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This publication provides guidance to prospects, applicants, students, faculty and staff.

1. McGill University reserves the right to make changes to the information contained in this online publication - including correcting errors, altering fees, schedules of admission, and credit requirements, and revising or cancelling particular courses or programs - without prior notice.
2. In the interpretation of academic regulations, the Senate is the final authority.
3. Students are responsible for informing themselves of the University's procedures, policies and regulations, and the specific requirements associated with the degree, diploma, or certificate sought.
4. All students registered at McGill University are considered to have agreed to act in accordance with the University procedures, policies and regulations.
5. Although advice is readily available on request, the responsibility of selecting the appropriate courses for graduation must ultimately rest with the student.
6. Not all courses are offered every year and changes can be made after publication. Always check the Minerva Class Schedule link at https://banweb.mcgill.ca/pban1/bwckschd.p_disp_dyn_sched for the most up-to-date information on whether a course is offered.
7. The academic publication year begins at the start of the Fall semester and extends through to the end of the Winter semester of any given year. Students who begin study at any point within this period are governed by the regulations in the publication which came into effect at the start of the Fall semester.
8. Notwithstanding any other provision of the publication, it is expressly understood by all students that McGill University accepts no responsibility to provide any course of instruction, program or class, residential or other services including the normal range of academic, residential and/or other services in circumstances of utility interruptions, fire, flood, strikes, work stoppages, labour disputes, war, insurrection, the operation of law or acts of God or any other cause (whether similar or dissimilar to those enumerated) which reasonably prevent their provision.

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

Publication Information

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2.3 General Statement Concerning Higher Degrees

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

3 Important Dates 2011-2012

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

4 Graduate Studies at a Glance

McGill University offers graduate and postdoctoral programs in the following units (org

Arts

: Political Science

: Psychology

: Russian and Slavic Studies

: Social Studies of Medicine

: Social Work

: Sociology

Dentistry

: Dentistry

Desautels Faculty of Management

: Desautels Faculty of Management

Education

: Educational and Counselling Psychology

: Information Studies

: Integrated Studies in Education

: Kinesiology and Physical Education

Engineering

: Architecture

: Chemical Engineering

: Civil Engineering and Applied Mechanics

: Electrical and Computer Engineering

: Mechanical Engineering

: Mining and Materials Engineering

: Urban Planning

Law

: Law

McGill School of Environment

: Environment

Medicine

:

Medicine

: Microbiology and Immunology

: Neuroscience (Integrated Program in)

: Nursing

: Occupational Health

: Otolaryngology – Head and Neck Surgery

: Pathology

: Pharmacology and Therapeutics

: Physical and Occupational Therapy

: Physiology

: Psychiatry

: Surgical Research

Religious Studies

: Religious Studies

Schulich School of Music

: Schulich School of Music

Science

: Atmospheric and Oceanic Sciences

: Biology

: Chemistry

: Computer Science

: Earth and Planetary Sciences

: Geography

: Mathematics and Statistics

: Physics

: Psychology

4.1 Graduate Diplomas and Certificates

Graduate diplomas and graduate certificates are programs of study under the academic supervision of Graduate and Postdoctoral Studies. They have as a

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

All graduate regulations apply to graduate diploma and certificate candidates.

4.2 Master's Degrees

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

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

Master of Architecture Degrees

M.Arch. programs offered:

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

Master of Arts Degrees

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

Anthropology (Thesis and Non-Thesis); options in Development Studies, Environment, Gender and Women's Studies, Medical Anthropology
Art History (Non-Thesis); option in Gender and Women's Studies (Non-Thesis)
Classics (Thesis and Non-Thesis)
Communication Studies (Thesis and Non-Thesis); option in Gender and Women's Studies
Economics (Thesis and Non-Thesis); options in Development Studies (Non-Thesis) and Social Statistics (Non-Thesis)
Education (Thesis and Non-Thesis)
English (Thesis and Non-Thesis)
French (Thesis and Non-Thesis); option in Gender and Women's Studies
Geography; options in Development Studies, Environment, Gender and Women's Studies, Neotropical Environment, Social Statistics
German Studies (Thesis and Non-Thesis)
Hispanic Studies (Thesis and Non-Thesis)
History (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), European Studies (Thesis and Non-Thesis), Gender and Women's Studies (Thesis and Non-Thesis), History of Medicine (Non-Thesis)
Islamic Studies; option in Gender and Women's Studies
Italian Studies (Thesis and Non-Thesis)
Jewish Studies (Thesis and Non-Thesis)
Kinesiology and Physical Education (Thesis and Non-Thesis)
Linguistics (Non-Thesis)
Mathematics and Statistics (Thesis and Non-Thesis)
Music (Thesis and Non-Thesis)
Philosophy; option in Bioethics
Political Science (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), European Studies (Thesis and Non-Thesis), Gender and Women's Studies (Non-Thesis), Social Statistics (Non-Thesis)
Psychology
Religious Studies (Thesis and Non-Thesis); options in Bioethics and Gender and Women's Studies
Russian
Sociology (Thesis and Non-Thesis); options in Development Studies (Thesis and Non-Thesis), Environment, Gender and Women's Studies (Thesis and Non-Thesis), Medical Sociology (Thesis and Non-Thesis), Social Statistics (Non-Thesis), Neotropical Environment

Master of Business Administration Degrees

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

Finance
Global Strategy and Leadership
Marketing
Technology and Innovation Management

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

Special programs:

M.B.A. with M.D.,C.M.
M.B.A. with B.C.L. and LL.B.
Master of Manufacturing Management (see Management and Mechanical Engineering)

Master's Degrees in Education

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

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

Counselling Psychology (Thesis and Non-Thesis): Counselling Psychology – Professional/Internship (Non-Thesis), Counselling Psychology – Project (Non-Thesis)
Education and Society (Thesis and Non-Thesis); options in Gender and Women's Studies (Thesis and Non-Thesis) and Jewish Studies (Thesis and Non-Thesis)

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

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

Educational Psychology

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

Kinesiology and Physical Education (Thesis and Non-Thesis)

Master's Degree in Engineering

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

Aerospace Engineering (Project)
Biomedical Engineering; option in Bioinformatics
Chemical Engineering (Thesis and Project); option in Environmental Engineering (Project)
Civil Engineering and Applied Mechanics (Thesis and Project); option in Environmental Engineering (Project)
Electrical Engineering (Thesis and Project); option in Computational Science and Engineering
Mechanical Engineering (Thesis and Project); option in Computational Science and Engineering

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

Master of Science Degrees

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

Agricultural Economics
Animal Science
Atmospheric and Oceanic Science; options in Computational Science and Engineering, and Environment
Biochemistry; options in Bioinformatics, and Chemical Biology
Biology; options in Bioinformatics, Environment, and Neotropical Environment
Bioresource Engineering; options in Environment, Integrated Water Resource Management (Non-Thesis), and Neotropical Environment
Cell Biology and Anatomy
Chemical Engineering
Chemistry; option in Chemical Biology
Civil Engineering and Aph.d 0 1 89.146 56146 56146

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

Other degrees:

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

Master of Social Work Degrees

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

Special program:

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

Master of Urban Planning Degree

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

Options: Transportation Planning and Urban Design.

4.3 Doctoral Degrees

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

The following doctoral degrees are offered (*see below for more information about sub-specializations*):	**Prerequisites:**
Doctor of Civil Law (D.C.L.)	B.C.L. or LL.B. and usually LL.M. See Law.
	M.A. in Composition (D.Mus. in Composition) or an master's degree in

Biology; options in Bioinformatics, Developmental Biology, Environment, and Neotropical Environment
Biomedical Engineering; option in Bioinformatics
Bioresource Engineering; options in Environment, and Neotropical Environment
Chemical Engineering
Chemistry; option in Chemical Biology
Civil Engineering and Applied Mechanics
Classics
Communication Studies; option in Gender and Women's Studies
Communication Sciences and Disorders; option in Language Acquisition
Computer Science; option in Bioinformatics
Counselling Psychology
Earth and Planetary Sciences; option in Environment
Economics
Educational Psychology
Educational Studies; option in Gender and Women's Studies
Electrical Engineering
English
Entomology; options in Environment, and Neotropical Environment
Epidemiology and Biostatistics
Food Science and Agricultural Chemistry
French; option in Gender and Women's Studies
Geograph

