



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

**Programs, Courses and University Regulations
2010-2011**

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

Publication Information

Published by

Enrolment Services

845 Sherbrooke Street West
Montreal, Quebec, H3A 2T5
Canada

Managing Editor

Bonnie Borenstein
Enrolment Services

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1 About the Faculty of Agricultural and Environmental Sciences, including School of Dietetics and Human Nutrition

The Faculty of Agricultural and Environmental Sciences is committed to excellence in teaching, research and service to ensure that humanity's present and future food, health and natural resource needs are met while protecting the environment.

2 History of the Faculty

Dedicated to improving the quality of life in Quebec's rural communities, Sir William Christopher Macdonald founded the School of Agriculture, the School for Teachers and the School of Household Science at Macdonald College in Ste. Anne de Bellevue in 1906. Macdonald College opened its doors to students in 1907 and its first degrees were awarded in 1911. The School for Teachers became the Faculty of Education in 1965 and moved to the downtown campus in 1970. Currently the Macdonald Campus is home to the Faculty of Agricultural and Environmental Sciences, the School of Dietetics and Human Nutrition and the Institute of Parasitology. The Faculty is comprised of the Departments of Animal Science, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences and Plant Science. The Faculty is one of the founding members of the McGill School of Environment and is also home to the Farm Management and Technology Program. The current enrolment is over 1500 undergraduate and graduate students.

3 Macdonald Campus Facilities

3.1 Morgan Arboretum

The Morgan Arboretum has 245 hectares of managed and natural woodlands, fields and tree plantations used for environmental research and teaching in a wide range of courses. Eighteen formal tree collections contain groups of most Canadian native trees and many useful and important exotics. In addition, over 170 species of birds, 30 species of mammals and 20 species of reptiles and amphibians seasonally inhabit the property. Finally, the Arboretum features 25 kilometres of ski, snowshoe and walking trails, a variety of forest ecosystems, conservation projects and forest operations such as maple syrup production. A nature interpretation program is also offered. More information is available at www.mcgill.ca/nrs/arboretum.

3.2 Macdonald Campus Library

Located in the Barton Building, the Macdonald Campus Library provides access to leading-edge print and electronic collections, facilities and services to support a broad range of needs. The library's collections encompass a wide variety of print and electronic resources in the areas of agriculture, nutrition and environmental sciences.

The library's catalogue, research databases, McGill theses, past exams and other online resources are accessible to you via the library website. The library is also a depository for many print and electronic government publications. The library's eZone computers provide access to specialized software such as ArcGIS, SAS and EndNote. Comfortable seating, study tables and group study areas are available to you and the area is equipped for direct or wireless laptop access to the McGill network and the internet. You can also borrow laptops.

Librarians specializing in specific disciplines are available to help you find information for your course assignments or research topics, either in person, or by phone, email, or chat. Tours and research workshops are provided throughout the year.

More information is available at www.mcgill.ca/library/library-using/branches/macdonald-library or feel free to drop by.

3.3 Macdonald Campus Computing Centre

The Macdonald Campus Computing Centre is managed by McGill's IT Customer Services (ICS) unit. Undergraduate computing labs are open 24 x 7, year round. The labs offer computers running Microsoft Office software, scanners and printers.

The IT walk-in support office is open from 9:00 a.m. to 5:00 p.m., Monday to Friday. For support on all central IT services please contact the ICS Service Desk by email at support.ist@mcgill.ca or call 514-398-3398.

For more information and to search the IT Knowledge Base, visit the IT Services web page at www.mcgill.ca/it.

3.4 Lyman Entomological Museum and Research Laboratory

Originally established in 1914 and formerly housed in the Redpath Museum, the Lyman Entomological Museum was moved to the Macdonald Campus in 1961. It houses the largest university collection of insects in Canada, second in size only to the National Collection. The Museum also has an active graduate research program in association with the Department of Natural Resource Sciences. Study facilities are available, on request from the Curator, to all bona fide students of entomology. Visits by other interested parties can be arranged by calling 514-398-7914. More information is available at <http://lyman.mcgill.ca>.

3.5 Brace Centre for Water Resources Management

The Brace Centre for Water Resources Management is located on the Macdonald Campus. It is a multidisciplinary and advanced research and training centre of McGill University, dedicated to solving problems of water management for all human and environmental uses. It brings together staff from several McGill faculties to undertake research, teaching, specialized training, and policy and strategic studies, both in Canada and internationally. The Centre draws on the wide range of facilities available within the University. More information is available at www.mcgill.ca/brace.

4 About the Faculty of Agricultural and Environmental Sciences, including School of Dietetics and Human Nutrition (Undergraduate)

The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition are located on McGill University's Macdonald Campus, which occupies 650 hectares in a beautiful waterfront setting on the western tip of the island of Montreal.

Students can earn internationally recognized degrees in the fields of agricultural sciences and applied biosciences, food and nutritional sciences, environmental sciences, and bioresource engineering. Students have the opportunity, in all programs, to study abroad in places such as Panama, Barbados or Africa. Students may also have the opportunity to participate in internships.

Macdonald is a very diverse and international campus. Students are taught by outstanding professors who are among the top in their fields. The campus has excellent facilities for teaching and research, including well-equipped laboratories, experimental farm and field facilities, and the Morgan Arboretum. The campus is surrounded by the Ottawa and St. Lawrence rivers.

The Faculty is at the forefront of advances in the basic sciences and engineering associated with food supply, human health and nutrition, and the environment, and it is a world leader in plant and animal biotechnology, bioproducts and bioprocessing, bioinformatics, food safety and food quality, environmental engineering, water management, soils, parasitology, microbiology and ecosystem science and management.

The Macdonald Campus is an exciting place to live, work, study, learn and discover. Its very intimate collegial and residential setting allows for strong interaction between staff and students and for enriched student activity and participation in extracurricular activities. A hallmark of our undergraduate programs is the ability to provide hands-on learning experiences in the field and labs, and the smaller class sizes.

4.1 Location

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

Telephone: 514-398-7928

Website: www.mcgill.ca/macdonald

The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition are located on the Macdonald Campus of McGill University in Sainte-Anne-de-Bellevue at the western end of the Island of Montreal.

Served by public transport (STM [www.stm.info], bus and train), it is easily reached from the McGill downtown campus and from the Pierre Elliott Trudeau International Airport. Arrangements can also be made to use the McGill intercampus shuttle bus service. The shuttle service is available to all registered students.

4.2 Administrative Officers

Chandra Madramootoo; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.), P.Eng. (*James McGill Professor*) **Dean, Faculty of Agricultural and Environmental Sciences, and Associate Vice-Principal (Macdonald Campus)**

William H. Hendershot; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(Br. Col.)	Associate Dean (Academic)
Suha Jabaji; B.Sc.(AUB), M.Sc.(Guelph), Ph.D.(Wat.)	Associate Dean (Research and Graduate Education)
David J. Lewis; B.Sc., M.Sc., Ph.D.(Mem.)	Associate Dean (Student Affairs)
Silvana Pellecchia	Manager, Student Affairs
Gary O'Connell; B.Comm.(C'dia)	Director, Academic and Administrative Services
William R. Ellyett; B.A.(Sir G. Wms.), B.Ed.(Phys.Ed.)(McG.)	Director of Athletics
Paul Meldrum; B.J.(Hons.)(Car.)	General Manager, Macdonald Campus Farm
Ginette Legault	Manager, Campus Housing
Peter D.L. Knox; B.Sc.(Agr.)(McG.)	Supervisor, Property Maintenance

4.3 Faculty Admission Requirements

For information about the admission requirements for this Faculty please refer to the *Undergraduate Admissions Guide*, found at www.mcgill.ca/applying/undergrad.

For information about inter-faculty transfers, see *University Information and Regulations > Inter-Faculty Transfer*.

Applications are submitted directly online at www.mcgill.ca/applying. Please note that the same application is used for all undergraduate programs at McGill and two program choices can be entered. For further information contact:

Student Affairs Office
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, Quebec H9X 3V9

Telephone: 514-398-7928 or 7925
Email: studentinfo.macdonald@mcgill.ca
Website: www.mcgill.ca/macdonald/prospective

More specific information on application deadlines and admission requirements can be found at www.mcgill.ca/applying/undergrad.

4.4 Student Information

Friendly staff are on hand to answer your questions about academics, residence, athletics, student life, health concerns and much more.

4.4.1 The Student Affairs Office

The Student Affairs Office, located in Laird Hall, Room 106, provides a wide variety of academic services. These include information about admission (prerequisites and program requirements), academic standing, examinations (deferrals, conflicts, rereads), exchange programs, inter-faculty transfers, program changes, registration (course change, withdrawals), scholarships (entrance and in-course), second degrees, second majors, minors, session away, and graduation (convocation).

Website: www.mcgill.ca/macdonald/studentinfo/sao

4.4.2 Student Services

Students who study on the Macdonald Campus can make full use of all McGill Student Services, see *University Regulations and General Information > Support for Students*. The Office of the Executive Director, Services for Students, gives you direct access to several services, see *University Regulations and General Information > Student Services – Macdonald Campus*.

For further information, refer to the Macdonald Campus Student Services website, www.mcgill.ca/macdonald-studentservices, and the Student Services website, www.mcgill.ca/studentservices.

4.4.3 Macdonald Campus Residences

You can apply for residence in either of two distinctive facilities:

Laird Hall, with a capacity of 250 students, is arranged on a co-educational basis and provides single and double room accommodation for both undergraduate and graduate students.

The EcoResidence accommodates 100 students in apartment-style living. It offers fully furnished six-plex and two-plex apartments including individual bedrooms.

For further information, refer to *University Regulations and General Information > Residential Facilities > University Residences – Macdonald Campus*, www.mcgill.ca/macdonald-residences, or email residences.macdonald@mcgill.ca.

4.4.4 Student Life

All undergraduate, postgraduate, and Farm Management and Technology students are members of the Macdonald Campus Students' Society. The MCSS, through the 18-member Students' Council, is involved in numerous campus activities such as social events, academic affairs, and the coordination of clubs and organizations. Student life is informal and friendly and student groups range from the Outdoor Adventure Club to the Photography Society. Major social events include Orientation activities, Halloween Party and Winter Carnival. The Ceilidh, a student-run bar located in the Centennial Centre, is open every Thursday night.

The Centennial Centre is the centre of student life, offering facilities for student activities, such as meeting rooms, club rooms, pool tables, great places to relax, listen to music and meet friends. Also located in the Centre are the Students' Council offices, an information desk and the Robber's Roost Campus Bookstore.

4.4.5 Student Rights and Responsibilities

The *Handbook on Student Rights and Responsibilities* is published jointly by the Office of the Dean of Students and the University Secretariat. A copy of the Handbook can be found at www.mcgill.ca/secretariat/policies/students or obtained from the Macdonald Campus Student Affairs Office or the Macdonald Campus Student Services Centre.

4.4.6 Fees

The University reserves the right to make changes without notice in its published scale of tuition, residence and other fees.

Payment of student fees can be made directly on Minerva through internet banking or preauthorized debit charges. Electronic billing is the official means of delivering fee statements to all McGill students. The University generally produces e-bills at the beginning of the month and sends an email notification to your official McGill email address stating that your e-bill is available for viewing on Minerva.

The University shall have no obligation to issue any transcript of record, award any diploma or re-register a student in case of non-payment of tuition fees, library fines, residence fees, or loans on their due date.

4.4.6.1 Tuition Fees

General information on Tuition and other fees is found under *University Regulations and General Information > Fees*.

4.4.6.2 Other Expenses

In addition to tuition fees and the cost of accommodation and meals, you should be prepared to spend a minimum of \$1,000 (depending on your program) on prescribed textbooks and classroom supplies. These may be purchased at the Campus Bookstore in the Centennial Centre.

Uniforms are required for food laboratories. If you are in the B.Sc.(Nutr.Sc.) program, you will be advised of the uniform requirements on acceptance or promotion.

4.4.7 Scholarships and Bursaries

Various entrance and in-course scholarships and bursaries are available. For full details see www.mcgill.ca/students/courses/calendars.

4.4.8 Immunization for Dietetics Majors

As a student in the Dietetics Major, you are required to complete the Compulsory Immunization Program for Health Care Students prior to the commencement of the U1 Winter Professional Practice (Stage) course NUTR 208. Participation in Professional Practice (Stage) in Dietetics will only be permitted after you have completed all immunization requirements, and certain deadlines will apply. Updates to your immunizations may be required during your program. For full details see www.mcgill.ca/studenthealth/forms.

4.4.9 Language Requirement for Professions

Quebec law requires that candidates seeking admission to provincially recognized Quebec professional corporations or *Ordres* have a working knowledge of the French language, i.e., be able to communicate verbally and in writing in that language. Agrologists, chemists, dietitians, and engineers are among those within this group.

For additional information, see *University Regulations and General Information > Admission to Professional and Graduate Studies > Language Requirements for Professions*.

4.5 Faculty Information and Regulations

Each student in the Faculty of Agricultural and Environmental Sciences must be aware of the Faculty Regulations as stated in this publication.

While departmental and faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of your course selection and registration, for compliance with, and completion of your program and degree requirements, and for the observance of regulations and deadlines, *rests with you*. It is your responsibility to seek guidance if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

4.5.1 Minimum Credit Requirement

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

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

Normally, Quebec students who have completed the *Diplôme d'études collégiales* (DEC) or equivalent diploma are admitted to the first year of a program requiring the completion of a minimum of 90 credits, 113 credits for Bioresource Engineering, 115 credits for Dietetics plus any missing basic science prerequisites, and 122 credits for the Concurrent Degrees in Food Science and Nutritional Sciences.

Students from outside Quebec who are admitted on the basis of a high school diploma enter the Freshman Major, which comprises 30 credits (see [section 6.1: Freshman Major](#) in this publication).

You will not receive credit toward your degree for any course that overlaps in content with a course successfully completed at McGill, at another university, at CEGEP, or Advanced Placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate.

If you are a student in the B.Sc.(Ag.Env.Sc.), you must take a minimum of two-thirds of your course credits within the Faculty of Agricultural and Environmental Sciences.

4.5.2 Minimum Grade Requirement

You must obtain grades of C or better in any required, complementary and freshman courses used to fulfil program requirements. You may not register in a course for which you have not passed all the prerequisite courses with a grade of C or better, except by written permission of the Departmental Chair concerned.

4.5.3 Academic Advisers

Upon entering the Faculty and before registering, you must consult with the Academic Adviser of your program for selection and scheduling of required, complementary, and elective courses. The Academic Adviser will normally continue to act in this capacity for the duration of your studies in the Faculty.

A Faculty Adviser is also available in the Student Affairs Office to assist you with student record related matters.

4.5.4 Categories of Students

4.5.4.1 Full-Time Students

Full-time students in satisfactory standing take a minimum of 12 credits per term. (A normal course load is considered to be 15 credits per term.)

Students in Probationary standing are not normally permitted to take more than 14 credits per term. In exceptional circumstances, the Committee on Academic Standing may give permission to attempt more.

4.5.4.2 Part-time Students

Part-time students carry fewer than 12 credits per term.

4.5.5 Academic Standing

You must prove that you can master the material of lectures and laboratories. Examinations are normally held at the end of each course but other methods of evaluation may also be used. The grade assigned for a course represents your standing in all the course work.

The following rules apply to your academic standing:

1. When your CGPA (or TGPA in the first term of the program) falls below 2.00, your academic standing becomes Probationary.
2. If you are in Probationary standing, you may register for no more than 14 credits per term.
3. While in Probationary standing, you must achieve a TGPA of 2.50 to continue in Probationary standing or a CGPA of 2.00 in order to return to Satisfactory standing. Failure to meet at least one of these conditions will result in Unsatisfactory standing. (In the case of Fall term, this will be Interim Unsatisfactory standing and the rules for Probationary standing will apply.)

4. When your CGPA (or TGPA in the first term of the program) falls below 1.50, your academic standing becomes Unsatisfactory and you must withdraw. (In the case of Fall term, the standing will be Interim Unsatisfactory standing and the rules for Probationary standing will apply.)
5. If you are in Unsatisfactory standing, you may not continue in your program. You may apply for readmission only after your registration has been interrupted for at least one term (not including Summer term).
6. Readmission will be in the standing Unsatisfactory/Readmit and a CGPA of 2.00 must be achieved to return to Satisfactory standing or a TGPA of 2.50 must be achieved for Probationary standing. If you fail to meet at least one of these conditions, you will be required to withdraw permanently.

4.5.5.1 Committee on Academic Standing

The Faculty's Committee on Academic Standing, consisting of academic staff, administrative staff and a student representative, reviews special requests made by students regarding their academic life.

4.5.6 Credit System

The credit assigned to a particular course reflects the amount of effort it demands of you. As a guideline, a one-credit course would represent approximately 45 hours total work per course. This is, in general, a combination of lecture hours and other contact hours such as laboratory periods, tutorials and problem periods as well as personal study hours.

Please refer to *University Regulations and General Information > Credit System*.

4.5.6.1 Continuing Education Courses

Not all Continuing Education credit courses are recognized for credit within Faculty degree programs. Please contact the Student Affairs Office before registering for such courses.

4.5.7 Academic Credit Transfer

Transfer credits based on courses taken at other institutions (completed with a grade of C or better) before entrance to this Faculty are calculated and assigned after you are accepted and have accepted the offer of admission.

Transfer credits may also be granted for courses taken at other institutions (completed with a grade of C or better) while you are attending McGill University. You must secure permission to apply such credits to your program in this Faculty before you begin the work. Prior Approval Forms are available in the Student Affairs Office in the Faculty. Grades obtained in such courses do not enter into calculations of grade point averages (GPA).

Exemption from a required or complementary course on the basis of work completed at another institution must be approved by both the instructor of the appropriate McGill course and the Academic Adviser.

As a full-time degree student, you may register, with approval of the Student Affairs Office, for course(s) at any university in the province of Quebec. Those courses successfully completed with a minimum grade of C (according to the standards of the university giving the course), will be recognized for the purpose of your degree but the grades obtained will not enter into your GPA calculations.

For further details, see *University Regulations and General Information > Registration > Quebec Inter-University Transfer Agreement (IUT)*, or go to www.crepuq.qc.ca to access the online application.

4.5.8 Regulations Regarding Second Academic Majors

While registered in a Major in the Faculty of Agricultural and Environmental Sciences, you may pursue a second set of courses of greater scope than a Minor (e.g., Faculty Program, Major, Honours Program, Major Concentration) in either this Faculty or another faculty. Application for a Second Academic Major must be made to the Associate Dean (Student Affairs) in the Student Affairs Office, Laird Hall, Room 106. Following are the regulations and procedures for Second Academic Majors:

1. You must be in Satisfactory academic standing with a minimum CGPA of 3.00 in order to apply for a Second Academic Major.
2. In consultation with the appropriate authority associated with each Major (Academic Adviser, Associate Dean), you must construct a proposal showing all the courses that are to be taken to satisfy the entrance and program requirements of both the First and Second Academic Majors.
3. A minimum of 36 credits must be unique to the Second Major (i.e., not part of the Required or Complementary courses taken for the First Major).
4. You must obtain prior approval for all proposed Second Academic Majors from your Academic Adviser and the Student Affairs Office and from the Associate Dean, adviser or appropriate committee of the other faculty concerned.
5. Normally, proposals for Second Academic Majors will be initiated before completion of U1 year of the First Academic Major.
6. The academic standards applicable to each Major will be respected.

4.5.8.1 Procedures for Minor Programs

If you want to register for a Minor program, you must complete a Minor Approval form (usually at the beginning of your U2 year), and return it duly completed to the Student Affairs Office. The Minor program will then be added to your record and will automatically continue each year unless you officially cancel it in writing. If you want to cancel the Minor, you must notify both the Minor adviser and the Student Affairs Office. The Minor Approval form is available on the Faculty website and in the Student Affairs Office, Laird Hall, Room 106.

4.5.9 Course Change Information

1. Courses: please refer to *University Regulations and General Information > Registration > Course Change Period*, and the Important Dates website www.mcgill.ca/importantdates.
2. Course withdrawal (Transcript notation of “W”): please refer to *University Regulations and General Information > Registration > Regulations Concerning Course Withdrawal*, and the Important Dates website www.mcgill.ca/importantdates.
3. Other changes: Information about changes may be obtained from the Student Affairs Office of the Faculty.

4.5.10 Graduate Courses Available to Undergraduates

Undergraduates who want to take graduate courses must have a cumulative grade point average (CGPA) of at least 3.20. Final approval must be obtained from Graduate and Postdoctoral Studies.

4.5.11 Attendance and Conduct in Class

Matters of discipline connected with, or arising from, the general arrangement for teaching are under the jurisdiction of the Dean of the Faculty.

Students may be admonished by a professor or instructor for dishonest or improper conduct. If disciplinary action is required, it must be reported to the Associate Dean (Student Affairs).

Punctual attendance at all classes, laboratory periods, tests, etc., is expected of all students.

4.5.12 Incomplete Grades

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

Students graduating in June	
Fall courses	January 15
Winter courses, and courses spanning Fall/Winter	April 30

Non-graduating students	
Fall courses	January 15
Winter courses, and courses spanning Fall/Winter	May 15

Students' deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time. It is important to note that instructors may impose earlier deadlines than those listed above.

If marks to clear Ks have not been submitted to the Student Affairs Office by the above dates, the K is automatically changed to a KF and counts as an F in the GPA.

Students with a grade of K who have serious extenuating circumstances may request an extension of the K deadline (KE) from the Associate Dean (Student Affairs). Please refer to *University Regulations and General Information > Student Records > Grading and Grade Point Averages (GPA)* for more information about grading and credit.

4.5.13 Examinations

You should refer to *University Regulations and General Information > Examinations* for information about final examinations and deferred examinations. Examination schedules are posted on the McGill website, www.mcgill.ca, normally one month after the start of classes for the Tentative Exam Schedule, and two months after the start of classes for the Final Exam Schedule.

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

Oral presentations made as part of course requirements are in English.

4.5.13.1 Reassessments and Rereads

In accordance with the *Charter of Student Rights*, and subject to its stated conditions, you have the right to consult any written submission for which you have received a mark. You also have the right to discuss this submission with the examiner.

If, after discussion with your instructor, you want to have a formal final examination reread, you must apply in writing to the Associate Dean (Student Affairs). The following conditions apply:

- grades may be either raised or lowered as the result of a reread;
- rereads in courses outside the Faculty of Agricultural and Environmental Sciences are subject to the deadlines, rules and regulations of the relevant faculty.

Application for rereads must be made by March 31 for Fall term courses and by September 30 for Winter term and Summer term courses. You are assessed a fee for formal rereads. Any request to have term work re-evaluated must be made directly to the instructor concerned.

Any request to have in-course submissions reassessed must be made within 10 working days after the graded material has been made available to you.

4.5.13.2 Deferred Examinations

The Faculty offers deferred exams for medical reasons and exceptional circumstances (to be approved by the Associate Dean (Student Affairs)) for the Fall and Winter period. Verify dates on the Important Dates website at www.mcgill.ca/importantdates, apply on Minerva and provide medical documentation to the Student Affairs Office.

4.5.14 Degree Requirements

To be eligible for a B.Eng.(Bioresource), B.Sc.(Ag.Env.Sc.), B.Sc.(F.Sc.), or Concurrent B.Sc.(F.Sc.) and B.Sc.(Nutr.Sc.) degree, you must have passed, or achieved exemption, with a minimum grade of C in all required and complementary courses of the program. You must also have a CGPA of at least 2.00.

In addition, if you are a student in the Dietetics program, you must have completed the Stages of professional formation requiring a CGPA of 3.00.

You must have completed all Faculty and program requirements; see the [section 4.5.1: Minimum Credit Requirement](#) section of this publication.

