member responsible for the course is expected to review the materials and the appropriateness of the grade. This is so even if the materials in question have already been discussed by the TA with the student.)

Verification

In a case where a student feels that totalling errors have been made in arriving at the final grade, the student can request 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.

Rereads

According to the Charter, students have the right, subject to reasonable administrative arrangements, "to an impartial and competent review of any mark" (hereafter "reread").

At the time the request for a reread is made, the student should have already met with the faculty member responsible for the course to review the mark, or made a reasonable attempt to do so. Rereads can only be requested if a change upwards in the letter grade for the course is possible as a result of the reread. Assignments can only be reread if, together, they account for more than 20% of the course grade.

The reread by a second reader is a review of the mark, not the work assigned. It is the second reader's task to determine whether the original mark is fair and reasonable, not to give the work a totally new assessment.

1. The time limit for requesting a reread is within 30 days after posting of the final marks for the course. However, in the case of work which has been graded during the course and returned to the student, students must indicate in writing to Graduate and Postdoctoral Studies within 5 working days of receiving the graded work their intention to request a reread. This intention must be confirmed within 30 days of the posting of the final marks for the course.

(Note: Material that is returned to a student **cannot be reread** unless arrangements have been made to ensure that the material has not been changed subsequent to the original grading; for example, the student can make a copy for the professor to retain either before handing the material in or immediately upon receiving it back from the instructor or at the point where the professor and student review the work together.)

Instructors are strongly advised to write their corrections in red pen and to write comments which help the student to understand the mark assigned.)

2. The request for a formal reread must be made by the student in writing to Graduate and Postdoctoral Studies and should specify the reasons for the request. It should include a statement indicating that the student has already met with the faculty member responsible for the course to review the mark or indicating why this has not been possible. The reread fee (\$35 for an exam, \$35 for a paper, \$35 for one or more assignments, to a maximum of \$105 per course) will be charged directly to the student's fee account after the result of the reread is received. No fee will be charged if there is a change upwards in the letter grade for the course.
3. Administration of the reread is handled by Graduate and Postdoctoral Studies, not by the department. GPS will contact the department to obtain the work to be reread, a list of potential readers, and details of the marking. The list of potential readers must be approved by the Department Chair or Graduate Program Director. The Chair or Director must, as well, vouch for the impartiality of these readers. All communication with the second reader is conducted by GPS.

The second reader is given the original assignment, with marginalia, corrections, summary comments and mark intact, as well as any notes from the instructor pertinent to the general nature of the course or the assignment and grading schemes, etc.

4. The student's and the instructor's names are blanked out to reduce the possibility of prejudice and to help meet the requirement of the Charter of Students' Rights that the review be impartial. The rereader's name will not be made known to the student or instructor at any time; the student's name will not be made known to the rereader at any time.
5. The second reader should support his or her assessment with a brief memorandum to Graduate and Postdoctoral Studies. As a result of the reread process, the grade may become **higher or lower or remain unchanged**. The grade submitted by the second reader shall replace the original grade. The reread grade cannot be challenged.

In the case of requests for rereads of group work, all members of the group must sign the request, indicating that they agree to the reread. In the event that members of the group are not in agreement, the written request should indicate which students are requesting the reread and which students do not wish for a reread. In such cases, the outcome of the reread (whether positive or negative) will affect only the students in favour of the reread. Neither the reread grade nor the decision to opt in or out of the reread can be challenged.

6. The new grade resulting from the review will be communicated to the student in a letter from Graduate and Postdoctoral Studies, with a copy to the academic unit.

Prepared by the Committee on Graduate Programs, Supervision and Teaching

Approved by Council of the Faculty of Graduate Studies and Research, May 12th 1995

9.6 Health and Parental/Familial Leave of Absence Policy

A leave of absence may be granted by Graduate and Postdoctoral Studies for maternity or parenting (interpreted according to McGill's "Parental Leave Policy" for non-academic staff) reasons or for health reasons.

Such a leave must be requested on a term by term basis and may be granted for a period of up to 52 weeks. Students must make a request for such a leave in writing to their department and submit a medical certificate. The department shall forward the request to GPS.

During a **leave of absence for parental or familial reasons**, a student will not be eligible to take courses but he/she may request and expect guidance on thesis and research work and will have free access to the University's academic facilities. Library services will continue to be available by registering at the Circulation Desk of the Humanities and Social Sciences Library (McLennan-Redpath). In special circumstances, familial leave may be considered by GPS for a student when a close family member is ill.

During a **leave of absence for health reasons**, a student will not be eligible to request guidance on thesis and research work or to take courses. He/she will not have access to the University's academic facilities but Library services will normally continue to be available by registering at the Circulation Desk of the Humanities and Social Sciences Library (McLennan-Redpath).

A medical certificate must accompany such leave requests.

Council of FGSR, March 1999

Please refer to *University Regulations and Resources > Graduate > Regulations > : Leave of Absence Status* for information regarding registration of graduate students and Postdocs on such leaves.

Procedure:

All requests for a leave of absence for health reasons should be accompanied by the following:

- a duly completed *Leave of Absence/Non-Resident Request Form* available from www.mcgill.ca/gps/staff/registration;
- a written request from the student;
- a Minerva form to drop all courses for all relevant terms;
- a medical certificate.

To be acceptable, the medical certificate must contain at least the following items:

- the student's name, as well as complete contact information for the physician;
- a clear statement by the physician justifying the student's inability to perform his/her academic duties, with start and end dates;
- if the request is submitted during a term for which the leave is requested, a clear explanation as to why the health conditions in question did not prevent the normal performance of academic duties at the beginning of the semester.

No retroactive requests for leave of absence will be considered.

It remains the student's responsibility to verify their administrative situation, in particular, as it pertains to term and course registration.

9.7 Failure Policy

Please refer to *University Regulations and Resources > Graduate > Regulations > : Failure Policy* for information regarding the policy and procedures to follow in cases of failure.

9.8 Guideline on Hours of Work

In order to maintain full-time status, a graduate student should not work more than 180 hours per term over 15 weeks with 12 hours per week.

10 Research Policy and Guidelines, Patents, Postdocs, Associates, Trainees

Students must inform themselves of University rules and regulations and keep abreast of any changes that may occur. The *Research Policy and Guidelines, Patents, Postdocs, Associates, Trainees* section of this publication contains important details required by students during their studies at McGill and should be periodically consulted, along with other sections and related publications.

10.1 Policy on Research Ethics

Please refer to the Policy on Research Ethics available at www.mcgill.ca/secretariat/policies/research.

10.2 Regulations on Research Policy

Please refer to the Regulations on Research Policy available at www.mcgill.ca/secretariat/policies/research.

10.3 Policy on Research Integrity

Please refer to the Policy on Research Integrity available at: www.mcgill.ca/research/about/integrity.

10.4 Guidelines for Research Involving Human Subjects

Please refer to the guidelines for research involving human subjects available at: www.mcgill.ca/research/researchers/compliance/human.

10.5 Guidelines for Research with Animal Subjects

Please refer to the guidelines for research involving animal subjects available at: www.mcgill.ca/research/researchers/compliance/animal.

10.6 Policy on Intellectual Property

Please refer to the Policy on Intellectual Property available at: www.mcgill.ca/research/researchers/ip.

10.7 Regulations Governing Conflicts of Interest

Please refer to the regulations governing conflicts of interest available at www.mcgill.ca/secretariat/policies/conflictinterest.

10.8 Safety in Field Work

Please refer to the policies on safety in field work available at www.mcgill.ca/ehs/fieldworksafety.

10.9 Office of Sponsored Research

Please refer to the Office of Sponsored Research, available at: www.mcgill.ca/research/researchers.

10.10 Postdocs

Please see www.mcgill.ca/gps/postdocs.

10.11 Research Associates

A Research Associate is a senior career researcher who usually works independently, in most cases has a Ph.D. or equivalent, and is often supported directly by outside granting agencies. (www.mcgill.ca/apo/classifications/other/research-associate)

11 Academic Programs

The programs and courses in the following sections have been approved for the 2011-2012 session as listed, but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

11.1 Agricultural Economics**11.1.1 Location**

Department of Agricultural Economics
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7820

Email: agr.econ@mcgill.ca
Website: <http://agrecon.mcgill.ca>

11.1.2 About Agricultural Economics

For program information please see the [section 11.6: Natural Resource Sciences](#).

11.1.3 Agricultural Economics Faculty

Program Director

J.C. Henning

Associate Professors

J.C. Henning; B.Sc., Ph.D.(Guelph)

P.J. Thomassin; B.Sc.(McG.), M.S., Ph.D.(Hawaii Pac.)

Assistant Professor

N. Kosoy; B.Sc.(Univ. Simon Bolivar), M.Sc.(Univ. of Kent, Univ. Autonoma de Barcelona), Ph.D.(Univ. Autonoma de Barcelona); Ecological Economics

A. Naseem; B.Sc.(McG.), M.Sc., Ph.D.(Mich.)

11.2 Animal Science

11.2.1 Location

Department of Animal Science
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7794

Fax: 514-398-7964

Email: animal.science@mcgill.ca

Website: www.mcgill.ca/animal

11.2.2 About Animal Science

The Department of Animal Science provides exciting challenges to graduate students in the areas of Biotechnology and Molecular Biology, Breeding and Genetics, Nutrition, and Reproductive Physiology as they relate, not only to livestock production but also leading into the fields of human nutrition and medicine via animal models for human disease, infertility, and obesity. Official options in Biotechnology are also available. Departmental researchers have excellent wet-lab facilities at their disposal; large-animal studies can be carried out at the Large Animal Research Unit on the Macdonald campus farm, where other livestock species are available for research trials as well. Research can make use of the Small Animal Research Unit for studies involving rodent-animal models, guinea pigs, neonatal piglets, and rabbits. Expertise is also available in applied information systems, management-software development, and large-scale data analyses. Close collaboration with the Quebec Centre for Expertise in Dairy Production (Valacta) allows for large-scale data-mining projects, software development, and the production of advising tools for the industry. The Department also has significant expertise in food safety, environmental studies related to animal production, and global food security. Our staff's many connections via research networks allow for rich learning environments for our graduate students.

[section 11.2.5: Master of Science \(M.Sc.\); Animal Science \(Thesis\) \(45 credits\)](#)

Four one-semester courses and two seminar courses at the postgraduate level complement an area of research (resulting in a thesis) under the supervision of one of our staff – many of whom are leaders in their respective fields. Entrance to this program is highly competitive, requiring an excellent B.Sc. and letters of reference. Graduates of this program are well prepared for careers in the animal industry, the pharmaceutical sector, and many varied fields in biotechnology.

section 11.2.6: Master of Science, Applied (M.Sc.A.); Animal Science (Non-Thesis) (45 credits)

This non-thesis degree is oriented to animal scientists already working in industry or government, to undergraduate students inspired by concepts in sustainable and integrated animal agriculture, to project leaders interested in animal resource management, and to veterinarians. The program provides graduate training in applied areas of animal production with a view toward integrating technology and management in animal production with allied areas of agricultural resource utilization.

section 11.2.7: Doctor of Philosophy (Ph.D.); Animal Science

Since the Ph.D. is primarily a research degree, the amount of coursework required will normally be considerably less than is the case for the M.Sc. It will depend on the background of the individual student and must be approved by the student's advisory committee. At a minimum, it includes two seminar courses at the graduate level and the Ph.D. Comprehensive Examination as an admission to candidacy for the Ph.D. As with the M.Sc. (Thesis), admission is based on an excellent track record. Suitable candidates are encouraged to contact potential supervisors within their chosen area of interest. Applicants should, however, be aware that no professor is in a position to accept students without formal approval of the application by the Graduate School.

section 11.2.8: Doctor of Philosophy (Ph.D.); Animal Science — Bioinformatics

Bioinformatics research lies at the intersection of biological/medical sciences and mathematics/computer science/engineering. The intention of the Bioinformatics Option is to train students to become researchers in this interdisciplinary field. This includes the development of strategies for experimental design, the construction of tools to analyze datasets, the application of modeling techniques, the creation of tools for manipulating bioinformatics data, the integration of biological databases, and the use of algorithms and statistics.

11.2.3 Animal Science Admission Requirements and Application Procedures**11.2.3.1 Admission Requirements****M.Sc. (Thesis)**

Candidates are required to have either a bachelor's degree in Agriculture or a B.Sc. degree in an appropriate, related discipline with an equivalent cumulative grade point average of 3.0/4.0 (second class–upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

M.Sc. (Applied)

All candidates are required to have a B.Sc. degree or equivalent.

Ph.D.

Candidates are normally required to have a M.Sc. degree in an area related to the chosen field of specialization for the Ph.D. program.

11.2.3.2 Application Procedures

Applicants for graduate studies through academic units in the Faculty of Agricultural and Environmental Sciences must forward supporting documents to:

Department of Animal Science
Macdonald Campus of McGill University
21,111 Lakeshore
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7792

Fax: 514-398-7964

Email: animal.science@mcgill.ca

Applications will be considered upon receipt of a signed and completed application form, \$100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent. Letters of recommendation may also be sent electronically (via email). Letters sent electronically must meet the following conditions:

1. The email communicating the electronic letter must be sent from a valid institutional or corporate email address (domain). Electronic letters sent from public domain addresses such as Hotmail, Gmail, Yahoo Mail, or Videotron, etc., cannot be accepted.
2. The electronic letters must be specific as to which program the student has applied to, and include information that would aid an admissions committee in making an informed decision.
3. Letters of reference (electronic and hard copy) must be dated and must not be more than 12 months old.
4. The referee must indicate his/her position and full contact information at the institution.
5. Electronic letters sent from a Career Centre or Portfolio Management Company must state that the letters are confidential.

