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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) oversees all programs leading to graduate diplomas, certificates, and higher degrees, with the exception of some programs in the School of Continuing Studies. It is responsible for admission policies, the supervision of graduate students' work, and for recommending to Senate those who may receive the degrees, diplomas, and certificates.

3 Important Dates 2012–2013

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

4 Graduate Studies at a Glance

4.1 Graduate and Postdoctoral Degrees Offered by Faculty

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

| Faculty of Agricultural and Environmental Sciences | Degrees Available |
|--|---|
| section 11.1: Agricultural Economics | M.Sc., M.Sc.A., M.Sc. (Econ), M.Sc. (Environ), M.Sc. (Forest) |

| Program | Thesis/Non-Thesis | Options |
|-------------------|-------------------|--|
| Post-professional | Non-Thesis | Architectural History and Theory, Cultural Mediations and Technology, Urban Design and Housing |

Master of Arts (M.A.)

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

| Program Areas | Thesis/Non-Thesis | Options |
|------------------------------------|--|--|
| Anthropology | Thesis, Non-Thesis | Development Studies, Environment, Gender and Women's Studies (Thesis) |
| Art History | Non-Thesis | Gender and Women's Studies (Non-Thesis) |
| Classics | Thesis, Non-Thesis | N/A |
| Communication Studies | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) |
| Counselling Psychology | Non-Thesis (Professional Internship), Non-Thesis (Project) | N/A |
| East Asian Studies | Thesis (<i>Ad Hoc</i>) | N/A |
| Economics | Thesis, Non-Thesis | Development Studies, Social Statistics (Non-Thesis) |
| Educational Psychology | Thesis | N/A |
| Education and Society | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) Gender and Women's Studies, Jewish Education (Non-Thesis) |
| Educational Leadership | Thesis, Non-Thesis (Coursework), Non-Thesis (Project) | Gender and Women's Studies (Thesis) Gender and Women's Studies (Non-Thesis (Project)) |
| English | Thesis, Non-Thesis | N/A |
| French | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) |
| Geography | Thesis | Development Studies, Environment, Gender and Women's Studies, Neotropical Environment, Social Statistics (Thesis) |
| German | Thesis, Non-Thesis | N/A |
| Hispanic Studies | Thesis, Non-Thesis | N/A |
| History | Thesis, Non-Thesis | Development Studies, European Studies, Gender and Women's Studies (Thesis) Development Studies, European Studies, Gender and Women's Studies (Non-Thesis) |
| History of Medicine | Non-Thesis | N/A |
| Islamic Studies | Thesis | Gender and Women's Studies (Thesis) |
| Italian | Thesis, Non-Thesis | N/A |
| Jewish Studies | Thesis, Non-Thesis | N/A |
| Kinesiology and Physical Education | Thesis, Non-Thesis | N/A |
| Linguistics | Non-Thesis | N/A |
| Mathematics and Statistics | Thesis, Non-Thesis | N/A |
| Medical Anthropology | Thesis | N/A |
| Music – Music Education | Thesis, Non-Thesis | N/A |
| Music – Music Technology | Thesis, Non-Thesis | N/A |
| Music – Musicology | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) |
| Music – Theory | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) |
| Philosophy | Thesis | Bioethics |

| Program Areas | Thesis/Non-Thesis | Options |
|---------------------------|--------------------|---|
| Political Science | Thesis, Non-Thesis | Development Studies, European Studies (Thesis) Development Studies, European Studies, Gender and Women's Studies, Social Statistics (Non-Thesis) |
| Psychology | Thesis | N/A |
| Religious Studies | Thesis, Non-Thesis | Bioethics, Gender and Women's Studies (Thesis) |
| Russian | Thesis | N/A |
| Second Language Education | Thesis, Non-Thesis | Gender and Women's Studies (Thesis) |
| Sociology | Thesis, Non-Thesis | Development Studies, Environment, Gender and Women's Studies, Medical Sociology, Neotropical Environment (Thesis) Development Studies, Gender and Women's Studies, Medical Sociology, Social Statistics (Non-Thesis) |
| Teaching and Learning | Non-Thesis | English or French Second Language, English Language Arts, Mathematics, Science and Technology, Social Sciences |

Master of Business Administration and Management Degrees (M.B.A., M.M., M.M.M.)