In order to qualify for a McGill degree, you must complete a minimum residency requirement of 60 credits at McGill. If you are in the B.Sc.(Ag.Env.Sc.), you must take a minimum of 2/3 of your course credits within the Faculty of Agricultural and Environmental Sciences.

4.5.15 Dean's Honour List

For information on the designation of Dean's Honour List awarded at graduation, see the *University Regulations and General Information > Dean's Honour List* section in this publication.

4.5.16 Distinction

For information on the designation of Distinction awarded at graduation, see *University Regulations and General Information > Distinction* in this publication.

4.5.17 Honours and First Class Honours

Departments may recommend to the Faculty that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:

- you must complete all Honours program requirements; for Honours, the CGPA at graduation must be at least 3.00;
- for First-Class Honours, the CGPA at graduation must be at least 3.50;
- some programs may impose additional requirements, which must be met before you are recommended for Honours or First-Class Honours.

Students in an Honours program whose CGPA is below 3.00 or who did not satisfy certain program requirements must consult their academic adviser to determine their eligibility to graduate in a program other than Honours.

4.5.18 Medals and Prizes

Various medals, scholarships and prizes are open to graduating students. No application is required. Full details of these are set out in the *Undergraduate Scholarships and Awards Calendar*, available at www.mcgill.ca/students/courses/calendars.

5 Overview of Programs Offered by the Faculty of Agricultural and Environmental Sciences

The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition offer degrees in Bachelor of Science (Agricultural and Environmental Sciences), Bachelor of Engineering (Bioresource Engineering), Bachelor of Science (Food Science), Bachelor of Science (Nutritional Sciences), Concurrent degree program in Food Science and Nutritional Sciences, Certificate in Food Science, Certificate in Ecological Agriculture, Diploma in Environment, and Diploma of Collegial Studies in Farm Management and Technology.

The Faculty of Agricultural and Environmental Sciences is one of the four faculties in partnership with the McGill School of Environment.

Several programs offered by the Faculty and School lead toward professional accreditation. These include Dietetics (membership in the Dietitians of Canada and the *Ordre professionnel des diététistes du Québec*); Agricultural Economics, Animal Production, Ecological Agriculture, Soil and Water Resources and Plant Production, (specializations in the Agro-Environmental Sciences Major) (membership in the *Ordre des agronomes du Québec* and other provincial

Institutes of Agriculture); Bioresource Engineering (membership as a professional Engineer in any province of Canada plus the *Ordre des agronomes du Québec*); Food Science (accreditation by the Institute of Food Technologists and professional accreditation by the *Ordre des chimistes du Québec*). Professional Practice experiences to complete the dietetics practicum are provided in the McGill teaching hospitals and in a wide variety of health, education, business, government and community agencies.

The Faculty also offers M.Sc. and Ph.D. programs in the areas of Agricultural Sciences, Biological Sciences, Bioresource Engineering, Biotechnology, Environmental Sciences, Food Science, and Nutritional Sciences. M.Sc.(A) programs are offered in some disciplines. In addition, a Graduate Certificate in Biotechnology, a Graduate Diploma in Dietitian Credentialing, and a Graduate Option in Environment are offered.

section 6.2: Bachelor of Science (Agricultural and Environmental Sciences) – B.Sc.(Ag.Env.Sc.)

section 6.3: Bachelor of Engineering (Bioresource) - B.Eng.(Bioresource)

section 6.4: Bachelor of Science (Food Science) - B.Sc.(F.Sc.)

section 6.5: Bachelor of Science (Nutritional Sciences) - B.Sc.(Nutr.Sc.)

section 5.7: Concurrent Bachelor of Science in Food Science - B.Sc.(F.Sc.) and Bachelor of Science in Nutritional Sciences - B.Sc.(Nutr.Sc.)

section 5.8: Honours Program

section 5.9: Minor Programs

section 5.10: Post-Baccalaureate Certificate Programs

section 5.11: Diploma Program

section 5.12: Diploma in Collegial Studies

section 5.13: Environmental Sciences Programs

5.1 Internship Opportunities and Co-op Experience

5.1.1 FAES 200/300 Internship Program

As a full-time undergraduate student (with a CGPA of 2.9 or higher) in one of the following programs: B.Sc.(Ag.Env.Sc.), B.Sc.(F.Sc.) and B.Eng.(Bioresource), you have the opportunity to participate in the Internship Program. It's a non-credit (Pass/Fail only) course, where you can intern in a place related to your field of study.

The internship should be a minimum length of 14 weeks, working 35 hours a week or more. Internships are a great way to get your foot in the door and experience practical work firsthand and see how it compliments your studies.

5.1.2 AGRI 310 Internship in Agriculture/Environment

The objective of AGRI 310 is to give you experience working in an enterprise that is related to your field of study, and to find out how your studies can contribute to your understanding and performance in the workplace environment. Through observations of the enterprise function, the decision-making process and the economic constraints, you should obtain a better understanding of the technical, economic and social challenges faced by enterprises working in the chosen field of study.

5.1.3 AGRI 410 D1 and D2 Internship and Co-op Experience

As a qualified student in the B.Sc.(Ag.Env.Sc.), you have the opportunity to participate in a summer-long internship related to your field of study. If you aspire to become a professional agrologist, you will be required to complete an internship under the supervision of a professional agrologist.

AGRI 410 is part of the professional agrology specialization and is obligatory for students wanting to become professional agrologists (*agronomes*) in Quebec as part of the 6 credits of practical training required by the *Ordre des agronomes du Québec*.

Most undergraduate programs offered in the Faculty include the opportunity for a Co-op work experience. Internships and Co-op experience both involve a work placement of 12 to 16 weeks' duration where you are exposed to the main areas of operation of your employer. Each work placement is unique, and you benefit from a program developed exclusively for you by both your employer and your instructor.

When you register for an internship or Co-op experience, you benefit from the practical learning that you undergo during your work-term in a meaningful job situation. As well, you benefit from the non-tangible learning experience that comes from the increased responsibilities needed to acquire and successfully complete your work term.

You also have the opportunity to pursue a 6-credit internship within the Barbados and Panama Field Studies semesters. For details, see *Field Studies and Study Abroad > Field Study Semesters and Off-campus Courses*.

5.2 Exchange Programs

The Faculty of Agricultural and Environmental Sciences participates in all University-wide student exchange programs available at McGill and also has Faculty-specific exchange programs. For more information, see *Field Studies and Study Abroad > Exchange Programs*.

5.3 Bachelor of Science in Agriculture and Environmental Sciences - B.Sc.(Ag.Env.Sc.)

See [section 6.2: Bachelor of Science \(Agricultural and Environmental Sciences\) – B.Sc.\(Ag.Env.Sc.\)](#) for details.

5.3.1 Major Programs

Graduates of programs marked with an asterisk * are eligible for membership in the *Ordre des agronomes du Québec* and other provincial institutes of agriculture.

Agricultural Economics*:

- Agribusiness Option
- Environmental Economics Option

Agro-Environmental Sciences*

Environmental Biology

Environment, under McGill School of Environment:

- Biodiversity and Conservation Domain
- Ecological Determinants of Health Domain
- Environmetrics Domain
- Food Production and Environment Domain
- Land Surface Processes and Environmental Change Domain
- Renewable Resource Management Domain
- Water Environments and Ecosystems Domain

International Agriculture and Food Systems

Life Sciences (Biological and Agricultural)

5.3.2 Specializations for Major Programs in the B.Sc.(Ag.Env.Sc.)

Agricultural Economics

Agriculture and Food Systems (Multidisciplinary)

Animal Biology

Animal Health and Disease

Animal Production

Applied Ecosystem Sciences

Ecological Agriculture

Entomology

Environmental Biology (Multidisciplinary)

Health and Nutrition

International Agriculture

International Development¹

Life Sciences (Multidisciplinary)

Microbiology

Molecular Biotechnology
 Plant Biology
 Plant Production
 Plant Protection
 Professional Agrology
 Soil and Water Resources
 Wildlife Biology

1 Only available to students in the International Agriculture and Food Systems Major.

Pre 2009-2010

The programs listed below were in effect until the 2008-2009 academic year, with the exception of Agricultural Economics and Environment. Please go to the appropriate Calendar for program requirements or consult your academic adviser.

Graduates of programs marked with an asterisk * are eligible for membership in the *Ordre des agronomes du Québec* and other provincial institutes of agriculture.

Agricultural Sciences*:

Agricultural Biotechnology Option
 Ecological Agriculture Option
 General Option
 International Agriculture Option
 Soils Option

Agricultural Sciences Internship*:

Agricultural Biotechnology Option
 Ecological Agriculture Option
 General Option
 International Agriculture Option
 Soils Science Option

Animal Biology

Animal Science*

Applied Zoology

Botanical Science:

Ecology Option
 Molecular Option

Environmental Biology (pre 2009 program)

Microbiology:

Biotechnology Option
 Applied Ecology Option
 Environment Option

Plant Science*

Resource Conservation

Wildlife Biology

5.4 Bachelor of Engineering in Bioresource Engineering - B.Eng.(Bioresource)

See [section 6.3: Bachelor of Engineering \(Bioresource\) - B.Eng.\(Bioresource\)](#) for details.

This normally leads to professional qualification in any provincial professional engineering order plus the *Ordre des agronomes du Québec*.

Bioresource Engineering:

Agricultural Engineering Stream
BioEnvironmental Engineering Stream
Ecological Engineering Stream
Food and Bioprocess Engineering Stream
Soil and Water Engineering Stream
Professional Agrology Stream

5.5 Bachelor of Science in Food Science - B.Sc.(F.Sc.)

See [section 6.4: Bachelor of Science \(Food Science\) - B.Sc.\(F.Sc.\)](#) for details.

Food Science:

Food Chemistry Option
Food Science Option

5.6 Bachelor of Science in Nutritional Sciences - B.Sc.(Nutr.Sc.)

Two Majors are offered by the School of Dietetics and Human Nutrition. See [section 6.5: Bachelor of Science \(Nutritional Sciences\) - B.Sc.\(Nutr.Sc.\)](#) for details.

Dietetics (professional program leading to professional licensing as Dietitian/Nutritionist)

Nutrition:

Food Function and Safety
Global Nutrition
Nutritional Biochemistry
Sports Nutrition

5.7 Concurrent Bachelor of Science in Food Science - B.Sc.(F.Sc.) and Bachelor of Science in Nutritional Sciences - B.Sc.(Nutr.Sc.)

See [section 6.4.3: Concurrent Bachelor of Science in Food Science \(B.Sc.\(F.Sc.\)\) and Bachelor of Science Nutritional Sciences \(B.Sc.\(Nutr.Sc.\)\) - Food Science/Nutritional Science Major \(122 credits\)](#) for details.

Food Science / Nutritional Science

5.8 Honours Program

Environment, under McGill School of Environment

5.9 Minor Programs

Agricultural Production

Animal Biology
 Animal Health and Disease
 Ecological Agriculture
 Minor in Environment, under McGill School of Environment
 Environmental Engineering
 Human Nutrition

5.10 Post-Baccalaureate Certificate Programs

The Faculty offers the following post-baccalaureate certificate programs.

Ecological Agriculture
 Food Science

5.11 Diploma Program

Diploma in Environment, under McGill School of Environment

5.12 Diploma in Collegial Studies

Farm Management and Technology

5.13 Environmental Sciences Programs

5.13.1 McGill School of Environment (MSE)

The MSE is a joint initiative of the Faculty of Agricultural and Environmental Sciences, the Faculty of Arts, the Faculty of Science, and the Faculty of Law. It offers a B.Sc.(Ag.Env.Sc.) Major in Environment, a B.Sc. Major in Environment, a B.A. & Sc. Inter-Faculty Program in Environment, a B.A. Faculty Program in Environment, a Minor in Environment and a Diploma in Environment. Many of the MSE programs allow you to choose to study exclusively on the Macdonald or downtown campuses, or to take advantage of both.

A list of the B.Sc.(Ag.Env.Sc.) Domains is given under [section 6.2: Bachelor of Science \(Agricultural and Environmental Sciences\) – B.Sc.\(Ag.Env.Sc.\)](#). Further information on all programs is given under *McGill School of Environment* and on the MSE website: www.mcgill.ca/mse.

5.13.2 Environmental Programs on the Macdonald Campus

A number of integrated environmental science programs are also offered on the Macdonald Campus, particularly within the B.Sc.(Ag.Env.Sc.) and B.Eng.(Bioresource) degrees. The objective of these interdepartmental programs is to provide you with a well-rounded training in a specific interdisciplinary subject as well as the basis for managing natural resources. For a complete list of the programs, see [section 5: Overview of Programs Offered by the Faculty of Agricultural and Environmental Sciences](#).

6 Academic Programs

Degree programs at the undergraduate level in the Faculty may lead to a B.Sc. degree in Agricultural and Environmental Sciences (Ag.Env.Sc.), Food Science (F.Sc.), Nutritional Sciences (Nutr.Sc.) or a B.Eng. degree in Bioresource Engineering. The Faculty also offers students the possibility to do concurrent B.Sc. degrees in both Food Science and Nutritional Sciences.

6.1 Freshman Major

Program Director

Dr. Marcia Knutt
Macdonald-Stewart Building, Room 1-022
Telephone: 514-398-7976

The Freshman Program is designed to provide a basic science foundation to students entering university for the first time from a high school system (outside of the Quebec CEGEP system). The Freshman Year consists of at least 30 credits in fundamental math and science courses as preparation for one of the following degree programs:

- B.Sc. (Agricultural & Environmental Sciences)
- B.Eng. (Bioresource)
- B.Sc. (Nutritional Sciences)
- B.Sc. (Food Science)
- Concurrent B.Sc. (Food Science) and B.Sc. (Nutritional Sciences)

Students who have completed the Diploma of Collegial Studies, Advanced Placement Exams, Advanced Levels, the International Baccalaureate, the French Baccalaureate, or McGill Placement examinations may receive exemption and/or credit for all or part of the basic science courses in biology, chemistry, physics and mathematics. Similarly students who have completed courses at other universities or colleges may receive exemptions and/or credits. Students should consult with the Faculty's Student Affairs Office.

6.1.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Freshman Program (30 credits)

(all majors except Agricultural Economics - see Advising Notes below*)

If you are entering university for the first time from a high school system, outside of Quebec CEGEP system, you will be required to complete a freshman year of at least 30 credits as listed below.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Note: If you are not certain that you have adequate math and/or physics skills to commence the freshman year you may wish to take preparatory courses prior to the normal Fall semester. You are encouraged to discuss your potential need with your academic adviser.

Freshman Adviser: Dr. Alice Cherestes

Macdonald-Stewart Building, Room 1-023

Telephone: 514-398-7980

Required Courses - Fall (14.5 credits)

AEBI 120	(3)	General Biology
AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 112	(4)	Introductory Physics 1
AGRI 195	(.5)	Freshman Seminar 1

Required Courses - Winter (12.5 credits)

AECH 111	(4)	General Chemistry 2
AEMA 102	(4)	Calculus 2
AEPH 114	(4)	Introductory Physics 2
AGRI 196	(.5)	Freshman Seminar 2

Elective - Winter (3 credits)

B.Sc. (Ag. & Env. Sci.) - Agricultural Economics Major - Freshman Program (30 credits)

If you are entering university for the first time from a high school system, outside of the Quebec CEGEP system, you will be required to complete a freshman year of at least 30 credits as listed below.

Note: Mathematical skill level will be determined during the first week of classes. The freshman adviser may recommend students register for an additional weekly Precalculus Lab, of one credit, which may be applied towards the required credits of the degree program.

Freshman Adviser: Dr. Alice Cherestes

Macdonald-Stewart Building, Room 1-023

Telephone: 514-398-7980

Required Courses - Fall (14 credits)

AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 112	(4)	Introductory Physics 1
AGEC 200**	(3)	Principles of Microeconomics

Required Courses - Winter (13 credits)

AEBI 122	(3)	Cell Biology
AEHM 205	(3)	Science Literacy
AEMA 102	(4)	Calculus 2
AGEC 201**	(3)	Principles of Macroeconomics

Complementary Courses - Winter (3 credits)

One of the following:

AGRI 120	(3)	Exobiospheres
BREE 103	(3)	Linear Algebra
NUTR 301	(3)	Psychology

Advising Notes:

* Freshman students intending to major in Agricultural Economics in the B.Sc. (Ag. & Env. Sci.) degree program should note that the courses AEBI 120 (General Biology), AECH 111 (General Chemistry 2), and AEPH 114 (Introductory Physics 2) are required for all other majors in the B.Sc. (Ag. & Env. Sci.) degree. Students who are uncertain about their choice of major should be completing the 'regular' Agricultural & Environmental Sciences Freshman Program; the AGECE 200/201 courses would then be taken as part of the 'regular' U1 curriculum should they ultimately decide on the Agricultural Economics Major.

** Freshman students planning to choose the Agricultural Economics Major will still be required to complete 90 credits in the major. Since AGECE 200 and AGECE 201 are normally required in the U1 year of the program, students who take these courses in their freshman year will be required to substitute 6 other credits. Students should discuss suitable replacement courses with their adviser.

6.1.2 Bachelor of Engineering (Bioresource) (B.Eng.(Bioresource)) - Freshman Program (30 credits)

If you are entering university for the first time from a high school system (outside of Quebec CEGEP system) you will be required to complete a freshman year of at least 30 credits as listed below.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Note: If you are not certain that you have adequate math and/or physics skills to commence the freshman year you may wish to take preparatory courses prior to the normal Fall semester. You are encouraged to discuss your potential need with your academic adviser.

Freshman Adviser: Dr. Alice Cherestes

Macdonald-Stewart Building, Room 1-023

Telephone: 514-398-7980

Required Courses - Fall (14.5 credits)

AEBI 120	(3)	General Biology
AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 113	(4)	Physics 1
BREE 187	(.5)	Freshman Seminar 1

Required Courses - Winter (15.5 credits)

AECH 111	(4)	General Chemistry 2
AEMA 102	(4)	Calculus 2
AEPH 115	(4)	Physics 2
BREE 103	(3)	Linear Algebra
BREE 188	(.5)	Freshman Seminar 2

6.1.3 Bachelor of Science (Food Science) (B.Sc.(F.Sc.)) - Freshman Program (30 credits)

If you are entering university for the first time from a high school system (outside of Quebec CEGEP system) you will be required to complete a freshman year of at least 30 credits as listed below.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Note: If you are not certain that you have adequate math and/or physics skills to commence the freshman year you may wish to take preparatory courses prior to the normal Fall semester. You are encouraged to discuss your potential need with your academic adviser.

Freshman Adviser: Dr. Alice Cherestes

Macdonald-Stewart Building, Room 1-023

Telephone: 514-398-7980

Required Courses - Fall (14.5 credits)

AEBI 120	(3)	General Biology
AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 112	(4)	Introductory Physics 1
AGRI 195	(.5)	Freshman Seminar 1

Required Courses - Winter (12.5 credits)

AECH 111	(4)	General Chemistry 2
AEMA 102	(4)	Calculus 2
AEPH 114	(4)	Introductory Physics 2
AGRI 196	(.5)	Freshman Seminar 2

Elective - Winter (3 credits)

6.1.4 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Freshman Program (30 credits)

If you are entering university for the first time from a high school system (outside of Quebec CEGEP system) you will be required to complete a freshman year of at least 30 credits as listed below.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Students require a minimum 2.50 CGPA in order to progress into Year 1 of the Dietetics program.

Note: If you are not certain that you have adequate math and/or physics skills to commence the freshman year you may wish to take preparatory courses prior to the normal Fall semester. You are encouraged to discuss your potential need with your academic adviser.

Freshman Adviser: Mrs. Judy Campbell-Gordon

Macdonald-Stewart Building, Room 2-019

Telephone: 514-398-7974

Required Courses - Fall (14.5 credits)

AEBI 120	(3)	General Biology
AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 112	(4)	Introductory Physics 1
AGRI 195	(.5)	Freshman Seminar 1

Required Courses - Winter (15.5 credits)

AEBI 122	(3)	Cell Biology
AEMA 102	(4)	Calculus 2
AEPH 114	(4)	Introductory Physics 2
AGRI 196	(.5)	Freshman Seminar 2
FDSC 230	(4)	Organic Chemistry

6.1.5 Concurrent Bachelor of Science Food Science (B.Sc. (F.Sc.)) and Bachelor of Science Nutritional Sciences (B.Sc. (Nutr.Sc.)) - Freshman Program (Concurrent) (30 credits)

These freshman requirements apply to students in the Concurrent Bachelor of Science Food Science (B.Sc. (F.Sc.)) and Bachelor of Science Nutritional Sciences (B.Sc. (Nutr.Sc.)) degree program.

If you are entering university for the first time from a high school system (outside of Quebec CEGEP system) you will be required to complete a freshman year of at least 30 credits as listed below.

Normally, students registered in the Faculty of Agricultural and Environmental Sciences Freshman program may take a maximum of 8 credits outside the Faculty offerings to meet the requirements of the program. Permission to exceed this limit must be received from the Associate Dean (Student Affairs) prior to registration.

Note: If you are not certain that you have adequate math and/or physics skills to commence the freshman year may wish to take preparatory courses prior to the normal Fall semester. You are encouraged to discuss your potential need with your academic adviser.

Freshman Adviser: Mrs. Judy Campbell-Gordon

Macdonald-Stewart Building, Room 2-019

Telephone: 514-398-7974

Required Courses - Fall (14.5 credits)

AEBI 120	(3)	General Biology
AECH 110	(4)	General Chemistry 1
AEMA 101	(3)	Calculus 1
AEPH 112	(4)	Introductory Physics 1
AGRI 195	(.5)	Freshman Seminar 1

Required Courses - Winter (15.5 credits)

AEBI 122	(3)	Cell Biology
AEMA 102	(4)	Calculus 2
AEPH 114	(4)	Introductory Physics 2
AGRI 196	(.5)	Freshman Seminar 2
FDSC 230	(4)	Organic Chemistry

6.2 Bachelor of Science (Agricultural and Environmental Sciences) – B.Sc.(Ag.Env.Sc.)

6.2.1 General rules for the following B.Sc.(Ag.Env.Sc.) programs

Students register in one *major* and at least one *specialization*. They may design their own program by choosing one of the four majors and at least one of the 23 specializations. By choosing two different specializations, students have the option of developing their own interdisciplinary interests. The multidisciplinary specializations are designed for those interested in broad training.

All the required and complementary courses for the major must be completed in full. Within each specialization, at least 18 credits must be unique: that is, they only count for that specialization and do not overlap with either the major or a second specialization. At least 54 credits of the 90 credits required for the degree (120 for students admitted to the Freshman year) must be from 300-level courses or higher; of this at least 12 credits must be from 400-level courses or higher.



Note: Below the program description for each major is a suggested list of specializations that complement the major.