(For hard-copy letters submitted on electronic letterhead with an electronic signature, the letter must conform to conditions 1) through 5) (above) and must also be sent in an envelope sealed by the referee.)

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 or 86 on the Internet-based test, with each component score not less than 20) or IELTS (minimum 6.5 overall band). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Documents submitted will not be returned.

Application Fee (non-refundable) – A fee of CAD\$100 must accompany each application (including those of McGill students); otherwise, it cannot be considered. This sum must be remitted by credit card only.

Dates for Guaranteed Consideration – For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a *Qualifying Program* if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a *Qualifying Program* will be prescribed by the academic unit concerned. *Qualifying students* are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

11.2.4 Animal Science Faculty

Chair

Kevin M. Wade

Emeritus Professors

R.B. Buckland; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Md.)

E.R. Chavez; Ing.Agr.(Chile), M.Sc., Ph.D.(Davis)

E. Donefer; B.Sc., M.Sc.(C'nell), Ph.D.(McG.)

B.R. Downey; D.V.M.(Tor.), Ph.D.(McG.)

U. Kühnlein; B.Sc.(Fed. Inst. of Tech., Zurich), Ph.D.(Geneva)

J.E. Moxley; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(C'nell)

S. Touchburn; M.S.A.(Br. Col.), Ph.D.(Ohio St.)

Professors

J.F. Hayes; B.Agr.Sc., M.Agr.Sc.(Dublin), Ph.D.(N. Carolina St.)

X. Zhao; B.Sc., M.Sc.(Nanjing), Ph.D.(C'nell) (*James McGill Professor*)

Associate Professors

V. Bordignon; D.V.M.(URCAMP, Brazil), M.Sc.(UFPel, Brazil), Ph.D.(Montr.)
 R.I. Cue; B.Sc.(Newcastle, UK), Ph.D.(Edin.)
 H. Monardes; Ing.Agr.(Concepcion, Chile), M.Sc., Ph.D.(McG.)
 A.F. Mustafa; B.Sc., M.Sc.(Khartoum), Ph.D.(Sask.) (*William Dawson Scholar*)
 L.E. Phillip; B.Sc.(Agr.), M.Sc.(Agr.)(McG.), Ph.D.(Guelph)
 K.M. Wade; B.Sc.(Agr.), M.Sc.(Agr.)(Dublin), Ph.D.(C'neil)
 D. Zadworny; B.Sc., Ph.D.(Guelph)

Assistant Professors

M. Chénier; B.Sc.(Laval), M.Sc.(Queb.), Ph.D.(McG.)
 R. Duggavathi; B.V.Sc., M.V.Sc.(Bangalore), Ph.D.(Sask.)
 S. Kimmins; B.Sc.(Dal.), M.Sc.(Nova Scotia Ag.), Ph.D.(Dal.)

Adjunct Professors

H. Baldassarre, P. Lacasse, D. Lefebvre, B. Murphy

11.2.5 Master of Science (M.Sc.); Animal Science (Thesis) (45 credits)**Thesis Courses (31 credits)**

ANSC 680	(7)	M.Sc. Thesis 1
ANSC 681	(7)	M.Sc. Thesis 2
ANSC 682	(7)	M.Sc. Thesis 3
ANSC 683	(10)	M.Sc. Thesis 4

Required Courses (14 credits)

12 credits of coursework at the 500 level or higher approved by the student's advisory committee, and two seminars.

ANSC 695	(1)	Animal Science Seminar 1
ANSC 696	(1)	Animal Science Seminar 2

Advanced undergraduate courses may be considered for graduate credit if approved by the student's committee and Graduate and Postdoctoral Studies and passed at the graduate level; generally, this will not constitute more than one of the four required courses.

11.2.6 Master of Science, Applied (M.Sc.A.); Animal Science (Non-Thesis) (45 credits)

The program aims to provide graduate training in applied areas of animal production with a view toward integrating technology and management in animal production with allied areas of agricultural resource utilization.

Research Project (15 credits)

ANSC 643	(3)	Project 1
ANSC 644	(3)	Project 2
ANSC 645	(3)	Project 3
ANSC 646	(3)	Project 4
ANSC 647	(3)	Project 5

Complementary Courses (30 credits)

15-30 credits from the following:

AEMA 610	(3)	Statistical Methods 2
ANSC 504	(3)	Population Genetics
ANSC 506	(3)	Advanced Animal Biotechnology
ANSC 530	(3)	Experimental Techniques in Nutrition
ANSC 551	(3)	Carbohydrate and Lipid Metabolism
ANSC 552	(3)	Protein Metabolism and Nutrition
ANSC 560	(3)	Biology of Lactation
ANSC 565	(3)	Applied Information Systems
ANSC 600	(3)	Advanced Eukaryotic Cells and Viruses
ANSC 605	(3)	Estimation: Genetic Parameters
ANSC 606	(3)	Selection Index and Animal Improvement
ANSC 607	(3)	Linear Models in Agricultural Research
ANSC 611D1	(1.5)	Advanced Reproductive Biology
ANSC 611D2	(1.5)	Advanced Reproductive Biology
ANSC 622	(3)	Selected Topics in Molecular Biology
ANSC 635	(3)	Vitamins and Minerals in Nutrition
ANSC 636	(3)	Analysis - Animal Breeding Research Data
ANSC 691	(3)	Special Topic: Animal Sciences
ANSC 692	(3)	Topic in Animal Sciences 1

0-15 credits selected from 500- and 600-level courses from across the Faculty (with the possibility of up to 9 credits from outside the Faculty if deemed appropriate by the supervisor).

11.2.7 Doctor of Philosophy (Ph.D.); Animal Science

Since the Ph.D. is primarily a research degree, the amount of coursework required will depend on the background of the individual student, and must be approved by the student's advisory committee.

Thesis

Required Courses

ANSC 701	(0)	Doctoral Comprehensive Examination
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Two seminar courses at the 500, 600, or 700 level.

11.2.8 Doctor of Philosophy (Ph.D.); Animal Science — Bioinformatics

Thesis

The thesis must clearly show originality and be a contribution to knowledge.

Required Courses (5 credits)

ANSC 701	(0)	Doctoral Comprehensive Examination
ANSC 797	(1)	Animal Science Seminar 3
ANSC 798	(1)	Animal Science Seminar 4

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar

Complementary Courses (6 credits)

Two courses chosen from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee.

11.3 Bioresource Engineering

11.3.1 Location

Department of Bioresource Engineering
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7774

Fax: 514-398-8387

Email: susan.gregus@mcgill.ca

Website: www.mcgill.ca/bioeng

11.3.2 About Bioresource Engineering

The Department offers M.Sc. and Ph.D. research programs in various areas of bioresource engineering including: plant and animal environments; ecological engineering (ecosystem modeling, design, management, and remediation); water resources management (hydrology, irrigation, drainage, water quality); agricultural machinery, mechatronics, and robotics; food engineering and food bio-processing; post-harvest technology; waste management and protection of the environment; bio-energy; artificial intelligence. The Department also offers a Graduate Certificate in Bioresource Engineering (Integrated Water Resources Management). The Department has well equipped laboratories for conducting research in all these areas.

The interdisciplinary nature of bioresource engineering often requires candidates for higher degrees to work in association with, or attend courses given by, a number of other departments at both the McGill University Macdonald campus and the Downtown campus.

section 11.3.5: Master of Science (M.Sc.); Bioresource Engineering (Thesis) (46 credits)

This option for the M.Sc. degree is oriented toward individuals who intend to develop a career in bioresource engineering research.

section 11.3.6: Master of Science (M.Sc.); Bioresource Engineering (Thesis) — Environment (46 credits)

The Environmental option is coordinated through the McGill School of Environment (MSE). This option is intended for students who want to take an interdisciplinary approach in their graduate research on environmental issues. Students will learn how knowledge is transferred into action with regards to the environment and how to develop an appreciation of the roles of science, politics, economics, and ethics.

section 11.3.7: Master of Science (M.Sc.); Bioresource Engineering (Thesis) — Neotropical Environment (46 credits)

This option is a joint offering between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. This interdisciplinary option encourages and promotes ethically sound and socially significant learning in the global context of environmental problems. Participation in the MSE-Panama Symposium presentation in Montreal is a requirement of this program. This program trains students in the socio-political aspects of the Tropical Environment.

section 11.3.8: Master of Science (M.Sc.); Bioresource Engineering (Non-Thesis) — Integrated Water Resource Management (45 credits)

Integrated Water Resource Management is a one-year program providing an essential approach for sustainable management of our natural watershed resources. The 13-credit internship is a central feature of this master's program. The degree gives students the unique opportunity to study the biophysical, environmental, legal, institutional, and socio-economic aspects of water use and management, in an integrated context. The degree is directed at practising professionals who wish to upgrade and/or focus their skill set to address water management issues. As a graduate from this program, you will be well suited to opportunities in diverse fields of employment, such as water resources consulting, international development project management, research with governments or universities, public policy and governance development, and climate change impact assessment.

section 11.3.9: Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) (45 credits)

The non-thesis option is aimed at individuals already employed in industry or seeking to improve their skills in specific areas (soil and water, structures and environment, waste management, environment protection, post-harvest technology, food process engineering, environmental engineering) in order to attain a higher level of engineering qualification. Candidates must be qualified to be members of a Canadian professional engineering association such as the Ordre des ingénieurs du Québec (OIQ) and must maintain contact with their academic adviser in the Department of Bioresource Engineering before registration to clarify objectives, investigate project possibilities, and plan a program of study.

section 11.3.10: Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Environment (45 credits)

The non-thesis Environment option is aimed at individuals already employed in industry or seeking to improve their skills in specific areas with the coordination of the McGill School of Environment.

section 11.3.11: Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Neotropical Environment (45 credits)

The non-thesis option is aimed at individuals already employed in industry or seeking to improve their skills in specific areas of the Tropical Environment. Participation in the MSE-Panama Symposium presentation in Montreal is a requirement of this program.

section 11.3.12: Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Environmental Engineering (45 credits)

The Environmental Engineering program emphasizes interdisciplinary fundamental knowledge, practical perspective, and awareness of environmental issues through a wide range of technical and non-technical courses offered by collaborating departments and faculties at the University.

The primary objective of the program is to train environmental professionals at the advanced level. The program is thus designed for individuals with a university undergraduate degree in engineering. Through this program, students will master specialized skills in their home disciplines and acquire a broader perspective and awareness of environmental issues.

section 11.3.13: Doctor of Philosophy (Ph.D.); Bioresource Engineering

Please contact the Department for more information about this program.

section 11.3.14: Doctor of Philosophy (Ph.D.); Bioresource Engineering — Environment

The Ph.D. Bioresource Engineering: Environment – MSE Option is coordinated through the McGill School of Environment (MSE). This option is intended for students who want to take an interdisciplinary approach in their graduate research on environmental issues. Students will learn how knowledge is transferred into action with regards to the environment and how to develop an appreciation of the roles of science, politics, economics, and ethics.

section 11.3.15: Doctor of Philosophy (Ph.D.); Bioresource Engineering — Neotropical Environment

This is a research-based degree with a team of co-advisers from McGill and Latin America with the requirements of a one-year residency in Panama or tropical Latin America, three interdisciplinary courses, at least two of them focusing on North-South issues, proficiency in Spanish or Portuguese, one-time off-campus (Panama) fees, and the possibility of NEO-specific fellowships. Only the accredited professors listed on the NEO website can accept students in the option.

section 11.3.16: Graduate Certificate in Bioresource Engineering — Integrated Water Resources Management (15 credits)

The Graduate Certificate in Integrated Water Resources Management is for practising professionals who wish to upgrade or focus their skill set to address water management issues. Students are trained in Water Ethics, Law and Policy of Water Management, Freshwater Ecosystems, Health, and Sanitation.

11.3.3 Bioresource Engineering Admission Requirements and Application Procedures

11.3.3.1 Admission Requirements

Candidates for M.Sc. and Ph.D. degrees and Graduate Certificate should indicate in some detail their fields of special interest when applying for admission. An equivalent cumulative grade point average of 3.0/4.0 (second class–upper division) or 3.2/4.0 during the last two years of full-time university study is required at the bachelor's level. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Experience after the undergraduate degree is an additional asset.

11.3.3.2 Application Procedures

Applicants for graduate studies through academic units in the Faculty of Agricultural and Environmental Sciences must forward supporting documents to:

Department of Bioresource Engineering
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7774

Fax: 514-398-8387

Email: susan.gregus@mcgill.ca

Applications will be considered upon receipt of a completed application form, \$100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, or 86 on the Internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use department code 31 (graduate schools), Biological Sciences – Agriculture to ensure that your TOEFL reaches this Office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Documents submitted will not be returned.

Application Fee (non-refundable) – A fee of \$100 Canadian must accompany each application (including McGill students); otherwise, it cannot be considered. This sum must be remitted by credit card only.

Dates for Guaranteed Consideration – For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

11.3.4 Bioresource Engineering Faculty

Chair

S.O. Prasher

Graduate Program Director

G.S.V. Raghavan

Associate Graduate Program Director

V. Orsat

Emeritus Professor

R.S. Broughton; B.S.A., B.A.Sc.(Tor.), S.M.(MIT), Ph.D.(McG.), LL.D.(Dal.)

Professor (Post-Retirement)

R. Kok; B.E.Sc., Ph.D.(W. Ont.)

Professors

S. Barrington; B.Sc.(Agr.Eng.), Ph.D.(McG.)

C.A. Madramootoo; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.) (*James McGill Professor*)

E. McKyes; B.Eng., M.Eng., Ph.D.(McG.)

S.O. Prasher; B.Tech., M.Tech.(Punj.), Ph.D.(Br. Col.), LL.D.(Dal.) (*James McGill Professor*)

G.S.V. Raghavan; B.Eng.(B'lore), M.Sc.(Guelph), Ph.D.(Colo. St.), D.Sc.(TNAU) (*James McGill Professor*)

Associate Professors

V.I. Adamchuk; B.Sc.(Kyiv, Ukraine), M.Sc., Ph.D.(Purd.)