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

| Program | Thesis/Non-Thesis | Options |
|------------------------------|-------------------|--|
| M.B.A. | Non-Thesis | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| M.B.A. with B.C.L. and LL.B. | Non-Thesis | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| M.D./M.B.A. | Non-Thesis | N/A |
| M.B.A./Japan | Non-Thesis | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| E.M.B.A. | Non-Thesis | N/A |
| M.M.M. | Non-Thesis | N/A |
| M.M./IMPM | Non-Thesis | N/A |
| M.M./IMPMHL | Non-Thesis | N/A |

Master of Education (M.Ed.)

| Program | Thesis/Non-Thesis | Options |
|------------------------|-------------------|---------|
| Educational Psychology | Non-Thesis | N/A |

Master of Engineering (M.Eng.)

| Program | Thesis/Non-Thesis | Options |
|----------------------------------|--------------------|--|
| Aerospace Engineering | Non-Thesis | N/A |
| Biomedical Engineering | Thesis, Non-Thesis | Bioinformatics (Thesis) |
| Chemical Engineering | Non-Thesis | Environmental Engineering (Non-Thesis) |
| Civil Engineering | Thesis, Non-Thesis | Environmental Engineering (Non-Thesis) |
| Electrical Engineering | Thesis, Non-Thesis | Computational Science and Engineering (Thesis) |
| Mechanical Engineering | Thesis, Non-Thesis | Computational Science and Engineering (Thesis) |
| Mining and Materials Engineering | Thesis, Non-Thesis | Environmental Engineering (Non-Thesis) |

Master of Laws (LL.M.)

| Program | Thesis/Non-Thesis | Options |
|---------|--------------------|---|
| Law | Thesis, Non-Thesis | Bioethics, European Studies (Thesis) Air and Space Law, Environment, Comparative Law (Thesis and Non-Thesis) |

Master of Library and Information Studies (M.L.I.S.)

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.

| Program | Thesis/Non-Thesis | Options |
|---------------------|-------------------|---------|
| Information Studies | Non-Thesis | N/A |

Master of Music (M.Mus.)

| Program | Thesis/Non-Thesis | Options |
|---------------------|-------------------|---|
| Music – Composition | Non-Thesis | N/A |
| Performance | Thesis | Vocal Pedagogy, Jazz Performance, Early Music, Orchestral Instruments and Guitar, Collaborative Piano, Piano, Opera and Voice, Organ and Church Music, Conducting |
| Sound Recording | Non-Thesis | N/A |

Master of Sacred Theology (S.T.M.)

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.

| Program | Thesis/Non-Thesis | Options |
|-------------------|-------------------|---------|
| Religious Studies | Non-Thesis | N/A |

Master of Science (M.Sc.)

| Program Areas | Thesis/Non-Thesis | Options |
|---------------------------------|--------------------|---|
| Agricultural Economics | Thesis | N/A |
| Animal Science | Thesis | N/A |
| Atmospheric and Oceanic Science | Thesis | Environment (Thesis) |
| Biochemistry | Thesis | Bioinformatics, Chemical Biology (Thesis) |
| Biology | Thesis | Bioinformatics, Environment, Neotropical Environment |
| Bioresource Engineering | Thesis, Non-Thesis | Environment, Neotropical Environment (Thesis) Integrated |