Majors:

- Agricultural Economics
- Agro-environmental Sciences
- Environmental Biology
- International Agriculture and Food systems
- Life Sciences (Biological and Agricultural)

Specializations:

- Agribusiness, [section 6.2.7.2: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Agribusiness \(24 credits\)](#)
- Agricultural Economics, [section 6.2.7.3: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Agricultural Economics \(24 credits\)](#)
- Agriculture and Food Systems (Multidisciplinary), [section 6.2.7.4: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Agriculture and Food Systems \(Multidisciplinary\) \(24 credits\)](#)
- Animal Biology, [section 6.2.7.5: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Animal Biology \(24 credits\)](#)
- Animal Health and Disease, [section 6.2.7.6: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Animal Health and Disease \(24 credits\)](#)
- Animal Production, [section 6.2.7.7: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Animal Production \(24 credits\)](#)
- Applied Ecosystem Sciences, [section 6.2.7.8: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Applied Ecosystem Sciences \(24 credits\)](#)
- Ecological Agriculture, [section 6.2.7.9: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Ecological Agriculture \(24 credits\)](#)
- Entomology, [section 6.2.7.10: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Entomology \(24 credits\)](#)
- Environmental Biology (Multidisciplinary), [section 6.2.7.11: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Environmental Biology \(Multidisciplinary\) \(24 credits\)](#)
- Environmental Economics, [section 6.2.7.12: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Environmental Economics \(24 credits\)](#)
- Health and Nutrition, [section 6.2.7.13: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Health and Nutrition \(24 credits\)](#)
- International Agriculture, [section 6.2.7.14: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - International Agriculture \(24 credits\)](#)
- International Development, [section 6.2.7.15: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - International Development \(IAFS\) \(24 credits\)](#)
- Life Sciences (Multidisciplinary), [section 6.2.7.16: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Life Sciences \(Multidisciplinary\) \(24 credits\)](#)
- Microbiology, [section 6.2.7.17: Bachelor of Science \(Agricultural and Environmental Sciences\) \(B.Sc.\(Ag.Env.Sc.\)\) - Microbiology \(24 credits\)](#)

- Molecular Biotechnology, *section 6.2.7.18: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Molecular Biotechnology (24 credits)*
- Plant Biology, *section 6.2.7.19: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Biology (24 credits)*
- Plant Production, *section 6.2.7.20: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Production (24 credits)*
- Plant Protection, *section 6.2.7.21: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Protection (24 credits)*
- Professional Agrology, *section 6.2.7.22: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Professional Agrology (21 credits)*
- Soil and Water Resources, *section 6.2.7.23: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Soil and Water Resources (24 credits)*
- Wildlife Biology, *section 6.2.7.24: Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Wildlife Biology (24 credits)*

6.2.2 B.Sc.(Ag.Env.Sc.) – Agricultural Economics Major

Program Director: Profesor John Henning
Macdonald-Stewart Building, Room 3-038
Telephone: 514-398-7826

6.2.2.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Major Agricultural Economics (42 credits)

Program Prerequisites

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Required Courses (33 credits)

AGEC 200	(3)	Principles of Microeconomics
AGEC 201	(3)	Principles of Macroeconomics
AGEC 231	(3)	Economic Systems of Agriculture
AGEC 320	(3)	Intermediate Microeconomic Theory
AGEC 330	(3)	Agriculture and Food Markets
AGEC 333	(3)	Resource Economics
AGEC 425	(3)	Applied Econometrics
AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
AGEC 491	(3)	Research & Methodology
ENVB 210	(3)	The Biophysical Environment

Complementary Courses (9 credits)

With the approval of the academic adviser, one introductory course in each of the following areas:

Accounting

Statistics

Written/oral Communication

Specialization (21-24 credits)

Specializations designed to be taken with the Agricultural Economics major:

-Agribusiness (24 credits)

-Environmental Economics (24 credits)

-Professional Agrology (21 credits)

Note: For a complete list of specializations offered for students in the Bachelor of Science in Agricultural and Environmental Sciences, please refer to Academic Programs > Bachelor of Science (Agricultural and Environmental Sciences) - B.Sc.(Ag.Env.Sc.) > Specializations, in this publication.

Electives

To meet the minimum credit requirement for the degree.

6.2.3 B.Sc.(Ag.Env.Sc.) – Agro-environmental Sciences Major

Program Director

Roger I. Cue
 Macdonald Stewart Building, room 1-080
 Telephone: 514-398-7805

6.2.3.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Major Agro-Environmental Sciences (42 credits)

This major is focused on the idea that agricultural landscapes are managed ecosystems, and that humans engaged in agriculture must maintain the highest possible environmental standards while providing food and other bioproducts to the marketplace. The major core focuses on the basic and applied biology of cultivated plants, domestic animals, arable soils, and the economics of agriculture. Students then choose one or two specializations in these or connected disciplines that reflect their interests and career goals.

The program has a strong field component that includes hands-on laboratories, visits to agricultural enterprises, and opportunities for internships. Classes and laboratories exploit the unique setting and facilities of the Macdonald Campus and Farm, which is a fully functioning farm in an urban setting that exemplifies many of the issues at the forefront of modern agricultural production. Graduates of this program are eligible to become members of the Ordre des agronomes du Québec.

Program Prerequisites

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Required Courses (36 credits)

AEBI 210	(3)	Organisms 1
AEHM 205	(3)	Science Literacy
AEMA 310	(3)	Statistical Methods 1
AGEC 200	(3)	Principles of Microeconomics
AGEC 231	(3)	Economic Systems of Agriculture
AGRI 215	(3)	Agro-Ecosystems Field Course
ANSC 250	(3)	Principles of Animal Science
ENVB 210	(3)	The Biophysical Environment
LSCI 204	(3)	Genetics
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
SOIL 315	(3)	Soil Fertility and Fertilizer Use

Complementary Courses (6 credits)

6 credits of Complementary courses selected as follows:

One of:

PLNT 300	(3)	Cropping Systems
PLNT 302	(3)	Forage Crops and Pastures

One of:

ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production

Specialization

Choose at least one specialization of 18 - 24 credits

Specializations designed to be taken with the Agro-Environmental Sciences Major:

- Agricultural Economics
- Animal Health and Disease
- Animal Production
- Ecological Agriculture
- Entomology
- International Agriculture
- Plant Production
- Plant Protection
- Professional Agrology
- Soil and Water Resources

Electives

To meet the minimum credit requirement for the degree.

6.2.4 B.Sc.(Ag.Env.Sc.) – Environmental Biology Major

Program Director

Professor Chris Buddle
Macdonald- Stewart Building, room 2-076
Telephone: 514-398-8026

6.2.4.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Major Environmental Biology (42 credits)

The Environmental Biology Major is about the biology, diversity and ecology of a broad range of organisms, from plant and vertebrate animals, to insects, fungi and microbes. This major places a strong emphasis on the ecosystems that species inhabit and the constraints imposed by the physical environment and by environmental change. Environmental Biology has significant field components worked into the course sets, and through this experiential learning, biological diversity, and the ways that species interact with their physical environment in a variety of ecosystems will be studied. The Major makes full use of the unique physical setting and faculty expertise of McGill's Macdonald Campus to train students to become ecologists, taxonomists, field biologists, and ecosystem scientists.

Program Director: Professor Christopher Buddle

Macdonald-Stewart Building, Room 2-076

514-398-8026

Program Prerequisites

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for information on prerequisites and minimum credit requirements.

Required Courses (30 credits)

AEBI 210	(3)	Organisms 1
AEBI 211	(3)	Organisms 2
AEBI 212	(3)	Evolution and Phylogeny
AEHM 205	(3)	Science Literacy
AEMA 310	(3)	Statistical Methods 1

ENVB 210	(3)	The Biophysical Environment
ENVB 222	(3)	St. Lawrence Ecosystems
ENVB 410	(3)	Ecosystem Ecology
LSCI 204	(3)	Genetics
LSCI 211	(3)	Biochemistry 1

Complementary Courses (12 credits)

12 credits of complementary courses selected from:

AEBI 451	(3)	Research Project 1
AEBI 491	(1)	Scientific Communication
AEMA 406	(3)	Quantitative Methods: Ecology
ENTO 340	(3)	Field Entomology
ENVB 301	(3)	Meteorology
ENVB 305	(3)	Population & Community Ecology
ENVB 313	(3)	Phylogeny and Biogeography
ENVB 315	(3)	Science of Inland Waters
ENVR 203	(3)	Knowledge, Ethics and Environment
LSCI 230	(3)	Introductory Microbiology
MICR 331	(3)	Microbial Ecology
NRSC 430	(3)	GIS for Natural Resource Management
NRSC 437	(3)	Assessing Environmental Impact
PLNT 304	(3)	Biology of Fungi
PLNT 358	(3)	Flowering Plant Diversity
SOIL 300	(3)	Geosystems
SOIL 326	(3)	Soils in a Changing Environment
WILD 307	(3)	Natural History of Vertebrates

Specialization

At least one specialization of 18-24 credits

Specializations designed to be taken with the Environmental Biology Major:

- Applied Ecosystem Sciences
- Entomology
- Environmental Biology (Multidisciplinary)
- Plant Biology
- Plant Protection
- Soil and Water Resources
- Wildlife Biology

Note: For a complete list of specializations offered for students in the Bachelor of Science in Agricultural and Environmental Sciences, please refer to Academic Programs > Bachelor of Science (Agricultural and Environmental Sciences) - B.Sc.(Ag.Env.Sc.) > Specializations, in this publication. Consult academic adviser for approval of specializations other than those listed above.

Electives

To meet the minimum credit requirement for the degree.

6.2.5 B.Sc.(Ag.Env.Sc.) – International Agriculture and Food Systems Major

Program Director

Professor Anwar Naseem
Macdonald-Stewart Building, room 3-037
Telephone: 514-398-7825

6.2.5.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Major International Agriculture and Food Systems (42 credits)

This program is directed at students who seek conceptual understanding of the scope of and inter-relationships among the environmental, economic and socio-cultural factors that shape the nature of developing country food systems as well as scientific competence in the ways in which agriculture can help define sustainable solutions to critical problems defined by food insecurity, malnutrition, poverty and ecological health. Students will be given general preparation sufficient for participation in project management and policy development together with a foundation adequate both for working alongside a range of development specialists and for subsequent acquisition of specific expertise in components of agricultural and food science. The program includes a common core of scientific and development-related courses.

Program Director: Professor Anwar Naseem
Macdonald-Stewart Building, Room 3-037
514-398-7825

Program Prerequisites

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Required Courses (30 credits)

AEMA 310	(3)	Statistical Methods 1
AGEC 200	(3)	Principles of Microeconomics
AGEC 442	(3)	Economics of International Agricultural Development
AGRI 411	(3)	Global Issues on Development, Food and Agriculture
AGRI 493	(3)	International Project Management
ENVB 210	(3)	The Biophysical Environment
FDSC 200	(3)	Introduction to Food Science
LSCI 211	(3)	Biochemistry 1
NRSC 340	(3)	Global Perspectives on Food
PLNT 203	(3)	Economic Botany

Complementary Courses (12 credits)

Select the complementary courses as follows:

One of:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

9 credits from the following:

ANSC 250	(3)	Principles of Animal Science
BREE 217	(3)	Hydrology and Water Resources
ENTO 352	(3)	Control of Insect Pests
ENVB 305	(3)	Population & Community Ecology

FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
LSCI 202	(3)	Molecular Cell Biology
LSCI 204	(3)	Genetics
LSCI 230	(3)	Introductory Microbiology
NUTR 501	(3)	Nutrition in Developing Countries
PARA 410	(3)	Environment and Infection
PARA 515	(3)	Water, Health and Sanitation
PLNT 434	(3)	Weed Biology and Control
WILD 424	(3)	Parasitology

Specialization

Students should also complete at least two specializations of 18-24 credits, one of which should be the Specialization in International Development.

Specializations designed to be taken with the International Agriculture and Food Systems Major:

- Agricultural Economics
- Agriculture and Food Systems (Multidisciplinary)
- Animal Production
- Ecological Agriculture
- Health and Nutrition
- International Development (for IAFS students)
- Plant Production
- Soil and Water Resources

Note: For a complete list of specializations offered for students in the Bachelor of Science in Agricultural and Environmental Sciences, please refer to Academic Programs > Bachelor of Science (Agricultural and Environmental Sciences) - B.Sc.(Ag.Env.Sc.) > Specializations, in this publication. Consult academic adviser for approval of specializations other than those listed above.

Electives

To meet the minimum credit requirement for the degree.

6.2.6 B.Sc.(Ag.Env.Sc.) – Life Sciences (Biological and Agricultural) Major

Program Director

Professor Brian Driscoll
Macdonald-Stewart Building, room 3-035
Telephone: 514-398-7887

6.2.6.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Major Life Sciences (Biological and Agricultural) (42 credits)

The Life Sciences (Biological and Agricultural) Major provides a strong foundation in the basic biological sciences. It will prepare graduates for careers in the agricultural, environmental, health and biotechnological fields. Graduates with high academic achievement may go on to post-graduate studies in research, or professional programs in the biological, veterinary, medical and health sciences fields.

Program Director: Professor Brian Driscoll
Macdonald-Stewart Building, Room 3-035
Telephone: 514-398-7887

Program Prerequisites

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Required Courses (27 credits)

AEBI 210	(3)	Organisms 1
AEBI 211	(3)	Organisms 2
AEBI 212	(3)	Evolution and Phylogeny
AEHM 205	(3)	Science Literacy
AEMA 310	(3)	Statistical Methods 1
LSCI 202	(3)	Molecular Cell Biology
LSCI 204	(3)	Genetics
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology

Complementary Courses (15 credits)

15 credits of the complementary courses selected from:

*MIMM 324 is taught at Downtown campus.

AEBI 451	(3)	Research Project 1
AEBI 491	(1)	Scientific Communication
AEHM 330	(3)	Academic and Scientific Writing
ANSC 234	(3)	Biochemistry 2
ANSC 250	(3)	Principles of Animal Science
ANSC 251	(3)	Comparative Anatomy
ANSC 324	(3)	Developmental Biology and Reproduction
ANSC 326	(3)	Fundamentals of Population Genetics
ANSC 330	(3)	Fundamentals of Nutrition
ANSC 420	(3)	Animal Biotechnology
BINF 301	(3)	Introduction to Bioinformatics
BTEC 306	(3)	Experiments in Biotechnology
ENVB 222	(3)	St. Lawrence Ecosystems
MICR 331	(3)	Microbial Ecology
MIMM 324	(3)	Fundamental Virology
NRSC 333	(3)	Pollution and Bioremediation
PARA 438	(3)	Immunology
PLNT 203	(3)	Economic Botany
PLNT 304	(3)	Biology of Fungi
PLNT 315	(3)	Herbs and Medicinal Plants
PLNT 353	(3)	Plant Structure and Function
PLNT 424	(3)	Cellular Regulation
PLNT 426	(3)	Plant Ecophysiology
WILD 375	(3)	Issues: Environmental Sciences
WILD 424	(3)	Parasitology

Specialization

At least one specialization of 18-24 credits from:

Specializations designed to be taken with the Life Sciences (Biological and Agricultural) Major:

- Animal Biology

- Animal Health and Disease
- Entomology
- Health and Nutrition
- Life Sciences (Multidisciplinary)
- Microbiology
- Molecular Biotechnology
- Plant Biology

Note: For a complete list of specializations offered for students in the Bachelor of Science in Agricultural and Environmental Sciences, please refer to Academic Programs > Bachelor of Science (Agricultural and Environmental Sciences) - B.Sc.(Ag.Env.Sc.) > Specializations, in this publication.

Electives

To meet the minimum credit requirement for the degree.

6.2.7 Specializations

6.2.7.1 B.Sc.(Ag.Env.Sc.) – Specializations to be taken with one of the B.Sc.(Ag.Env.Sc.) majors

Each specialization consists of 24 credits of courses (required and complementary) that provide a coherent package designed to prepare students for a future in a given discipline. Students will select at least one specialization. However, students wishing to broaden their training have the option of choosing to do two. Although the list of suggested specializations appears under each major in the programs section, students interested in other specializations should consult with their academic adviser/specialization coordinator.

6.2.7.2 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Agribusiness (24 credits)

The development of commercial agriculture relies on a large supporting sector of manufacturing and service companies involved in the supply of inputs to farming and the transportation, processing, and marketing of agricultural and food products.

This 24-credit specialization includes courses in agricultural sciences, agribusiness, and courses at the Desautels Faculty of Management.

This specialization is intended for students in the Major in Agricultural Economics.

Specialization Adviser: Professor John Henning

Macdonald-Stewart Building, Room 3-038

514-398-7826

Required Courses (15 credits)

AEBI 210	(3)	Organisms 1
AGEC 242	(3)	Management Theories and Practices
AGEC 332	(3)	Farm Management and Finance
AGEC 450	(3)	Agriculture Business Management
ANSC 250	(3)	Principles of Animal Science

Complementary Courses (9 credits)

9 credits chosen from the following list:

ACCT 361	(3)	Intermediate Management Accounting 1
AGRI 310	(3)	Internship in Agriculture/Environment
BUSA 364	(3)	Business Law 1
MGCR 341	(3)	Finance 1
MGCR 352	(3)	Marketing Management 1
MGCR 382	(3)	International Business
MGSC 373	(3)	Operations Research 1
ORGB 321	(3)	Leadership

6.2.7.3 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Agricultural Economics (24 credits)

A specialization in Agricultural Economics will complement a student's education in four ways. First, as a social science, Economics will provide an alternative perspective for students in the Faculty. Second, the specialization will provide an excellent foundation of the workings of the economy at large. Third, it will aid students to understand the business environment surrounding the agri-food industry. Finally, it will challenge students to analyze the interaction between the agricultural economy and the natural resource base.

Specialization Coordinator: Professor John Henning

Macdonald-Stewart Building, Room 3-038

Telephone: 514-398-7826

Required Courses (12 credits)

AGEC 200	(3)	Principles of Microeconomics
AGEC 201	(3)	Principles of Macroeconomics
AGEC 330	(3)	Agriculture and Food Markets
AGEC 333	(3)	Resource Economics

Complementary Courses (12 credits)

12 credits of complementary courses selected from:

AGEC 231	(3)	Economic Systems of Agriculture
AGEC 242	(3)	Management Theories and Practices
AGEC 320	(3)	Intermediate Microeconomic Theory
AGEC 332	(3)	Farm Management and Finance
AGEC 343	(3)	Accounting and Cost Control
AGEC 425	(3)	Applied Econometrics
AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
AGEC 450	(3)	Agriculture Business Management
AGEC 491	(3)	Research & Methodology
AGEC 492	(3)	Special Topics in Agricultural Economics 01

6.2.7.4 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Agriculture and Food Systems (Multidisciplinary) (24 credits)

This flexible specialization offers a balance between food systems and consumption and agricultural production. It provides students with an opportunity to select courses in the economics, nutrition and ethical and environmental implications of food systems and in the fundamentals of animal and plant production. The specialization is designed for students in the International Agriculture and Food Systems major who have broad interests in international agriculture and development.

To complete the specialization, students select 12 credits from the block of complementary courses related to Food Systems and Consumption and 12 credits from the block of complementary courses related to Agriculture Production from the lists in the table below.

Specialization Adviser: Professor G.S.V. Raghavan

Macdonald-Stewart Building, Room 1-098

Telephone: 514-398-8731

Complementary Courses (24 credits)

24 credits of complementary courses are selected as follows:

12 credits - Food Systems and Consumption

12 credits - Agricultural Production

Food Systems and Consumption

12 credits from:

AGEC 201	(3)	Principles of Macroeconomics
AGEC 231	(3)	Economic Systems of Agriculture
AGEC 242	(3)	Management Theories and Practices
AGEC 320	(3)	Intermediate Microeconomic Theory
AGEC 330	(3)	Agriculture and Food Markets
AGEC 333	(3)	Resource Economics
AGEC 343	(3)	Accounting and Cost Control
AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
ANSC 323	(3)	Mammalian Physiology
ANSC 424	(3)	Metabolic Endocrinology
ANSC 551	(3)	Carbohydrate and Lipid Metabolism
ANSC 552	(3)	Protein Metabolism and Nutrition
ECON 225	(3)	Economics of the Environment
ECON 326	(3)	Ecological Economics
FDSC 251	(3)	Food Chemistry 1
FDSC 319	(3)	Food Commodities
FDSC 330	(3)	Food Processing
LSCI 202	(3)	Molecular Cell Biology
LSCI 230	(3)	Introductory Microbiology
MICR 331	(3)	Microbial Ecology
MICR 341	(3)	Mechanisms of Pathogenicity
MICR 450	(3)	Environmental Microbiology
NRSC 221	(3)	Environment and Health
NRSC 512	(3)	Water: Ethics, Law and Policy
NUTR 337	(3)	Nutrition Through Life
NUTR 403	(3)	Nutrition in Society
NUTR 420	(3)	Toxicology and Health Risks
NUTR 501	(3)	Nutrition in Developing Countries
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PARA 410	(3)	Environment and Infection
PARA 438	(3)	Immunology
PARA 515	(3)	Water, Health and Sanitation
WILD 424	(3)	Parasitology

Agricultural Production

12 credits from:

AGRI 215	(3)	Agro-Ecosystems Field Course
AGRI 340	(3)	Principles of Ecological Agriculture
AGRI 435	(3)	Soil and Water Quality Management
ANSC 250	(3)	Principles of Animal Science
ANSC 312	(3)	Animal Health and Disease

ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production
BREE 217	(3)	Hydrology and Water Resources
ENTO 340	(3)	Field Entomology
ENTO 352	(3)	Control of Insect Pests
FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
PLNT 300	(3)	Cropping Systems
PLNT 302	(3)	Forage Crops and Pastures
PLNT 307	(3)	Vegetable Production
PLNT 310	(3)	Plant Propagation
PLNT 312	(3)	Urban Horticulture
PLNT 315	(3)	Herbs and Medicinal Plants
PLNT 321	(3)	Fruit Production
PLNT 322	(3)	Greenhouse Management
PLNT 434	(3)	Weed Biology and Control
SOIL 315	(3)	Soil Fertility and Fertilizer Use

6.2.7.5 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Animal Biology (24 credits)

The specialization in Animal Biology is intended for students who wish to further their studies in the basic biology of large mammals and birds. Successful completion of the program should enable students to qualify for application to most veterinary colleges in North America, to post-graduate studies in a variety of biology programs, and to work in many laboratory settings.

Specialization Adviser: Professor Roger Cue

Department of Animal Science

Telephone: 514-398-7805

Required Courses (15 credits)

ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 324	(3)	Developmental Biology and Reproduction
ANSC 420	(3)	Animal Biotechnology
PARA 438	(3)	Immunology

Complementary Courses (9 credits)

9 credits selected from:

AEBI 451	(3)	Research Project 1
ANSC 251	(3)	Comparative Anatomy
ANSC 326	(3)	Fundamentals of Population Genetics
ANSC 330	(3)	Fundamentals of Nutrition
ANSC 400	(3)	Eukaryotic Cells and Viruses
ANSC 424	(3)	Metabolic Endocrinology
ANSC 433	(3)	Animal Nutrition
ANSC 560	(3)	Biology of Lactation
ANSC 565	(3)	Applied Information Systems

6.2.7.6 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Animal Health and Disease (24 credits)

This specialization is offered for students wishing to understand general animal physiology and function, the susceptibility of animals to various diseases, methods for limiting and controlling potential outbreaks, and the resulting implications for the animal, the consumer and the environment. It is an ideal choice for students interested in the care of animals, or in working in laboratories where diseases are being researched.

Specialization Adviser: Professor Sarah Kimmins

Macdonald-Stewart Building, Room 1-091

514-398-7658

Required Courses (15 credits)

ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 424	(3)	Metabolic Endocrinology
MICR 341	(3)	Mechanisms of Pathogenicity
PARA 438	(3)	Immunology

Complementary Courses (9 credits)

9 credits of complementary courses selected from:

AEBI 451	(3)	Research Project 1
ANSC 251	(3)	Comparative Anatomy
ANSC 330	(3)	Fundamentals of Nutrition
NUTR 420	(3)	Toxicology and Health Risks
PHAR 300	(3)	Drug Action
WILD 424	(3)	Parasitology

6.2.7.7 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Animal Production (24 credits)

This specialization will be of interest to students who wish to study the improved efficiency of livestock production at the national and international levels. Students are exposed to animal nutrition, physiology and breeding in a context that respects environmental concerns and animal-welfare issues. When taken in conjunction with the Major Agro-Environmental Sciences and the specialization in Professional Agriculture, it conforms with the eligibility requirements of the Ordre des agronomes du Québec.

Specialization Adviser: Professor Arif Mustafa

Macdonald-Stewart Building, Room 1-086

Telephone: 514-398-7506

Required Courses (21 credits)

ANSC 301	(3)	Principles of Animal Breeding
ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 324	(3)	Developmental Biology and Reproduction
ANSC 433	(3)	Animal Nutrition
ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production

Complementary Courses (3 credits)

One of:

ANSC 234	(3)	Biochemistry 2
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ANSC 330 (3) Fundamentals of Nutrition

6.2.7.8 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Applied Ecosystem Sciences (24 credits)

The goal of this specialization is to provide students with an opportunity to further develop their understanding of the ecosystem processes, ecology, and systems thinking necessary to understand, design and manage our interaction with the environment.