M.O. Ngadi; B.Eng.(Agr.Eng.), M.A.Sc., Ph.D.(Dal.Tech.) (*William Dawson Scholar*)

Assistant Professors

J. Adamowski; B.Eng.(RMC), M.Phil.(Camb.), M.B.A.(WUT, LBS, HEC, NHH), Ph.D.(Warsaw)

G. Clark; B.Sc.(Alta.), M.Sc., Ph.D.(McG.)

M. Lefsrud; B.Sc.(Sask.), M.Sc.(Rutg.), Ph.D.(Tenn.)

V. Orsat; B.Sc., M.Sc., Ph.D.(McG.)

Adjunct Professors

J. Boye; B.Sc.(Ghana), Ph.D.(McG.)

Y. Choi; B.Sc., M.Sc.(South Korea), Ph.D.(McG.)

M. Clamen; B.Eng., Ph.D.(McG.)

A. Drizo; B.Sc.(Belgrade), M.Sc., Ph.D.(Edin.)

S. Gameda; B.Sc., M.Sc., Ph.D.(McG.)

S. Guiot; Lic.Sc., D.Sc.(Belgium)

P. Jutras; B.Sc.(McG.), M.Sc.(Montr.), Ph.D.(McG.)

J. Martinez; M.Sc.(Polytechnic Inst. of Toulouse), Ph.D.(U. of Perpignan)

P. Savoie; B.Sc.(McG.), M.Sc.(Laval), Ph.D.(Mich. St.)

B. Tartakovsky; M.Sc., Ph.D.(Moscow State U.)

C. Vigneault; B.Sc., M.Sc.(Laval), Ph.D.(McG.)

N. Wang; B.Eng., M.Eng.(Beijing), M.Sc., Ph.D.(Kansas St.)

Faculty Lecturers

M. Knutt; M.B.Sc.(W. Ont.), M.A., Ph.D.(Brandeis)

A. Cherestes; B.Sc., M.Sc.(Queens College), Ph.D.(CUNY)

Research/Professional Associates

Y. Garipey; B.Sc., M.Sc.(McG.)

Research/Professional Associates

D. Lyew; B.Sc., M.Sc., Ph.D.(McG.)

S. Sotocinal; B.Sc.(Phil.), M.Sc., Ph.D.(McG.)

Technical

S. Manktelow

11.3.5 Master of Science (M.Sc.); Bioresource Engineering (Thesis) (46 credits)

This option for the M.Sc. degree is oriented toward individuals who intend to develop a career in bioresource engineering research.

Thesis Courses (32 credits)

BREE 691	(4)	M.Sc. Thesis 1
BREE 692	(4)	M.Sc. Thesis 2
BREE 693	(4)	M.Sc. Thesis 3
BREE 694	(4)	M.Sc. Thesis 4
BREE 695	(4)	M.Sc. Thesis 5
BREE 696	(4)	M.Sc. Thesis 6
BREE 697	(4)	M.Sc. Thesis 7
BREE 698	(4)	M.Sc. Thesis 8

Required Courses (5 credits)

BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2
BREE 699	(3)	Scientific Publication

Complementary Courses (9 credits)

500-, 600-, or 700-level courses in bioresource engineering and other fields to be determined in consultation with the Research Director.

11.3.6 Master of Science (M.Sc.); Bioresource Engineering (Thesis) — Environment (46 credits)**Thesis Courses (32 credits)**

BREE 691	(4)	M.Sc. Thesis 1
BREE 692	(4)	M.Sc. Thesis 2
BREE 693	(4)	M.Sc. Thesis 3
BREE 694	(4)	M.Sc. Thesis 4
BREE 695	(4)	M.Sc. Thesis 5
BREE 696	(4)	M.Sc. Thesis 6
BREE 697	(4)	M.Sc. Thesis 7
BREE 698	(4)	M.Sc. Thesis 8

Required Courses (11 credits)

BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2

BREE 699	(3)	Scientific Publication
ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3

Complementary Courses (3 credits)

Chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

11.3.7 Master of Science (M.Sc.); Bioresource Engineering (Thesis) — Neotropical Environment (46 credits)

Thesis (32 credits)

BREE 691	(4)	M.Sc. Thesis 1
BREE 692	(4)	M.Sc. Thesis 2
BREE 693	(4)	M.Sc. Thesis 3
BREE 694	(4)	M.Sc. Thesis 4
BREE 695	(4)	M.Sc. Thesis 5
BREE 696	(4)	M.Sc. Thesis 6
BREE 697	(4)	M.Sc. Thesis 7
BREE 698	(4)	M.Sc. Thesis 8

Required Courses (11 credits)

BIOL 640	(3)	Tropical Biology and Conservation
BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2
BREE 699	(3)	Scientific Publication
ENVR 610	(3)	Foundations of Environmental Policy

Note: Participation in the MSE-Panama Symposium presentation in Montreal is required.

Elective Course (3 credits)

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.3.8 Master of Science (M.Sc.); Bioresource Engineering (Non-Thesis) — Integrated Water Resource Management (45 credits)**Research Project (6 credits)**

BREE 631	(6)	Integrated Water Resources Management Project
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Required Courses (30 credits)

BREE 510	(3)	Watershed Systems Management
BREE 533	(3)	Water Quality Management
BREE 630	(13)	Integrated Water Resources Management Internship
BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2
BREE 655	(3)	Integrated Water Resources Management Research Visits
NRSC 512	(3)	Water: Ethics, Law and Policy
PARA 515	(3)	Water, Health and Sanitation

Complementary Courses (9 credits)

9 credits selected as follows:

6 credits of any relevant graduate-level course(s) chosen in consultation with the Program Director.

3 credits of any graduate-level Statistics course chosen in consultation with the Program Director.

11.3.9 Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) (45 credits)

The non-thesis option is aimed toward individuals already employed in industry or seeking to improve their skills in specific areas (soil and water/structures and environment/waste management/environment protection/post-harvest technology/food process engineering/environmental engineering) in order to enter the engineering profession at a higher level.

Candidates must meet the qualifications of a professional engineer either before or during their M.Sc. Applied program.

Each candidate for this option is expected to establish and maintain contact with his/her academic adviser in the Department of Bioresource Engineering some time before registration in order to clarify objectives, investigate project possibilities and plan a program of study.

Research Project (12 credits)

BREE 671	(6)	Project 1
BREE 672	(6)	Project 2

Required Courses (2 credits)

BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2

Complementary Courses (31 credits)

31 credits of 500-, 600-, or 700-level courses in bioresource engineering and other fields* to be determined in consultation with the Project Director.

* Note: 12 of the 31 credits are expected to be from collaborative departments, e.g., food process engineering: 12 credits divided between Food Science and Chemical Engineering.

11.3.10 Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Environment (45 credits)

Candidates must meet the qualifications of a professional engineer either before or during their M.Sc. Applied program.

Research Project (12 credits)

BREE 671	(6)	Project 1
BREE 672	(6)	Project 2

Required Courses (8 credits)

BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2
ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3

Complementary Courses (25 credits)

3 credits from the following courses below:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another course at the 500, 600, or 700 level recommended by the advisory committee and approved by the Environment Option Committee.

22 additional credits of 500-, 600-, or 700-level courses chosen in consultation with the academic adviser.

11.3.11 Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Neotropical Environment (45 credits)

Research Project (12 credits)

BREE 671	(6)	Project 1
BREE 672	(6)	Project 2

Required Courses (8 credits)

BIOL 640	(3)	Tropical Biology and Conservation
BREE 651	(1)	Departmental Seminar M.Sc. 1
BREE 652	(1)	Departmental Seminar M.Sc. 2
ENVR 610	(3)	Foundations of Environmental Policy

Note: Participation in the MSE-Panama Symposium presentation in Montreal is required.

Complementary Courses (25 credits)

3 credits (one elective course), at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor and the Neotropical Environment Options Director.

22 additional credits of 500-, 600-, or 700-level courses chosen in consultation with the academic adviser.

11.3.12 Master of Science, Applied (M.Sc.A.); Bioresource Engineering (Non-Thesis) — Environmental Engineering (45 credits)

This inter-departmental graduate program leads to a master's degree in Environmental Engineering. The objective of the program is to train environmental professionals at an advanced level. The program is designed for individuals with an undergraduate degree in engineering. This non-thesis degree falls within the M.Eng. and M.Sc. programs which are offered in the Departments of Bioresource, Chemical, Civil, and Mining, Metals, and Materials Engineering.

Research Project (6 credits)

BREE 671*	(6)	Project 1
BREE 672	(6)	Project 2

* BREE 671 may also be taken as part of this requirement.

Required Courses (9 credits)

BREE 533	(3)	Water Quality Management
CHEE 591	(3)	Environmental Bioremediation
CIVE 615	(3)	Environmental Engineering Seminar

Complementary Courses (19 credits)

Data Analysis Course

3 credits from the following:

AEMA 611	(3)	Experimental Designs 1
CIVE 555	(3)	Environmental Data Analysis
PSYC 650	(3)	Advanced Statistics 1

Toxicology Course

3 credits from the following:

OCCH 612	(3)	Principles of Toxicology
OCCH 616	(3)	Occupational Hygiene

Water Pollution Engineering Course

4 credits from the following:

CIVE 651	(4)	Theory: Water / Wastewater Treatment
CIVE 652	(4)	Biological Treatment: Wastewaters
CIVE 660	(4)	Chemical and Physical Treatment of Waters

Air Pollution Engineering Course

3 credits from the following:

CHEE 592	(3)	Industrial Air Pollution Control
MECH 534	(3)	Air Pollution Engineering

or an approved 500-, 600-, or 700-level alternative course.

Environmental Impact Course

3 credits from the following:

GEOG 501	(3)	Modelling Environmental Systems
GEOG 551	(3)	Environmental Decisions

or an approved 500-, 600-, or 700-level alternative course.

Environmental Policy Course

3 credits from the following:

URBP 506	(3)	Environmental Policy and Planning
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or an approved 500-, 600-, or 700-level alternative course.

Further complementary courses (balance of coursework to meet the 45-credit program requirement):

Remaining Engineering or Non-Engineering courses from an approved list of courses, at the 500, 600, or 700 level, from the Faculty of Engineering, Faculty of Agricultural and Environmental Sciences, Faculty of Law, Faculty of Religious Studies, Desautels Faculty of Management, and Departments of Atmospheric and Oceanic Sciences, Biology, Chemistry, Earth and Planetary Sciences, Economics, Epidemiology and Biostatistics, Geography, Occupational Health, Political Science, Sociology, and the McGill School of Environment.

11.3.13 Doctor of Philosophy (Ph.D.); Bioresource Engineering

Candidates for the Ph.D. degree will normally register for the M.Sc. degree first. In cases where the research work is proceeding very satisfactorily, or where the equivalent of the M.Sc. degree has been completed previously, candidates may be permitted to proceed directly to the Ph.D. degree.

Thesis

Required Courses

BREE 701	(0)	Ph.D. Comprehensive Examination
BREE 751	(0)	Departmental Seminar Ph.D. 1
BREE 752	(0)	Departmental Seminar Ph.D. 2
BREE 753	(0)	Departmental Seminar Ph.D. 3
BREE 754	(0)	Departmental Seminar Ph.D. 4

Complementary Courses

Courses of study selected for a Ph.D. program will depend on the existing academic qualifications of the candidate, and on those needed for effective pursuit of research in the chosen field. Candidates are encouraged to take an additional course of study of their own choice in some field of the humanities, sciences, or engineering not directly related to their research. The program will be established by consultation of the candidate with a committee that will include the Research Director and at least one other professor.

11.3.14 Doctor of Philosophy (Ph.D.); Bioresource Engineering — Environment

Thesis

Required Courses

Note: BREE 701, the comprehensive component, must be taken either late in the first, or early in the second, registration year to qualify to proceed to the completion of the Ph.D. degree.

BREE 701	(0)	Ph.D. Comprehensive Examination
BREE 751	(0)	Departmental Seminar Ph.D. 1
BREE 752	(0)	Departmental Seminar Ph.D. 2
BREE 753	(0)	Departmental Seminar Ph.D. 3
BREE 754	(0)	Departmental Seminar Ph.D. 4

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3

Complementary Courses

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another course at the 500, 600, or 700 level recommended by the advisory committee and approved by the Environment Option Committee.

11.3.15 Doctor of Philosophy (Ph.D.); Bioresource Engineering — Neotropical Environment**Thesis****Required Courses**

BIOL 640	(3)	Tropical Biology and Conservation
BREE 701	(0)	Ph.D. Comprehensive Examination
BREE 751	(0)	Departmental Seminar Ph.D. 1
BREE 752	(0)	Departmental Seminar Ph.D. 2
BREE 753	(0)	Departmental Seminar Ph.D. 3
BREE 754	(0)	Departmental Seminar Ph.D. 4
ENVR 610	(3)	Foundations of Environmental Policy

Note: Participation in the MSE-Panama Symposium presentation in Montreal is required.

Elective Course (3 credits)

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.3.16 Graduate Certificate in Bioresource Engineering — Integrated Water Resources Management (15 credits)**Required Courses (9 credits)**

NRSC 512	(3)	Water: Ethics, Law and Policy
NRSC 514	(3)	Freshwater Ecosystems
PARA 515	(3)	Water, Health and Sanitation

Complementary Courses (6 credits)

3 credits from the following:

BREE 533	(3)	Water Quality Management
CIVE 550	(3)	Water Resources Management

and 3 credits from the list available in the Department chosen in consultation with the Academic Adviser.