| Program Areas | Thesis/Non-Thesis | Options |
|---|--------------------|--|
| Food Science and Agricultural Chemistry | Thesis, Non-Thesis | Food Safety (Non-Thesis) |
| Genetic Counselling | Non-Thesis | N/A |
| Geography | Thesis | Environment, Neotropical Environment |
| Human Genetics | Thesis | Bioethics, Bioinformatics |
| Human Nutrition | Thesis | N/A |
| Kinesiology and Physical Education | Thesis, Non-Thesis | N/A |
| Mathematics and Statistics | Thesis, Non-Thesis | Bioinformatics, Computational Science and Engineering |
| Mechanical Engineering | Thesis | N/A |
| Medical Radiation Physics | Thesis | N/A |
| Microbiology | Thesis | Environment |
| Microbiology and Immunology | Thesis | N/A |
| Mining and Materials Engineering | Thesis | N/A |
| Neuroscience | Thesis | N/A |
| Otolaryngology | Thesis | N/A |
| Parasitology | Thesis | Bioinformatics, Environment |
| Pathology | Thesis | N/A |
| Pharmacology | Thesis | Chemical Biology |
| Physics | Thesis | N/A |
| Physiology | Thesis | Bioinformatics |
| Plant Science | Thesis | Bioinformatics, Environment, Neotropical Environment |
| Psychiatry | Thesis | N/A |
| Psychology | Thesis | N/A |
| Public Health | Non-Thesis | Environment |
| Rehabilitation Sciences | Thesis, Non-Thesis | N/A |
| Renewable Resources | Thesis, Non-Thesis | Environment, Neotropical Environment (Thesis) Environmental Assessment (Non-Thesis) |

Master of Science, Applied (M.Sc.A.)

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.

| Program | Thesis/Non-Thesis | Options |
|--------------------------------------|--|---|
| Animal Science | Non-Thesis | N/A |
| Bioresource Engineering | Non-Thesis | Environment, Environmental Engineering, Neotropical Environment |
| Biotechnology | Non-Thesis | N/A |
| Chemistry | Non-Thesis | N/A |
| Communication Sciences and Disorders | Non-Thesis | Speech-Language Pathology |
| Human Nutrition | Non-Thesis (Project), Non-Thesis (Practicum) | N/A |
| Nursing | Non-Thesis | N/A |
| Occupational Health | Non-Thesis (Resident), Non-Thesis (Distance) | N/A |

| Program | Thesis/Non-Thesis | Options |
|----------------------|-------------------|---------|
| Occupational Therapy | Non-Thesis | N/A |
| Physical Therapy | Non-Thesis | N/A |
| Plant Science | Non-Thesis | N/A |

Master of Social Work (M.S.W.)

The M.S.W. degree represents a second level of professional study in which students build competence in a chosen field of practice.

| Program | Thesis/Non-Thesis | Options |
|---|--------------------|---------|
| Social Work | Thesis, Non-Thesis | N/A |
| Joint Master of Social Work with B.C.L. and LL.B. | Non-Thesis | N/A |

Master of Urban Planning

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

| Program | Thesis/Non-Thesis | Options |
|----------------|--------------------|--|
| Urban Planning | Thesis, Non-Thesis | Transportation Planning, Urban Design (Non-Thesis) |

4.4 Doctoral Degrees

The following section lists the doctoral degrees available at McGill, along with their prerequisites. See [section 4.4.1: Doctoral Degree Programs and Specializations](#) for specific programs and options for doctoral degrees.

| Degree | | 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 a 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 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. |

4.4.1 Doctoral Degree Programs and Specializations

Doctor of Civil Law (D.C.L.)

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.

| Program | Options | Offered by Faculty/School |
|---------|------------------------------------|---------------------------|
| Law | Air and Space Law, Comparative Law | Faculty of Law |

Doctor of Music (D.Mus.)

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 resup.182 154.501 Tto n.