Specialization Adviser: Professor James Fyles

Macdonald-Stewart Building, Room 2-063

Telephone: 514-398-7758

Required Courses (12 credits)

AEMA 406	(3)	Quantitative Methods: Ecology
BREE 327	(3)	Bio-Environmental Engineering
ENVB 305	(3)	Population & Community Ecology
ENVB 415	(3)	Ecosystem Management

Complementary Courses (12 credits)

12 credits of complementary courses selected as follows:

6 credits - Abiotic

6 credits - Biotic

6 credits are selected from the Abiotic list below:

AGRI 435	(3)	Soil and Water Quality Management
BREE 217	(3)	Hydrology and Water Resources
BREE 322	(3)	Organic Waste Management
ENVB 301	(3)	Meteorology
MICR 450	(3)	Environmental Microbiology
NRSC 430	(3)	GIS for Natural Resource Management
SOIL 300	(3)	Geosystems
SOIL 326	(3)	Soils in a Changing Environment
SOIL 510	(3)	Environmental Soil Chemistry

6 credits are selected from the Biotic list below:

AGRI 340	(3)	Principles of Ecological Agriculture
ENTO 440	(3)	Insect Diversity
ENVB 315	(3)	Science of Inland Waters
MICR 331	(3)	Microbial Ecology
PLNT 358	(3)	Flowering Plant Diversity
PLNT 426	(3)	Plant Ecophysiology
PLNT 460	(3)	Plant Ecology
WILD 307	(3)	Natural History of Vertebrates

6.2.7.9 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Ecological Agriculture (24 credits)

This specialization focuses on the principles underlying the practice of ecological agriculture. When coupled with the Major in Environmental Biology, agriculture as a managed ecosystem which responds to the laws of community ecology is examined; when combined with the Major Agro-Environmental

Sciences and the specialization in Professional Agrology, this specialization focuses more directly on the practice of ecological agriculture and conforms with the eligibility requirements of the Ordre des agronomes du Québec. It is suitable for students wishing to farm, do extension and government work, and those intending to pursue postgraduate work in this field.

Academic Adviser: Dr. Caroline Begg

Macdonald-Stewart Building, Room 2-071

Telephone: 514-398-8749

Required Courses (9 credits)

AGRI 210	(3)	Agro-Ecological History
AGRI 215	(3)	Agro-Ecosystems Field Course
AGRI 340	(3)	Principles of Ecological Agriculture

Complementary Courses (15 credits)

15 credits of Complementary courses selected from:

*Note: Offered in alternate years.

AGEC 333	(3)	Resource Economics
AGRI 310	(3)	Internship in Agriculture/Environment
AGRI 435	(3)	Soil and Water Quality Management
ENTO 352	(3)	Control of Insect Pests
ENTO 446	(3)	Apiculture
MICR 331	(3)	Microbial Ecology
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PLNT 302	(3)	Forage Crops and Pastures
PLNT 312*	(3)	Urban Horticulture
PLNT 315*	(3)	Herbs and Medicinal Plants
PLNT 434	(3)	Weed Biology and Control
PLNT 460	(3)	Plant Ecology
SOIL 326	(3)	Soils in a Changing Environment
SOIL 335*	(3)	Soil Ecology and Management
SOIL 445*	(3)	Agroenvironmental Fertilizer Use

6.2.7.10 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Entomology (24 credits)

This specialization offers students expertise in insect biology, ecology, evolution and behaviour. Applied entomology is included, as insects are key pests in various ecosystems, and insect pest management is and will continue to be a global priority. Insect taxonomy and systematics will be studied both in the field and in the classroom. Through careful selection of complementary courses, students can learn about the role of insects in various ecosystems, their functional importance, and their role in vectoring human disease.

Specialization Adviser: Christopher Buddle

Macdonald-Stewart Building 2-076

Telephone: 514-398-8026

Required Courses (12 credits)

ENTO 330	(3)	Insect Biology
ENTO 340	(3)	Field Entomology
ENTO 352	(3)	Control of Insect Pests
ENTO 440	(3)	Insect Diversity

Complementary Courses (12 credits)

12 credits of complementary courses selected from:

ENTO 446	(3)	Apiculture
ENTO 515	(3)	Parasitoid Behavioural Ecology
ENTO 520	(3)	Insect Physiology
ENTO 535	(3)	Aquatic Entomology
ENTO 550	(3)	Veterinary and Medical Entomology
PLNT 434	(3)	Weed Biology and Control
SOIL 335	(3)	Soil Ecology and Management
WILD 424	(3)	Parasitology

6.2.7.11 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Environmental Biology (Multidisciplinary) (24 credits)

This is a flexible specialization offering a balance between organisms, their ecology, and ecosystem processes and applications. Biology and ecology of a variety of taxonomic groups and the ways the organisms interact with and affect ecosystem processes will be examined. Students are exposed to ecosystem management and issues related to environmental change. The proposed specialization is designed for students with broad and general interests in environmental biology, but who wish for a strong grounding in Organismal biology and ecology and environmental sciences.

Specialization Adviser: Professor Christopher Buddle

Macdonald-Stewart Building, Room 2-0276

Telephone: 514-398-8026

Complementary Courses (24 credits)

24 credits (total) are selected from various categories as follows:

Minimum of 6 credits - Organisms

Minimum of 3 credits - Ecology

Minimum of 6 credits - Ecosystem Processes and Applications

Organisms

Minimum of 6 credits from the following:

BIOL 427	(3)	Herpetology
ENTO 340	(3)	Field Entomology
PLNT 304	(3)	Biology of Fungi
PLNT 358	(3)	Flowering Plant Diversity
WILD 307	(3)	Natural History of Vertebrates
WILD 350	(3)	Mammalogy
WILD 420	(3)	Ornithology

Ecology

Minimum of 3 credits from the following:

AEMA 406	(3)	Quantitative Methods: Ecology
ENTO 440	(3)	Insect Diversity
ENVB 305	(3)	Population & Community Ecology
ENVB 315	(3)	Science of Inland Waters
MICR 331	(3)	Microbial Ecology
PLNT 460	(3)	Plant Ecology

SOIL 335 (3) Soil Ecology and Management

Ecosystem Processes and Applications

Minimum of 6 credits from the following:

AGRI 435 (3) Soil and Water Quality Management
ENVB 301 (3) Meteorology
MICR 450 (3) Environmental Microbiology
NRSC 430 (3) GIS for Natural Resource Management
NRSC 437 (3) Assessing Environmental Impact
SOIL 300 (3) Geosystems
SOIL 326 (3) Soils in a Changing Environment
WILD 375 (3) Issues: Environmental Sciences
WILD 421 (3) Wildlife Conservation

6.2.7.12 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Environmental Economics (24 credits)

This specialization integrates environmental sciences and decision making with the economics of environment and sustainable development. It is designed to prepare students for careers in natural resource management and the analysis of environmental problems and policies.

This specialization is intended for students in the Major Agricultural Economics.

Specialization Adviser: Professor John Henning

Macdonald-Stewart Building, Room 3-038

514-398-7826

Required Courses (9 credits)

AEMA 406 (3) Quantitative Methods: Ecology
ENVB 305 (3) Population & Community Ecology
NRSC 437 (3) Assessing Environmental Impact

Complementary Courses (15 credits)

At least 15 credits chosen from the following list:

AGRI 310 (3) Internship in Agriculture/Environment
BREE 217 (3) Hydrology and Water Resources
ECON 225 (3) Economics of the Environment
ECON 326 (3) Ecological Economics
ECON 405 (3) Natural Resource Economics
ENVB 301 (3) Meteorology
ENVR 203 (3) Knowledge, Ethics and Environment
MICR 331 (3) Microbial Ecology
NRSC 333 (3) Pollution and Bioremediation
WILD 415 (2) Conservation Law
WILD 421 (3) Wildlife Conservation

6.2.7.13 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Health and Nutrition (24 credits)

This specialization offers students a foundation in nutrition with respect to health and disease. A focus on nutrition and health through the lifespan examines nutrient requirements and their relationship with health and disease prevention. Through careful selection of complementary courses, students can study about health and disease in various contexts ranging from human to animal health.

Specialization Adviser: Professor Linda Wykes

Macdonald-Stewart Building 2-042

Telephone: 514-398-7843

Required Courses (12 credits)

ANSC 323	(3)	Mammalian Physiology
ANSC 330	(3)	Fundamentals of Nutrition
NUTR 337	(3)	Nutrition Through Life
PARA 438	(3)	Immunology

Complementary Courses (12 credits)

12 credits from:

ANSC 312	(3)	Animal Health and Disease
ANSC 424	(3)	Metabolic Endocrinology
ANSC 551	(3)	Carbohydrate and Lipid Metabolism
ANSC 552	(3)	Protein Metabolism and Nutrition
NUTR 344	(4)	Clinical Nutrition 1
NUTR 420	(3)	Toxicology and Health Risks
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 503	(3)	Bioenergetics and the Lifespan
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data
PARA 410	(3)	Environment and Infection
PARA 515	(3)	Water, Health and Sanitation
PLNT 315	(3)	Herbs and Medicinal Plants
WILD 424	(3)	Parasitology

6.2.7.14 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - International Agriculture (24 credits)

This specialization will provide the student with coursework and hands-on experience of techniques and issues related to agriculture in a tropical setting. Theoretical courses on the policies and practice of agriculture in an international context are complemented by participation in one of the international field semesters. Note that there is a selection process for participation in a field semester and that participation entails extra cost. In addition, students should consult the academic adviser for the specialization and carefully review the prerequisites for courses in the field semester and the general requirements for participation, which may be over and above what is required by the student's major.

Specialization Adviser: Professor Humberto Mondardes

Macdonald-Stewart Building 1-093

Telephone: 514-398-7809

Required Courses (6 credits)

AGEC 442	(3)	Economics of International Agricultural Development
AGRI 411	(3)	Global Issues on Development, Food and Agriculture

Complementary Courses (18 credits)

18 credits of complementary courses selected as follows:

3 credits, one of the following:

NRSC 340	(3)	Global Perspectives on Food
NUTR 501	(3)	Nutrition in Developing Countries
PARA 515	(3)	Water, Health and Sanitation

15 credits, select one of the McGill Field Study Semesters listed below:

African Field Study Semester (Winter)

15 credits in African Field Study Semester are selected as follows:

9 credits of courses chosen from the complementary course set offered in the year of participation in the field study semester.

6 credits of Required courses as listed below:

GEOG 416	(3)	Africa South of the Sahara
NRSC 405	(3)	Natural History of East Africa

Barbados Field Study Semester (Fall)

15 credits selected as follows:

AGRI 452	(3)	Water Resources in Barbados
AGRI 519	(6)	Sustainable Development Plans
URBP 507	(3)	Planning and Infrastructure
URBP 520	(3)	Globalization: Planning and Change

Barbados Interdisciplinary Tropical Studies Field Semester (Summer)

15 credits selected as follows:

AEBI 421	(3)	Tropical Horticultural Ecology
AEBI 423	(3)	Sustainable Land Use
AEBI 425	(3)	Tropical Energy and Food
AEBI 427	(6)	Barbados Interdisciplinary Project

Panama Field Study Semester (Winter)

15 credits selected as follows:

AGRI 550	(3)	Sustained Tropical Agriculture
BIOL 553	(3)	Neotropical Environments
ENVR 451	(6)	Research in Panama
GEOG 498	(3)	Humans in Tropical Environments

6.2.7.15 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - International Development (IAFS) (24 credits)

The specialization provides a focus on social science offerings from the International Development Studies program offered by the Faculty of Arts for students in the International Agriculture and Food Systems (IAFS) major. The program combines an overview of development and social science course options with opportunity for field experience.

Specialization Adviser: Professor Anwar Naseem

Macdonald-Stewart Building, Room 3-037

514-398-7825

Required Course (3 credits)

INTD 200	(3)	Introduction to International Development
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Complementary Courses (21 credits)

21 credits selected as follows:

3 credits of research or internship coursework

18 credits from one of two streams:

- Economic Development and Living Standards
- Environment and Agricultural Resources

Research or Internship Coursework

3 credits from:

AGRI 498	(3)	Agricultural Development Research
AGRI 499	(3)	Agricultural Development Internship

Economic Development and Living Standards Stream

Students selecting this stream complete 18 credits from:

AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
AGRI 411	(3)	Global Issues on Development, Food and Agriculture
ANTH 227	(3)	Medical Anthropology
ECON 209	(3)	Macroeconomic Analysis and Applications
ECON 223	(3)	Political Economy of Trade Policy
ECON 326	(3)	Ecological Economics
ECON 336	(3)	The Chinese Economy
ECON 411	(3)	Economic Development: A World Area
ECON 416	(3)	Topics in Economic Development 2
GEOG 310	(3)	Development and Livelihoods
GEOG 403	(3)	Global Health and Environmental Change
GEOG 409	(3)	Geographies of Developing Asia
GEOG 508	(3)	Resources, People and Power
HIST 348	(3)	China: Science-Medicine-Technology
HIST 381	(3)	Colonial Africa: Health/Disease
HIST 396	(3)	Disease in Africa Since 1960
MGCR 360	(3)	Social Context of Business
MGCR 382	(3)	International Business
MGPO 475	(3)	Strategies for Developing Countries
MIME 524	(3)	Mineral Resources Economics
NRSC 340	(3)	Global Perspectives on Food
NRSC 540	(3)	Socio-Cultural Issues in Water
POLI 423	(3)	Politics of Ethno-Nationalism
POLI 445	(3)	International Political Economy: Monetary Relations

SOCI 307	(3)	Sociology of Globalization
SOCI 309	(3)	Health and Illness
SOCI 365	(3)	Health and Development
SOCI 513	(3)	Social Aspects HIV/AIDS in Africa

Environment and Agricultural Resources Stream

Students selecting this stream complete 18 credits from:

AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
ANTH 206	(3)	Environment and Culture
ANTH 301	(3)	Nomadic Pastoralists
ANTH 339	(3)	Ecological Anthropology
ANTH 418	(3)	Environment and Development
ANTH 512	(3)	Political Ecology
ECON 326	(3)	Ecological Economics
GEOG 302	(3)	Environmental Management 1
GEOG 403	(3)	Global Health and Environmental Change
GEOG 408	(3)	Geography of Development
GEOG 410	(3)	Geography of Underdevelopment: Current Problems
GEOG 508	(3)	Resources, People and Power
GEOG 510	(3)	Humid Tropical Environments
MGCR 360	(3)	Social Context of Business
MIME 524	(3)	Mineral Resources Economics
NRSC 340	(3)	Global Perspectives on Food
NRSC 540	(3)	Socio-Cultural Issues in Water
NUTR 501	(3)	Nutrition in Developing Countries
URBP 506	(3)	Environmental Policy and Planning
URBP 520	(3)	Globalization: Planning and Change

6.2.7.16 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Life Sciences (Multidisciplinary) (24 credits)

Students taking this specialization have a wide variety of life sciences course offerings to choose from to allow them to target their program to their own interests in the field. Course choices are balanced between "fundamentals" and "applications". Depending upon the courses chosen, the resulting program may be relatively specialized or very broad, spanning several disciplines. Such a broad background in life sciences will open up employment opportunities in a variety of diverse bioscience industries; students with an appropriate CGPA may proceed to a wide variety of post-graduate programs or professional schools.

Academic Adviser: Professor Brian Driscoll

Macdonald-Stewart Building 3-035

Telephone: 514-398-7887

Complementary Courses (24 credits)

24 credits of complementary courses are selected from the categories listed below:

12 credits - Fundamentals

12 credits - Applications

Complementary Courses - Fundamentals

12 credits selected from:

ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 324	(3)	Developmental Biology and Reproduction
ANSC 330	(3)	Fundamentals of Nutrition
ANSC 400	(3)	Eukaryotic Cells and Viruses
ANSC 433	(3)	Animal Nutrition
ENTO 330	(3)	Insect Biology
ENTO 440	(3)	Insect Diversity
ENVB 305	(3)	Population & Community Ecology
ENVB 313	(3)	Phylogeny and Biogeography
ENVB 315	(3)	Science of Inland Waters
MICR 331	(3)	Microbial Ecology
MICR 338	(3)	Bacterial Molecular Genetics
MICR 450	(3)	Environmental Microbiology
NUTR 337	(3)	Nutrition Through Life
PARA 438	(3)	Immunology
PLNT 304	(3)	Biology of Fungi
PLNT 353	(3)	Plant Structure and Function
PLNT 358	(3)	Flowering Plant Diversity
PLNT 424	(3)	Cellular Regulation
PLNT 426	(3)	Plant Ecophysiology
PLNT 460	(3)	Plant Ecology
WILD 375	(3)	Issues: Environmental Sciences
WILD 424	(3)	Parasitology

Complementary Courses - Applications

12 credits selected from:

AEBI 451	(3)	Research Project 1
AEMA 406	(3)	Quantitative Methods: Ecology
ANSC 420	(3)	Animal Biotechnology
ANSC 424	(3)	Metabolic Endocrinology
ANSC 506	(3)	Advanced Animal Biotechnology
ANSC 560	(3)	Biology of Lactation
ANSC 565	(3)	Applied Information Systems
BINF 301	(3)	Introduction to Bioinformatics
BINF 511	(3)	Bioinformatics for Genomics
BTEC 306	(3)	Experiments in Biotechnology
BTEC 535	(3)	Functional Genomics in Model Organisms
BTEC 555	(3)	Structural Bioinformatics
ENTO 352	(3)	Control of Insect Pests
ENTO 535	(3)	Aquatic Entomology
ENTO 550	(3)	Veterinary and Medical Entomology

ENVB 301	(3)	Meteorology
FDSC 442	(3)	Food Microbiology
MICR 341	(3)	Mechanisms of Pathogenicity
NRSC 430	(3)	GIS for Natural Resource Management
NUTR 420	(3)	Toxicology and Health Risks
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PARA 410	(3)	Environment and Infection
PARA 515	(3)	Water, Health and Sanitation
PLNT 305	(3)	Plant Pathology
PLNT 310	(3)	Plant Propagation
PLNT 315	(3)	Herbs and Medicinal Plants
PLNT 434	(3)	Weed Biology and Control
PLNT 435	(3)	Plant Breeding
SOIL 335	(3)	Soil Ecology and Management

6.2.7.17 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Microbiology (24 credits)

Students following this specialization receive education and training in fundamental principles and applied aspects of microbiology. Complementary courses allow students to focus on basic microbial sciences or applied areas such as biotechnology. Successful graduates may work in university, government and industrial research laboratories, in the pharmaceutical, fermentation and food industries, and with an appropriate CGPA proceed to post-graduate studies or professional biomedical schools.

Specialization Adviser: Professor Lyle Whyte

Macdonald-Stewart Building 3-036

Telephone: 514-398-7889

Required Courses (15 credits)

MICR 331	(3)	Microbial Ecology
MICR 338	(3)	Bacterial Molecular Genetics
MICR 341	(3)	Mechanisms of Pathogenicity
MICR 450	(3)	Environmental Microbiology
PARA 438	(3)	Immunology

Complementary Courses (9 credits)

9 credits selected from:

*Note: Students select either MIMM 413 or WILD 424.

AEBI 451	(3)	Research Project 1
BINF 301	(3)	Introduction to Bioinformatics
BINF 511	(3)	Bioinformatics for Genomics
BTEC 306	(3)	Experiments in Biotechnology
BTEC 535	(3)	Functional Genomics in Model Organisms
BTEC 555	(3)	Structural Bioinformatics
FDSC 442	(3)	Food Microbiology
MICR 300	(3)	Microbial Physiology Laboratory
MIMM 324	(3)	Fundamental Virology
MIMM 413*	(3)	Parasitology

PARA 410	(3)	Environment and Infection
PLNT 304	(3)	Biology of Fungi
PLNT 424	(3)	Cellular Regulation
WILD 424*	(3)	Parasitology

6.2.7.18 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Molecular Biotechnology (24 credits)

Students following this specialization receive education and training in fundamental principles and applied aspects of molecular biology and biotechnology. Complementary courses allow students to focus on basic molecular biology or aspects of biotechnology such as bioinformatics. Successful graduates may work in university, government and industrial research laboratories, bioscience industries (i.e. pharmaceutical), and with an appropriate CGPA proceed to post-graduate studies or professional biomedical schools.

Specialization Adviser: Professor Brian Driscoll

Macdonald-Stewart Building, Room 3-037

Telephone: 514-398-7887

Required Courses (15 credits)

BINF 301	(3)	Introduction to Bioinformatics
BTEC 306	(3)	Experiments in Biotechnology
MICR 338	(3)	Bacterial Molecular Genetics
PARA 438	(3)	Immunology
PLNT 424	(3)	Cellular Regulation

Complementary Courses (9 credits)

9 credits selected from:

AEBI 451	(3)	Research Project 1
ANSC 234	(3)	Biochemistry 2
ANSC 323	(3)	Mammalian Physiology
ANSC 400	(3)	Eukaryotic Cells and Viruses
ANSC 420	(3)	Animal Biotechnology
ANSC 508	(3)	Tools in Animal Biotechnology
ANSC 565	(3)	Applied Information Systems
BINF 511	(3)	Bioinformatics for Genomics
BTEC 535	(3)	Functional Genomics in Model Organisms
BTEC 555	(3)	Structural Bioinformatics
CELL 500	(3)	Techniques Plant Molecular Genetics
CELL 501	(3)	Plant Molecular Biology and Genetics
MIMM 324	(3)	Fundamental Virology

6.2.7.19 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Biology (24 credits)

This specialization emphasizes the study of plants from the cellular to the organismal level. The structure, physiology, development, evolution, and ecology of plants will be studied. Most courses offer laboratory classes that expand on the lecture material and introduce students to the latest techniques in plant biology. Many laboratory exercises use the excellent research and field facilities at the Morgan Arboretum, McGill Herbarium, Emile A. Lods Agronomy Research Centre, the Horticultural Centre and the Plant Science greenhouses as well as McGill field stations. Students may undertake a research project under the guidance of a member of the Plant Science Department as part of their studies. Graduates with the specialization may continue in post-graduate study or work in the fields of botany, mycology, molecular biology, ecology, conservation or environmental science.

Specialization Adviser: Professor Marcia Waterway

Raymond Building 2-021b

Telephone: 514-398-7864

Required Courses (12 credits)

PLNT 353	(3)	Plant Structure and Function
PLNT 358	(3)	Flowering Plant Diversity
PLNT 426	(3)	Plant Ecophysiology
PLNT 460	(3)	Plant Ecology

Complementary Courses (12 credits)

12 credits of complementary courses selected from:

BINF 511	(3)	Bioinformatics for Genomics
CELL 500	(3)	Techniques Plant Molecular Genetics
CELL 501	(3)	Plant Molecular Biology and Genetics
ENVB 313	(3)	Phylogeny and Biogeography
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PLNT 203	(3)	Economic Botany
PLNT 310	(3)	Plant Propagation
PLNT 315	(3)	Herbs and Medicinal Plants
PLNT 424	(3)	Cellular Regulation
PLNT 435	(3)	Plant Breeding
PLNT 489	(1)	Project Planning and Proposal
PLNT 490	(2)	Research Project

6.2.7.20 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Production (24 credits)

The goal of this specialization is to give students an excellent background in the knowledge and skills relating to the biology and physiology, breeding, propagation, and management of domesticated plants. The plant industry, in both rural and urban settings, is a sector of growing importance to Canadian and global economies. Graduates may find employment directly with plants in horticulture or in field crop development, production and management; or in government services, extension, teaching, consulting or post-graduate studies. When taken in conjunction with the Major Agro-Environmental Sciences and the specialization in Professional Agriculture, this specialization conforms with the eligibility requirements for the Ordre des agronomes du Québec.

