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## 1 The Faculty

### 1.1 Location

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

Telephone: (514) 398-4210
Faculty Website: www.arts.mcgill.ca/arts
Student Affairs Office Website: www.mcgill.ca/artscisao

The Student Affairs Office and the Office of the Associate Dean (Student Affairs) of the Faculty of Arts are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both the Faculty of Arts and the Faculty of Science.

### 1.2 Administrative Officers

John Hall; B.A.(Oxon.), M.A.(Penn.), Ph.D.(Lond.Sch. of Economics)  
**Dean**

John Galaty; B.A. (Hartford), M.A.,Ph.D.(Chic.)  
**Associate Dean (Research and Graduate Studies)**

Uli Locher; Ph.D.(Yale)  
**Associate Dean (Projects and Technology)**

Enrica Quaroni; B.A., Ph.D.(McG.)  
**Associate Dean (Student Affairs)**

Susan Sharpe  
**Assistant to the Dean**
1.3 Programs and Teaching in Arts

Established in 1843, the Faculty of Arts is one of the oldest in Canada and remains the largest at McGill. With over 5,000 full-time students and over 250 full-time professors, the Faculty offers several hundred courses in many disciplines.

The Faculty of Arts permits students great program flexibility. Students may concentrate on one Arts discipline while obtaining Minor Concentrations in different Arts disciplines as well as in other faculties, such as, for example, Science. McGill's historic Arts building is the centrepiece of the University's downtown campus. It houses classrooms, offices and Moyse Hall – an elegant and well-equipped performance theatre. The Faculty maintains bilateral exchange programs with many universities around the world and encourages students to spend a term or two studying abroad.

McGill Arts graduates are valued for their ability to think critically and communicate effectively, often in more than one language. Their skills in research and analysis are applicable in a wide spectrum of professional fields, such as law, education, business, government, and public service.

The Faculty of Arts offers programs leading to the degrees of B.A. and B.S.W. Admission is selective; fulfillment of the minimum requirements does not guarantee acceptance. Admission criteria are described in “Admission Requirements” on page 26.

The Faculty of Arts also offers a Diploma in Environment, see page 393 under the McGill School of Environment, a 30-credit program available to holders of a B.Sc. or B.A. or equivalent. All credits for the Diploma must be completed at McGill.

Finally, the Faculties of Arts and of Science jointly offer the Bachelor of Arts and Science (B.A.&Sc.) which is described in the Arts & Science section of the Calendar.

1.4 Student Affairs Office

The Student Affairs Office, located in Dawson Hall, provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and programs, degree requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.

Special requests can be made, in writing, to the Associate Dean (Student Affairs).

For more information, please refer to our Website at www.mcgill.ca/artsci

2 Faculty Admission Requirements

For information about admission requirements to the B.A. or B.S.W., please refer to “Admission Requirements” on page 26.

For information about inter-faculty transfers, please refer to “Inter-Faculty Transfer” on page 44 as well as to the relevant information posted on the Students Affairs Office Website at www.mcgill.ca/artsci and in the Student Affairs Office, Dawson Hall, Room 110.

3 Faculty Degree Requirements

Each student in the Faculty of Arts must be aware of the Faculty regulations as stated in this Calendar. While departmental and Faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration, for compliance with, and completion of, program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student’s responsibility to seek guidance from the Student Affairs office if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

To be eligible for a B.A. degree, students must fulfill all Faculty and program requirements as indicated below:

- Minimum Credit Requirement, see section 3.1
- Successive Program Requirements, see section 3.2
- Cumulative Grade Point Average (CGPA), see section 3.3
- Time Limit for Completion of the Degree, see section 3.4
- Program Requirements, see section 3.5
- Course Requirements, see section 3.6

3.1 Minimum Credit Requirement

Students must complete the minimum credit requirement for the degree as specified in the 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 to students who obtain satisfactory results in the Diploma of Collegial Studies, International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests.

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new GPA will be calculated. The Associate Dean (Student Affairs), in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

Students who are readmitted after a period of absence are normally subject to the program and degree requirements in effect at the time of readmission.

3.2 Residency

To obtain a B.A. degree, students must complete satisfactorily a minimum of 60 credits at McGill University towards the fulfillment of the B.A. degree requirements. At least two-thirds of all program requirements must normally be completed at McGill. In addition, some departments may require that their students complete specific components of their program at McGill.

Exceptionally, and subject to departmental approval, students in a Minor Concentration who pursue an approved study away program may complete up to half of the Minor Concentration requirements elsewhere.

The residency requirement for the Diploma in Environment is 30 credits completed at McGill.

3.3 Cumulative Grade Point Average (CGPA)

Each candidate for a degree must achieve a minimum cumulative grade point average (CGPA) of 2.00.

3.4 Time Limit for Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their program in no more than eight terms after their initial registration for the degree. For students who change programs, the period of eight terms may be extended by two terms with the approval of the students’ department and the Associate Dean (Student Affairs). Students in the Freshman Program become subject to these regulations one year after their initial registration. Students who exceed these limits must apply to the Faculty for permission to continue.

Students routinely taking 18 credits or fewer per year are not subject to the above requirements.
3.5 Program Requirements

3.5.1 Freshman Program

Students who need to complete 97-120 credits to complete their degree requirements must complete the Freshman program requirements in their first year of studies prior to selecting a departmental program. Students may select one of the following Freshman program options:

- 6 credits in each of three of the following areas: social sciences, languages, humanities, or mathematics and science, with a maximum of 18 credits per area and 12 credits per department.
- 18 credits of courses conducted in French. Depending on degree of language proficiency attained, this could include a maximum of 12 credits of intensive French language courses.