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

Language Requirements – Master's Degrees

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

5.2 Doctoral Degrees

Residence Requirements – Doctoral

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

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

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

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

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

Note: The master’s degree must have been aw

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

5.3 Ad Hoc Programs

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

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

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

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

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

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

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

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

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

The applicant must present evidence of academic achievement: a minimum standing equivalent to a cumulative grade point average (CGPA) of 3.0 out of a possible 4.0 or a CGPA of 3.2/4.0 for the last two full-time academic years. High grades are ehouldered f

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

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

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

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

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

6.8 Admission to an Ad Personam Joint Program

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

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

6.9 Admission to an Ad Hoc Program (Thesis)

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

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

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

6.10 Reinstatement and Admission of Former Students

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

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

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

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

Revised – Council of February 9, 2004.

6.11 Deferral of Admission

Under [illegible] circumstances, an admission f[illegible]a par[illegible]ular semester can be considered for a deferral. This can be considered only if the student has not register[illegible]. If the student has already registered, n[illegible]eferra[illegible]an be granted. The student must withdraw from the University and apply for admission to a later term.

Fello

7 Fe[illegible]owships, Awa[illegible] and As[illegible]tantships

Graduate and Postdoctoral Studies
(Fellowships and Awards Section)
James Administration Building, Room 400
845 Sherbrookna7edocreetes5ips30

Email: *graduate.fellowships@mcgill.ca*
Website: *www.mcgill.ca/gps/students* (under Fellowships and Awards)

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

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

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

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

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

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

8 Postdoctoral Research

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

8.1 Postdocs

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

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

8.2 Guidelines and Policy for Academic Units on Postdoctoral Education

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

1. **Definition and Status**

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

2. **Registration**

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

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

3. **Appointment, Pay, Agreement of Conditions**

i.

– to uphold and transmit to their Postdocs the highest professional standards of research and/or scholarship;

– to provide research guidance;

– to meet regularly with their Postdocs;

– to provide feedback on research submitted by the Postdocs;

– to clarify expectations regarding intellectual property rights in accordance with the University's policy;

– to provide mentorship for career development;

– to prepare, sign, and adhere to a Letter of Agreement for Postdoctoral Education.

vi. Some examples of responsibilities of Postdocs are:

– to inform themselves of and adhere to the University's policies and/or regulations for Postdocs for leaves, for research, and for student conduct as outlined in the *Handbook on Student Rights and Responsibilities* and the *General Information, Regulations and Researc*

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

2. Program

i. Early in their program, students should be informed of the phases through which they must pass toward the achievement of the graduate degree, the approximate amount of time each phase should take, the criteria for its successful completion, and any deadlines relating to these phases.

ii. It is important that students are made aware of whatever courses are required to complete their programs, that these courses are available, and that they relate to students' proposed areas of research or to the development of related areas of scholarship.

iii. Where relevant, students should also be informed early in their program of language requirements or comprehensive examinations. The guidelines, criteria and procedures for comprehensive examinations must be explicit and consistently applied in each program. Academic units should consider the rationale for language and comprehensive examinations and how they relate to the objectives of the graduate program.

iv. Every effort should be taken to ensure that students choose, as soon as possible, realistic and appropriate areas of research commensurate with degree requirements.

v. There must be clear procedures established in every unit by which students receive guidance and constructive criticism on their progress on a regular basis through the program (e.g., regular meetings and/or email communication with supervisors and committees, attendance at research seminars, semester or annual reviews of student progress). In addition to regular meetings between the student and supervisor or advisory/thesis committee, each unit must establish a procedure to provide feedback to thesis students regarding their research progress. At least annually, there must be a

iii. Academic units should establish criteria of excellence in supervision and graduate teaching appropriate to their disciplines and should suitably reward those who meet these criteria, e.g., in decisions concerning tenure and promotion, or merit pay awards.