Specialization Adviser: Professor Jaswinder Singh

Raymond Building 2-021a

Telephone: 514-3987906

Required Courses (18 credits)

PLNT 300	(3)	Cropping Systems
PLNT 305	(3)	Plant Pathology
PLNT 310	(3)	Plant Propagation
PLNT 353	(3)	Plant Structure and Function
PLNT 434	(3)	Weed Biology and Control
PLNT 435	(3)	Plant Breeding

Complementary Courses (6 credits)

6 credits of complementary courses selected from:

PLNT 203	(3)	Economic Botany
PLNT 302	(3)	Forage Crops and Pastures

PLNT 307	(3)	Vegetable Production
PLNT 312	(3)	Urban Horticulture
PLNT 315	(3)	Herbs and Medicinal Plants
PLNT 321	(3)	Fruit Production
PLNT 322	(3)	Greenhouse Management
PLNT 331	(3)	Grains and Biofuel Crops
PLNT 489	(1)	Project Planning and Proposal
PLNT 490	(2)	Research Project

6.2.7.21 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Plant Protection (24 credits)

This specialization is recommended for students with a strong interest in the complex field of plant protection in both urban and agricultural settings. The biology of herbivores, of pathogenic organisms, and of plant competitive interactions and defense mechanisms as well as the interactions of plants with their environment will be studied. Students interested in the theory and application of techniques of integrated plant protection should choose this specialization in conjunction with the Major Agro-Environmental Sciences or the Major Environmental Biology. Those interested in the biotechnology and molecular aspects of plant-pathogen or plant-insect interactions should choose it in conjunction with the Major Life Sciences (Biological and Agricultural). Complementary specializations could include Plant Biology, Plant Production, Entomology or Microbiology.

Specialization Adviser: Professor Ajjamada Kushalappa

Raymond Building, Room 2-028b

Telephone: 514-398-7867

Required Courses (18 credits)

ENTO 330	(3)	Insect Biology
ENTO 352	(3)	Control of Insect Pests
PLNT 304	(3)	Biology of Fungi
PLNT 305	(3)	Plant Pathology
PLNT 353	(3)	Plant Structure and Function
PLNT 434	(3)	Weed Biology and Control

Complementary Courses (6 credits)

6 credits of complementary courses selected from:

ENTO 340	(3)	Field Entomology
ENTO 515	(3)	Parasitoid Behavioural Ecology
PLNT 426	(3)	Plant Ecophysiology
PLNT 430	(3)	Plant Disease Epidemiology
PLNT 520	(3)	Plant-Microbe Interactions

6.2.7.22 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Professional Agrology (21 credits)

This specialization is required for students who wish to qualify for membership in the Ordre des agronomes du Québec (OAQ). It cannot be taken alone; it must be taken with the Agro-Environmental Sciences Major and a second specialization in Agricultural Economics, Animal Production, Ecological Agriculture, Plant Production, or Soil and Water, or with the Agricultural Economics Major and the Agri-business Specialization.

Note: Most students will require 21 credits to complete this specialization. In consultation with the academic adviser students taking the Agricultural Economics Specialization and the Agri-business Specialization will need to take an additional 3 credits, chosen in consultation with the academic adviser, such that they meet the minimum requirements of the OAQ. None of the credits within this specialization may also count for the student's major or other specialization. All of the 21 or 24 credits count only for this specialization.

Specialization Adviser: Professor Joann Whalen

Macdonald-Stewart Building 2-069

Telephone: 514-398-7943

Required Courses (12 credits)

AGRI 330	(1)	Agricultural Legislation
AGRI 410D1	(3)	Agrology Internship
AGRI 410D2	(3)	Agrology Internship
AGRI 430	(2)	Professional Practice in Agrology
AGRI 490	(3)	Agri-Food Industry Project

Complementary Courses

9-12 credits

For students in the Agro-Environmental Sciences major with a specialization in Agricultural Economics, Animal Production, Ecological Agriculture, Plant Production or Soil and Water Resources:

3 credits from:

AGEC 332	(3)	Farm Management and Finance
ANSC 433	(3)	Animal Nutrition
SOIL 445	(3)	Agroenvironmental Fertilizer Use

Plus 6-9 additional credits, approved by the academic adviser, in agricultural sciences or applied agriculture to meet the requirements of the OAQ.

Note: students in the Agricultural Economics specialization must take 12 complementary credits while students in Animal Production, Ecological Agriculture, Plant Production, or Soil and Water Resources specializations must take 9 complementary credits.

For students in the Agricultural Economics major with a specialization in Agri-Business:

6 credits from:

AEBI 212	(3)	Evolution and Phylogeny
LSCI 202	(3)	Molecular Cell Biology
LSCI 204	(3)	Genetics
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology

3 credits from:

ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production

3 credits from:

PLNT 300	(3)	Cropping Systems
PLNT 302	(3)	Forage Crops and Pastures
PLNT 434	(3)	Weed Biology and Control

6.2.7.23 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Soil and Water Resources (24 credits)

This specialization will interest students who want to understand how soils and water interact within managed ecosystems such as urban or agricultural landscapes. The conservation and management of agricultural soils, issues affecting watershed management and decision making, and the remediation of contaminated soils will be examined. When taken with the Major Agro-Environmental Sciences and the specialization in Professional Agriculture, this specialization conforms with the eligibility requirements for the Ordre des agronomes du Québec.

Specialization Adviser: Professor Joann Whalen

Macdonald-Stewart Building 2-069

Telephone: 514-398-7943

Required Courses (15 credits)

*Note: SOIL 335 and SOIL 445 are offered in alternate years.

BREE 217	(3)	Hydrology and Water Resources
SOIL 315	(3)	Soil Fertility and Fertilizer Use
SOIL 326	(3)	Soils in a Changing Environment
SOIL 335*	(3)	Soil Ecology and Management
SOIL 445*	(3)	Agroenvironmental Fertilizer Use

Complementary Courses (9 credits)

9 credits of complementary courses selected as follows:

3 credits from:

AGRI 435	(3)	Soil and Water Quality Management
BREE 416	(3)	Engineering for Land Development

6 credits from:

BREE 322	(3)	Organic Waste Management
BREE 327	(3)	Bio-Environmental Engineering
ENVB 301	(3)	Meteorology
NRSC 333	(3)	Pollution and Bioremediation
NRSC 430	(3)	GIS for Natural Resource Management
SOIL 510	(3)	Environmental Soil Chemistry

6.2.7.24 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Wildlife Biology (24 credits)

This specialization focuses on the ecology of vertebrate animals, their biological and physical environment and the interactions that are important in the management of ecological communities and wildlife species. Students have access to local wildlife resources including the Avian Science and Conservation Centre, the McGill Arboretum, the Stonycroft Wildlife Area, the Molson Reserve and the Ecomuseum.

Specialization Adviser: Professor Murray Humphries

Macdonald-Stewart Building 2-069

Telephone: 514-398-7885

Required Courses (13 credits)

PLNT 358	(3)	Flowering Plant Diversity
WILD 307	(3)	Natural History of Vertebrates
WILD 401	(4)	Fisheries and Wildlife Management
WILD 421	(3)	Wildlife Conservation

Complementary Courses (11 credits)

11 credits of complementary courses selected as follows:

At least 6 credits from the following:

BIOL 427	(3)	Herpetology
WILD 350	(3)	Mammalogy
WILD 420	(3)	Ornithology

At least 5 credits from the following:

ENVB 315	(3)	Science of Inland Waters
NRSC 514	(3)	Freshwater Ecosystems
WILD 311	(3)	Ethology
WILD 415	(2)	Conservation Law
WILD 424	(3)	Parasitology
WILD 475	(3)	Desert Ecology

6.3 Bachelor of Engineering (Bioresource) - B.Eng.(Bioresource)

6.3.1 Bioresource Engineering Major

The Department of Bioresource Engineering collaborates with other departments and the Faculty of Engineering in providing courses of instruction for a curriculum in Bioresource Engineering. Graduates qualify to apply for registration as professional engineers in any province of Canada. The professional agrology option qualifies graduates to apply for registration to the *Ordre des agronomes du Québec*.

There are six streams offered within the Bioresource Engineering Major. Via the appropriate choice of elective course sets, a particular area of study may be emphasized. More information about these streams and the suggested course sets for each can be found on the Department website at www.mcgill.ca/bioeng.

In the **Bio-Environmental Engineering** stream, students learn about soil and water quality management and conservation, geomatics, hydrology and water resources, organic waste treatment, use of GIS for biosystem operation, engineering for land development, climate control in buildings, ecosystem remediation, and many other related topics.

Students who follow the **Soil and Water** stream learn about hydrology, irrigation and drainage, soil and water management, environmental quality control and remediation, structural design, machinery design, artificial intelligence, GIS, and remote sensing.

In the **Ecological Engineering** stream, students learn how to apply principals of engineering and ecology to the design and implementation of complex ecological systems. They learn how to create systems that preserve and enhance natural ecological processes as a means of fulfilling design requirements.

In the **Food and Bioprocessing** stream, students are taught about the engineering of foods and food processes, physical properties of biological materials, post-harvest technology, fermentation and bio-processing, the management of organic wastes, biotechnology, the design of machinery for bioprocessing, etc.

Students who specialize in the **Agricultural Engineering** stream will learn about machine design, machinery, robotics, structural design, environmental quality control, waste management, artificial intelligence, GIS, remote sensing, complex system simulation, and much more.

The **Professional Agrology** option offers a course selection guided to qualify graduates for registration as professional agrologists with the *Ordre des agronomes du Québec*.

All required and complementary courses must be passed with a minimum grade of C. One term is spent taking courses from the Faculty of Engineering on the McGill downtown campus.

Students also have the opportunity to pursue a Minor. Several possibilities are: Agricultural Production, Environment, Ecological Agriculture, Biotechnology, Computer Science, Construction Engineering and Management, Entrepreneurship, and Environmental Engineering. Details of some of these Minors can be found under *Faculty of Engineering > Minor Programs*. To complete a Minor, it is necessary to spend at least one extra term beyond the normal requirements of the B.Eng.(Bioresource) program.

See [section 4.5.1: Minimum Credit Requirement](#) for prerequisites and minimum credit requirements.

6.3.2 About the B.Eng. (Bioresource) Program

Bioresource Engineering is the unique branch of engineering that includes Biological engineering and Bioengineering where professional engineering practice intersects with biological sciences. Bioresource Engineers design, improve and manage biological-based systems to operate in efficient and sustainable ways for the well being of the environment and society.

6.3.3 Bachelor of Engineering (Bioresource) (B.Eng.(Bioresource)) - Major Bioresource Engineering (113 credits)

Academic Adviser-U1: Professor Grant Clark

Macdonald-Stewart Building, Room 1-099

Telephone: 514-398-7784

Required Courses (53 credits)

AEMA 202	(3)	Intermediate Calculus
AEMA 305	(3)	Differential Equations
BREE 205	(3)	Engineering Design 1
BREE 210	(3)	Mechanical Analysis & Design
BREE 216	(3)	Bioresource Engineering Materials
BREE 252	(3)	Computing for Engineers
BREE 301	(3)	Biothermodynamics
BREE 305	(3)	Fluid Mechanics
BREE 312	(3)	Electric Circuits and Machines
BREE 319	(3)	Engineering Mathematics
BREE 327	(3)	Bio-Environmental Engineering
BREE 341	(3)	Mechanics of Materials
BREE 481	(.5)	Undergraduate Seminar 1
BREE 482	(.5)	Undergraduate Seminar 2
BREE 483	(.5)	Undergraduate Seminar 3
BREE 484	(.5)	Undergraduate Seminar 4
BREE 485	(1)	Undergraduate Seminar 5
BREE 486	(1)	Undergraduate Seminar 6
BREE 490	(3)	Engineering Design 2
BREE 495	(3)	Engineering Design 3
FACC 400	(1)	Engineering Professional Practice
MECH 289	(3)	Design Graphics
MIME 310	(3)	Engineering Economy

Complementary Courses

60 credits of the complementary courses selected as follow:

6 credits - Set A

9 credits - Set B (Natural Sciences and Mathematics)

9 credits - Set C (Social Sciences)

36 credits - Set D (Engineering)

Set A

One of the following:

AEMA 310	(3)	Statistical Methods 1
CIVE 302	(3)	Probabilistic Systems
MATH 323	(3)	Probability

One of the following:

CHEE 315	(4)	Heat and Mass Transfer
MECH 346	(3)	Heat Transfer

Set B - Natural Sciences and Mathematics

9 credits with a minimum of 3 credits chosen from the list below:

AEBI 210	(3)	Organisms 1
AEBI 211	(3)	Organisms 2
ENVB 305	(3)	Population & Community Ecology
ENVB 315	(3)	Science of Inland Waters
LSCI 202	(3)	Molecular Cell Biology
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
MICR 331	(3)	Microbial Ecology

Plus 6 credits chosen in consultation with the academic adviser.

Set C - Social Sciences

Minimum of 3 credits from the following list:

CHEE 230	(3)	Environmental Aspects of Technology
CHEE 430	(3)	Technology Impact Assessment
CIVE 469	(3)	Infrastructure and Society
ENVR 201	(3)	Society and Environment
MIME 308	(3)	Social Impact of Technology
SOCI 235	(3)	Technology and Society

Plus 6 credits of social sciences, management studies, humanities or law courses at the U1 undergraduate level or higher with approval of the academic adviser.

Note: these 6 credits may include one 3-credit language course other than the student's normal spoken languages.

Set D - Engineering

36 credits from the following list with the option (and approval of the academic adviser) of taking a maximum of 6 credits from other courses offered in the Faculty of Engineering:

BREE 214	(3)	Geomatics
BREE 217	(3)	Hydrology and Water Resources
BREE 314	(3)	Agri-Food Buildings
BREE 315	(3)	Design of Machines
BREE 322	(3)	Organic Waste Management
BREE 325	(3)	Food Process Engineering
BREE 412	(3)	Machinery Systems Engineering
BREE 416	(3)	Engineering for Land Development
BREE 418	(3)	Soil Mechanics and Foundations
BREE 419	(3)	Structural Design
BREE 423	(3)	Biological Material Properties
BREE 430	(3)	GIS for Natural Resource Management
BREE 497	(3)	Environmental Design Project
BREE 501	(3)	Simulation and Modelling
BREE 502	(3)	Drainage/Irrigation Engineering
BREE 504	(3)	Instrumentation and Control

BREE 506	(3)	Advances in Drainage Management
BREE 509	(3)	Hydrologic Systems and Modelling
BREE 510	(3)	Watershed Systems Engineering
BREE 512	(3)	Soil Cutting and Tillage
BREE 515	(3)	Soil Hydrologic Modelling
BREE 518	(3)	Bio-Treatment of Wastes
BREE 519	(3)	Advanced Food Engineering
BREE 520	(3)	Food, Fibre and Fuel Elements
BREE 525	(3)	Climate Control for Buildings
BREE 530	(3)	Fermentation Engineering
BREE 531	(3)	Post-Harvest Drying
BREE 532	(3)	Post-Harvest Storage
BREE 533	(3)	Water Quality Management
CHEE 474	(3)	Biochemical Engineering
CIVE 317	(3)	Structural Engineering 1
CIVE 318	(3)	Structural Engineering 2

6.3.4 Bachelor of Engineering (Bioresource) (B.Eng.(Bioresource)) - Major Bioresource Engineering - Professional Agrology (113 credits)

Academic Adviser-U1: Professor Grant Clark

Macdonald-Stewart Building, Room 1-099

Telephone: 514-398-7784

Required Courses (56 credits)

AEMA 202	(3)	Intermediate Calculus
AEMA 305	(3)	Differential Equations
AGRI 330	(1)	Agricultural Legislation
AGRI 430	(2)	Professional Practice in Agrology
BREE 205	(3)	Engineering Design 1
BREE 210	(3)	Mechanical Analysis & Design
BREE 216	(3)	Bioresource Engineering Materials
BREE 252	(3)	Computing for Engineers
BREE 301	(3)	Biothermodynamics
BREE 305	(3)	Fluid Mechanics
BREE 312	(3)	Electric Circuits and Machines
BREE 319	(3)	Engineering Mathematics
BREE 327	(3)	Bio-Environmental Engineering
BREE 341	(3)	Mechanics of Materials
BREE 481	(.5)	Undergraduate Seminar 1
BREE 482	(.5)	Undergraduate Seminar 2
BREE 483	(.5)	Undergraduate Seminar 3
BREE 484	(.5)	Undergraduate Seminar 4
BREE 485	(1)	Undergraduate Seminar 5

BREE 486	(1)	Undergraduate Seminar 6
BREE 490	(3)	Engineering Design 2
BREE 495	(3)	Engineering Design 3
FACC 400	(1)	Engineering Professional Practice
MECH 289	(3)	Design Graphics
MIME 310	(3)	Engineering Economy

Complementary Courses

57 credits of the complementary courses selected as follow:

6 credits - Set A

12 credits - Set B (Natural Sciences)

6 credits - Set C (Social Sciences)

33 credits - Set D (Engineering)

Set A

6 credits

AEMA 310	(3)	Statistical Methods 1
MECH 346	(3)	Heat Transfer

Set B - Natural Sciences

6 credits from each of the following two groups:

Group 1 - Biology

AEBI 211	(3)	Organisms 2
LSCI 202	(3)	Molecular Cell Biology
LSCI 204	(3)	Genetics
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology

Group 2 - Agricultural Sciences

AEBI 210	(3)	Organisms 1
ANSC 250	(3)	Principles of Animal Science
ANSC 433	(3)	Animal Nutrition
ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production
PLNT 203	(3)	Economic Botany
PLNT 300	(3)	Cropping Systems
PLNT 302	(3)	Forage Crops and Pastures
PLNT 307	(3)	Vegetable Production
PLNT 312	(3)	Urban Horticulture
PLNT 321	(3)	Fruit Production
PLNT 322	(3)	Greenhouse Management
PLNT 331	(3)	Grains and Biofuel Crops

Set C - Social Sciences

3 credits from the following list:

CHEE 230	(3)	Environmental Aspects of Technology
CHEE 430	(3)	Technology Impact Assessment
CIVE 469	(3)	Infrastructure and Society
ENVR 201	(3)	Society and Environment
MIME 308	(3)	Social Impact of Technology
SOCI 235	(3)	Technology and Society

Plus one 3 credit social sciences, management studies, humanities, law or language course with permission of the academic adviser.

Set D - Engineering

33 credits from Group 1, Group 2 and Group 3.

(Minimum of 6 credits from Group 1 or Group 2 below)

Group 1 - Soil and Water

BREE 214	(3)	Geomatics
BREE 217	(3)	Hydrology and Water Resources
BREE 322	(3)	Organic Waste Management
BREE 416	(3)	Engineering for Land Development
BREE 418	(3)	Soil Mechanics and Foundations
BREE 430	(3)	GIS for Natural Resource Management
BREE 502	(3)	Drainage/Irrigation Engineering
BREE 506	(3)	Advances in Drainage Management
BREE 509	(3)	Hydrologic Systems and Modelling
BREE 510	(3)	Watershed Systems Engineering
BREE 512	(3)	Soil Cutting and Tillage
BREE 515	(3)	Soil Hydrologic Modelling
BREE 518	(3)	Bio-Treatment of Wastes
BREE 533	(3)	Water Quality Management

Group 2 - Food Processing

BREE 325	(3)	Food Process Engineering
BREE 519	(3)	Advanced Food Engineering
BREE 520	(3)	Food, Fibre and Fuel Elements
BREE 530	(3)	Fermentation Engineering
BREE 531	(3)	Post-Harvest Drying
BREE 532	(3)	Post-Harvest Storage
CHEE 474	(3)	Biochemical Engineering

Group 3 - Other Engineering

BREE 314	(3)	Agri-Food Buildings
BREE 315	(3)	Design of Machines

BREE 412	(3)	Machinery Systems Engineering
BREE 419	(3)	Structural Design
BREE 423	(3)	Biological Material Properties
BREE 497	(3)	Environmental Design Project
BREE 501	(3)	Simulation and Modelling
BREE 504	(3)	Instrumentation and Control
BREE 525	(3)	Climate Control for Buildings
CIVE 317	(3)	Structural Engineering 1
CIVE 318	(3)	Structural Engineering 2

6.3.5 Bachelor of Engineering (Bioresource) - B.Eng.(Bioresource) Related Programs

6.3.5.1 Minor in Environmental Engineering

For more information, see *Minor in Environmental Engineering (27 credits)*.

6.3.5.2 Barbados Field Study Semester

For more information, see *Field Studies and Study Abroad > Field Studies > Barbados Field Study Semester*.

6.3.5.3 Barbados Interdisciplinary Tropical Studies Field Semester

For more information, see *Field Studies and Study Abroad > Field Studies > Barbados Interdisciplinary Tropical Studies Field Semester*.

6.3.5.4 Internship Opportunities and Co-op Experiences

For more information, see *Internship Opportunities and Co-op Experiences*.

6.4 Bachelor of Science (Food Science) - B.Sc.(F.Sc.)

The Food Science program has been designed to combine the basic sciences, particularly chemistry, with speciality courses which are directly related to the discipline.

Freshman Adviser

Dr. Alice Cherestes
Macdonald-Stewart Building, Room1-023
Telephone: 514-398-7980

6.4.1 Bachelor of Science (Food Science) (B.Sc.(F.Sc.)) - Major Food Science - Food Science Option (90 credits)

This program is intended for those students interested in the multidisciplinary field of food science. The courses are integrated to acquaint the student with food processing, food chemistry, quality assurance, analytical procedures, food products, standards and regulations. The program prepares graduates for employment as scientists in industry or government, in regulatory, research, quality assurance, or product development capacities.

Graduates have the academic qualifications for membership in the Canadian Institute of Food Science and Technology (CIFST). Graduates of Food Science Major with Food Science Option can also qualify for recognition by the Institute of Food Technologists (IFT).

Food Science Option is completed to 90 credits with free elective courses.

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Adviser-U1: Professor Salwa Karboune

Macdonald-Stewart Building, Room 1-040

Telephone: 514-398-8666

Required Courses (69 credits)

Note: If an introductory CEGEP level Organic Chemistry course has not been completed, then FDSC 230 (Organic Chemistry) must be completed as a replacement.

AEMA 310	(3)	Statistical Methods 1
AGRI 510	(3)	Professional Practice
BREE 324	(3)	Elements of Food Engineering
FDSC 200	(3)	Introduction to Food Science
FDSC 213	(3)	Analytical Chemistry 1
FDSC 251	(3)	Food Chemistry 1
FDSC 300	(3)	Principles of Food Analysis 1
FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
FDSC 319	(3)	Food Commodities
FDSC 330	(3)	Food Processing
FDSC 400	(3)	Food Packaging
FDSC 425	(3)	Principles of Quality Assurance
FDSC 442	(3)	Food Microbiology
FDSC 495D1	(1.5)	Food Science Seminar
FDSC 495D2	(1.5)	Food Science Seminar
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 207	(3)	Nutrition and Health

Electives (21 credits)

Electives are selected in consultation with an academic adviser, to meet the minimum 90-credit requirement for the degree. A portion of these credits should be in the humanities/social sciences.

6.4.2 Bachelor of Science (Food Science) (B.Sc.(F.Sc.)) - Major Food Science - Food Chemistry Option (90 credits)

This program is intended for those students interested in the multidisciplinary field of food science. The courses are integrated to acquaint the student with food processing, food chemistry, quality assurance, analytical procedures, food products, standards and regulations. The program prepares graduates for employment as scientists in industry or government, in regulatory, research, quality assurance, or product development capacities.

Graduates have the academic qualifications for membership in the Canadian Institute of Food Science and Technology (CIFST). Graduates of Food Science Major with Food Chemistry Option can also qualify for recognition by the Institute of Food Technologists (IFT) and the Ordre des chimistes du Québec (OCQ). Food Chemistry Option is completed to 90 credits with free elective courses.