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

| Program | Options | Offered by Faculty/School |
|--------------------------------------|---|--|
| Animal Science | Bioinformatics | Faculty of Agricultural and Environmental Sciences |
| Anthropology | Neotropical Environment | Faculty of Arts |
| Architecture | N/A | Faculty of Engineering |
| Art History | Gender and Women's Studies | Faculty of Arts |
| Atmospheric and Oceanic Sciences | N/A | Faculty of Science |
| Biochemistry | Bioinformatics, Chemical Biology | Faculty of Medicine |
| Biology | Bioinformatics, Developmental Biology, Environment, Neotropical Environment | Faculty of Science |
| Biomedical Engineering | Bioinformatics | Faculty of Medicine |
| Bioresource Engineering | Environment, Neotropical Environment | Faculty of Agricultural and Environmental Sciences |
| Biostatistics | N/A | Faculty of Medicine |
| Cell Biology | N/A | Faculty of Medicine |
| Chemical Engineering | N/A | Faculty of Engineering |
| Chemistry | Chemical Biology | Faculty of Science |
| Civil Engineering | N/A | Faculty of Engineering |
| Classics | N/A | Faculty of Arts |
| Communication Sciences and Disorders | Language Acquisition | Faculty of Medicine |
| Communication Studies | Gender and Women's Studies | Faculty of Arts |
| Computer Science | Bioinformatics | Faculty of Science |
| | s | Faculty of Education |

| Program | Options | Offered by Faculty/School |
|----------------------------------|---|--|
| Islamic Studies | Gender and Women's Studies | Faculty of Arts |
| Linguistics | Language Acquisition | Faculty of Arts |
| Management | N/A | Desautels Faculty of Management |
| Mathematics and Statistics | Bioinformatics | Faculty of Arts, Faculty of Science |
| Mechanical Engineering | N/A | Faculty of Engineering |
| Microbiology | N/A | Faculty of Agricultural and Environmental Sciences |
| Microbiology and Immunology | Bioinformatics, Environment | Faculty of Medicine |
| Mining and Materials Engineering | N/A | Faculty of Engineering |
| Music | (Composition, Music Education, Musicology, Music Technology, Sound Recording, Theory), Gender and Women's Studies | Schulich School of Music |
| Neuroscience | N/A | Faculty of Medicine |
| Nursing | Psychosocial Oncology | Ingram School of Nursing |
| Occupational Health | N/A | Faculty of Medicine |
| Parasitology | Bioinformatics, Environment | Faculty of Agricultural and Environmental Sciences |
| Pathology | N/A | Faculty of Medicine |
| Pharmacology | Chemical Biology | Faculty of Medicine |
| Philosophy | Environment, Gender and Women's Studies | Faculty of Arts |
| Physics | N/A | Faculty of Science |
| Physiology | Bioinformatics | Faculty of Medicine |
| Plant Science | Bioinformatics, Environment, Neotropical Environment | Faculty of Agricultural and Environmental Sciences |
| Political Science | Gender and Women's Studies | Faculty of Arts |
| Psychology | Language Acquisition, Psychosocial Oncology | Faculty of Arts, Faculty of Science |
| Rehabilitation Science | N/A | School of Physical and Occupational Therapy |
| Religious Studies | Gender and Women's Studies | Faculty of Religious Studies |
| Renewable Resources | Environment, Neotropical Environment | Faculty of Agricultural and Environmental Sciences |
| Russian | N/A | Faculty of Arts |
| School/Applied Child Psychology | N/A | Faculty of Education |
| Social Work | N/A | Faculty of Arts |
| Sociology | Environment, Gender and Women's Studies | Faculty of Arts |

Joint Doctor of Philosophy Degrees

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)

Ad Hoc Doctor of Philosophy Degrees (Ph.D. (Ad Hoc))

Several departments offer the possibility of directly entering a Ph.D. program on an *ad hoc* basis, or, with the permission of the supervisor and the approval of the Graduate Program Director, e

- 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 *Programs, Courses and University Regulations* publication, 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 grade of B- or better, all those courses that 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 coursework (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



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, 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 *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > Guidelines and Policies > : 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

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

See www.mcgill.ca/gradapplicants/apply/prepare/requirements/international-degree-equivalency for information on grade equivalencies and degree requirements from countries in Europe and around the world. These equivalencies and requirements are provided for information only and are subject to change without notice.