11.4 Dietetics and Human Nutrition

11.4.1 Location

School of Dietetics and Human Nutrition
Macdonald-Stewart Building, Room MS2-039
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7762
Fax: 514-398-7739
Email: lise.grant@mcgill.ca
Website: www.mcgill.ca/dietetics

11.4.2 About Dietetics and Human Nutrition

In the School of Dietetics and Human Nutrition, cutting-edge nutrition research is conducted by its 10 tenure-track professors and six faculty lecturers in all areas recommended by North American Nutrition Societies. These include molecular and cellular nutrition, clinical, community, and international nutrition. Domains emphasized by School researchers include epigenetics, proteomics, and metabolomics, embryonic, and fetal origins of health and disease, the development of improved recommendations and policies for optimizing health in at-risk populations including Aboriginal populations, mothers and children, and the elderly, and the development of novel nutritional and/or nutraceutical approaches for treatment during surgery and recover from disease.

Research is conducted in our on-site research labs, the Centre for Indigenous Peoples' Nutrition and Environment (CINE), the Mary Emily Clinical Nutrition Research unit, and the MUHC Teaching Hospitals. Students can conduct research or participate in clinical rotations with the BITS – Barbados, IDRC – Ghana and field sites in Asia, Africa, and Latin America.

section 11.4.5: Master of Science (M.Sc.); Human Nutrition (Thesis) (45 credits)

A master's degree in Human Nutrition offers advanced Nutrition courses in a broad range of research areas. The program is suitable for students with an undergraduate degree in nutritional sciences, exercise physiology, kinesiology, food science, biochemistry, medicine, or another closely related field. Students are required to complete 14 credits in advanced nutrition coursework plus 31 credits related to their thesis research. Graduates of our M.Sc. thesis degree have pursued successful careers in research, international health agencies, government agencies, and industry.

section 11.4.7: Master of Science, Applied (M.Sc.A.); Human Nutrition (Non-Thesis) — Practicum (45 credits) and section 11.4.6: Master of Science, Applied (M.Sc.A.); Human Nutrition (Non-Thesis) — Project (45 credits)

The M.Sc. Applied program is a course-based master's aimed to attract dietitians and graduates from a B.Sc. in Nutritional Sciences. This program will allow students to further develop knowledge and expertise in nutrition and develop their expertise in specific nutrition areas. Students are required to complete 29 credits in advanced nutrition courses plus 16 credits related to a research paper or an advanced practicum (reserved for registered dietitians). McGill is the only English-speaking university that offers this program in Quebec. Careers include managerial positions for practicing dietitians, and careers in nutrition programs, government, and industry.

section 11.4.8: Graduate Diploma in Registered Dietitian Credentialing (30 credits)

In the School of Dietetics and Human Nutrition at McGill, students pursuing a graduate degree in nutrition have the opportunity to take a Graduate Diploma in R.D. Credentialing, upon completion of the M.Sc. or Ph.D. program. We are the only university in Quebec and much of Canada that offers this opportunity. This Diploma consists of two semesters of Stage (internship) in Clinical Nutrition, Community Nutrition, and Foodservice Systems Management. Upon completion of the Diploma, the recipient is eligible to register and practice as a Dietitian in Quebec, as well as in other Canadian provinces and other countries.

section 11.4.9: Doctor of Philosophy (Ph.D.); Human Nutrition

A Ph.D. degree in Human Nutrition is suitable for students with an M.Sc. degree in Nutritional Sciences or related areas who wish to become independent researchers and/or leaders in the field of nutritional sciences. The School offers a stimulating research environment with opportunities in a wide range of areas of basic science, clinical research with our many hospital clinicians, as well as population health in Canada and abroad. Careers include academic, senior government, and industry positions within in Canada and internationally.

11.4.3 Dietetics and Human Nutrition Admission Requirements and Application Procedures**11.4.3.1 Admission Requirements****M.Sc. Thesis and M.Sc. Applied (Project or Practicum)**

Applicants must be graduates of a university of recognized reputation and hold a B.Sc. degree equivalent to a McGill degree in a subject closely related to the one selected for graduate work. Applicants must have at least a cumulative grade point average (CGPA) in McGill University's credit equivalency of 3.2/4.0 (second class – upper division) during their bachelor's degree program. All eligible candidates to the M.Sc. Applied program may select the project option; those who have completed a dietetic internship and six months' work experience are eligible to apply for a practicum option.

Ph.D.

Applicants must be graduates of a university of recognized reputation and hold a B.Sc. and M.Sc. degree equivalent to a McGill degree in a subject closely related to the one selected for graduate work. Applicants must have at least a cumulative grade point average (CGPA) in McGill University's credit equivalency of 3.2/4.0 (second class – upper division) during their bachelor's and master's degree programs.

Graduate Diploma in R.D. Credentialing

For information on admissions requirements, applicants must contact Dr. Maureen Rose in the School of Dietetics and Human Nutrition.

11.4.3.2 Application Procedures

Applicants for graduate studies must forward supporting documents to:

School of Dietetics and Human Nutrition
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7762

Fax: 514-398-7739

Email: lise.grant@mcgill.ca

Applications will be considered upon receipt of a completed online application form, \$100 application fee, current résumé, statement describing reasons for interest in the program and career goals, and the following supporting documents:

Transcripts – Applicants must submit two official copies of all university-level transcripts with proof that degree(s) were granted. Photocopies are not accepted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent. Transcripts should be sent directly from the issuing institution. When included in an application package, transcripts must be in the original sealed envelopes.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a B.Sc. degree equivalent to a McGill honours degree in a subject closely related to the one selected for graduate work.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper), or by email directly from the originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization are minimally required. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 560 on the paper-based test or 86 on the Internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. The School reserves the right to request TOEFL results. Please contact the School for details. Results must be submitted as part of the application. Use University code 0935 (McGill University, Montreal) to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is required for all applicants to the School of Dietetics and Human Nutrition who are submitting non-Canadian and non-U.S. transcripts.

Submitted documents will not be returned.

Application Fee (non-refundable) – A fee of CAD\$100 must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted by credit card only.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. All applicants must use the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Final acceptance to the M.Sc. (Thesis) and Ph.D. programs depends on a staff member agreeing to serve as the student's supervisor. A supervisor is not required for acceptance to the M.Sc. (Applied) program. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. While the school cannot guarantee financial support, teaching assistantships and other scholarships may be available.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a *Qualifying Program* if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a *Qualifying Program* will be prescribed by the academic unit. Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year (two terms) is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.**

11.4.4 Dietetics and Human Nutrition Faculty

Director

Kristine G. Koski

Professor Emerita

Harriet V. Kuhnlein; B.S.(Penn. St.), M.S.(Ore. St.), Ph.D.(Calif.), R.D. (*joint appt. with Faculty of Medicine*)

Professors

Luis B. Agellon; B.Sc., Ph.D.(McM.) (*Canada Research Chair*)

Tim A. Johns; B.Sc.(McM.), M.Sc.(Br. Col.), Ph.D.(Mich.) (*joint appt. with Plant Science*)

Associate Professors

Grace Egeland; B.A.(Luther College), Ph.D.(Pitts.) (*Canada Research Chair*)

Katherine Gray-Donald; B.Sc., Ph.D.(McG.), R.D. (*joint appt. with Epidemiology and Biostatistics, Faculty of Medicine*)

Kristine G. Koski; B.S., M.S.(Wash.), Ph.D.(Calif.), R.D. (*joint appt. with the Division of Experimental Medicine, Faculty of Medicine*)

Stan Kubow; B.Sc.(McG.), M.Sc.(Tor.), Ph.D.(Guelph)

Grace S. Marquis; B.A.(Ind.), M.Sc.(Mich. St.), Ph.D.(C'neil) (*Canada Research Chair*)

Louise Thibault; B.Sc., M.Sc., Ph.D.(Laval), Dt. P.

Hope Weiler; B.A.Sc.(Guelph), Ph.D.(McM.), R.D. (*Canada Research Chair*)

Linda J. Wykes; B.Sc., M.Sc., Ph.D.(Tor.) (*William Dawson Scholar*)

Faculty Lecturers

Linda Jacobs Starkey; B.Sc.(Mt. St. Vin.), M.Sc., Ph.D.(McG.), R.D., F.D.C. (*Associate Dean of Students*)

(*Interim – TBA*)

Mary Hendrickson-Nelson; B.A.(St. Benedict), B.Sc.(Minn.), M.Sc.(Colo. St.), Dt. P.

Sandy Phillips; B.Sc., M.Sc.(A.)(McG.), Dt. P. (*interim – University Coordinator, Professional Practice (Stage) in Dietetics*)

Hughes Plourde; B.Sc.(McG.), M.Sc.(Montr.), Dt. P.

Maureen Rose; B.Sc., M.Ed., Ph.D.(McG.), Dt. P.

Associate Members

Anaesthesia: Franco Carli, Ralph Lattermann, Thomas Schricker

Food Science & Agricultural Chemistry: Selim Kermasha

Kinesiology: Ross Andersen

Associate Members

Parasitology: Marilyn E. Scott

Medicine: Louis Beaumier, Réjeanne Gougeon, L. John Hoffer, Larry Lands, Errol B. Marliss, Thomas Schricker, Jean-François Yale, José Morais, Stéphanie Chevalier, Celia Rodd

Adjunct Professors

Laurie Chan (*UNBC*)

Kevin A. Cockell (*Health Canada*)

11.4.5 Master of Science (M.Sc.); Human Nutrition (Thesis) (45 credits)**Thesis Courses (31 credits)**

NUTR 680	(6)	Human Nutrition M.Sc. Thesis 1
NUTR 681	(6)	Human Nutrition M.Sc. Thesis 2
NUTR 682	(9)	Human Nutrition M.Sc. Thesis 3
NUTR 683	(10)	Human Nutrition M.Sc. Thesis 4

Required Courses (2 credits)

NUTR 695	(1)	Human Nutrition Seminar 1
NUTR 696	(1)	Human Nutrition Seminar 2

Complementary Courses (12 credits)

3 credits in graduate-level statistics

3 credits in graduate-level research methods

3-6 credits in graduate-level courses (chosen in consultation with supervisory committee)

0-3 credits:

NUTR 513	(3)	Credentialing in Dietetics
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11.4.6 Master of Science, Applied (M.Sc.A.); Human Nutrition (Non-Thesis) — Project (45 credits)**Research Project (12 credits)**

NUTR 652	(3)	M.Sc. (Applied) Project 1
NUTR 653	(3)	M.Sc. (Applied) Project 2
NUTR 654	(3)	M.Sc. (Applied) Project 3
NUTR 655	(3)	M.Sc. (Applied) Project 4

Required Courses (6 credits)

NUTR 651	(3)	M.Sc. (Applied) Nutrition 1
NUTR 660	(1)	M.Sc. (Applied) Nutrition 2
NUTR 695	(1)	Human Nutrition Seminar 1
NUTR 696	(1)	Human Nutrition Seminar 2

Complementary Courses (18 credits)

3 credits of 500-level or higher Statistics.

3 credits in research methods at the 500 level or higher

12 credits of course work, at the 500 level or higher, in Nutrition, Animal Science, or Food Science chosen in consultation with the student's supervisor.

Elective courses (9 credits)

9 credits of 500-level or higher courses in consultation with the student's academic adviser or supervisor.

11.4.7 Master of Science, Applied (M.Sc.A.); Human Nutrition (Non-Thesis) — Practicum (45 credits)

Practicum (12 credits)

NUTR 656	(3)	M.Sc. (Applied) Practicum 1
NUTR 657	(3)	M.Sc. (Applied) Practicum 2
NUTR 658	(3)	M.Sc. (Applied) Practicum 3
NUTR 659	(3)	M.Sc. (Applied) Practicum 4

Required Courses (6 credits)

NUTR 651	(3)	M.Sc. (Applied) Nutrition 1
NUTR 660	(1)	M.Sc. (Applied) Nutrition 2
NUTR 695	(1)	Human Nutrition Seminar 1
NUTR 696	(1)	Human Nutrition Seminar 2

Complementary Courses (18 credits)

3 credits in statistics at the 500 level or higher

3 credits in research methods at the 500 level or higher

12 credits of course work, at the 500 level or higher, in Nutrition, Animal Science, or Food Science chosen in consultation with the student's supervisor.

Elective Courses (9 credits)

9 credits of 500-level or higher courses in consultation with the student's academic adviser or supervisor.

11.4.8 Graduate Diploma in Registered Dietitian Credentialing (30 credits)

The Graduate Diploma is open to students who have completed a graduate degree with the School of Dietetics and Human Nutrition including NUTR 513 Credentialing in Dietetics.