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Adviser-U1: Professor Salwa Karboune

Macdonald-Stewart Building, Room 1-040

Telephone: 514-398-8666

Required Courses (51 credits)

Note: If an introductory CEGEP level Organic Chemistry course has not been completed, then FDSC 230 (Organic Chemistry) must be completed as a replacement.

AEMA 310	(3)	Statistical Methods 1
AGRI 510	(3)	Professional Practice
BREE 324	(3)	Elements of Food Engineering
FDSC 200	(3)	Introduction to Food Science
FDSC 213	(3)	Analytical Chemistry 1
FDSC 251	(3)	Food Chemistry 1

FDSC 300	(3)	Principles of Food Analysis 1
FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
FDSC 319	(3)	Food Commodities
FDSC 330	(3)	Food Processing
FDSC 400	(3)	Food Packaging
FDSC 425	(3)	Principles of Quality Assurance
FDSC 442	(3)	Food Microbiology
FDSC 495D1	(1.5)	Food Science Seminar
FDSC 495D2	(1.5)	Food Science Seminar
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 207	(3)	Nutrition and Health

Additional Required Courses - Food Chemistry Option (30 credits)

Note: Graduates of this program are qualified for recognition by the Institute of Food Technologists (IFT) and the Ordre des chimistes du Québec (OCQ).

FDSC 233	(3)	Physical Chemistry
FDSC 305	(3)	Food Chemistry 2
FDSC 315	(3)	Separation Techniques in Food Analysis 1
FDSC 334	(3)	Analysis of Food Toxins and Toxicants
FDSC 405	(3)	Product Development
FDSC 410	(3)	Flavour Chemistry
FDSC 490	(3)	Research Project 1
FDSC 491	(3)	Research Project 2
FDSC 515	(3)	Enzyme Thermodynamics/Kinetics
FDSC 520	(3)	Biophysical Chemistry of Food

Electives (9 credits)

Electives are selected in consultation with academic adviser, to meet the minimum 90-credit requirement for the degree. A portion of these credits should be in the humanities/social sciences.

6.4.3 Concurrent Bachelor of Science in Food Science (B.Sc.(F.Sc.)) and Bachelor of Science Nutritional Sciences (B.Sc.(Nutr.Sc.)) - Food Science/Nutritional Science Major (122 credits)

The concurrent program B.Sc.(F.Sc.) and B.Sc.(Nutr.Sc.) is designed to give motivated students the opportunity to combine the two fields. The two disciplines complement each other with food science providing the scientific foundation in the fundamentals of food science and its application in the food system, while nutritional sciences brings the fundamental knowledge in the nutritional aspects of food and metabolism. The program aims to train students with the fundamental knowledge in both disciplines to promote the development of healthy food products for human consumption. The overall program is structured and closely integrated so as to satisfy the academic requirements of both degrees as well as the professional training or exposure to industry.

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Adviser-U1: Professor Selim Kermasha

Macdonald-Stewart Building, Room 1-033

Telephone: 514-398-7922

Required Courses (79 credits)

AEMA 310	(3)	Statistical Methods 1
ANSC 234	(3)	Biochemistry 2
ANSC 323	(3)	Mammalian Physiology

ANSC 424	(3)	Metabolic Endocrinology
FDSC 200	(3)	Introduction to Food Science
FDSC 213	(3)	Analytical Chemistry 1
FDSC 251	(3)	Food Chemistry 1
FDSC 300	(3)	Principles of Food Analysis 1
FDSC 305	(3)	Food Chemistry 2
FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
FDSC 315	(3)	Separation Techniques in Food Analysis 1
FDSC 319	(3)	Food Commodities
FDSC 330	(3)	Food Processing
FDSC 334	(3)	Analysis of Food Toxins and Toxicants
FDSC 400	(3)	Food Packaging
FDSC 425	(3)	Principles of Quality Assurance
FDSC 442	(3)	Food Microbiology
FDSC 497	(1.5)	Professional Seminar: Food
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 207	(3)	Nutrition and Health
NUTR 214	(4)	Food Fundamentals
NUTR 307	(3)	Human Nutrition
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1
NUTR 497	(1.5)	Professional Seminar: Nutrition
NUTR 512	(3)	Herbs, Foods and Phytochemicals

Complementary Courses (30 credits)

Complementary courses are selected as follows:

At least 9 credits from the following:

AGEC 200	(3)	Principles of Microeconomics
AGEC 201	(3)	Principles of Macroeconomics
AGEC 330	(3)	Agriculture and Food Markets
AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
AGEC 450	(3)	Agriculture Business Management

At least 9 credits from the following:

AGEC 242	(3)	Management Theories and Practices
ENVR 203	(3)	Knowledge, Ethics and Environment
NRSC 340	(3)	Global Perspectives on Food
NUTR 301	(3)	Psychology
NUTR 322	(2)	Applied Sciences Communication

NUTR 446 (3) Applied Human Resources

12 credits from the following:

FDSC 480 (12) Industrial Stage/Food

NUTR 480 (12) Industrial Stage/Nutrition

Electives

13 credits to meet the credit requirements for the degree.

6.4.3.1 About the Concurrent Bachelor of Science in Food Science (B.Sc.(F.Sc.)) and Bachelor of Science in Nutritional Sciences (B.Sc.(Nutr.Sc.)) Program

Unique in North America, the new concurrent degree program in Food Science and Nutritional Science offers the best education in these complementary fields and opens the door to a multitude of career paths.

The **Food Science** component of the program focuses on the chemistry of food and the scientific principles underlying food preservation, processing and packaging to provide consumers with quality foods. The **Nutritional Science** component deals with the science of the nutritional aspects of food and metabolism. The program has been carefully structured to ensure that students receive the training that industry demands.

6.4.4 Bachelor of Science (Food Science) - B.Sc.(F.Sc.) Related Programs

6.4.4.1 Certificate in Food Science

Detailed information on this certificate program can be found under [section 6.7.3: Certificate in Food Science \(30 credits\)](#) in this publication.

6.5 Bachelor of Science (Nutritional Sciences) - B.Sc.(Nutr.Sc.)

6.5.1 Dietetics Major

Academic Advising Coordinator

Sandy Phillips, M.Sc., R.D.
School of Dietetics and Human Nutrition

6.5.2 Nutrition Major

Academic Advising Coordinator

Kristine G. Koski, Ph.D., R.D. (U.S.)
School of Dietetics and Human Nutrition

6.5.3 About the B.Sc. (Nutritional Sciences) Program

Freshman Adviser

Judy Campbell-Gordon
Macdonald-Stewart Building, Room 2-019
Telephone: 514-398-7974

6.5.4 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Major Dietetics (115 credits)

The Dietetics major, which includes a 40 week internship (Stage) as part of its degree requirements, is a professional program that leads to membership in a provincial regulatory body and professional licensure as a dietitian/nutritionist.

Graduates are qualified for challenging professional and leadership positions related to food and health, as dietitians, nutritionists and food administrators. The designations "Dietitian" and "Nutritionist" are reserved titles associated with reserved acts in the province of Quebec. As clinical nutritionists, dietitians may work in health-care settings, nutrition counselling centres, clinics and private practice. As community nutritionists, dietitians are involved in nutrition education programs through school boards, sports centres and local and international health agencies. The dietitian in the food service sector participates in all aspects of management to assure quality food products and services. Postgraduate programs are available to qualified graduates. The duration of the program is three and one-half years.

Successful graduates are qualified to apply for membership with the Ordre professionnel des diététistes du Québec (O.P.D.Q.) and/or other provincial regulatory bodies, as well as Dietitians of Canada. Forty weeks of supervised professional experience, "Stage", in clinical and community nutrition and food service systems management are included in the undergraduate program.

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Advising Coordinator: Sandy Phillips, M.Sc., R.D.

School of Dietetics and Human Nutrition

Notes:

The School firmly applies prerequisite requirements for registration in all required courses in the Dietetics Major.

All required and complementary courses must be passed with a minimum grade of C.

Advising Note for Professional Practice

*Note: Successful completion of each rotation of each level of Stage (Professional Practice) is required to pass that level of Stage. Each level is a prerequisite for the next level and must be passed with a minimum grade of C. Undergraduate registration is restricted to students in the Dietetics Major, CGPA greater than or equal to 3.0. Visiting and Special students must contact the Academic Advising Coordinator (dietetics) regarding course registration approval.

Students are reminded that ethical conduct on Professional Practice (Stage) rotations is required. The Faculty reserves the right to require the withdrawal of any student if at any time the Faculty feels the student has displayed unprofessional conduct or demonstrates incompetence.

Required Courses (100 credits)

Required courses and Professional Practice (Stage) courses are sequenced in a specific order over 9 terms (3.5 year program). See <http://www.mcgill.ca/dietetics> for detailed information regarding the undergraduate program plan.

AEMA 310	(3)	Statistical Methods 1
AGEC 242	(3)	Management Theories and Practices
AGEC 343	(3)	Accounting and Cost Control
ANSC 234	(3)	Biochemistry 2
ANSC 323	(3)	Mammalian Physiology
ANSC 424	(3)	Metabolic Endocrinology
LSCI 211	(3)	Biochemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 207	(3)	Nutrition and Health
NUTR 208	(1)	Professional Practice Stage 1A
NUTR 209	(3)	Professional Practice Stage 1B
NUTR 214	(4)	Food Fundamentals
NUTR 217	(4)	Application: Food Fundamentals
NUTR 310	(1)	Professional Practice Stage 2A
NUTR 311	(5)	Professional Practice Stage 2B
NUTR 322	(2)	Applied Sciences Communication
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1
NUTR 345	(3)	Food Service Systems Management

NUTR 346	(2)	Quantity Food Production
NUTR 403	(3)	Nutrition in Society
NUTR 408	(1)	Professional Practice Stage 3A
NUTR 409	(8)	Professional Practice Stage 3B
NUTR 436	(2)	Nutritional Assessment
NUTR 438	(2)	Interviewing and Counselling
NUTR 446	(3)	Applied Human Resources
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 510	(14)	Professional Practice - Stage 4
NUTR 545	(5)	Clinical Nutrition 2

Complementary Courses (9 credits)

3 credits from either:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

Note: ANSC 330 or NUTR 307 must be taken in Fall of U2

3 credits of Human Behavioural Science courses chosen from:

NUTR 301	(3)	Psychology
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Or equivalent from another faculty

3 credits from the social sciences that may include, but are not limited to:

AGEC 200	(3)	Principles of Microeconomics
ENVR 201	(3)	Society and Environment
ENVR 203	(3)	Knowledge, Ethics and Environment
RELG 270	(3)	Religious Ethics and the Environment

Or social science course from another faculty

Elective Courses (6 credits)

Students who need to improve their proficiency in either English or French are strongly encouraged to choose their electives for that purpose. Students who wish to take language courses should check with the English and French Language Centre, Faculty of Arts, as placement testing may be required. Students are encouraged to develop a working knowledge of French in order to optimize their participation and learning in Stage placement sites.

Alternate elective choices may include, but are not limited to:

AEHM 300	(3)	ESL: High Intermediate 1
AEHM 301	(3)	ESL: High Intermediate 2
AEHM 330	(3)	Academic and Scientific Writing
NUTR 501	(3)	Nutrition in Developing Countries
NUTR 503	(3)	Bioenergetics and the Lifespan
NUTR 512	(3)	Herbs, Foods and Phytochemicals

A Compulsory Immunization

A compulsory immunization program exists at McGill which is required for Dietetics students to practice. Students should complete their immunization before or soon after arriving at Macdonald Campus; confirmation of medical/health documentation will be sent by the health nurse to the University Coordinator (Stage) and must be complete prior to commencement of Stage. Certain deadlines may apply.

6.5.5 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Major Nutrition - Food Function and Safety (90 credits)

This Major covers the many aspects of human nutrition and food and gives first, an education in the scientific fundamentals of these disciplines and second, an opportunity to focus in (a) nutritional biochemistry and metabolism, (b) global nutrition issues, (c) food function, product development and safety and/or (d) sports nutrition. Graduates are qualified for careers in pharmaceutical and/or food industries or government laboratories, the health science communications field, sports clinics and national or international food support programs. Graduates often continue on to further studies preparing for careers in research, medicine, and dentistry or as specialists in nutrition. Aside from working as university teachers and researchers, postgraduates may be employed by government and health protection agencies, in world development programs or in the food sector. (Currently under revision)

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Advising Coordinator: Professor Kristine Koski

School of Dietetics and Human Nutrition

Required Courses (54 credits)

All required courses must be passed with a minimum grade of C.

Term 1

Note: The course FDSC 212 has been retired and the program requirements are under review.

FDSC 212	(0)	
LSCI 211	(3)	Biochemistry 1
NUTR 207	(3)	Nutrition and Health
NUTR 214	(4)	Food Fundamentals

Term 2

ANSC 234	(3)	Biochemistry 2
FDSC 251	(3)	Food Chemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 322	(2)	Applied Sciences Communication

Term 3

AEMA 310	(3)	Statistical Methods 1
ANSC 323	(3)	Mammalian Physiology
FDSC 305	(3)	Food Chemistry 2

Term 4

ANSC 424	(3)	Metabolic Endocrinology
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1

Term 5

NUTR 420	(3)	Toxicology and Health Risks
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data

Complementary Courses (15 credits)

15 credits of Complementary Courses are selected as follows:

3 credits from the list below

12 credits from the Food Function and Safety set

3 credits, one of the following courses:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

Food Function and Safety

12 credits are selected as follows:

FDSC 300	(3)	Principles of Food Analysis 1
FDSC 315	(3)	Separation Techniques in Food Analysis 1
FDSC 319	(3)	Food Commodities
FDSC 425	(3)	Principles of Quality Assurance

Electives (21 credits)

21 credits of Electives are taken to meet the minimum credit requirement for the degree. Reciprocal agreement allows all students to take a limited number of electives at any Quebec university. With prior approval students can take electives at any Canadian or international university.

6.5.6 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Major Nutrition - Global Nutrition (90 credits)

This major covers the many aspects of human nutrition and food and gives first, an education in the scientific fundamentals of these disciplines and second, an opportunity to focus in (a) nutritional biochemistry and metabolism, (b) global nutrition issues, (c) food function, product development and safety and/or (d) sports nutrition. Graduates are qualified for careers in pharmaceutical and/or food industries or government laboratories, the health science communications field, sports clinics and national or international food support programs. Graduates often continue on to further studies preparing for careers in research, medicine, and dentistry or as specialists in nutrition. Aside from working as university teachers and researchers, postgraduates may be employed by government and health protection agencies, in world development programs or in the food sector. (Currently under revision)

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Advising Coordinator: Professor Kristine Koski

School of Dietetics and Human Nutrition

Required Courses (54 credits)

All required courses must be passed with a minimum grade of C.

Term 1

Note: The course FDSC 212 has been retired and the program requirements are under review.

FDSC 212	(0)	
LSCI 211	(3)	Biochemistry 1
NUTR 207	(3)	Nutrition and Health
NUTR 214	(4)	Food Fundamentals

Term 2

ANSC 234	(3)	Biochemistry 2
FDSC 251	(3)	Food Chemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 322	(2)	Applied Sciences Communication

Term 3

AEMA 310	(3)	Statistical Methods 1
ANSC 323	(3)	Mammalian Physiology
FDSC 305	(3)	Food Chemistry 2

Term 4

ANSC 424	(3)	Metabolic Endocrinology
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1

Term 5

NUTR 420	(3)	Toxicology and Health Risks
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data

Complementary Courses (15 credits)

15 credits of Complementary Courses are selected as follows:

3 credits from the list below

12 credits from the Global Nutrition set

3 credits, one of the following courses:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

Global Nutrition

12 credits are selected as follows:

AGRI 340	(3)	Principles of Ecological Agriculture
NRSC 340	(3)	Global Perspectives on Food
NUTR 403	(3)	Nutrition in Society
NUTR 501	(3)	Nutrition in Developing Countries

Electives (21 credits)

21 credits of Electives are taken to meet the minimum credit requirement for the degree. Reciprocal agreement allows all students to take a limited number of electives at any Quebec university. With prior approval students can take electives at any Canadian or international university.

6.5.7 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Major Nutrition - Nutritional Biochemistry (90 credits)

This major covers the many aspects of human nutrition and food and gives first, an education in the scientific fundamentals of these disciplines and second, an opportunity to focus in (a) nutritional biochemistry and metabolism, (b) global nutrition issues, (c) food function, product development and safety and/or (d) sports nutrition. Graduates are qualified for careers in pharmaceutical and/or food industries or government laboratories, the health science communications field, sports clinics and national or international food support programs. Graduates often continue on to further studies preparing for careers in research, medicine, and dentistry or as specialists in nutrition. Aside from working as university teachers and researchers, postgraduates may be employed by government and health protection agencies, in world development programs or in the food sector. (Currently under revision)

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Advising Coordinator: Professor Kristine Koski

School of Dietetics and Human Nutrition

Required Courses (54 credits)

All required courses must be passed with a minimum grade of C.

Term 1

Note: The course FDSC 212 has been retired and the program requirements are under review.

FDSC 212	(0)	
LSCI 211	(3)	Biochemistry 1
NUTR 207	(3)	Nutrition and Health
NUTR 214	(4)	Food Fundamentals

Term 2

ANSC 234	(3)	Biochemistry 2
FDSC 251	(3)	Food Chemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 322	(2)	Applied Sciences Communication

Term 3

AEMA 310	(3)	Statistical Methods 1
ANSC 323	(3)	Mammalian Physiology
FDSC 305	(3)	Food Chemistry 2

Term 4

ANSC 424	(3)	Metabolic Endocrinology
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1

Term 5

NUTR 420	(3)	Toxicology and Health Risks
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data

Complementary Courses (15 credits)

15 credits of Complementary Courses are selected as follows:

3 credits from the list below

12 credits from the Nutritional Biochemistry set

3 credits, one of the following courses:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

Nutritional Biochemistry

12 credits are selected as follows:

ANSC 551	(3)	Carbohydrate and Lipid Metabolism
ANSC 552	(3)	Protein Metabolism and Nutrition
LSCI 204	(3)	Genetics
PARA 438	(3)	Immunology

Electives (21 credits)

21 credits of Electives are taken to meet the minimum credit requirement for the degree. Reciprocal agreement allows all students to take a limited number of electives at any Quebec university. With prior approval students can take electives at any Canadian or international university.

6.5.8 Bachelor of Science (Nutritional Sciences) (B.Sc.(Nutr.Sc.)) - Major Nutrition - Sports Nutrition (90 credits)

This major covers the many aspects of human nutrition and food and gives first, an education in the scientific fundamentals of these disciplines and second, an opportunity to focus in (a) nutritional biochemistry and metabolism, (b) global nutrition issues, (c) food function, product development and safety and/or (d) sports nutrition. Graduates are qualified for careers in pharmaceutical and/or food industries or government laboratories, the health science communications field, sports clinics and national or international food support programs. Graduates often continue on to further studies preparing for careers in research, medicine, and dentistry or as specialists in nutrition. Aside from working as university teachers and researchers, postgraduates may be employed by government and health protection agencies, in world development programs or in the food sector. (Currently under revision)

Please refer to Faculty Information and Regulations > Minimum Credit Requirements, in this publication for prerequisites and minimum credit requirements.

Academic Advising Coordinator: Professor Kristine Koski

School of Dietetics and Human Nutrition

Required Courses (54 credits)

All required courses must be passed with a minimum grade of C.

Term 1

Note: The course FDSC 212 has been retired and the program requirements are under review.

FDSC 212	(0)	
LSCI 211	(3)	Biochemistry 1
NUTR 207	(3)	Nutrition and Health
NUTR 214	(4)	Food Fundamentals

Term 2

ANSC 234	(3)	Biochemistry 2
FDSC 251	(3)	Food Chemistry 1
LSCI 230	(3)	Introductory Microbiology
NUTR 322	(2)	Applied Sciences Communication

Term 3

AEMA 310	(3)	Statistical Methods 1
ANSC 323	(3)	Mammalian Physiology
FDSC 305	(3)	Food Chemistry 2

Term 4

ANSC 424	(3)	Metabolic Endocrinology
NUTR 337	(3)	Nutrition Through Life
NUTR 344	(4)	Clinical Nutrition 1

Term 5

NUTR 420	(3)	Toxicology and Health Risks
NUTR 450	(3)	Research Methods: Human Nutrition
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data

Complementary Courses (15 credits)

15 credits of Complementary Courses are selected as follows:

3 credits from the list below

12 credits from the Sports Nutrition set

3 credits, one of the following courses:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

Sports Nutrition

12 credits selected as follows:

Note: Students select either ANAT 214 or EDKP 205.

ANAT 214	(3)	Systemic Human Anatomy
EDKP 205	(3)	Structural Anatomy
EDKP 391	(3)	Physiology in Sport and Exercise
EDKP 495	(3)	Scientific Principles of Training
NUTR 503	(3)	Bioenergetics and the Lifespan

Electives (21 credits)

21 credits of Electives are taken to meet the minimum credit requirement for the degree. Reciprocal agreement allows all students to take a limited number of electives at any Quebec university. With prior approval students can take electives at any Canadian or international university.

6.5.9 Bachelor of Science (Nutritional Sciences) - Related Programs

6.5.9.1 Minor in Human Nutrition

Detailed information on this minor can be found under [section 6.6.7: Minor Human Nutrition \(24 credits\)](#) in this publication.

6.5.9.2 Concurrent Bachelor of Science in Food Science - B.Sc.(F.Sc.) and Bachelor of Science in Nutritional Sciences - B.Sc.(Nutr.Sc.) - Food Science/Nutritional Science Major

Detailed information on this concurrent program can be found under [section 6.4.3: Concurrent Bachelor of Science in Food Science \(B.Sc.\(F.Sc.\)\) and Bachelor of Science Nutritional Sciences \(B.Sc.\(Nutr.Sc.\)\) - Food Science/Nutritional Science Major \(122 credits\)](#) in this publication.

6.6 Minor Programs

The Faculty of Agricultural and Environmental Sciences offers a number of minor programs.

6.6.1 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Minor Agricultural Production (24 credits)

This minor program is designed to allow students in non-agricultural production majors to receive credit for courses in agricultural production and to stimulate "cross-over" studies. The Minor can be associated with existing major programs in the Faculty, but in some instances it may require more than 90 credits to meet the requirements of both the major and the minor.

Students are advised to consult their major program adviser and the academic adviser of the minor in their first year. At the time of registration for their penultimate year, students must declare their intent to obtain a Minor Agricultural Production. With the agreement of their major program adviser they must submit their program of courses already taken, and to be taken in their final year, to the academic adviser of the Agricultural Production Minor. The academic adviser of the Agricultural Production Minor will then certify which courses the student will apply toward the minor and that the student's program conforms with the requirements of the minor.

Notes:

1. Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study well before their final year.
2. Not all courses are offered every year. For information on available courses, consult Class Schedule at <http://www.mcgill.ca/minerva>; complete listings can be found in the Courses section of this Calendar.

Academic Adviser: Professor Jaswinder Singh

Department of Plant Science

Telephone: 514-398-7906

General Regulations

To obtain a Minor in Agricultural Production, students must:

- a) ensure that their academic record at the University includes a C grade or higher in the courses as specified in the course requirements given below.
- b) offer a minimum total of 24 credits from the courses as given below, of which not more than 6 credits may be counted for both the major and the minor programs. This restriction does not apply to elective courses in the major program.