iv. The maximum number of students under the direction of a single supervisor should be consistent with the ability of the supervisor to provide quality supervision, taking into account the workload of the supervisor and norms of the discipline.

v. Procedures should be established for ensuring continuity in supervision when a student is separated from a supervisor

The majority of doctoral programs at McGill require candidates to pass a comprehensive e

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

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

Plagiarism

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

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

Failures

i. Repeats

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

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

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

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

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

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

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

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

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

4. The student's and the instructor's names are blanked out to reduce the possibility of prejudice and to help meet the requirement of the Charter of Students' Rights that the re

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

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

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

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

No retroactive requests for leave of absence will be considered.

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

9.7 Failure Policy

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

9.8 Guideline on Hours of Work

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

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

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

10.1 Policy on Research Ethics

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

10.2 Regulations on Research Policy

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

10.3 Policy on Research Integrity

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

10.4 Guidelines for Research Involving Human Subjects

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

10.5 Guidelines for Research with Animal Subjects

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

10.6 Policy on Intellectual Property

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

10.7 Regulations Governing Conflicts of Interest

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

10.8 Safety in Field Work

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

10.9 Office of Sponsored Research

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

10.10 Postdocs

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

10.11 Research Associates

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

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

11.1.2 About Agricultural Economics

For program information please see the *section 11.6: Natural Resource Sciences*.

11.1.3 Agricultural Economics Faculty

Program Director

J.C. Henning

Associate Professors

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

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

Assistant Professor

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

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

11.2 Animal Science

11.2.1 Location

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

Telephone: 514-398-7794
Fax: 514-398-7964
Email: *animal.science@mcgill.ca*
Website: *www.mcgill.ca/animal*

11.2.2 About Animal Science

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

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

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

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

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

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

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

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

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

11.2.3 Animal Science Admission Requirements and Application Procedures

11.2.3.1 Admission Requirements

M.Sc. (Thesis)

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

M.Sc. (Applied)

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

Ph.D.

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

11.2.3.2 Application Procedures

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

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

Telephone: 514-398-7792
Fax: 514-398-7964
Email: *animal.science@mcgill.ca*

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

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

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

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

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

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

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

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

Documents submitted will not be returned.

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

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

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

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

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

11.2.4 Animal Science Faculty

Chair

Kevin M. Wade

Emeritus Professors

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

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

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

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

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

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

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

Professors

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

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

Associate Professors

V. Bordignon; D.V.M.(URCAMP, Brazil), M.Sc.(UFPel, Brazil), Ph.D.(Montr.)

R.I. Cue; B.Sc.(Newcastle, UK), Ph.D.(Edin.)

H. Monardes; Ing.Agr.(Concepcion, Chile), M.Sc., Ph.D.(McG.)

A.F. Mustafa; B.Sc., M.Sc.(Khartoum), Ph.D.(Sask.) (*William Dawson Scholar*)

L.E. Phillip; B.Sc.(Agr.), M.Sc.(Agr.)(McG.), Ph.D.(Guelph)

K.M. Wade; B.Sc.(Agr.), M.Sc.(Agr.)(Dublin), Ph.D.(C'nell)

D. Zadworny; B.Sc., Ph.D.(Guelph)

Assistant Professors

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

R. Duggavathi; B.V.Sc., M.V.Sc.(Bangalore), Ph.D.(Sask.)

S. Kimmins; B.Sc.(Dal.), M.Sc.(Nova Scotia Ag.), Ph.D.(Dal.)

Adjunct Professors

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

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

Thesis Courses (31 credits)

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

Required Courses (14 credits)

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

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

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

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

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

Research Project (15 credits)

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

Complementary Courses (30 credits)

15-30 credits from the following:

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

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

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

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

Thesis

Required Courses

ANSC 701	(0)	Doctoral Comprehensive Examination

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

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

Thesis

The thesis must clearly show originality and be a contrib76 Tm(b)Tj1 0 0 1 250.961 140.1 0 0 1 250v1 0 0 Tearly sho

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

Complementary Courses (6 credits)

Two courses chosen from the following:

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

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

11.3 Bioresource Engineering

11.3.1 Location

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

Telephone: 514-398-7774
Fax: 514-398-8387
Email: *susan.gregus@mcgill.ca*
Website: *www.mcgill.ca/bioeng*

11.3.2 About Bioresource Engineering

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

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

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

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

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

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

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

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

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

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

section 11.3.9: Master of Science,

11.3.3.2 Application Procedures

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

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

Telephone: 514-398-7774
Fax: 514-398-8387
Email: *susan.gregus@mcgill.ca*

Associate Graduate Program Director

Research/Professional Associates

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

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

Technical

S. Manktelow

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

This option for the M.Sc. degree is oriented toward indi

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

Complementary Courses (3 credits)

Chosen from the following:

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

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

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

Thesis (32 credits)

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

Required Courses (11 credits)

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

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

Elective Course (3 credits)

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

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

Research Project (6 credits)

BREE 631	(6)	Integrated Water Resources Management Project

Required Courses (30 credits)

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

Complementary Courses (9 credits)

9 credits selected as follows:

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

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

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

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

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

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

Research Project (12 credits)

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

Required Courses (2 credits)

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

Complementary Courses (31 credits)

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

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

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

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

Research Project (12 credits)

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

Required Courses (8 credits)

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

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

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

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

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

Research Project (6 credits)

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

* BREE 671 may also be tak9ts).11.3.1W0 0 1 221.949 887.74493(.11.3.1ls E Qithityialnag.03,.0 0 1 165.864 571.52493(.11.3.1(31 0 0 1 70.52 571.52493(.11.3.171 m

Environmental Impact Course

3 credits from the following:

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

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

Environmental Policy Course

3 credits from the following:

URBP 506	(3)	Environmental Policy and Planning

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

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

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

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

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

Thesis

Required Courses

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

Complementary Courses

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

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

Thesis

Required Courses

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

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

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

Complementary Courses

One course chosen from the following:

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

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

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

Thesis

Required Cour

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

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

11.4 Dietetics and Human Nutrition

11.4.1 Location

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

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

11.4.2 About Dietetics and Human Nutrition

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

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

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

A master’s degree in Human Nutrition offers advanced Nutrition courses in a broad range of research areas. The program is suitable for students with an undergraduate degree in nutritional sciences, exercise physiology, kinesiology, food science, biochemistry, medicine, or another closely related field. Students are required to complete 14 credits in advanced nutrition course

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

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

11.4.3 Dietetics and Human Nutrition Admission Requirements and Application Procedures

11.4.3.1 Admission Requirements

M.Sc. Thesis and M.Sc. Applied (Project or Practicum)

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

Dates for Guaranteed Consideration

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

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

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

Associate Members

Parasitology: Marilyn E. Scott

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

Adjunct Professors

Laurie Chan (*UNBC*)

Kevin A. Cockell (*Health Canada*)

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

Thesis Courses (31 credits)

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

Required Courses (2 credits)

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

Complementary Courses (12 credits)

3 credits in graduate-level statistics

3 credits in graduate-level research methods

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

0-3 credits:

NUTR 513	(3)	Credentialing in Dietetics

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

Research Project (12 credits)

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

Required Courses (6 credits)

	(3)	M.Sc. (Applied) Nutrition 1

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 in consultation with the student's academic adviser or supervisor.

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

Practicum (12 credits)

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

Required Courses (6 credits)

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

Complementary Courses (18 credits)

3 credits in statistics at the 500 level or higher

3 credits in research methods at the 500 lee3 crits)

11.5.3.2 Application Procedures

Applicants for graduate studies must forward supporting documents to:

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

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

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

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

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

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

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

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

Submitted documents will not be returned.