Required Courses (30 credits)

NUTR 612	(8)	Graduate Professional Practice 2 Management
NUTR 613	(14)	Graduate Professional Practice 3 Clinical Nutrition
NUTR 614	(8)	Graduate Professional Practice 4 Community Nutrition

11.4.9 Doctor of Philosophy (Ph.D.); Human Nutrition

Thesis

Required Courses

NUTR 701	(0)	Doctoral Comprehensive Examination
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NUTR 797	(1)	Human Nutrition Seminar 3
NUTR 798	(1)	Human Nutrition Seminar 4

11.5 Food Science and Agricultural Chemistry

11.5.1 Location

Department of Food Science and Agricultural Chemistry
 Macdonald-Stewart Building, Room MS1-034
 Macdonald Campus of McGill University
 21,111 Lakeshore Road
 Sainte-Anne-de-Bellevue, QC H9X 3V9
 Canada

Telephone: 514-398-7898

Fax: 514-398-7977

Email: foodscience@mcgill.ca

Website: www.mcgill.ca/foodscience

11.5.2 About Food Science and Agricultural Chemistry

The Department of Food Science and Agricultural Chemistry offers both M.Sc. (thesis and non-thesis) and Ph.D. programs. These programs provide training in evolving interdisciplinary areas of food quality, food safety, food chemistry, food biotechnology, functional ingredients, applied infrared spectroscopy, food processing, thermal generation of aromas and toxicants, marine biochemistry, and food toxicology. The Department has key infrastructure with all major equipment necessary for conducting research in all these areas. Our graduate program provides strong mentoring/advisory support while maintaining high flexibility for individual research projects.

section 11.5.5: Master of Science (M.Sc.); Food Science and Agricultural Chemistry (Non-Thesis) (45 credits)

The program offers advanced food science courses in a broad range of areas. It is suitable for students with an undergraduate degree in food science or a closely related discipline. Entry is possible from other disciplines; however, students will be expected to do a qualifying term or year to pick up relevant courses to orient themselves to food science. Students are required to complete a total of 45 credits (10 graduate-level courses, a seminar course, and a research project). Subsequent career paths include work with food industry and government agencies.

section 11.5.6: Master of Science (M.Sc.); Food Science and Agricultural Chemistry (Thesis) (45 credits)

This program is a research-based degree in various areas of related to food science for candidates entering the M.Sc. program without restrictions (i.e., not requiring a qualifying term/year); the M.Sc. degree consists of 45 graduate credits. These credits are obtained through a combination of graduate courses (15 credits) and a research thesis (30 credits). Entry into the M.Sc. (thesis option) also hinges on the availability of supervisory staff and financing. However, it is advisable that the applicant for the M.Sc. degree, if the applicant so wishes, select the non-thesis M.Sc. option as a second choice in the application form, to ensure admission to the Food Science graduate program. Subsequent career paths include work with food industry, government agencies, and in research.

section 11.5.7: Doctor of Philosophy (Ph.D.); Food Science and Agricultural Chemistry

A Ph.D. in food science is suitable for students with a M.Sc. degree in food science or related areas who wish to become independent researchers and/or leaders in the field of food sciences. Candidates with a B.Sc. degree applying for the Ph.D. need to register first for the M.Sc. degree. In cases where the candidates are proceeding well during their first year, they may be permitted to proceed to the Ph.D. degree. Entry into the Ph.D. graduate program hinges on the availability of supervisory staff and financing.

11.5.3 Food Science and Agricultural Chemistry Admission Requirements and Application Procedures

11.5.3.1 Admission Requirements

Applicants to the M.Sc. programs must be graduates of a university of recognized reputation and hold a B.Sc. in Food Science or a related discipline such as Chemistry, Biochemistry, or Microbiology with a minimum cumulative grade point average (CGPA) of 3.0/4.0 (second class–upper division) and 3.2/4.0 during the last two years of full-time university study. Applicants to the Ph.D. program must hold a M.Sc. degree in Food Science or related areas with a minimum CGPA of 3.4 in their M.Sc. and 3.2 for the last two years of their B.Sc. degree. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

11.5.3.2 Application Procedures

Applicants for graduate studies must forward supporting documents to:

Graduate Program Admissions
Department of Food Science and Agricultural Chemistry
Macdonald-Stewart Building, Room MS1-034
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7898
Fax: 514-398-7977
Email: foodscience@mcgill.ca

Applications will be considered upon receipt of a completed application form, \$100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test or 86 on the Internet-based test with each component not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Submitted documents will not be returned.

Application and Fee

The online application form is available on the web at www.mcgill.ca/gradapplicants/apply.

- Complete the online application form (\$100 non-refundable fee (including McGill Students); VISA or MasterCard accepted). Applications will not be processed without payment.
- It should take you approximately 30 minutes to complete the online application. You may stop at any time and finish later by re-entering your Login ID and PIN number.
- You can apply to two programs in different academic units (departments, schools, or institutes), on the same online application form.
- Do not apply to a thesis and a non-thesis master's program within the same academic unit as two separate choices. Select only one program and you can request a change at a later time.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Final acceptance to the M.Sc. and Ph.D. programs depends on a staff member agreeing to serve as the student's supervisor. A supervisor is not required for acceptance to the M.Sc. Non-Thesis program. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. While the department cannot guarantee financial support, students can apply for teaching assistantships and other scholarships.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

11.5.4 Food Science and Agricultural Chemistry Faculty**Chair**

V. Yaylayan

Chair of Graduate Program

S. Karboune

Professors

I. Alli; B.Sc.(Guy.), M.Sc., Ph.D.(McG.)

W.D. Marshall; B.Sc.(New Br.), Ph.D.(McM.)

H.S. Ramaswamy; B.Sc.(B'lore), M.Sc., Ph.D.(Br. Col.)

F.R. van de Voort; B.Sc., M.Sc., Ph.D.(Br. Col.)

Associate Professors

A.A. Ismail; B.Sc., Ph.D.(McG.)

S. Kermasha; B.Sc.(Baghdad), C.E.S, D.E.A, D.Sc.(Nancy)

B.K. Simpson; B.Sc.(Ghana), Ph.D.(Nfld.)

V.A. Yaylayan; B.Sc.(Beirut), M.Sc., Ph.D.(Alta.)

Assistant Professors

M. Chénier; B.Sc.(Laval), M.Sc.(IAF), Ph.D.(McG.)

S. Karboune; B.Sc., M.Sc.(Rabat), D.E.A., Ph.D.(Marseille)

11.5.5 Master of Science (M.Sc.); Food Science and Agricultural Chemistry (Non-Thesis) (45 credits)

This 45-credit program is offered to candidates who seek further training in Food Science, but do not wish to pursue independent research. These credits are obtained through a combination of graduate courses.

The residence time for a M.Sc. degree (Non-Thesis) is three academic terms.

Research Project (9 credits)

FDSC 697	(4.5)	M.Sc. Project Part 1
FDSC 698	(4.5)	M.Sc. Project Part 2

Required Courses (6 credits)

FDSC 695	(3)	M.Sc. Graduate Seminar 1
FDSC 696	(3)	M.Sc. Graduate Seminar 2

Complementary Courses (30 credits)

A minimum of five courses (15 credits) must be selected from the following list. The remaining credits (at the 500 or 600 level) are chosen in consultation with the academic adviser.

AGRI 510	(3)	Professional Practice
FDSC 515	(3)	Enzyme Thermodynamics/Kinetics
FDSC 519	(3)	Advanced Food Processing
FDSC 520	(3)	Biophysical Chemistry of Food

FDSC 530	(3)	Advanced Analytical Chemistry
FDSC 535	(3)	Food Biotechnology
FDSC 536	(3)	Food Traceability
FDSC 537	(3)	Nutraceutical Chemistry
FDSC 538	(3)	Food Science in Perspective
FDSC 634	(3)	Food Toxins & Toxicants
FDSC 651	(3)	Principles of Food Analysis 2
FDSC 652	(3)	Separation Techniques in Food Analysis 2

11.5.6 Master of Science (M.Sc.); Food Science and Agricultural Chemistry (Thesis) (45 credits)

For candidates entering the M.Sc. program without restrictions, i.e., those not requiring a qualifying term/year, the M.Sc. degree consists of 45 graduate credits. These credits are obtained through a combination of graduate courses and a research thesis.

The residence time for a M.Sc. degree is three academic terms based on unqualified entry into the M.Sc. program. Students are encouraged to complete their studies within this time frame.

Thesis (30 credits)

FDSC 690	(8)	M.Sc. Literature Review
FDSC 691	(7)	M.Sc. Research Protocol
FDSC 692	(15)	M.Sc. Thesis

Required Courses (6 credits)

FDSC 695	(3)	M.Sc. Graduate Seminar 1
FDSC 696	(3)	M.Sc. Graduate Seminar 2

Complementary Courses (9 credits)

At least 9 credits, normally from 500- or 600-level departmental courses.

11.5.7 Doctor of Philosophy (Ph.D.); Food Science and Agricultural Chemistry

Candidates will be judged principally on their research ability. Coursework will be arranged in consultation with the student's departmental graduate advisory committee.

Thesis

Required Courses (9 credits)

Note: Candidates should be prepared to take the Comprehensive Preliminary Examination before the end of the second year of the program.

FDSC 700	(0)	Comprehensive Preliminary Examination
FDSC 725	(3)	Advanced Topics in Food Science
FDSC 797	(3)	Ph.D. Graduate Seminar 1
FDSC 798	(3)	Ph.D. Graduate Seminar 2

11.6 Natural Resource Sciences

11.6.1 Location

Department of Natural Resource Sciences

McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7890
Fax: 514-398-7990
Email: info.nrs@mcgill.ca
Website: www.mcgill.ca/nrs

11.6.2 About Natural Resource Sciences

The Department of Natural Resource Sciences offers programs leading to M.Sc. and Ph.D. degrees in Entomology (includes Environment and Neotropical Environment Options), Microbiology (includes Bioinformatics and Environment Options), Renewable Resources (includes Forest Science, Micrometeorology, Soil Science and Wildlife Biology with Environment and Neotropical Environment Options available) and an M.Sc. degree in Agricultural Economics. It is also possible for students to pursue doctoral studies through the Department of Economics with Agricultural Economics as a field of specialization. A Non-Thesis option in Environmental Assessment (M.Sc. Ren. Res.) and an inter-disciplinary Option in Bioinformatics for doctoral students are available.

The Department possesses, or has access to, excellent facilities for laboratory and field research. Affiliated with the Department are the Lyman Entomological Museum and Research Laboratory, the Molson Nature Reserve, the Morgan Arboretum, the Avian Science and Conservation Centre, and the Ecomuseum of the St. Lawrence Valley Natural History Society.

Master of Science Degrees

section 11.6.5: Master of Science (M.Sc.); Agricultural Economics (Thesis) (46 credits)

This program provides students with applied economic concepts and tools to identify, define, and analyze economic problems affecting the performance of the agri-food sector and the environment. The ideal prior preparation is an undergraduate degree in Agricultural Economics or Economics, including undergraduate courses in intermediate economic theory (micro and macro), calculus, algebra, statistics and econometrics.

Attention is given to the development of analytical skills in the broad areas of agricultural, environmental and ecological economics. Students may specialize, by way of their research program, in agribusiness, development, finance, marketing and trade, policy, and resource economics. The program prepares graduates for rewarding careers in research, analysis and decision-making in academia, private and NGO sectors, and government.

section 11.6.6: Master of Science (M.Sc.); Entomology (Thesis) (45 credits)

Please contact the Department for more information about this program.

section 11.6.7: Master of Science (M.Sc.); Entomology (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.6.8: Master of Science (M.Sc.); Entomology (Thesis) — Neotropical Environment (48 credits)

Please contact the Department for more information about this program.

section 11.6.9: Master of Science (M.Sc.); Microbiology (Thesis) (45 credits)

Please contact the Department for more information about this program.

section 11.6.10: Master of Science (M.Sc.); Microbiology (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.6.11: Master of Science (M.Sc.); Renewable Resources (Thesis) (45 credits)

(including Micrometeorology, Forest Science, Soil Science and Wildlife Biology as areas of research)

section 11.6.12: Master of Science (M.Sc.); Renewable Resources (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.6.13: Master of Science (M.Sc.); Renewable Resources (Thesis) — Neotropical Environment (48 credits)

Please contact the Department for more information about this program.

section 11.6.14: Master of Science (M.Sc.); Renewable Resources (Non-Thesis) — Environmental Assessment (45 credits)

The Non-Thesis Master's in Renewable Resources: Environmental Assessment Option is normally taken over a one year cycle beginning in the winter term and concluding in the autumn term. It is comprised of three inter-related elements: graduate level courses, primarily given in the winter term, a summer term internship and a project related research paper which is completed in the autumn term.

The program is aimed at environmental assessment professionals and advanced environmental science scholars planning for careers in the public and private sector agencies which guide environmental impact assessment, integrated assessment and sustainable development in Canada and internationally.

McGill's Non-Thesis Master's in Environmental Assessment is offered in conjunction with a Memorandum of Understanding with the United Nations Environment Program (UNEP - 2003) which designates the Faculty of Agricultural and Environmental Sciences as a UNEP Collaborating Centre on Environmental Assessment. An important component of the MOU is that the Faculty advance teaching and training through the development of course offerings which enable students to prepare for contributing to sustainable development by utilizing the excellent materials provided by UNEP and other national and international agencies.

Ph.D. Degrees in Entomology, Microbiology, or Renewable Resources

(Includes Micrometeorology, Forest Science, Soil Science, and Wildlife Biology)

section 11.6.15: Doctor of Philosophy (Ph.D.); Entomology

Please contact the Department for more information about this program.

section 11.6.16: Doctor of Philosophy (Ph.D.); Microbiology

Please contact the Department for more information about this program.

section 11.6.17: Doctor of Philosophy (Ph.D.); Renewable Resources

Please contact the Department for more information about this program.

section 11.6.18: Doctor of Philosophy (Ph.D.); Entomology — Environment

Please contact the Department for more information about this program.

section 11.6.19: Doctor of Philosophy (Ph.D.); Entomology — Neotropical Environment

Please contact the Department for more information about this program.

section 11.6.20: Doctor of Philosophy (Ph.D.); Microbiology — Bioinformatics

Please contact the Department for more information about this program.

section 11.6.21: Doctor of Philosophy (Ph.D.); Microbiology — Environment

Please contact the Department for more information about this program.

section 11.6.22: Doctor of Philosophy (Ph.D.); Renewable Resources — Environment

Please contact the Department for more information about this program.

section 11.6.23: Doctor of Philosophy (Ph.D.); Renewable Resources — Neotropical Environment

Please contact the Department for more information about this program.