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

Revision, October 2012. End of revision.

6.3 Application Procedures (for All Admissions Starting Summer 2013)

Revision, October 2012. Start of revision.

Application Checklist

All supplemental application materials and supporting documents must be uploaded directly to the McGill admissions processing system. See www.mcgill.ca/gradapplicants/apply/submitting-your-documents for information and instructions.

- 1. Online Application for Admission form:** www.mcgill.ca/gradapplicants/apply/ready.
- 2. Application fee:** \$100 for each form you submit (you may indicate two programs on each form), payable by credit card when you submit the form. Some programs may charge additional fees. If applicable these will be automatically charged when you submit the application form.
- 3. Transcripts:** your complete record of study from each university-level institution you have attended to date. Uploaded copies will be considered as unofficial; final, official copies will be required once you are offered admission.
- 4. Reference letters:** on the application form you must provide the names and email addresses of at least two professors who are familiar with your academic work. McGill will contact these referees and invite them to upload references on your behalf. N.B. some departments require more than two referees; please consult *Admission Requirements and Application Procedures* for each department at [rs0ontanqu submit the form](#).

6.4 Admission Tests

Revision, October 2012. Start of revision.

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, se

6.6 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 under

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 0G4
Telephone: 514-398-3990
Fax: 514-398-2626
Website: www.mcgill.ca/gps/students/funding/students-postdocs

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 countries in the list, which can be found at www.mels.gouv.qc.ca/sections/publications/index.asp?page=fiche&id=1039, are eligible for such exemptions. For more information and the necessary application materials, see 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 (DFWs) 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 postdoctoral scholars 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 Enrolment Services in order to have access to University facilities (library, computer, etc.).

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 Graduate and Postdoctoral Studies *University Regulations and Resources*;
- to submit a complete file for registration to Enrolment Services;
- 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 for maternity or parental reasons or for health reasons (see *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : 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 Enrolment Services. See procedure under *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : 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/students/progress/leave-vacation 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 Government of Quebec's 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 Government of Quebec's 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;
- the individual must be engaged in full-time research;
- the individual must provide copies of official transcripts/diploma;
- the individual must have the approval of a McGill professor to supervise the research and of the Unit;
- the individual must have adequate proficiency in English, but is not required to pro

- Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision
- Policy on Graduate Student Research Progress Tracking
- Ph.D. Comprehensives Policy
- Graduate Studies Reread Policy
- Health and Parental/Familial Leave of Absence Policy
- Failure Policy
- Guideline on Hours of Work

10 Information on Research Policies and Guidelines, Patents, Postdocs, Associates, Trainees

Refer to *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Research Policy and Guidelines, Patents, Postdocs, Associates, Trainees* for information on the following:

- Policy on Research Ethics
- Regulations on Research Policy
- Policy on Research Integrity
- Guidelines for Research Involving Human Subjects
- Guidelines for Research with Animal Subjects
- Policy on Intellectual Property
- Regulations Governing Conflicts of Interest
- Safety in Field Work
- Office of Sponsored Research
- Postdocs
- Research Associates

11 Academic Programs

The programs and courses in the following sections have been approved for the 2012–2013 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 [section 11.7: 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.(Agr.)(McG.), M.S., Ph.D.(Hawaii Pac.)

Assistant Professors

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

A. Naseem; B.Sc.(McG.), M.Sc.(Penn.), M.A., 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 depends on the background of the individual student and must be approved by the student's Advisory Committee. At a minimum, it includes two seminar

The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

Required Courses

| | | |
|----------|-----|------------------------------------|
| ANSC 701 | (0) | Doctoral Comprehensive Examination |
|----------|-----|------------------------------------|

Two seminar courses at the 500, 600, or 700 level.