Application and Fee

11.5.4 Food Science and Agricultural Chemistry Faculty

Chair

V. Yaylayan

Chair of Graduate Program

S. Karboune

Professors

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

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

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

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

Associate Professors

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

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

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

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

Assistant Professors

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

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

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

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

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

Research Project (9 credits)

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

Required Courses (6 credits)

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

Complementary Courses (30 credits)

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

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

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

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

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

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

Thesis (30 credits)

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

Required Courses (6 credits)

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

Complementary Courses (9 credits)

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

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

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

Thesis

Required Courses (9 credits)

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

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

11.6 Natural Resource Sciences

11.6.1 Location

Department of Natural Resource Sciences

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

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

11.6.2 About Natural Resource Sciences

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

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

Master of Science Degrees

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

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

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

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

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

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

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

Candidates are required to have a bachelor's degree in a relevant subject, with an equivalent cumulativ

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

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

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

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

Telephone: 514-398-7890
Fax: 514-398-7990

Applications will be considered upon receipt of:

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

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

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

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

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

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website:

Emeritus Professors

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

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

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

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

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

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

Professors

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

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

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

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

Associate Professors

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

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

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

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

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

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

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

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

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

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

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

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

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

Assistant Professors

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

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

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

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

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

Associate Members

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

Adjunct Professors

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

Master of Science (M.Sc.);

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)

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

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

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

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

Thesis Courses (36 credits)

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

Required Courses (9 credits)

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

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

Elective Courses (3 credits)

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

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

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

Research Project (9 credits)

NRSC 616	(9)	Environmental Assessment Project Paper

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.

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

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

Thesis

Required Courses

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

Coursework

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

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

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

Thesis

Required Courses

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

Coursework

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

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

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

Thesis

Required Courses

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

Coursework

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

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

Thesis

Required Courses

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

Coursework

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

Complementary Courses

One course chosen from the following:

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

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

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

Thesis

Required Courses

BIOL 640	(3)	Tropical Biology and Conservation
		F

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

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

Elective Courses

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

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

Thesis

Required Courses

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

Complementary Courses

6 credits from the following courses:

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

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

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

Thesis

Required Courses

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

Coursework

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

Complementary Courses

One course chosen from the following:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 580	(3)	Topics in Environment 3
		The Economy of Nature4

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

Thesis

Required Courses

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

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

Elective Courses

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student’s supervisor AND the Neotropical En

11.7.3.2 Application Procedures

Applicants for the thesis research degrees (M.Sc. and Ph.D.) must forward supporting documents to:

Thesis Research Graduate Programs
Institute of Parasitology
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7722
Fax: 514-398-7857
Email: *graduate.parasitology@mcgill.ca*
Website: *www.mcgill.ca/parasitology*

Applicants for the Biotechnology programs must forward supporting documents to:

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

Telephone: 514-398-7725
Fax: 514-398-7857
Email: *program.biotech@mcgill.ca*
Website: *www.mcgill.ca/biotechgradprog*

Applications – Complete the online application form available at *www.mcgill.ca/gradapplicants/apply*. Note: There is a CAD$100 non-refundable application fee. Applications will not be processed without payment. Paper applications, or PDF versions thereof, are no longer available. All applications to McGill must be done online. Applications will be considered upon receipt of the completed online application form, the CAD$100 application fee, and the following supporting documents:

Note: Documents submitted will not be returned.

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

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

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. Letters may be sent electronically (via email). Electronic letters must be sent via a valid institutional or coporate email address (domain); public domains such as Hotmail, Yahoo, Gmail, Videotron, etc., cannot be accepted. Detailed information is found at the following site: *www.mcgill.ca/gradapplicants/apply/prepare/checklist/documents/*. It is the applicant's responsibility to arrange for these letters to be sent.

received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants must make use of the online application form available on the web at *www.mcgill.ca/gradapplicants/apply*.