11.6.3 Natural Resource Science Admission Requirements and Application Procedures

11.6.3.1 Admission Requirements

M.Sc. Thesis (Agricultural Economics)

Direct admission to the M.Sc. requires the completion of a B.Sc. in Agricultural Economics or a closely related area, with the equivalent cumulative grade point average of 3.0/4.0 (second class – upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

The ideal preparation includes courses in agricultural economics, economic theory (intermediate micro and macro), calculus, linear algebra, and statistics. Students with deficiencies in these areas will be required to take additional courses as part of their degree program.

M.Sc. Thesis (Entomology, Microbiology, Renewable Resources)

Candidates are required to have a bachelor's degree with an equivalent cumulative grade point average of 3.0/4.0 (second class – upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

M.Sc. in Renewable Resources (Non-Thesis) – Environmental Assessment Option

Candidates are required to have a bachelor's degree in a relevant subject, with an equivalent cumulative grade point average of 3.0/4.0 (second class – upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Applicants should also have at least one year of professional experience in environmental assessment or a similar field.

Ph.D. Thesis (Entomology, Microbiology, Renewable Resources)

Candidates, normally, are required to hold a M.Sc. degree and will be judged primarily on their ability to conduct an original and independent research study.

11.6.3.2 Application Procedures

(For all programs excluding the Environmental Assessment Option)

Applicants for graduate studies must forward supporting documents to:

Department of Natural Resource Sciences
Graduate Student Office
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7941

Fax: 514-398-7990

Email: marie.kubecki@mcgill.ca

Applications will be considered upon receipt of the online application form, \$100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted are required for admission. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on official letterhead of the originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Non-Canadian applicants whose mother tongue is not English, who did not graduate from a Canadian institution (anglophone or francophone), and who have not completed an undergraduate degree using the English language are required to submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test or 86 on the Internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay.

For entrance into the master's program in Agricultural Economics the following test scores are required: TOEFL (minimum score 570 on the paper-based test or 88 on the Internet-based test with each component score not less than 20) or IELTS (minimum 7 overall band).

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Application Fee (non-refundable) – A fee of \$100 Canadian must accompany each application (including McGill students); otherwise, it cannot be considered. This fee must be remitted by credit card only.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Acceptance to all programs normally depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a *Qualifying Program* if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a *Qualifying Program* will be prescribed by the academic unit concerned. *Qualifying students* are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a Qualifying Program does not guarantee admission to a degree program.**

11.6.3.2.1 Application Procedures for Environmental Assessment Option (Non-Thesis)

Applicants for graduate studies in the Non-Thesis Environmental Assessment Option must forward supporting documents to:

Department of Natural Resource Sciences
Environmental Assessment Office
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7890

Fax: 514-398-7990

Applications will be considered upon receipt of:

1. the online application form and \$100 application fee;
2. two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. If transcripts contain course numbers only, please submit a list of the titles of courses taken in the major subject;
3. two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. If the degree was awarded more than five years ago, letters of recommendation can be written by employers rather than professors;
4. a curriculum vitae;
5. letter of intent outlining the applicant's reasons for wishing to pursue the program of study.

It is the applicant's responsibility to arrange for the following documents to be sent:

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Competency in English – Non-Canadian applicants whose mother tongue is not English, who did not graduate from a Canadian institution (anglophone or francophone) and who have not completed an undergraduate degree using the English language, are required to submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 570 on the paper-based test or 88 on the Internet-based test with each component score not less than 20) or IELTS (minimum 7 overall band). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay.

Application Fee (non-refundable) – A fee of \$100 Canadian must accompany each application (including McGill students); otherwise, it cannot be considered. This fee must be remitted by credit card only.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

11.6.4 Natural Resource Sciences Faculty

Chair

B. Côté

Program Director - Agricultural Economics

J.C. Henning

Graduate Program Director

I.B. Strachan

Emeritus Professors

N.N. Barthakur; B.Sc.(Gauh.), M.Sc.(Alld.), Ph.D.(Sask.); *Agricultural Physics*

E.S. Idziak; B.Sc.(Agr.), M.Sc.(McG.), D.Sc.(Delft); *Microbiology*

A.F. MacKenzie; B.S.A., M.Sc.(Sask.), Ph.D.(C'nell); *Soil Science*

R.A. MacLeod; B.A., M.A.(Br. Col.), Ph.D.(Wisc.), F.R.S.C.; *Microbiology*

P.H. Schuepp; Dipl.Sc.Nat.(Zür.), Ph.D.(Tor.); *Agricultural Physics*

R.K. Stewart; B.Sc.(Agr.), Ph.D.(Glas.); *Entomology*

Professors

D.M. Bird; B.Sc.(Guelph), M.Sc., Ph.D.(McG.); *Wildlife Biology*

P. Brown; B.A.(Haver.), M.A., Ph.D.(Col.); *Environmental Policy and Ethics (joint appt. with Geography and McGill School of Environment)*

J.W. Fyles; B.Sc., M.Sc.(Vic., BC), Ph.D.(Alta.); *Forest Resources (Tomlinson Chair in Forestry)*

W.H. Hendershot; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(Br. Col.); *Soil Science*

Associate Professors

C. Buddle; B.Sc.(Guelph), Ph.D.(Alta.); *Forest Insect Ecology*

B. Côté; B.Sc., Ph.D.(Laval); *Forest Resources*

M.A. Curtis; B.Sc., M.Sc., Ph.D.(McG.); *Environmental Governance*

B.T. Driscoll; B.Sc., Ph.D.(McM.); *Microbiology*

G.B. Dunphy; B.Sc.(New Br.), M.Sc., Ph.D.(Nfld.); *Entomology*

J.C. Henning; B.Sc., Ph.D.(Guelph); *Agricultural Economics*

M. Humphries; B.Sc.(Manit.), M.Sc.(Alta.), Ph.D.(McG.); *Wildlife Biology*

D.J. Lewis; B.Sc., M.Sc., Ph.D.(Nfld.); *Entomology*

I.B. Strachan; B.Sc.(Tor.), M.Sc., Ph.D.(Qu.); *Micrometeorology*

P.J. Thomassin; B.Sc.(McG.), M.S., Ph.D.(Hawaii Pac.); *Agricultural and Environmental Economics*

J. Whalen; B.Sc.(Agr.(Dal.)), M.Sc.(McG.), Ph.D.(Ohio St.); *Soil Science*

T.A. Wheeler; B.Sc.(Nfld.), M.Sc., Ph.D.(Guelph); *Entomology*

L.G. Whyte; B.Sc.(Regina), Ph.D.(Wat.); *Microbiology*

Assistant Professors

E. Bennett; B.A.(Oberline Coll.), M.S., Ph.D.(Wisc.); *Ecosystem Ecology (joint appt. with McGill School of Environment)*

G. Hickey; B.Sc.(Melb.), Ph.D.(Br. Col.), EMPA (ANZSOG, Monash); *Sustainable Natural Resource Management*

N. Kosoy; B.Sc.(Univ. Simon Bolivar), M.Sc.(Univ. of Kent, Univ. Autonoma de Barcelona), Ph.D.(Univ. Autonoma de Barcelona); *Ecological Economics (joint appt. with McGill School of Environment)*

A. Naseem; B.Sc.(McG.), M.Sc., Ph.D.(Mich.); *Agricultural Economics*

C. Solomon; B.Sc.(C'nell), Ph.D.(Wisc.); *Wildlife Biology*

Associate Members

C.A. Chapman (*Anthropology*), L.J. Chapman (*Biology*), D. Green (*Redpath Museum*), W.D. Marshall (*Food Science and Agricultural Chemistry*), M. Scott (*Institute of Parasitology*), D. Smith (*Plant Science*)

Adjunct Professors

D. Angers, G. Boivin, M.A. Bouchard, K. Fernie, C. Greer, D. Houle, J.P. Savard, E. Smith, G. Sunahara, C. Vincent, F. Whoriskey

11.6.5 Master of Science (M.Sc.); Agricultural Economics (Thesis) (46 credits)

Students may specialize, by way of their research program, in agri-business, development, finance, marketing and trade, policy, and resource and ecological economics.

Thesis Courses (27 credits)

AGEC 691	(6)	M.Sc. Thesis 1
AGEC 692	(3)	M.Sc. Thesis 2
AGEC 693	(6)	M.Sc. Thesis 3
AGEC 694	(6)	M.Sc. Thesis 4
AGEC 695	(6)	M.Sc. Thesis 5

Required Course

(1 credit)

AGEC 690	(1)	Seminar
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Complementary Courses (18 credits)

6 credits, two theory courses chosen from:

AGEC 611	(3)	Price Analysis
AGEC 633	(3)	Environmental and Natural Resource Economics
ECON 610	(3)	Microeconomic Theory 1
ECON 611	(3)	Microeconomic Theory 2
ECON 620	(3)	Macroeconomic Theory 1
ECON 621	(3)	Macroeconomic Theory 2

3 credits, one quantitative methods course chosen from:

AEMA 610	(3)	Statistical Methods 2
ECON 525	(3)	Project Analysis
ECON 662	(6)	Econometrics
ECON 665	(3)	Quantitative Methods
MGSC 634	(3)	Econometric Methods in Management
MGSC 679	(3)	Applied Deterministic Optimization

9 credits, three 3-credit courses at the 500, 600, or 700 level, at least one of which must be in Agricultural Economics, chosen in consultation with the Agricultural Economics Adviser.

11.6.6 Master of Science (M.Sc.); Entomology (Thesis) (45 credits)

Thesis Courses (36 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (3 credits)

NRSC 643	(1)	Graduate Seminar 1
NRSC 644	(1)	Graduate Seminar 2
NRSC 651	(1)	Graduate Seminar 3

Complementary Courses (6 credits)

Two 3-credit courses at the 500, 600, or 700 level; normally one of these will be a course in statistics.

11.6.7 Master of Science (M.Sc.); Entomology (Thesis) — Environment (46 credits)**Thesis Courses (36 credits)**

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (7 credits)

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 651	(1)	Graduate Seminar 3

Complimentary Courses (3 credits)

One of the following courses:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

11.6.8 Master of Science (M.Sc.); Entomology (Thesis) — Neotropical Environment (48 credits)**Thesis Courses (36 credits)**

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (9 credits)

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy
NRSC 643	(1)	Graduate Seminar 1
NRSC 644	(1)	Graduate Seminar 2
NRSC 651	(1)	Graduate Seminar 3

Note: Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Elective Courses (3 credits)

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.6.9 Master of Science (M.Sc.); Microbiology (Thesis) (45 credits)

Thesis Courses (36 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (3 credits)

NRSC 643	(1)	Graduate Seminar 1
NRSC 644	(1)	Graduate Seminar 2
NRSC 651	(1)	Graduate Seminar 3

Complementary Courses (6 credits)

Two 3-credit 500-, 600-, or 700-level courses; normally one of these will be a course in statistics.

11.6.10 Master of Science (M.Sc.); Microbiology (Thesis) — Environment (46 credits)

Thesis Courses (36 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (7 credits)

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 651	(1)	Graduate Seminar 3

Complementary Course (3 credits)

One of the following courses:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling

ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

11.6.11 Master of Science (M.Sc.); Renewable Resources (Thesis) (45 credits)

Includes Micrometeorology, Forest Science, Soil Science and Wildlife Biology as areas of research.

Thesis Courses (36 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (3 credits)

NRSC 643	(1)	Graduate Seminar 1
NRSC 644	(1)	Graduate Seminar 2
NRSC 651	(1)	Graduate Seminar 3

Complementary Courses (6 credits)

Two 3-credit courses at the 500 level or higher recommended by the supervisory committee; one of which must be in quantitative methods/techniques.

11.6.12 Master of Science (M.Sc.); Renewable Resources (Thesis) — Environment (46 credits)

Thesis Courses (33 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 694	(9)	M.Sc. Thesis Research 4

Required Courses (7 credits)

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 651	(1)	Graduate Seminar 3

Complimentary Courses (6 credits)

3 credits, one of the following courses:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3

ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

3 credits of statistics at the 500, 600, or 700 level.

11.6.13 Master of Science (M.Sc.); Renewable Resources (Thesis) — Neotropical Environment (48 credits)

Thesis Courses (36 credits)

NRSC 691	(12)	M.Sc. Thesis Research 1
NRSC 692	(12)	M.Sc. Thesis Research 2
NRSC 693	(12)	M.Sc. Thesis Research 3

Required Courses (9 credits)

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy
NRSC 643	(1)	Graduate Seminar 1
NRSC 644	(1)	Graduate Seminar 2
NRSC 651	(1)	Graduate Seminar 3

Note: Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Elective Courses (3 credits)

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.6.14 Master of Science (M.Sc.); Renewable Resources (Non-Thesis) — Environmental Assessment (45 credits)

The non-thesis master's in Renewable Resources: Environmental Assessment option is normally taken over a one year cycle beginning in the Winter term and concluding in the Fall term. It is comprised of three interrelated elements: graduate-level courses, primarily given in the Winter term, a Summer term internship, and a project-related research paper, which is completed in the Fall term. The program is aimed at environmental assessment professionals and advanced environmental science scholars planning for careers in the public and private sector agencies, which guide environmental impact assessment, integrated assessment, and sustainable development in Canada and internationally. McGill's non-thesis master's in Environmental Assessment is offered in conjunction with a Memorandum of Understanding (MOU) with the United Nations Environment Program (UNEP - 2003), which designates the Faculty of Agricultural and Environmental Sciences as a UNEP Collaborating Centre on Environmental Assessment. An important component of the MOU is that the Faculty advance teaching and training through the development of course offerings that enable students to prepare for contributing to sustainable development by utilizing the excellent materials provided by UNEP and other national and international agencies.