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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 |
| | (3) | Bioinformatics: Proteomics |

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 modelling, design, management, and remediation); water resources management (hydrology, irrigation, drainage, water quality); agricultural machinery, mechatronics, and robotics; food engineering and bio-processing; post-harvest technology; waste management and protection of the environment; bio-energy; and 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 regard 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

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 regard 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

Revision, October 2012. Start of revision.

Candidates for M.Sc. and Ph.D. degrees and Graduate Certificates 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.

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.**

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

11.3.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

11.3.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

- Acceptance to all programs depends on a staff member agreeing to serv

Research/Professional Associates

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

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 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.

11.3.7 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

Required Courses (30 credits)

BREE 503 (3) Water: Society, Law and Policy
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
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 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 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 chosen in consultation with the Environment Option Committee.

| | | |
|----------|-----|---------------------------------|
| 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 |
|----------|-----|-----------------------------------|

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

Further complementary courses (balance of course)

11.4.3 Biotechnology Admission Requirements and Application Procedures

11.4.3.1 Admission Requirements

Revision, October 2012. Start of revision.

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.

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.**

Financial Support – **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.

11.4.3.2 Application Procedures

McGill's online application form for graduate program candidates is available. Dates are as follows:

| | | |
|----------|-----|----------------------------------|
| 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.

11.4.6 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) | Molecular 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 |

11.5 Dietetics and Human Nutrition

11.5.1 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

11.5.2 About Dietetics and Human Nutrition

In the School of Dietetics and Human Nutrition, cutting-edge nutrition research is conducted by its nine 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; 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 recovery 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 11.5.5: 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 11.5.7: Master of Science, Applied (M.Sc.A.); Human Nutrition (Non-Thesis) — Practicum (45 credits) and section 11.5.6: 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 program. It allows students to further develop knowledge and expertise in nutrition. Students are required to complete 29 credits in advanced Nutrition courses plus 16 credits related to a research project or an advanced practicum (reserved for registered dietitians). Careers include managerial positions for practising dietitians, and careers in nutrition programs, government, and industry.

section 11.5.8: 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 apply to our Graduate Diploma in R.D. Credentialing, upon completion of the M.Sc. or Ph.D. program and upon completion of the undergraduate courses required by *l'Ordre professionnel des diététistes du Québec* (OPDQ). 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 Québec, as well as in other Canadian provinces and other countries.

section 11.5.9: 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 Canada and internationally.

11.5.3 Dietetics and Human Nutrition Admission Requirements and Application Procedures

11.5.3.1 Admission Requirements

Revision, October 2012. Start of revision.

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 admission requirements, applicants must contact Dr. Maureen Rose in the School of Dietetics and Human Nutrition.

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 courses 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.**

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

11.5.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

11.5.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

- 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.
- 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.

11.5.3.3 Dates for Guaranteed Consideration

| Canadian | International | Special/Exchange/Visiting |
|--------------------|----------------------|--|
| Fall: March 15 | Fall: March 15 | Fall: March 15 |
| Winter: October 15 | Winter: September 15 | Winter: Same as Canadian/International |
| Summer: March 1 | Summer: January 15 | Summer: Same as Canadian/International |

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.

Revision, October 2012. End of revision.

11.5.4 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*)

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

0-3 credits:

| | | |
|----------|-----|----------------------------|
| NUTR 513 | (3) | Credentialing in Dietetics |
|----------|-----|----------------------------|

11.5.6 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.

11.5.7 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 Cour/F1 8.1 Tf1 0 0 OH.873 81s.

3 credits in research methods at the 500 lev

section 11.6.5: 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

| Canadian | International | Special/Exchange/Visiting |
|------------------|------------------|--|
| Fall: June 30 | Fall: March 1 | Fall: Same as Canadian/International |
| Winter: Nov. 15 | Winter: Sept. 15 | Winter: Same as Canadian/International |
| Summer: March 30 | Summer: Jan. 15 | Summer: Same as Canadian/International |

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.