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

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

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
PARA 600	(4)	Thesis Proposal for M.Sc
PARA 606	(2)	Parasitology Seminar
PARA 607	(2)	Parasitology Research Seminar

Complementary Courses (6 credits)

3 credits from one of the following:

PARA 635	(3)	Cell Biology and Infection
PARA 655	(3)	Host-Parasite Interactions

3 credits from one of the following:

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

ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

Or another graduate course recommended by the advisory committee and approved by the Environment Option Committee.

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

Research Project (16 credits)

BTEC 622	(2)	Biotechnology Research Project 1
BTEC 623	(6)	Biotechnology Research Project 2
BTEC 624	(6)	Biotechnology Research Project 3
BTEC 625	(2)	Biotechnology Research Project 4

Required Courses (17 credits)

BIOT 505	(3)	Selected Topics in Biotechnology
BTEC 501	(3)	Bioinformatics
BTEC 619	(4)	Biotechnology Laboratory 2
BTEC 620	(4)	Biotechnology Laboratory 1
BTEC 621	(3)	Biotechnology Management

BTEC 555	(3)	Structural Bioinformatics
BTEC 691	(3)	Biotechnology Practicum
EXMD 511	(3)	Joint Venturing with Industry
EXMD 602	(3)	Techniques in Molecular Genetics

Health

EXMD 610	(3)	Biomedical Methods in Medical Research
PARA 635	(3)	Cell Biology and Infection
PHGY 518	(3)	Artificial Cells

Environment and Food

BREE 530	(3)	Fermentation Engineering
FDSC 535	(3)	Food Biotechnology

11.8 Plant Science

11.8.1 Location

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

Telephone: 514-398-7851
Fax: 514-398-7897
Email: *plant.science@mcgill.ca*
Website: *www.mcgill.ca/plant*

11.8.2 About Plant Science

The Department offers an M.Sc. and Ph.D. in Plant Science with Options in Bioinformatics, Environment, or Neotropical Environment, and provides for study in all fields of plant sciences. Research facilities – both field and laboratory – are available for investigations in plant breeding, crop physiology, crop management, crop quality, plant ecology, the epidemiology and biology of plant diseases, epigenetics, biosystematics, recombinant DNA technology, mycology, weed biology, tissue culture, plant biochemistry, and bioinformatics. Facilities include: the Horticultural Research Centre, the Emile A. Lods Agronomy Research Centre, greenhouses, growth cabinets, the McGill University Herbarium, the Applied Biotechnology laboratory, the CT Scanning laboratory, and a Level 2 Quarantine Facility.

An advisory committee is named for each student and has the responsibility for developing the program of study appropriate to the student's background and area of specialization.

section 11.8.5: Master of Science (M.Sc.); Plant Science (Thesis) (45 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program consists of two graduate level courses, seminars, and

section 11.8.7: Master of Science (M.Sc.); Plant Science (Thesis) — Environment (48 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field. This option/concentration has an added emphasis on environmental sciences, including additional courses and seminars.

section 11.8.8: Master of Science (M.Sc.); Plant Science (Thesis) — Neotropical Environment (48 credits)

This M.Sc. in Plant Science requires approximately two years for completion. The program overall consists of two graduate level courses, seminars, and a research project leading to a thesis. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field. This option/concentration has an added emphasis on neotropical environments, including additional courses and seminars. Part of the program takes place in Panama.

section 11.8.9: Master of Science, Applied (M.Sc.A.); Plant Science (Non-Thesis) (45 credits)

This M.Sc. in Plant Science requires about 18 months or four to five terms for completion. Overall, the program consists of graduate-level courses, seminars, and a research project. The courses and the research project are chosen and defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, the private sector, or further graduate studies in a related field.

section 11.8.10: Doctor of Philosophy (Ph.D.); Plant Science

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector.

section 11.8.11: Doctor of Philosophy (Ph.D.); Plant Science — Bioinformatics

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on bioinformatics, including additional courses and seminars.

section 11.8.12: Doctor of Philosophy (Ph.D.); Plant Science — Environment

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on environmental sciences, including additional courses and seminars.

section 11.8.13: Doctor of Philosophy (Ph.D.); Plant Science — Neotropical Environment

This Ph.D. in Plant Science requires approximately three years for completion. The program overall consists of seminars and a research project leading to a thesis. Students must also complete a comprehensive examination within their first year of study. The research project is defined with the help of an advisory committee. Subsequent career paths are varied, but include work with government agencies, universities, or the private sector. This option/concentration has an added emphasis on neotropical environments, including additional courses and seminars. Part of the program takes place in Panama.