Research Project (9 credits)

NRSC 616	(9)	Environmental Assessment Project Paper
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Required Internship (15 credits)

NRSC 615	(15)	Environmental Assessment Internship
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Required Courses (15 credits)

NRSC 610	(3)	Advanced Environmental Assessment
NRSC 611	(3)	Environmental Assessment Knowledge Base
NRSC 612	(3)	Environmental Assessment and Sustainable Development
NRSC 613	(3)	Strategic and Sectoral Environmental Assessment
NRSC 614	(3)	Meeting Environmental Assessment Regulations

Complementary Courses (6 credits)

500- or 600-level relevant courses to be chosen in consultation with the Supervisor and Program Director.

11.6.15 Doctor of Philosophy (Ph.D.); Entomology

Includes Micrometeorology, Forest Science, Soil Science, and Wildlife Biology.

Thesis**Required Courses**

NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

11.6.16 Doctor of Philosophy (Ph.D.); Microbiology

Includes Micrometeorology, Forest Science, Soil Science, and Wildlife Biology.

Thesis**Required Courses**

NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

11.6.17 Doctor of Philosophy (Ph.D.); Renewable Resources

Includes Micrometeorology, Forest Science, Soil Science, and Wildlife Biology.

Thesis

Required Courses

NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

11.6.18 Doctor of Philosophy (Ph.D.); Entomology — Environment

Thesis

Required Courses

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

Complementary Courses

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

11.6.19 Doctor of Philosophy (Ph.D.); Entomology — Neotropical Environment

Thesis

Required Courses

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy

NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Note: Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Elective Courses

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.6.20 Doctor of Philosophy (Ph.D.); Microbiology — Bioinformatics

Thesis

Required Courses

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Complementary Courses

6 credits from the following courses:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee.

11.6.21 Doctor of Philosophy (Ph.D.); Microbiology — Environment

Thesis

Required Courses

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

Complementary Courses

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment 1
ENVR 680	(3)	Topics in Environment 4

or another 500-, 600-, or 700-level course recommended by the advisory committee and approved by the Environment Option Committee.

11.6.22 Doctor of Philosophy (Ph.D.); Renewable Resources — Environment

Thesis

Required Courses

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 754	(0)	Graduate Seminar 7

Coursework

Course requirements are specified by the staff in the discipline but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

Complementary Courses

One course chose from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

11.6.23 Doctor of Philosophy (Ph.D.); Renewable Resources — Neotropical Environment**Thesis****Required Courses**

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy
NRSC 701	(0)	Ph.D. Comprehensive Examination
NRSC 751	(0)	Graduate Seminar 4
NRSC 752	(0)	Graduate Seminar 5
NRSC 753	(0)	Graduate Seminar 6
NRSC 754	(0)	Graduate Seminar 7

Note: Participation in the MSE-Panama Symposium presentation in Montreal is required.

Elective Courses

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.7 Parasitology**11.7.1 Location**

Institute of Parasitology
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7722

Fax: 514-398-7857

Email: graduate.parasitology@mcgill.ca

Website: www.mcgill.ca/parasitology

11.7.2 About Parasitology

M.Sc. and Ph.D. thesis research degrees in Parasitology, with Bioinformatics and Environment options; and non-thesis Graduate Certificate and M.Sc.(Applied) degree in Biotechnology.

The Institute of Parasitology teaches and researches the phenomenon of parasitism of humans and livestock. The nutrition/parasitism interface is also examined. Current research involvement includes the biology, biochemistry, bioinformatics, pharmacology, control, ecology, epidemiology, immunology, molecular biology, neurobiology, and population and molecular genetics of parasitic organisms, viruses, and cancer cells. The non-thesis programs in Biotechnology offer a course-based curriculum with practical training in laboratory courses and internships.

The Institute is housed in its own building adjacent to the Macdonald Campus Library, and has well-equipped laboratories. A confocal microscopy suite and a FACSAria cell sorting facility are available on site. Small and large animal facilities are present on the Macdonald campus. The Institute is affiliated with the McGill Centre for Tropical Diseases at the Montreal General Hospital.

Graduates typically go on to become career research scientists, enter the biotechnology sector in research, management or sales, or accept government positions.

Parasitology Programs

section 11.7.5: Master of Science (M.Sc.); Parasitology (Thesis) (46 credits)

A research project is undertaken in an area of parasitology under the direction of a supervisor, and a thesis is produced. Coursework is minimal. Graduates have gone on to medical school, to teaching positions, or have found employment in scientific fields.

section 11.7.6: Master of Science (M.Sc.); Parasitology (Thesis) — Bioinformatics (47 credits)

A research project is undertaken in an area of parasitology under the direction of a supervisor, and a thesis is produced. This option involves additional coursework specializing in bioinformatics, and graduates are highly trained professionals with expertise in bioinformatics.

section 11.7.7: Master of Science (M.Sc.); Parasitology (Thesis) — Environment (46 credits)

A research project is undertaken under the direction of a supervisor, and a thesis is produced. This option involves extra coursework in topics relevant to the environment and is suitable for students interested in environmental issues. Graduates find employment in science and/or the environment, such as management or consulting positions in the emerging field of environmental protection, or go on to further graduate studies.

section 11.7.8: Doctor of Philosophy (Ph.D.); Parasitology

An advanced, original research project is undertaken in an area of parasitology supervised by faculty staff. Coursework is minimal. Graduates are well suited for teaching positions in academia or research careers in a university or private industry laboratory.

section 11.7.9: Doctor of Philosophy (Ph.D.); Parasitology — Bioinformatics

An advanced, original research project in an area of parasitology is undertaken supervised by faculty staff, and a thesis is produced. Additional coursework in the field of bioinformatics is required for this option. Graduates are well suited for a teaching or research career, especially where there is particular emphasis on the science of bioinformatics.

section 11.7.10: Doctor of Philosophy (Ph.D.); Parasitology — Environment

An advanced, original research project in an area of parasitology is undertaken supervised by faculty staff, and a thesis is produced. There is additional coursework on environmental topics for this option. Graduates are prepared for careers in academia, industry, or government, especially where the focus is on environmental protection or management of valuable natural resources, such as water.

BIOTECHNOLOGY PROGRAMS

section 11.7.11: Master of Science, Applied (M.Sc.A.); Biotechnology (Non-Thesis) (45 credits)

Candidates must possess a bachelor's degree in the biological/molecular sciences or an equivalent program. This applied master's program is unique in Quebec. It aims to prepare students for entry into the biotechnology and pharmaceutical industry or to pursue further graduate studies in biomedicine, agriculture, or the environment. Students can choose from a wide range of complementary courses given throughout the McGill campuses to "design" their own program toward a future career choice. The program provides in-house training in molecular biology with a strong focus on the molecular/biochemical sciences. Concurrently, it provides teaching in management and gives students the opportunity to look at the business aspect of biotechnology. A research internship of four to eight months is carried out in an active laboratory, and students learn to present and write research results. Graduates will find jobs ranging from positions as research assistants and/or technicians in biomedical or pharmaceutical laboratories to managerial or supervisory positions. They may also pursue a career in the business of biotechnology including patent and intellectual property management.

section 11.7.12: Graduate Certificate in Biotechnology (16 credits)

Candidates must possess a bachelor's degree in the biological/molecular sciences or an equivalent program. This is a short, intense program for students wishing to deepen their understanding of biotechnology and gain hands-on experience via an intensive laboratory course using the latest molecular biology techniques. Students can choose from a wide range of complementary courses given throughout the McGill campuses to "design" their own program toward a future career choice. Graduates will find employment in research or industrial laboratories as assistants and/or technicians.

11.7.3 Parasitology Admission Requirements and Application Procedures

11.7.3.1 Admission Requirements

Candidates for either the M.Sc. or the Ph.D. thesis research degree should possess a bachelor's degree in the biological or medical sciences with a minimum cumulative grade point average of 3.2/4.0 (second class – upper division). High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Previous experience in parasitology is not essential.

Candidates for the Graduate Certificate and the M.Sc.(Applied) in Biotechnology must possess a bachelor's degree in Biological Sciences or equivalent with a minimum cumulative grade point average of 3.0/4.0 or 3.2/4.0 GPA in the last two full-time years of university study for the Graduate Certificate, and a minimum of 3.2/4.0 CGPA for the M.Sc.(A.), as well as prerequisites or equivalents. Prerequisites or equivalents: applicants are required to have sufficient background in Biochemistry, Cellular Biology, and Molecular Biology, preferably at an advanced level for the Master's Applied.

11.7.3.2 Application Procedures

Applicants for the thesis research degrees (M.Sc. and Ph.D.) must forward supporting documents to:

Thesis Research Graduate Programs
Institute of Parasitology
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7722
Fax: 514-398-7857
Email: graduate.parasitology@mcgill.ca
Website: www.mcgill.ca/parasitology

Applicants for the Biotechnology programs must forward supporting documents to:

Biotechnology Graduate Programs
Institute of Parasitology
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7725
Fax: 514-398-7857
Email: program.biotech@mcgill.ca
Website: www.mcgill.ca/biotechgradprog

Applications – Complete the online application form available at www.mcgill.ca/gradapplicants/apply. Note: There is a CAD\$100 non-refundable application fee. Applications will not be processed without payment. Paper applications, or PDF versions thereof, are no longer available. All applications to McGill must be done online. Applications will be considered upon receipt of the completed online application form, the CAD\$100 application fee, and the following supporting documents:



Note: Documents submitted will not be returned.

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. Letters may be sent electronically (via email). Electronic letters must be sent via a valid institutional or corporate email address (domain); public domains such as Hotmail, Yahoo, Gmail, Videotron, etc., cannot be accepted. Detailed information is found at the following site: www.mcgill.ca/gradapplicants/apply/prepare/checklist/documents/. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English by appropriate exams, e.g., TOEFL (minimum score 577 on the paper-based test, or 90 on the Internet-based test with each component not less than 20). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay. For detailed information consult the following site: www.mcgill.ca/gradapplicants/apply/prepare/requirements/proficiency.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Application Fee (non-refundable) – A fee of CAD\$100 must accompany each online application (including those submitted by McGill students), otherwise it cannot be considered. This sum must be remitted by credit card only.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are

received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants must make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Acceptance to all thesis research programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Financial support for Biotechnology programs is very limited. Students must secure funding from governmental agencies or be self-sufficient. International students are strongly encouraged to secure funding from their home country or international agencies. More information is found at www.mcgill.ca/biotechgradprog/admissions/tuition.

Other Supporting Documents – Other documents may be required for the admission process. Please consult the respective website of Parasitology and Biotechnology for full details of the admission process.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a *Qualifying Program* if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a *Qualifying Program* will be prescribed by the academic unit concerned. *Qualifying students* are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

11.7.4 Parasitology Faculty

Director

Timothy G. Geary

Professors

John P. Dalton; B.Sc., Ph.D.(Dublin) (*Canada Research Chair in Infectious Diseases*)

Timothy G. Geary; B.Sc.(Notre Dame), Ph.D.(Mich.) (*Canada Research Chair in Parasite Biotechnology*)

Roger Prichard; B.Sc., Ph.D.(NSW) (*James McGill Professor*)

Associate Professors

Robin N. Beech; B.Sc.(Nott.), Ph.D.(Edin.)

Elias Georges; B.Sc., Ph.D.(McG.)

Armando Jardim; B.Sc., Ph.D.(Vic., BC)

Paula Ribeiro; B.Sc., Ph.D.(York)

Marilyn E. Scott; B.Sc.(New Br.), Ph.D.(McG.)

Assistant Professors

Florence Dzierzinski; B.Sc., M.Sc., Ph.D.(Lille, France) (*Canada Research Chair in Parasite Pathogenesis*)

Petra Rohrbach; B.Sc.(McG.), Ph.D.(Heidelberg, Germany)

Reza Salavati; B.A., M.A.(Calif. St.), Ph.D.(Wesl.)

Associate Members

Gregory J. Matlashewski (*Medicine, Microbiology and Immunology*); Mary Stevenson (*Medicine, Experimental Medicine*); Brian Ward (*Medicine, Experimental Medicine*)

11.7.5 Master of Science (M.Sc.); Parasitology (Thesis) (46 credits)

Thesis Courses (32 credits)

PARA 687	(10)	Thesis Research 1
PARA 688	(10)	Thesis Research 2
PARA 689	(12)	Thesis Research 3

Required Courses (14 credits)

PARA 600	(4)	Thesis Proposal for M.Sc
PARA 606	(2)	Parasitology Seminar
PARA 607	(2)	Parasitology Research Seminar
PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions

Other course work in related subjects may be required, depending upon the candidate's background and research orientation.

11.7.6 Master of Science (M.Sc.); Parasitology (Thesis) — Bioinformatics (47 credits)**Thesis Courses (24 credits)**

PARA 688	(10)	Thesis Research 2
PARA 689	(12)	Thesis Research 3
PARA 690	(2)	Thesis Research 4

Required Courses (17 credits)

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PARA 600	(4)	Thesis Proposal for M.Sc
PARA 606	(2)	Parasitology Seminar
PARA 607	(2)	Parasitology Research Seminar
PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions

Complementary Courses (6 credits)

6 credits from the following courses:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500 or 600 level may be required at the discretion of the candidate's supervisory committee.

11.7.7 Master of Science (M.Sc.); Parasitology (Thesis) — Environment (46 credits)**Thesis Courses (26 credits)**

PARA 687	(10)	Thesis Research 1
PARA 688	(10)	Thesis Research 2
PARA 691	(6)	Thesis Research 5

Required Courses (14 credits)

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
PARA 600	(4)	Thesis Proposal for M.Sc
PARA 606	(2)	Parasitology Seminar
PARA 607	(2)	Parasitology Research Seminar

Complementary Courses (6 credits)

3 credits from one of the following:

PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions

3 credits from one of the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

Note: Other course work in related subjects may be required, depending upon the candidate's background and research orientation.