Revision, December 2012. End of revision.

11.6.4 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)

11.6.5 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.

PROGRAM REQUIREMENTS

Research Project (12 credits)

FDSC 697 (6) M.Sc. Project Part 1

FDSC 698 (6) M.Sc. Project Part 2

Complementary Courses (18 credits)

3 credits chosen from the following:

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

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

15 credits chosen from the following:

| | | |
|----------|-----|--|
| AGRI 510 | (3) | Professional Practice |
| FDSC 515 | (3) | Enzyme Thermodynamics/Kinetics |
| FDSC 516 | (3) | Flavour Chemistry |
| FDSC 519 | (3) | Advanced Food Processing |
| FDSC 520 | (3) | Biophysical Chemistry of Food |
| FDSC 535 | (3) | Food Biotechnology |
| FDSC 536 | (3) | Food Traceability |
| FDSC 537 | (3) | Nutraceutical Chemistry |
| FDSC 538 | (3) | Food Science in Perspective |
| FDSC 540 | (3) | Sensory Evaluation of Foods |
| FDSC 545 | (3) | Advances in Food Microbiology |
| FDSC 634 | (3) | Food Toxins & Toxicants |
| FDSC 651 | (3) | Principles of Food Analysis 2 |
| FDSC 652 | (3) | Separation Techniques in Food Analysis 2 |

Elective Courses (15 credits)

At the 500 level or higher, and chosen in consultation with the academic adviser.

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

The program is intended to train graduate students as specialists in food safety with the expectation that graduates will be well prepared academically to take on the challenging food safety events and issues that emerge both in Canada and globally. The program will cover food safety through the entire food supply

Herbs, Foods and Ph

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

11.7.2 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. An interdisciplinary option in Bioinformatics for doctoral students is 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, and the Ecomuseum of the St. Lawrence Valley Natural History Society.

Master of Science Degrees

section 11.7.5: 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 11.7.6: Master of Science (M.Sc.); Entomology (Thesis) (45 credits)

Please contact the Department for more information about this program.

section 11.7.7: Master of Science (M.Sc.); Entomology (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.7.8: Master of Science (M.Sc.); Entomology (Thesis) — Neotropical Environment (48 credits)

Please contact the Department for more information about this program.

section 11.7.9: Master of Science (M.Sc.); Microbiology (Thesis) (45 credits)

Please contact the Department for more information about this program.

section 11.7.10: Master of Science (M.Sc.); Microbiology (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.7.11: Master of Science (M.Sc.); Renewable Resources (Thesis) (45 credits)

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

section 11.7.12: Master of Science (M.Sc.); Renewable Resources (Thesis) — Environment (46 credits)

Please contact the Department for more information about this program.

section 11.7.13: Master of Science (M.Sc.); Renewable Resources (Thesis) — Neotropical Environment (48 credits)

Please contact the Department for more information about this program.

section 11.7.14: Master of Science (M.Sc.); Renewable Resources (Non-Thesis) — Environmental Assessment (45 credits)

This program is under revision. Please contact the Department for more information.

Ph.D. Degrees in Entomology

Professors

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 Forest Ecology)*

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*

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)*

S. Faucher; B.Sc., Ph.D.(Montr.); *Microbiology*

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. Autonom de Barcelona), Ph.D.(Univ. Autonom 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*)

I. Vaccaro (*Anthropology, McGill School of Environment*)

Adjunct Professors

D. Angers

G. Boivin

M.A. Bouchard

K. Fernie

C. Greer

D. Houle

J.P. Savard

E. Smith

Adjunct Professors

G. Sunahara

C. Vincent

F. Whoriskey

11.7.5 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 |
|----------|-----|---------|

Complementary Courses (18 credits)

6 credits, two theory courses chosen from:

| | | |
|----------|-----|--|
| 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 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.

11.7.6 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.

Master of Science (1 0 0651)

| | | |
|----------|-----|-------------------------------------|
| 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.