11.8.3 Plant Science Admission Requirements and Application Procedures

11.8.3.1 Admission Requirements

General

The minimum cumulative grade point average (CGPA) is 3.0/4.0 (second-class upper division) or a GPA of 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

Ph.D.

Ph.D. candidates are required to have a M.Sc. degree in an area related to the chosen field of specialization for the Ph.D. program. Outstanding M.Sc. students may be permitted to transfer to the second year of the Ph.D. program following one year of study.

11.8.3.2 Application Procedures

Applicants for graduate studies must forward supporting documents to:

Department of Plant Science

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

Telephone: 514-398-7851
Fax: 514-398-7897
Email: *carolyn.bowes@mcgill.ca*

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

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

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

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

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

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

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

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

Dates for Guaranteed Consideration

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

Financial aid is very limited and highly competitive. It is suggested that students givoted f me onl afromhe unoous v 0 0 1 29304 318.2800(oted eart ubjects gi)F4

Professors

P. Dutilleul; L.Sc., D.Sc.(Louvain)

D.L. Smith; B.Sc., M.Sc.(Acad.), Ph.D.(Guelph)

A.K. Watson; B.Sc.(Agr.), M.Sc.(Br. Col.), Ph.D.(Sask.)

Associate Professors

J. Bede; B.Sc.(Calg.), M.Sc., Ph.D.(Tor.)

S. deBlois; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.)

D.J. Donnelly; B.Sc.(Agr.)(McG.), M.Sc.(Br. Col.), Ph.D.(S. Fraser)

S. Jabaji; B.Sc.(Beirut), M.Sc.(Guelph), Ph.D.(Wat.)

A.C. K

A.C. KW

11.8.6 Master of Science (M.Sc.); Plant Science (Thesis) — Bioinformatics (48 credits)

Thesis Courses (39 credits)

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1

Required Courses (3 credits)

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PLNT 691	(0)	Research Horizons in Plant Science 2

Complementary Courses (6 credits)

Chosen from the following:

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

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

11.8.7 Master of Science (M.Sc.); Plant Science (Thesis) — Environment (48 credits)

Thesis Courses (39 credits)

PLNT 664	(12)	M.Sc. Thesis 1
PLNT 665	(12)	M.Sc. Thesis 2
PLNT 666	(15)	M.Sc. Thesis 3

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1

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:

Global Environme78 d En

Required Invitational Seminar

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.

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

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Thesis

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1

Required Courses (3 credits)

* Must be taken within one year of registering.

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
PLNT 701*	(0)	Doctoral Comprehensive Examination

Complementary Courses (6 credits)

Two courses to be chosen from the following:

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

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

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

Thesis

Required Invitational Seminar

PLNT 690	(0)	Research Horizons in Plant Science 1

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

11.8.14 Graduate Certificate in Bioinformatics (15 credits)

Required Courses (9 credits)

BINF 511	(3)	Bioinformatics for Genomics
BTEC 501	(3)	Bioinformatics
BTEC 555	(3)	Structural Bioinformatics

Complementary Courses (6 credits)

3 credits from the following:

ANSC 565	(3)	Applied Information Systems
BTEC 535	(3)	Functional Genomics in Model Organisms

3 credits from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BIOC 603	(3)	Genomics and Gene Expression
BMDE 652	(3)	Bioinformatics: Proteomics
COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
COMP 616N1	(1.5)	Bioinformatics Seminar
COMP 616N2	(1.5)	Bioinformatics Seminar
COMP 618	(3)	Bioinformatics: Functional Genomics
GLIS 673	(3)	Bioinformatics Resources
HGEN 663	(3)	Beyond the Human Genome