Required Courses (12 credits)

AEBI 210	(3)	Organisms 1
ANSC 250	(3)	Principles of Animal Science
ENVB 210	(3)	The Biophysical Environment
PLNT 300	(3)	Cropping Systems

Complementary Courses (12 credits)

12 credits chosen from the following list in consultation with the academic adviser for the minor:

AGRI 215	(3)	Agro-Ecosystems Field Course
AGRI 340	(3)	Principles of Ecological Agriculture
ANSC 451	(3)	Dairy and Beef Production Management
ANSC 458	(3)	Swine and Poultry Production
PLNT 302	(3)	Forage Crops and Pastures
PLNT 307	(3)	Vegetable Production
PLNT 321	(3)	Fruit Production
PLNT 331	(3)	Grains and Biofuel Crops

6.6.2 Minor Animal Biology (24 credits)

The Minor Animal Biology intended for students who wish to further their studies in the basic biology of large mammals and birds. Successful completion of the program should provide students with a sound background in the field of biomedical studies and the use of animal models. It should also qualify students to apply to most veterinary colleges in North America, to post-graduate studies in a variety of biology programs, and to work in many laboratory settings.

This minor is not open to students in B.Sc.(Ag.Env.Sc.) programs. These students may register for the specialization in Animal Biology.

Academic Adviser: Professor Roger Cue

Department of Animal Science

Telephone: 514-398-7805

Required Courses (15 credits)

ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 324	(3)	Developmental Biology and Reproduction
ANSC 420	(3)	Animal Biotechnology
PARA 438	(3)	Immunology

Complementary Courses (9 credits)

A minimum of 9 credits selected from the following list:

AEBI 451	(3)	Research Project 1
ANSC 251	(3)	Comparative Anatomy
ANSC 326	(3)	Fundamentals of Population Genetics
ANSC 330	(3)	Fundamentals of Nutrition
ANSC 400	(3)	Eukaryotic Cells and Viruses
ANSC 424	(3)	Metabolic Endocrinology
ANSC 433	(3)	Animal Nutrition
ANSC 560	(3)	Biology of Lactation
ANSC 565	(3)	Applied Information Systems

6.6.3 Minor Animal Health and Disease (24 credits)

The minor in Animal Health and Disease is offered to students wishing to understand general animal physiology and function, the susceptibility of animals to various diseases, methods for limiting and controlling potential outbreaks, and the resulting implications for the animal, the consumer and the environment. It is an ideal choice for students who are interested in the care of animals, or in working in laboratories where diseases are being researched. It would also be useful to students who wish to apply to most veterinary colleges in North America.

This minor is not open to students in B.Sc.(Ag.Env.Sc.) programs. These students may register for the specialization in Animal Health and Disease.

Academic Adviser: Professor Sarah Kimmins

Macdonald-Stewart Building, Room 1-091

Telephone: 514-398-7658

Required Courses (15 credits)

ANSC 312	(3)	Animal Health and Disease
ANSC 323	(3)	Mammalian Physiology
ANSC 424	(3)	Metabolic Endocrinology
MICR 341	(3)	Mechanisms of Pathogenicity
PARA 438	(3)	Immunology

Complementary Courses (9 credits)

9 credits selected from the following list:

AEBI 451	(3)	Research Project 1
ANSC 251	(3)	Comparative Anatomy
ANSC 330	(3)	Fundamentals of Nutrition

NUTR 420	(3)	Toxicology and Health Risks
PHAR 300	(3)	Drug Action
WILD 424	(3)	Parasitology

6.6.4 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) - Minor Ecological Agriculture (24 credits)

The Minor Ecological Agriculture is designed to focus on the principles underlying the practice of ecological agriculture and is suitable for students wishing to farm, do extension and government work, and those intending to pursue postgraduate studies in this field.

This minor can be associated with existing major programs in the Faculty, but in some instances it may require more than 90 credits to meet the requirements of both the Major and the Minor.

Students are advised, during the U1 year, to consult their Major Program adviser and the academic adviser of the Minor. At the time of registration for the U2 year, students must declare their intent to obtain the Minor. With the agreement of their Major Program adviser they must submit their program of courses already taken, and to be taken, to the academic adviser of the Minor. The academic adviser of the Minor will then certify which courses the student will apply toward the Minor and confirm that the student's program conforms with its requirements.

Academic Adviser: Dr. Caroline Begg

Macdonald-Stewart Building, Room 2-071

Telephone: 514-398-8749

General Regulations

To obtain a Minor in Ecological Agriculture, students must:

- Ensure that their academic record at the University includes a C grade or higher in the courses as specified in the course requirements given below.
- Offer a minimum total of 24 credits from the courses as given below, of which not more than 6 credits may be counted for both the Major and the Minor programs. This restriction does not apply to elective courses in the Major program.

Required Courses (9 credits)

AGRI 210	(3)	Agro-Ecological History
AGRI 215	(3)	Agro-Ecosystems Field Course
AGRI 340	(3)	Principles of Ecological Agriculture

Complementary Courses (15 credits)

15 credits chosen from:

*Note: Offered in alternate years.

AGEC 333	(3)	Resource Economics
AGRI 310	(3)	Internship in Agriculture/Environment
AGRI 435	(3)	Soil and Water Quality Management
ENTO 352	(3)	Control of Insect Pests
ENTO 446	(3)	Apiculture
MICR 331	(3)	Microbial Ecology
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PLNT 302	(3)	Forage Crops and Pastures
PLNT 312*	(3)	Urban Horticulture
PLNT 315*	(3)	Herbs and Medicinal Plants
PLNT 434	(3)	Weed Biology and Control
PLNT 460	(3)	Plant Ecology
SOIL 326	(3)	Soils in a Changing Environment
SOIL 335*	(3)	Soil Ecology and Management

SOIL 445* (3) Agroenvironmental Fertilizer Use

6.6.5 Minor in Entrepreneurship



Note: Students will no longer be admitted into the Minor in Entrepreneurship as it is being suspended. For additional information on the Minor in Entrepreneurship, consult the *2007-2008 Undergraduate Programs Calendar* available at www.mcgill.ca/students/courses/calendars.

6.6.6 Minor in Environmental Engineering (27 credits)

The Minor program consists of 27 credits in courses that are environment related. By means of a judicious choice of complementary and elective courses, Bioresource Engineering students may obtain this Minor with a minimum of 12 additional credits.

The Environmental Engineering Minor is administered by the Faculty of Engineering, Department of Civil Engineering and Applied Mechanics (see *Faculty of Engineering > Environmental Engineering Minor*).

Courses available in the Faculty of Agricultural and Environmental Sciences (partial listing):	
BREE 322	Organic Waste Management
BREE 416	Engineering for Land Development
BREE 518	Bio-Treatment of Wastes
MICR 331	Microbial Ecology

Academic Adviser: Professor Shiv Prasher
Macdonald-Stewart Building, room 1-028
Telephone: 514-398-7775

6.6.7 Minor Human Nutrition (24 credits)

The Minor Human Nutrition is intended to complement a student's primary field of study by providing a focused introduction to the metabolic aspects of human nutrition. It is particularly accessible to students in Biochemistry, Biology, Physiology, Anatomy and Cell Biology, Microbiology and Immunology, Animal Science or Food Science programs. The completion of 24 credits is required, of which at least 18 must not overlap with the primary program. All courses must be taken in the appropriate sequence and passed with a minimum grade of C. Students may declare their intent to follow the Minor program at the beginning of their U2 year. They must then consult with the Academic Adviser for the Human Nutrition Minor in the School of Dietetics and Human Nutrition to obtain approval for their course selection. Since some courses may not be offered every year and many have prerequisites, students are cautioned to plan their program in advance.

The minor program does not carry professional recognition; therefore, it is not suitable for students wishing to become nutritionists or dietitians. However, successful completion may enable students to qualify for many postgraduate nutrition programs.

Note:

Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study well before their final year.

Academic Adviser: Professor Linda Wykes
Macdonald-Stewart Building, Room 2-042
Telephone: 514-398-7843

Required Courses (6 credits)

NUTR 337 (3) Nutrition Through Life
NUTR 450 (3) Research Methods: Human Nutrition

Complementary Courses (18 credits)

18 credits are selected as follows:

3 credits in biochemistry, one of:

ANSC 234 (3) Biochemistry 2
BIOC 311 (3) Metabolic Biochemistry

3 credits in physiology, one of:

ANSC 323	(3)	Mammalian Physiology
PHGY 202	(3)	Human Physiology: Body Functions
PHGY 210	(3)	Mammalian Physiology 2

3 credits in nutrition, one of:

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307	(3)	Human Nutrition

9 credits are selected as follows:

ANSC 551	(3)	Carbohydrate and Lipid Metabolism
ANSC 552	(3)	Protein Metabolism and Nutrition
NUTR 403	(3)	Nutrition in Society
NUTR 420	(3)	Toxicology and Health Risks
NUTR 436	(2)	Nutritional Assessment
NUTR 501	(3)	Nutrition in Developing Countries
NUTR 512	(3)	Herbs, Foods and Phytochemicals
NUTR 551	(3)	Analysis of Nutrition Data
PATH 300	(3)	Human Disease

One of:

MIMM 314	(3)	Immunology
PARA 438	(3)	Immunology

One of:

NUTR 430	(3)	Directed Studies: Dietetics and Nutrition 1
NUTR 431	(3)	Directed Studies: Dietetics and Nutrition 2

6.7 Post-Baccalaureate Certificate Programs

The Faculty offers the following 30-credit post-baccalaureate certificate programs.

6.7.1 Certificate in Ecological Agriculture (30 credits)

This 30-credit certificate program is very similar to the minor program and is designed to focus on the principles underlying the practice of ecological agriculture. The Certificate may be of special interest to professional agrologists who wish further training, as well as formal recognition that they have completed a coherent program of courses beyond their B.Sc. studies.

Students holding a B.Sc. in agriculture or a related area are eligible to register for this program provided that they are otherwise acceptable for admission to the University. Students who have completed the Minor or Specialization in Ecological Agriculture are not permitted to register for this program.

Academic Adviser: Dr. Caroline Begg

Macdonald-Stewart Building, Room 2-071

Telephone: 514-398-8749

General Regulations

To obtain a Certificate in Ecological Agriculture, students must complete a minimum total of 30 credits from the courses as given below.

Notes:

1. Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, students are urged to prepare their program of study to ensure that they have met all conditions.
2. Students using AGRI 310 towards the requirements of the Specialization/Minor/Certificate are limited to an experience on farms or other enterprises that are either organic, biodynamic, or practising permaculture. The placement must be approved by the academic adviser for the Specialization/Minor/Certificate.

Required Courses (9 credits)

AGRI 210	(3)	Agro-Ecological History
AGRI 340	(3)	Principles of Ecological Agriculture
ENVB 305	(3)	Population & Community Ecology

Complementary Courses (21 credits)

21 credits chosen from the following, in consultation with the Academic Adviser for Ecological Agriculture.

3 - 6 credits (at least 3 credits) from the following:

SOIL 335	(3)	Soil Ecology and Management
SOIL 445	(3)	Agroenvironmental Fertilizer Use

15-18 credits to be chosen from:

AGEC 333	(3)	Resource Economics
AGRI 215	(3)	Agro-Ecosystems Field Course
AGRI 310	(3)	Internship in Agriculture/Environment
AGRI 435	(3)	Soil and Water Quality Management
ENTO 352	(3)	Control of Insect Pests
ENVB 410	(3)	Ecosystem Ecology
MICR 331	(3)	Microbial Ecology
NUTR 512	(3)	Herbs, Foods and Phytochemicals
PLNT 302	(3)	Forage Crops and Pastures
PLNT 312	(3)	Urban Horticulture
PLNT 434	(3)	Weed Biology and Control
PLNT 460	(3)	Plant Ecology
WILD 311	(3)	Ethology

6.7.2 Certificate in Entrepreneurship

The Certificate in Entrepreneurship is no longer being offered. For Information on this program, refer to the *2006-2007 Undergraduate Programs Calendar*.

6.7.3 Certificate in Food Science (30 credits)

This 30-credit program will appeal to mature students who have a first degree in a science-related discipline. Students must complete the Introduction to Food Science, Food Microbiology and Quality Assurance courses, at least three food chemistry/analysis courses, two processing/engineering courses, and at least one course in communication skills, ethics or business skills. Entry to this program is permitted only in September.

Academic Adviser: Professor Hosahalli S. Ramaswamy

Macdonald-Stewart Building, Room 1-038

Telephone: 514-398-7919

Required Course (3 credits)

FDSC 200	(3)	Introduction to Food Science
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Complementary Courses (27 credits)

27 credits are selected as follows:

9 credits from the following:

FDSC 251	(3)	Food Chemistry 1
FDSC 300	(3)	Principles of Food Analysis 1
FDSC 305	(3)	Food Chemistry 2
FDSC 315	(3)	Separation Techniques in Food Analysis 1
FDSC 319	(3)	Food Commodities
FDSC 334	(3)	Analysis of Food Toxins and Toxicants
FDSC 410	(3)	Flavour Chemistry
FDSC 495D1	(1.5)	Food Science Seminar
FDSC 495D2	(1.5)	Food Science Seminar

6 credits from the following:

BREE 324	(3)	Elements of Food Engineering
FDSC 310	(3)	Post Harvest Fruit and Vegetable Technology
FDSC 330	(3)	Food Processing
FDSC 400	(3)	Food Packaging
FDSC 405	(3)	Product Development
FDSC 425	(3)	Principles of Quality Assurance

3 credits from the following:

FDSC 442	(3)	Food Microbiology
LSCI 230	(3)	Introductory Microbiology
NUTR 207	(3)	Nutrition and Health

9 credits from the following:

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

6.8 Field Studies

6.8.1 African Field Study Semester

The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see *Field Studies and Study Abroad > African Field Study Semester*.

6.8.2 Barbados Field Study Semester

This program takes place at Bellairs Research Institute in Barbados, it is a full 15-credit program offered each Fall semester. For more information, see *Field Studies and Study Abroad > Barbados Field Study Semester*.

6.8.3 Barbados Interdisciplinary Tropical Studies Field Semester

This 15-credit program is offered at the Bellairs Research Institute in Barbados. For more information, see *Field Studies and Study Abroad > Barbados Interdisciplinary Tropical Studies Field Semester*.

6.8.4 Panama Field Study Semester

The program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama. For more information, see *Field Studies and Study Abroad > Panama Field Study Semester*.

7 Graduate Programs

Graduate work may be undertaken on the Macdonald Campus, through the Departments of Animal Science, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences, Plant Science, the Institute of Parasitology, and the School of Dietetics and Human Nutrition.

The advanced courses of study offered lead to the degrees of Master of Science, Master of Science Applied, Doctor of Philosophy, Graduate Certificate in Biotechnology and Graduate Certificate in Integrated Water Resources Management (IWRM).

Information on these programs and related fellowships is available from the Student Affairs Office, Macdonald Campus of McGill University, 21,111 Lakeshore Road, Laird Hall, Sainte-Anne-de-Bellevue, Quebec, H9X 3V9.

The *Graduate and Postdoctoral Studies Calendar* and full information regarding graduate courses, theses, registration, fellowships, etc., can be accessed on the McGill website, www.mcgill.ca.

8 Farm Management and Technology Program

8.1 Location

Farm Management and Technology Program
Faculty of Agricultural and Environmental Sciences
Macdonald Campus of McGill University
21,111 Lakeshore Road, Harrison House
Sainte-Anne-de-Bellevue, Quebec H9X 3V9

Telephone: 514-398-7814

Fax: 514-398-7955

Email: fnt.macdonald@mcgill.ca

Website: www.mcgill.ca/fnt

8.2 Farm Management and Technology Program Faculty

Director

Peter Enright

Associate Director

Serge Lussier

8.3 Diploma Farm Management Technology

This 3-year academic and practical program is offered on the Macdonald Campus and taught by the staff of the Faculty of Agricultural and Environmental Sciences of McGill University. The program is funded by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec and authorized by the Ministère de l'Éducation, du Loisir et du Sport du Québec.

The educational goals of the program are:

1. to make our graduates competent in the exercise of their profession;
2. to help the student's integration into professional life;
3. to foster professional mobility;
4. to foster a need for continual development of professional knowledge.

Program Overview

Six academic terms are spent on the Macdonald Campus studying a sequence of courses in soil, plant science, animal science, engineering, economics and management. The first summer of the program includes a 13-week internship on an agricultural enterprise other than the home farm, or an agricultural business where the student learns the many skills and encounters the many problems related to modern commercial agriculture. Students prepare for their Enterprise internship during both academic semesters of Year 1 through two Farm Practice courses.

During the second summer, students are registered in Entrepreneurship 1, which involves agricultural enterprises. The students will be responsible for data collection to be used in their Farm Project and the Nutrient Management Plan 2 when they return to campus for the Fall semester. The internships and practicums will enable the students to relate their academic work to the reality of farming and the agri-food sector.

Finally, courses in English, Français, Humanities, Physical Education and two complementary courses taken during the program will entitle the student to receive a Diplôme d'études collégiales (DEC) from the Ministère de l'Éducation, du Loisir et du Sport du Québec. Students will also receive a certification from Macdonald Campus stating that they have successfully completed the requirements of the Farm Management and Technology Program.

Program Outline

Administrative Unit

FMTTP 001	(1.33)	Farm Practice 1 (152-001-MC)
FMTTP 007	(2)	Health and Farm Safety (152-007-MC)
FMTTP 011	(1.33)	Farm Practice 2 (152-011-MC)
FMTTP 036	(6)	Enterprise Internship (152-036-MC)
FMTTP 037	(2.33)	Entrepreneurship 1 (152-037-MC)

Bioresource Engineering

FMTTP 003	(2)	Soil Preparation (152-003-MC)
FMTTP 004	(1.67)	Microcomputing (152-004-MC)
FMTTP 014	(1.67)	Machinery Management (152-014-MC)
FMTTP 018	(1.33)	Building Maintenance (152-018-MC)
FMTTP 019	(1.67)	Tools & Machinery Maintenance (152-019-MC)
FMTTP 021	(2)	Water and Soil Conservation (152-021-MC)
FMTTP 024	(1.67)	Farm Building Planning (152-024-MC)

FMTM 027	(1.33)	Precision Farming (152-027-MC)
Agricultural Economics		
FMTM 002	(1.33)	Introduction to Economics (152-002-MC)
FMTM 025	(2)	Farm Project (152-025-MC)
FMTM 038	(2)	Financial and Managerial Accounting (152-038-MC)
FMTM 039	(1.67)	Agri-Marketing (152-039-MC)
FMTM 042	(2.33)	Budgeting, Finance and Policies (152-042-MC)
FMTM 043	(2.67)	Entrepreneurship 2 (152-043-MC)
FMTM 044	(1.33)	Management of Human Resources (152-044-MC)

Animal Science

FMTM 005	(1.33)	Animal Anatomy and Physiology
FMTM 008	(2.33)	Introduction to Animal Science (152-008-MC)

English

FMTM 077	()	
FMTM 080	(2)	English Upgrading
FMTM 082	(2.33)	Literary Genres (603-102-04)
FMTM 083	(2.33)	Literary Themes (603-103-04)
FMTM 084	(2)	English for FMT (603-VSA-04)

Français

FMTM 075	(2)	Langue française et communication (602-101-03)
FMTM 098	(2)	Français agricole (602-VSG-MC)

Humanities

FMTM 085	(2.33)	Humanities 1: Knowledge (345-103-04)
FMTM 086	(2)	Humanities 2: World Views (345-102-03)
FMTM 087	(2)	Humanities 3: Env. & Org. Issues (345-VSH-MC)

Natural Resource Sciences

FMTM 009	(2.67)	Soil Fertilization (152-009-MC)
FMTM 040	(1.67)	Nutrient Management Plan 1 (152-040-MC)
FMTM 041	(1.33)	Nutrient Management Plan 2 (152-041-MC)

Physical Education

FMTM 090	()	
FMTM 094	(1)	Physical Activity (109-104-02)
FMTM 095	(1)	Active Living (109-105-02)

Plant Science

FMTM 006	(2.67)	Agricultural Botany
FMTM 017	(1.33)	Pesticide Use

Elective Production Courses

We offer four production courses in the area of Animal Science and four production courses in the area of Plant Science. Students must take a minimum of two courses in each category for a total of four courses. Students could elect to take more than four courses if they wish, after a discussion with their academic adviser. They must take a minimum of two courses per semester.

Animal Science Category

FMTM 028	(2.67)	Dairy Heifer Management (152-028-MC)
FMTM 029	(2.67)	Dairy Herd Management (152-029-MC)
FMTM 030	(2.67)	Swine and Poultry (152-030-MC)
FMTM 031	(2.67)	Beef and Sheep (152-031-MC)

Plant Science Category

FMTM 032	(2.67)	Fruit and Vegetable Crops (152-032-MC)
FMTM 033	(2.67)	Greenhouse Crops (152-033-MC)
FMTM 045	(2.67)	Field Crop Production (152-045-MC)
FMTM 046	(2.67)	Field Crop Management (152-046-MC)

Complementary Courses*

Students must take the following complementary courses to meet the program requirements:

* After consultation with their academic adviser, students can substitute complementary courses taken at another collegial institution. This includes science courses which are required for further studies in a degree program. The cost associated with courses taken elsewhere must be assumed by the students.

FMTM 096	(2)	Forests, Forestry and Society (305-032-MC)
FMTM 097	(2)	Landscape Design (504-VSG-MC)

Comprehensive Assessment

The objective of this examination is to ensure that students have attained the objectives and standards for each competency in the program. Successful completion of the Comprehensive Assessment is mandatory to obtain the D.E.C.

The passing grade is 60%. The mark indicating that the student has successfully completed the Comprehensive Assessment will appear on the student's transcript.

English Exit Examination

All students who wish to graduate and obtain the D.E.C. must pass the English Exit Examination that is offered by the M.E.L.S. Students must take this examination on the date selected by the M.E.L.S.

8.4 Entrance Requirements – FMT

1. Students should have a good practical knowledge of farming under eastern Canadian conditions. One year of experience is recommended but under special conditions a four-month summer season is acceptable.
2. The minimum academic entrance requirements are a Quebec High School Leaving Certificate (Secondary V), or its equivalent and any other academic requirement set by the M.E.L.S.
3. All candidates for admission must make arrangements to come to the Macdonald Campus for an interview prior to admission to the program.
4. Admission to this program is only in the Fall semester.

5. We strongly encourage incoming students to acquire their driver's permit (both for cars **and** farm equipment) before coming to Macdonald Campus. This is first for safety reasons, given that students work with farm equipment (Soil Preparation) very early on as they arrive at Macdonald. As well, most farmers require that their employees and stagiaires know how to drive and possess the appropriate driver's license.

8.5 Registration – FMT

Students in the Farm Management and Technology Program must register online using Minerva at www.mcgill.ca/minerva for each semester at McGill.



Note: The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules, conditions of admission and credit requirements and the revision or cancellation of particular courses. In normal circumstances, individual courses will not be offered with less than five registrants.

8.6 Academic Rules and Regulations – FMT

The Farm Management and Technology Program follows the rules and regulations of McGill University as well as from the *Ministère de l'Éducation, du Loisir et du Sport du Québec* for the collegial level.

8.6.1 Sessional Dates - FMT

The number of teaching and examination days is set by the *Ministère de l'Éducation, du Loisir et du Sport du Québec*. The sessional dates vary from year to year. At the present time, each semester has 75 teaching days and 7 days of exams.

8.6.2 Last Day for Withdrawal or Course Additions

The last day to make course registration changes for Fall term courses is September 20.

The last day to make course registration changes for Winter term courses is February 15.

8.6.3 Academic Standing - FMT

Attendance in class is compulsory. Students with attendance of less than 80% may not be permitted to write examinations.

Examinations and other work in courses will be marked according to the percentage system. The minimum passing mark in a course is 60%.

When a student's cumulative percent average (CPA) or semestrial percent average (SPA) first drops below 60%, or they fail four or more courses in a semester, withdrawal is advised. Students who choose to remain in the program are on probation.

Students on probation are normally permitted to register for not more than 10 credits per semester. They are not permitted to be on probation for more than one semester unless they obtain an SPA of 70% or higher.