11.7.9 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.

11.7.10 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 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.

11.7.11 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.

11.7.12 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 |

Complementary Courses (6 credits)

3 credits, one of the following courses:

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

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

11.7.13 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.

11.7.14 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 |
|----------|-----|--|

Required Internship (15 credits)

| | | |
|----------|------|-------------------------------------|
| NRSC 615 | (15) | Environmental Assessment Internship |
|----------|------|-------------------------------------|

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.

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

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

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

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

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

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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 lar

11.7.19 Doctor of Philosophy (Ph.D.); Entomology — Neotropical Environment**Thesis**

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

11.7.20 Doctor of Philosophy (Ph.D.); Microbiology — Bioinformatics**Thesis**

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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 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.

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

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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

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

11.8.2 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 11.8.5: 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 11.8.6: 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.

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.

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.**

Financial Aid – **Financial aid is very limited and highly competitive.**

Assistant Professors

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*)

11.8.5 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.

11.8.6 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 |
| | | Bioinformatics Seminar |

| | | |
|----------|-----|-------------------------------------|
| 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.

11.8.7 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 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.

11.8.8 Doctor of Philosophy (Ph.D.); Parasitology

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner.

The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

11.8.9 Doctor of Philosophy (Ph.D.); Parasitology — Bioinformatics

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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.

11.8.10 Doctor of Philosophy (Ph.D.); Parasitology — Environment

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

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 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.

Plant Science

section 11.9.5: Master of Science (M.Sc.); Plant Science (Thesis) (45 credits)

This M.Sc. in Plant Science requires approximately two years for completion. Overall, the program 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 11.9.6

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 an 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.

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.

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

11.9.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

See [section 6.3: Application Procedures \(for All](#)

Associate Professors

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.)

K. Stewart; B.Sc.(Agr.), (Br. Col.), Ph.D.(R'dg) (*Post-Retirement*)

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.)

Agr

| | | |
|----------|------|----------------|
| 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 |
|----------|-----|--------------------------------------|

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 511 | (3) | Bioinformatics for Genomics |
| 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.

11.9.7 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 |
|----------|-----|--------------------------------------|

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 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.

11.9.8 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 |
|----------|-----|--------------------------------------|

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.

11.9.9 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.

11.9.10 Doctor of Philosophy (Ph.D.); Plant Science

PLNT 690 (0) Research Horizons in Plant Science 1

Required Courses

* Must be taken within one year of registering

PLNT 701 (0) Doctoral Comprehensive Examination

Complementary Courses

Any courses at the 500 or 600 level deemed necessary for the chosen area of specialization.

11.9.11 Doctor of Philosophy (Ph.D.); Plant Science — Bioinformatics

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

Required Invitational Seminar

PLNT 690 (0) Research Horizons in Plant Science 1

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 511 (3) Bioinformatics for Genomics
 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.

11.9.12 Doctor of Philosophy (Ph.D.); Plant Science — Environment

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

Required Invitational Seminar

PLNT 690 (0) Research Horizons in Plant Science 1

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 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.

11.9.13 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.

The required thesis for this Ph.D. degree must display original scholarship expressed in proper literate style and must be a distinct contribution to knowledge.

Candidates must participate in the STRI seminar series when in residence in Panama, and in the MSE-Panama Symposium Presentation in Montreal.

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

Required Invitational Seminar

| | | |
|----------|-----|--------------------------------------|
| PLNT 690 | (0) | Research Horizons in Plant Science 1 |
|----------|-----|--------------------------------------|

Required Courses (6 credits)

* Must be taken within one year of registering.

| | | |
|----------|-----|------------------------------------|
| BIOL 640 | (3) | Tropical Biology and Conservation |
| | | Foundations of Environmental Polic |

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.

11.9.14 Graduate Certificate in Bioinformatics (15 credits)

Required Courses (9 credits)

Bioinformatics for Genomics