11.7.8 Doctor of Philosophy (Ph.D.); Parasitology

Thesis

Required Courses (10 credits)

PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions
PARA 700	(0)	Thesis Proposal for Ph.D
PARA 710	(2)	Parasitology Ph.D. Seminar 1
PARA 711	(2)	Parasitology Ph.D. Seminar 2

* Note: In the first year of the doctoral program, the candidates must successfully complete a written thesis proposal and make an oral presentation on their proposed research to fulfil PARA 700, the comprehensive component.

Depending upon the candidate's background, other course work may be required.

11.7.9 Doctor of Philosophy (Ph.D.); Parasitology — Bioinformatics

Thesis

Required Courses (13 credits)

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions
PARA 700	(0)	Thesis Proposal for Ph.D
PARA 710	(2)	Parasitology Ph.D. Seminar 1
PARA 711	(2)	Parasitology Ph.D. Seminar 2

Complementary Courses (6 credits)

6 credits chosen from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee.

11.7.10 Doctor of Philosophy (Ph.D.); Parasitology — Environment**Thesis****Required Courses (14 credits)**

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
PARA 700	(0)	Thesis Proposal for Ph.D
PARA 710	(2)	Parasitology Ph.D. Seminar 1
PARA 711	(2)	Parasitology Ph.D. Seminar 2

Complementary Courses (6 credits)

One of the following courses:

PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species

ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

Or another graduate course recommended by the advisory committee and approved by the Environment Option Committee.

11.7.11 Master of Science, Applied (M.Sc.A.); Biotechnology (Non-Thesis) (45 credits)

Research Project (16 credits)

BTEC 622	(2)	Biotechnology Research Project 1
BTEC 623	(6)	Biotechnology Research Project 2
BTEC 624	(6)	Biotechnology Research Project 3
BTEC 625	(2)	Biotechnology Research Project 4

Required Courses (17 credits)

BIOT 505	(3)	Selected Topics in Biotechnology
BTEC 501	(3)	Bioinformatics
BTEC 619	(4)	Biotechnology Laboratory 2
BTEC 620	(4)	Biotechnology Laboratory 1
BTEC 621	(3)	Biotechnology Management

Complementary Courses (12 credits)

3 credits in Ethics at the 500 level or higher, selected in consultation with the academic adviser.

9 credits at the 500 level or higher, selected within the Faculties of Agricultural and Environmental Sciences, Medicine, Science, or Management in consultation with the academic adviser of the program in line with the interests of the student.

11.7.12 Graduate Certificate in Biotechnology (16 credits)

Required Courses (10 credits)

BIOT 505	(3)	Selected Topics in Biotechnology
BTEC 620	(4)	Biotechnology Laboratory 1
BTEC 621	(3)	Biotechnology Management

Complimentary Courses (6 credits)

Two courses chosen from the following:

General Topics

ANSC 622	(3)	Selected Topics in Molecular Biology
BINF 511	(3)	Bioinformatics for Genomics
BIOL 524	(3)	Topics in Molecular Biology
BIOL 568	(3)	Topics on the Human Genome
BTEC 501	(3)	Bioinformatics
BTEC 502	(3)	Biotechnology Ethics and Society
BTEC 535	(3)	Functional Genomics in Model Organisms

BTEC 555	(3)	Structural Bioinformatics
BTEC 691	(3)	Biotechnology Practicum
EXMD 511	(3)	Joint Venturing with Industry
EXMD 602	(3)	Techniques in Molecular Genetics

Health

EXMD 610	(3)	Biomedical Methods in Medical Research
PARA 635	(3)	Cell Biology and Infection
PHGY 518	(3)	Artificial Cells

Environment and Food

BREE 530	(3)	Fermentation Engineering
FDSC 535	(3)	Food Biotechnology

11.8 Plant Science**11.8.1 Location**

Department of Plant Science
 Macdonald Campus
 21,111 Lakeshore Road
 Sainte-Anne-de-Bellevue, QC H9X 3V9
 Canada

Telephone: 514-398-7851

Fax: 514-398-7897

Email: plant.science@mcgill.ca

Website: www.mcgill.ca/plant

11.8.2 About Plant Science

The Department offers an M.Sc. and Ph.D. in Plant Science with Options in Bioinformatics, Environment, or Neotropical Environment, and provides for study in all fields of plant sciences. Research facilities – both field and laboratory – are available for investigations in plant breeding, crop physiology, crop management, crop quality, plant ecology, the epidemiology and biology of plant diseases, epigenetics, biosystematics, recombinant DNA technology, mycology, weed biology, tissue culture, plant biochemistry, and bioinformatics. Facilities include: the Horticultural Research Centre, the Emile A. Lods Agronomy Research Centre, greenhouses, growth cabinets, the McGill University Herbarium, the Applied Biotechnology laboratory, the CT Scanning laboratory, and a Level 2 Quarantine Facility.

An advisory committee is named for each student and has the responsibility for developing the program of study appropriate to the student's background and area of specialization.

section 11.8.5: Master of Science (M.Sc.); Plant Science (Thesis) (45 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field.

section 11.8.6: Master of Science (M.Sc.); Plant Science (Thesis) — Bioinformatics (48 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field. This option/concentration has an added emphasis on bioinformatics, including additional courses and seminars.

section 11.8.7: Master of Science (M.Sc.); Plant Science (Thesis) — Environment (48 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field. This option/concentration has an added emphasis on environmental sciences, including additional courses and seminars.

section 11.8.8: Master of Science (M.Sc.); Plant Science (Thesis) — Neotropical Environment (48 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field. This option/concentration has an added emphasis on neotropical environments, including additional courses and seminars. Part of the program takes place in Panama.

section 11.8.9: Master of Science, Applied (M.Sc.A.); Plant Science (Non-Thesis) (45 credits)

This M.Sc. in Plant Science requires about 18 months or four to five terms for completion. Overall, the program consists of graduate-level courses, seminars, and a research project. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field.

section 11.8.10: Doctor of Philosophy (Ph.D.); Plant Science

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector.

section 11.8.11: Doctor of Philosophy (Ph.D.); Plant Science — Bioinformatics

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on bioinformatics, including additional courses and seminars.

section 11.8.12: Doctor of Philosophy (Ph.D.); Plant Science — Environment

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on environmental sciences, including additional courses and seminars.

section 11.8.13: Doctor of Philosophy (Ph.D.); Plant Science — Neotropical Environment

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on neotropical environments, including additional courses and seminars. Part of the program takes place in Panama.

11.8.3 Plant Science Admission Requirements and Application Procedures

11.8.3.1 Admission Requirements

General

The minimum cumulative grade point average (CGPA) is 3.0/4.0 (second-class upper division) or a GPA of 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

Ph.D.

Ph.D. candidates are required to have a M.Sc. degree in an area related to the chosen field of specialization for the Ph.D. program. Outstanding M.Sc. students may be permitted to transfer to the second year of the Ph.D. program following one year of study.

11.8.3.2 Application Procedures

Applicants for graduate studies must forward supporting documents to:

Department of Plant Science

Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7851
Fax: 514-398-7897
Email: carolyn.bowes@mcgill.ca

Applications will be considered upon receipt of a signed and completed application form, \$100 application fee, and the following supporting documents:
DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test or 86 on the Internet-based test, with a minimum score of 20 on each), or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences – Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Application Fee (non-refundable) – A fee of \$100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted by credit card only.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs, then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials, including supporting documents, are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.

Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

11.8.4 Plant Science Faculty

Chair

P. Seguin

Emeritus Professors

D.J. Buszard; B.Sc.(Bath), Ph.D.(Lond.)

R.H. Estey; B.Ed.(New Br.), M.S.(Maine), D.I.C.(Imp. Coll.), B.Sc.(Agr.), Ph.D.(McG.), F.L.S.

W.F. Grant; B.A., M.A.(McM.), Ph.D.(Virg.), F.L.S.

Professors

P. Dutilleul; L.Sc., D.Sc.(Louvain)
D.L. Smith; B.Sc., M.Sc.(Acad.), Ph.D.(Guelph)
A.K. Watson; B.Sc.(Agr.), M.Sc.(Br. Col.), Ph.D.(Sask.)

Associate Professors

J. Bede; B.Sc.(Calg.), M.Sc., Ph.D.(Tor.)
S. deBlois; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.)
D.J. Donnelly; B.Sc.(Agr.)(McG.), M.Sc.(Br. Col.), Ph.D.(S. Fraser)
S. Jabaji; B.Sc.(Beirut), M.Sc.(Guelph), Ph.D.(Wat.)
A.C. Kushalappa; B.Sc., M.Sc.(B'Lore), Ph.D.(Flor.)
P. Seguin; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Minn.)
M. Stromvik; B.A., M.Sc.(Stockholm), Ph.D.(Ill.)
M. Waterway; B.A.(Grand Rapids), M.S.(Wisc.), Ph.D.(C'nell)

Assistant Professors

J.-B. Charron; B.Sc.(Montr.), M.Sc., Ph.D.(UQAM)
J. Singh; B.Sc.(Agr.), M.Sc.(Punjab), Ph.D.(Syd.)

Faculty Lecturers

C. Begg; B.Sc.(Agr.)(McG.), M.Sc.(Sask.), Ph.D.(McG.)
S. Lussier; B.Sc.(Agr.)(McG.)
D. Wees; B.Sc.(Agr.), M.Sc.(McG.)

Associate Members

G. Brown (*Department of Biology*)
T.A. Johns (*Dietetics and Human Nutrition*)

Adjunct Professors

M. Fortin, S. Jenni, S. Khanizadeh, A. Bertrand

11.8.5 Master of Science (M.Sc.); Plant Science (Thesis) (45 credits)

Thesis Courses (39 credits)

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Complementary Courses (6 credits)

Two graduate-level courses

Additional courses may be required at the discretion of the candidate's supervisory committee.

11.8.6 Master of Science (M.Sc.); Plant Science (Thesis) — Bioinformatics (48 credits)**Thesis Courses (39 credits)**

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (3 credits)

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PLNT 691	(0)	Research Horizons in Plant Science 2

Complementary Courses (6 credits)

Chosen from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500 or 600 level may be required at the discretion of the candidate's advisory committee.

11.8.7 Master of Science (M.Sc.); Plant Science (Thesis) — Environment (48 credits)**Thesis Courses (39 credits)**

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (6 credits)

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3

Complementary Courses (3 credits)

Chosen from one of the following courses:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

Additional courses may be required at the discretion of the candidate's supervisory committee.

11.8.8 Master of Science (M.Sc.); Plant Science (Thesis) — Neotropical Environment (48 credits)

Candidates must participate in the STRI seminar series when in residence in Panama, and in the MSE-Panama Symposium Presentation in Montreal.

Thesis Courses (39 credits)

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (6 credits)

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy

Elective Courses (3 credits)

3 credits at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

Additional courses may be required at the discretion of the candidate's supervisory committee.

11.8.9 Master of Science, Applied (M.Sc.A.); Plant Science (Non-Thesis) (45 credits)

N.B. this program is under revision. Please contact Ms. Carolyn Bowes for information.

11.8.10 Doctor of Philosophy (Ph.D.); Plant Science

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Thesis

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses

* Must be taken within one year of registering

PLNT 701	(0)	Doctoral Comprehensive Examination
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Complementary Courses

Any courses at the 500 or 600 level deemed necessary for the chosen area of specialization.

11.8.11 Doctor of Philosophy (Ph.D.); Plant Science — Bioinformatics

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Thesis**Required Invitational Seminar**

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (3 credits)

* Must be taken within one year of registering.

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PLNT 701*	(0)	Doctoral Comprehensive Examination

Complementary Courses (6 credits)

Two courses to be chosen from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Additional courses at the 500 or 600 level may be required at the discretion of the candidate's advisory committee.

11.8.12 Doctor of Philosophy (Ph.D.); Plant Science — Environment**Thesis****Required Invitational Seminar**

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (6 credits)

* Must be taken within the first year of registering

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
PLNT 701*	(0)	Doctoral Comprehensive Examination

Coursework

Course requirements are specified by the staff in the discipline, but are flexible and depend largely on the student's background, immediate interests, and ultimate objectives.

Complementary Courses (3 credits)

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
ENVR 611	(3)	The Economy of Nature
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

11.8.13 Doctor of Philosophy (Ph.D.); Plant Science — Neotropical Environment

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Candidates must participate in the STRI seminar series when in residence in Panama, and in the MSE-Panama Symposium Presentation in Montreal.

Thesis

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1
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Required Courses (6 credits)

* Must be taken within one year of registering.

BIOL 640	(3)	Tropical Biology and Conservation
ENVR 610	(3)	Foundations of Environmental Policy
PLNT 701*	(0)	Doctoral Comprehensive Examination

Elective Courses (3 credits)

3 credits at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.8.14 Graduate Certificate in Bioinformatics (15 credits)**Required Courses (9 credits)**

BINF 511	(3)	Bioinformatics for Genomics
BTEC 501	(3)	Bioinformatics
BTEC 555	(3)	Structural Bioinformatics

Complementary Courses (6 credits)

3 credits from the following:

ANSC 565	(3)	Applied Information Systems
BTEC 535	(3)	Functional Genomics in Model Organisms

3 credits from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BIOC 603	(3)	Genomics and Gene Expression
BMDE 652	(3)	Bioinformatics: Proteomics
COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
COMP 616N1	(1.5)	Bioinformatics Seminar
COMP 616N2	(1.5)	Bioinformatics Seminar
COMP 618	(3)	Bioinformatics: Functional Genomics
GLIS 673	(3)	Bioinformatics Resources
HGEN 663	(3)	Beyond the Human Genome