Students who do not raise their CPA to 60% (or obtain an SPA of 70%) while on probation are not permitted to continue. They are required to withdraw from the Program for one year. If, after this period, students wish to be readmitted, they must apply in writing to the Director of the Program.

8.6.4 Handbook on Student Rights and Responsibilities

This Handbook is a compendium of regulations and policies governing student rights and responsibilities at McGill University. It is published jointly by the Dean of Students' Office and the Secretariat. A copy of the Handbook can be found at www.mcgill.ca/secretariat/policies/students or obtained from the Student Affairs Office or the Macdonald Campus Student Services Centre.

8.6.5 Institutional Policy on the Evaluation of Student Achievement - FMT

The policy has the following objectives:

- to establish and explain the principles followed in evaluating student learning;
- to describe the means of translating these principles into practice and to establish the required procedures;
- to articulate the appropriate responsibilities of students, instructors, departments, and academic administrators;
- to account to students, parents, universities and employers for the standards of learning at the campus;
- to create an environment of awareness and free discussion of pedagogical concerns within all segments of the campus community;
- to provide information which will allow students to more fully understand and participate in the educational process;
- to provide the framework within which instructors and academic administrators can exercise their professional judgment in a competent, just, and coherent fashion.

Copies are available in the Library and students are informed of it at registration.

8.7 Fees and Expenses – FMT

8.7.1 Fees

Tuition fees for all full-time students who are eligible for the Farm Management and Technology Program are paid by the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec*. Student Services and Student Societies' fees, as well as course material fees, will be charged according to the schedule in effect for all Macdonald Campus students. At the time of publishing, the fees* were \$818.60 for the Fall semester and \$673.55 for the Winter semester.

* 2009-10 fees, subject to change without notice.

8.7.2 Textbooks and Supplies

The cost of textbooks and supplies is estimated at \$200.00 per semester.

8.7.3 Financial Assistance

In-Course Financial Aid (including loans and bursaries) is available to full-time students on the basis of demonstrated financial need, however, it is recommended that all applicants apply for the maximum government student assistance program for which they are eligible. Students may apply for In-Course Financial Aid through the *Financial Aid* Menu on Minerva and will then be asked to make an appointment with the Loan Administrator who visits the Student Services Centre, Macdonald campus, every Wednesday to meet with students with financial difficulties. For more information see *University Regulations and General Information > Scholarships and Student Aid*, or contact the Student Services Centre at 514-398-7992.

8.8 Residence Accommodation – FMT

The Laird Hall Residence has a capacity of 250 students. It accommodates undergraduate, graduate, and Farm Management and Technology Program students on the Macdonald Campus. For more information, please refer to *University Regulations and General Information > Residential Facilities > University Residences – Macdonald Campus*, www.mcgill.ca/macdonald-residences, or email residences.macdonald@mcgill.ca.

9 Department of Animal Science

9.1 Location

Macdonald Stewart Building - Room MS1-084
Telephone: 514-398-7794
Fax: 514-398-7964
Email: animal.science@mcgill.ca
Website: www.mcgill.ca/animal

9.2 About the Department of Animal Science

There are excellent programs available for those students interested in the study of animal science at the undergraduate level. Whether students are interested in the improvement of livestock production from the point of view of nutrition, breeding and reproduction, or the study of animals in a health context, or even the biotechnology aspects that provide a basis for further laboratory research and an opening to animal models and their impact on human health and disease, there is a specialization that will appeal to those needs.

The Department of Animal Science plays a crucial role in the offering of four important specializations:

- Animal Biology
- Animal Health and Disease
- Animal Production
- International Agriculture

Each of these specializations must be taken within the context of a major, depending on the orientation of a student towards animal production management, animal biotechnology, further studies in animal health, international studies and/or Graduate Studies.

Students interested in becoming a professional agrolgist (a member of the *Ordre des agronomes du Québec*), should register in the Agro-Environmental Sciences Major and take the specialization in Animal Production.

9.3 Department of Animal Science Faculty

Chair

Kevin M. Wade

Emeritus Professors

Roger B. Buckland

Eduardo R. Chavez

Bruce R. Downey

Urs Kuhnlein

John E. Moxley

Sherman Touchburn

Professors

Flannan Hayes

Xin Zhao (*James McGill Professor*)

Associate Professors

Vilceu Bordignon

Roger I. Cue

Humberto G. Monardes

Arif Mustafa (*William Dawson Scholar*)

Leroy E. Phillip

Kevin Wade

David Zadworny

Assistant Professors

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Raj Duggavathi

Sarah Kimmins

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Hernan Baldassarre

Pierre Lacasse

Daniel Lefebvre

Bruce Murphy

10 Department of Bioresource Engineering

10.1 Location

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10.2 About the Department of Bioresource Engineering

Bioresource Engineering is an interdisciplinary program that integrates engineering, design and the biological sciences. It is a unique profession that applies engineering principles to the enhancement and sustainability of the world's natural resources. Bioresource engineers seek solutions to problems that involve plants, animals and the environment. Bioresource Engineering includes the design, construction, operation, maintenance, remediation and upgrading of systems that contain biological components. This also includes the design of many of the technological constructions that are part of such systems. Thus, Bioresource Engineering includes quite a few sub-disciplines, which are linked because of their biological orientation.

10.3 Department of Bioresource Engineering Faculty

Chair

Shiv O. Prasher

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Robert S. Broughton
Robert Kok

Professors

Suzelle Barrington
Chandra Madramootoo (*James McGill Professor*)
Edward McKyes
Shiv O. Prasher (*James McGill Professor*)
G.S. Vijaya Raghavan (*James McGill Professor*)

Associate Professor

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Assistant Professors

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Grant Clark

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Valérie Orsat

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Joyce Boye

Young Choi

Murray Clamen

Aleksandra Drizo

Samuel Gameda

Serge Guiot

Pierre Jutras

Jose Martinez

Philippe Savoie

Boris Tartakovsky

Clément Vigneault

Ning Wang

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11 Department of Food Science and Agricultural Chemistry

11.1 Location

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11.2 About the Department of Food Science

Food Science is a multidisciplinary field involving chemistry, biochemistry, nutrition, microbiology and processing to give one the scientific knowledge to solve real problems associated with the many facets of the food system. Food Science is still a relatively new and growing discipline, brought about mainly as a response to the social changes taking place in North America and other parts of the developed world. The current trend towards merger between **food** and **pharmaceutical industries** to produce the next generation of new food products such as functional foods and nutraceuticals is the biggest challenge facing the discipline of Food Science today. You can be part of it. The programs offered are: **B.Sc. Food Science (Food Chemistry or Food Science option)** and **Concurrent degree which includes B.Sc. Food Science/B.Sc. Nutritional Sciences**. For more information on these programs, see [section 6.4: Bachelor of Science \(Food Science\) - B.Sc.\(F.Sc.\)](#).

11.3 Department of Food Science and Agricultural Chemistry Faculty

Chair

Selim Kermasha

Professors

Inteaz Alli

William D. Marshall

Hosahalli S. Ramaswamy

Frederik R. van de Voort

Associate Professors

Ashraf A. Ismail

Selim Kermasha

Benjamin K. Simpson

Varoujan Yaylayan

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Martin Chénier

Salwa Karboune

12 Department of Natural Resource Sciences

12.1 Location

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12.2 About Department of Natural Resource Sciences

The courses and academic programs offered by the Department of Natural Resource Sciences allow students to explore interactions among the components of terrestrial and aquatic ecosystems, and governance through the development of a strong, interdisciplinary background in fundamental, applied and social sciences.

Our environment is comprised of many interacting components: interactions between the earth's atmosphere and forests or crops, between plants and other organisms in the soil, between soil properties and nutrients available to plants, between vegetation and the wildlife it supports, between ecological communities on the land and those of the rivers and lakes nearby, between microbial organisms and food safety and disease, between insects, plants and animals, between human activities such as agriculture, forestry and industrial development and natural ecological processes. In turn, all these processes are greatly affected by the actions of governments that rely primarily on feedback from societal and industrial groups, economists, and policy experts to provide guidelines for the management of our natural resources.

12.3 Department of Natural Resource Sciences Faculty

Chair

Benoît Côté

Emeritus Professors

Nayana N. Barthakur

Edmund Idziak

Angus F. Mackenzie

Robert A. MacLeod

Peter H. Schuepp

Robin K. Stewart

Professors

David M. Bird

Peter Brown (*joint appoint. with Geography and McGill School of Environment*)

James W. Fyles (*Tomlinson Professor of Forest Ecology*)

William H. Hendershot

Associate Professors

Christopher Buddle

Benoît Côté

Mark A. Curtis

Brian T. Driscoll

Gary B. Dunphy

John Henning

Murray Humphries

David J. Lewis

Donald F. Niven

Manfred E. Rau

Ian Strachan

Paul Thomassin

Joann Whalen

Terry A. Wheeler

Lyle Whyte

Assistant Professors

Elena Bennett (*joint appoint. with McGill School of Environment*)

Gordon Hickey

Anwar Naseem

Curators

Stephanie Boucher

Christina Idziak

Associate Members

Colin A. Chapman (*Anthropology*)
Lauren J. Chapman (*Biology*)
David Green (*Redpath Museum*)
William D. Marshall (*Dept. of Food Science and Agricultural Chemistry*)
Donald L. Smith (*Dept. of Plant Science*)
Marilyn Scott (*Institute of Parasitology*)

Adjunct Professors

Denis Angers
Suzanne Beauchemin
Dominique Berteaux
Guy Boivin
Michel Bouchard
Kimberly Fernie
Charles W. Greer
Daniel Houle
Carlos Miguez
Jean-Pierre Savard
Elwin G. Smith
Geoffrey Sunahara
Charles Vincent
Frederick G. Whoriskey

Past Professor

Laurie Baker

13 Department of Plant Science

13.1 Location

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13.2 About the Department of Plant Science

Our understanding of biological systems has advanced exponentially during the 20th century and technological developments now allow us to pose questions that simply could not be asked a few decades ago. We also live at a time of great challenges: the human population is now close to 7 billion and continues to rise at an alarming rate, the climate is changing, worldwide energy availability is going down, quality freshwater is getting scarce, biodiversity is disappearing, and a number of wild habitats are threatened by human activities.

Plant scientists have a crucial role to play in solving several of these problems. How can we keep feeding the growing population with quality food, while the resources to do so are scarcer than ever? How will plants react to a changing climate? How can we design effective conservation strategies to preserve biodiversity? The challenge of using the knowledge accumulated in the field of biology to answer these questions falls in great part to plant scientists.

The Department of Plant Science contributes to several undergraduate programs that will train tomorrow's agrologists, ecologists, botanists and biotechnologists. These include Specializations in Ecological Agriculture, Plant Biology, Plant Production, and also the Environmetrics and Food Production and Environment Domains of the McGill School of the Environment. See related program information under [section 6.2: Bachelor of Science \(Agricultural and Environmental Sciences\) – B.Sc.\(Ag.Env.Sc.\)](#).

13.3 Department of Plant Science Faculty

Chair

Philippe Sequin

Emeritus Professors

Deborah Buszard

Ralph H. Estey

William F. Grant

Professors

Pierre Dutilleul

Donald L. Smith

Alan K. Watson

Associate Professors

Jacqueline C. Bede

Sylvie de Blois

Danielle J. Donnelly

Marc Fortin

Suha Jabaji

Ajjamada C. Kushalappa

Philippe Seguin

Katrine A. Stewart

Martina V. Stromvik

Marcia J. Waterway

Assistant Professors

Jean-Benoit Charron

Jaswinder Singh

Faculty Lecturers

Caroline Begg

Faculty Lecturers

Serge Lussier

David Wees

Associate MembersGregory Brown (*Department of Biology*)Timothy A. Johns (*School of Dietetics and Human Nutrition*)**Adjunct Professors**

Marc Fortin

Sylvie Jenni

Shahrokh Khanizadeh

Jean-François Laliberté

14 School of Dietetics and Human Nutrition

14.1 Location

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14.2 About the School of Dietetics and Human Nutrition

Health and well-being of individuals in relation to food choices and physiological status prevails as the unifying theme of the programs in the School of Dietetics and Human Nutrition. The availability of food, normal metabolism and clinical nutrition, community nutrition at the local and international level, the evaluation of nutritional products and their use in nutrition, and the communication of information about food and health form the core of academic programs.

14.3 School of Dietetics and Human Nutrition Faculty

Director

Kristine G. Koski

Professor Emerita

Harriet V. Kuhnlein

Professors

Luis B. Agellon

Timothy A. Johns

Associate Professors

Grace Egeland (*Canada Research Chair*)

Katherine Gray-Donald

Kristine G. Koski

Stan Kubow

Louise Thibault

Hope Weiler (*Canada Research Chair*)

Linda Wykes (*William Dawson Scholar*)

Grace S. Marquis (*Canada Research Chair*)

Lecturers

Peter Bender (PT)

Lynda Fraser (PT)

Mary Hendrickson

Linda Jacobs Starkey

Maureen Rose

Joane Routhier

Sandy Phillips

Hugues Plourde

Heidi Ritter

Adjunct Professors

Mary l'Abbé

Kevin A. Cockell

Cross-Appointed Staff

Food Science and Agricultural Chemistry: Selim Kermasha

Medicine: Louis Beaumier, Franco Carli, Stephanie Chevalier, Réjeanne Gougeon, L. John Hoffer, Larry Lands, Errol Marliss, José Morais, Thomas Schrickler, Jean-François Yale, Ralph Lattermann

Parasitology: Marilyn E. Scott

MUHC: Sonya Page

15 Institute of Parasitology

15.1 Location

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15.2 Institute of Parasitology Faculty

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Professors

John Dalton

Timothy Geary

Roger Prichard

Associate Professors

Robin Beech

Elias Georges

Armando Jardim

Paula Ribeiro

Marilyn Scott

Assistant Professors

Florence Dzierszynski

Petra Rohrbach

Reza Salavati

Associate Members

Greg Matlashewski

Martin Olivier

Mary Stevenson

Brian Ward

Adjunct Professors

Sean Forrester

David Marcogliese

Terence Spithill

16 Instructional Staff

Adamowski, Jan; B.Eng.(RMC), M.Phil.(Camb./MIT), M.B.A.(Warsaw/HEC-Paris/London Business School/Norwegian School of Economics and Business Administration), Ph.D.(Warsaw); Assistant Professor of Bioresource Engineering

- Agellon, Luis B.; B.Sc., Ph.D.(McM.); Professor of Human Nutrition (*Canada Research Chair*)
- Alli, Inteaz; B.Sc.(Guyana), M.Sc., Ph.D.(McG.); Professor of Food Science and Agricultural Chemistry
- Barrington, Suzelle; B.Sc.(Agr.Eng.), Ph.D.(McG.); Professor of Bioresource Engineering
- Bede, Jacqueline; B.Sc.(Calg.), M.Sc., Ph.D.(Tor.); Associate Professor of Plant Science
- Beech, Robin N.; B.Sc.(Nott.), Ph.D.(Edin.); Associate Professor of Parasitology
- Begg, Caroline; B.Sc.(Agr.)(McG.), M.Sc.(Sask.), Ph.D.(McG.); Faculty Lecturer, Department of Plant Science
- Bennett, Elena; B.A.(Oberlin), M.Sc., Ph.D.(Wis.); Assistant Professor of Ecosystem Ecology and McGill School of Environment
- Bird, David M.; B.Sc.(Guelph), M.Sc., Ph.D.(McG.); Fellow A.O.U., Professor of Wildlife Biology and Director, Avian Science and Conservation Centre
- Bordignon, Vilceu; Ag.Tec.(EAPC), M.Sc., D.V.M.(Universidade da Região da Campanha (Brazil)), Ph.D.(Montr.); Associate Professor of Animal Science
- Brown, Peter G.; B.A.(Haver.), M.A., Ph.D.(Col.); Professor of Natural Resource Sciences (*joint appoint. with Geography and McGill School of Environment*)
- Buddle, Christopher; B.Sc.(Guelph), Ph.D.(Alta.); Associate Professor of Forest Insect Ecology
- Charron, Jean-Benoit; B.Sc.(Montr.), M.Sc., Ph.D.(UQAM); Assistant Professor of Plant Science
- Chenier, Martin R.; B.Sc., M.Sc.(Laval), Ph.D.(McG.); Assistant Professor of Food Safety
- Cherestes, Alice; B.A., M.A., Ph.D.(CUNY); Faculty Lecturer, Faculty of Agricultural and Environmental Sciences
- Clark, Grant; B.Sc.(Agr.Eng.)(Alta.), Ph.D.(McG.); Assistant Professor of Bioresource Engineering
- Côté, Benoît; B.Sc., Ph.D.(Laval); Associate Professor of Woodland Resources, Chair of Department of Natural Resource Sciences
- Cue, Roger I.; B.Sc.(Newcastle, UK), Ph.D.(Edin.); Associate Professor of Animal Science
- Curtis, Mark; B.Sc., M.Sc., Ph.D.(McG.); Associate Professor of Wildlife Biology
- Dalton, John P.; B.Sc., Ph.D.(Dublin); Professor of Parasitology and Canada Research Chair
- de Blois, Sylvie; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.); Associate Professor of Plant Science and McGill School of Environment
- Donnelly, Danielle J.; B.Sc.(Agr.)(McG.), M.Sc.(Br. Col.), Ph.D.(S. Fraser); Associate Professor of Plant Science
- Driscoll, Brian T.; B.Sc., Ph.D.(McM.); Associate Professor of Microbiology
- Duggavathi, Rajesha; B.V.Sc., M.V.Sc.(Univ. of Agricultural Sciences, Bangalore), Ph.D.(Sask.); Assistant Professor of Animal Science
- Dunphy, Gary B.; B.Sc.(New Br.), M.Sc., Ph.D.(Nfld.); Associate Professor of Entomology
- Dutilleul, Pierre R.; B.Sc., Ph.D.(Belgium); Professor of Statistics
- Dzierszynski, Florence; Bacc.(Université de Lille I), M.Sc.(Université de Compiègne/Université de Lille I), Ph.D.(Université de Lille I); Assistant Professor of Parasitology (*Canada Research Chair*)
- Egeland-Hovda, Grace M.; B.A.(Luther), Ph.D.(Pitt.); Associate Professor of Human Nutrition (*Canada Research Chair*)
- Ellyett, William R.; B.A.(Sir G. Wms.), B.Ed.(P.E.)(McG.); Faculty Lecturer (PT), Farm Management and Technology Program and Director of Athletics
- Enright, Peter; B.Sc.(Agr.Eng.), M.Sc.(McG.); Faculty Lecturer, Director, Farm Management and Technology Program
- Fyles, James W.; B.Sc., M.Sc.(Vic. (BC)), Ph.D.(Alta.); Professor of Woodland Resources (*Tomlinson Professor of Forest Ecology*)
- Geary, Timothy G.; B.Sc.(Notre Dame), Ph.D.(Mich.); Professor of Parasitology, Director, Institute of Parasitology, (*Canada Research Chair in Parasite Biotechnology*)
- Georges, Elias; B.Sc., Ph.D.(McG.); Associate Professor of Parasitology
- Gray-Donald, Katherine; B.Sc., Ph.D.(McG.); Associate Professor of Human Nutrition
- Hayes, J. Flannan; B.Agr.Sc., M.Agr.Sc.(Dublin), Ph.D.(N. Carolina St.); Professor of Animal Science
- Hendershot, William H.; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(Br. Col.); Associate Dean (Academic), Professor of Soil Science
- Hendrickson-Nelson, Mary; B.A.(College of St. Benedict), B.Sc.(Minn.), M.Sc.(Colo. St.); Faculty Lecturer (Stage), School of Dietetics and Human Nutrition
- Henning, John C.; B.Sc., Ph.D.(Guelph); Associate Professor of Agricultural Economics
- Hickey, Gordon M.; B.F.Sc.(Melb.), Ph.D.(Br. Col.); Assistant Professor of Natural Resource Sciences
- Humphries, Murray; B.Sc.(Manit.), Ph.D.(Alta.); Associate Professor of Wildlife Biology (*NSERC Northern Chair*)
- Ismail, Ashraf A.; B.Sc., Ph.D.(McG.); Associate Professor of Food Science and Agricultural Chemistry
- Jabaji, Suha; B.Sc.(AUB), M.Sc.(Guelph), Ph.D.(Wat.); Associate Professor of Plant Science and Associate Dean (Research and Graduate Education)

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Kimmins, Sarah; B.Sc.(Dal.), M.Sc.(Nova Scotia Ag.), Ph.D.(Dal.); Assistant Professor of Animal Science

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Koski, Kristine G.; B.S., M.S.(Wash.), Ph.D.(Calif., Davis); Associate Professor of Human Nutrition and Director, School of Dietetics and Human Nutrition

Kubow, Stan; B.Sc.(McG.), M.Sc.(Tor.), Ph.D.(Guelph); Associate Professor of Dietetics and Human Nutrition

Kushalappa, Ajjamada C.; B.Sc., M.Sc.(B'lore), Ph.D.(Flor.); Associate Professor of Plant Science

Lefsrud, Mark G.; B.S.(Sask.), M.S.(Rutg.), Ph.D.(Tenn.); Assistant Professor of Bioresource Engineering

Lewis, David J.; B.Sc., M.Sc., Ph.D.(Mem.); Associate Dean (Student Affairs) and Associate Professor of Entomology

Lussier, Serge; B.Sc.(Agr.)(McG.); Assistant Director and Faculty Lecturer, Farm Management and Technology Program

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Strachan, Ian; B.Sc.(Tor.), M.Sc., Ph.D.(Qu.); Associate Professor of Agrometeorology

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Thomassin, Paul; B.Sc.(Agr.)(McG.), M.S., Ph.D.(Hawaii Pac.); Associate Professor of Agricultural Economics

Titman, Rodger D.; B.Sc.(McG.), M.Sc.(Bishop's), Ph.D.(New Br.), Fellow A.O.U.; Associate Professor (Post-retirement) of Wildlife Biology

van de Voort, Frederik R.; B.Sc., M.Sc., Ph.D.(Br. Col.); Professor of Food Science and Agricultural Chemistry

Wade, Kevin; B.Agr.Sc., M.Agr.Sc.(Dublin), Ph.D.(C'nell); Associate Professor of Animal Science and Chair, Department of Animal Science

Waterway, Marcia J.; B.A.(Calvin), M.S.(Wis.), Ph.D.(C'nell); Associate Professor of Plant Science and Curator, McGill University Herbarium

Watson, Alan K.; B.Sc.(Agr.), M.Sc.(Br. Col.), Ph.D.(Sask.); Professor of Agronomy and Director, Phytarium/Biopesticide Quarantine Facility

Wees, David D.; B.Sc.(Agr.), M.Sc.(McG.); Faculty Lecturer, Department of Plant Science

Weiler, Hope; B.A.Sc.(Guelph), Ph.D.(McM.); Associate Professor of Human Nutrition (*Canada Research Chair*)

Whalen, Joann; B.Sc.(Agr.)(Dal.), M.Sc.(McG.), Ph.D.(Ohio St.); Associate Professor of Soil Science (*William Dawson Scholar*)

Wheeler, Terry; B.Sc.(Nfld.), M.Sc., Ph.D.(Guelph); Associate Professor of Entomology and Director, Lyman Entomological Museum and Research Laboratory

Whyte, Lyle G; B.Sc.(Regina), Ph.D.(Wat.); Associate Professor of Microbiology (*Canada Research Chair*)

Wykes, Linda; B.Sc., M.Sc., Ph.D.(Tor.); Associate Professor of Dietetics and Human Nutrition (*William Dawson Scholar*)

Yaylayan, Varoujan A.; B.Sc., M.Sc.(Beirut), Ph.D.(Alta.); Associate Professor of Food Science and Agricultural Chemistry

Zadworny, David; B.Sc., Ph.D.(Guelph); Associate Professor of Animal Science

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