For further details, refer to the Arts and Science Freshman information on the Web at www.mcgill.ca/artscisao.

Note: A Freshman (U-0) Year 24-Credit Option “Making Modernities” is currently under consideration for September 2005. Students will explore key texts, cultural artifacts, and performative arts that illustrate social, political, philosophical, and scientific creativity in comparative perspective. A series of four integrated, interdisciplinary 6-credit courses includes lectures, seminars, tutorials, and a performative module. Courses explore the Ancient World of Greece and China, the late Medieval World of Renaissance Italy and Islam, the Early Modern Enlightenment and New World, and the Modern World of Western and Eastern Europe and Developing countries in Africa and Asia.

3.5.2 Departmental Programs

Arts students, other than those registered in the Freshman Program, are required to have an approved program (Multi-track, Honours, Faculty), and to select their courses in each term with a view to timely completion of their degree and program requirements. Students must complete one of the following program streams:

**MULTI-TRACK SYSTEM**

To recognise the diversity of student backgrounds and interests and the multiple routes to understanding provided by a modern university, the Faculty of Arts offers a 90-credit multi-track system that includes a Major Concentration complemented by at least a Minor Concentration and that may be completed in one of the following ways:

**Options**

A: Major Concentration (36) + Minor Concentration (18) + 36 credits of electives

B: Major Concentration (36) + Major Concentration (36) + 18 credits of electives

C: Major Concentration (36) + Minor Concentration (18) + Minor Concentration (18) + 18 credits of electives

**Regulations:**

- Within option A and option B, all Concentrations must be in different academic units. (For students completing a second degree in the Faculty of Arts, this regulation is waived.)
- Within option C, one of the Minor Concentrations may be in the same unit as the Major Concentration. Students who pursue a same-unit Minor Concentration will substitute additional complementary (non-required) courses to a total of 18 credits for any courses completed as a part of their Major Concentration within that unit.
- Students will include within the 36 or 18 credits of their Major or Minor Concentration any university-level (200 or above) prerequisites to required courses within their Concentrations.
- No course may fulfill the requirements for more than one program or concentration requirement.

**Definitions:**

- **Units:** academic departments or administrative equivalents.
- **Programs:** lists of required and complementary courses (including prerequisites for required courses) prepared and maintained by units.
- **Major Concentration:** 36 credits taken from a unit’s Major program.
- **Minor Concentration:** 18 credits taken from a unit’s Minor program.
- **Expandable Minor Concentrations:** those which can, on the completion of 18 additional approved credits, be expanded into a Major Concentration within the appropriate unit.

**HONOURS PROGRAM**

Honours programs demand a high degree of specialisation, and require students to satisfy specific departmental and Faculty Honours requirements while maintaining a good academic standing. They are designed to prepare students for graduate study.

**Regulations:**

- To be registered in an Honours program after the first year, students must have attained a GPA and CGPA of at least 3.00 in the previous year, unless they have special permission from the department and the Associate Dean (Student Affairs).
- To complete an Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required and complementary courses taken at McGill which constitute the Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their program GPA.
- In addition to the completion of the Honours requirements, students must complete at least a Minor Concentration in an academic unit other than the one in which the Honours requirements are satisfied. (For students completing a second degree in the Faculty of Arts, this regulation is waived.)

**JOINT HONOURS PROGRAM**

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program Components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs. Each Joint Honours component consists of a maximum of 36 required and complementary credits (not including program prerequisites). In cases where a minimum of 24 credits are in courses normally restricted to Honours students, the total of required and complementary credits may be as few as 30. To complete a Joint Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required and complementary courses taken at McGill which constitute the Joint Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their component of the program GPA.

**FACULTY PROGRAM**

A Faculty program is an approved selection of courses constituting a concentration in an intellectually coherent and inter-faculty field of studies. These courses must include approved selections from one of the following:

- The Faculties of Arts and of Science, and at least one other faculty.
- The Faculty of Arts, and at least one faculty other than the Faculty of Science.

The Faculty of Arts currently recognises the following Faculty Programs:

- Industrial Relations
- McGill School of Environment.

**3.6 Course Requirements**

All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do
additional work for a supplemental grade if these options are available. Repeating the course is not allowed.

If a required course is failed a second time, a student may appeal to the Associate Dean (Student Affairs) for permission to take the course a third time. If permission is denied by the Associate Dean and/or by the Committee on Student Standing, upon appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs offered are given in each unit’s section together with the locations of departmental advisory offices, program directors and telephone numbers should further information be required.

3.6.1 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, CEGEP, at another university, or Advanced Placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate. It is the student's responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

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

1. Credit will be given for ONLY ONE of the following introductory statistics courses: AEMA310, BIOL373, ECON227D1/ECON227D2, ECON257D1/ECON257D2, EPSC215, GEEG202, MATH203, MGCR271, PSYC204, SOCI350.
2. Credit will be given for ONLY ONE of the following intermediate statistics courses: AEMA411, ECON227D1/ECON227D2, ECON257D1/ECON257D2, GEOS351, MATH204, MGCR272, PSYC305, SOCI461.
3. Students who have already received credit for MATH324 or MATH357, will NOT receive credit for any of the following: AEMA411, BIOL373, ECON227, ECON 227 D1/D2, ECON257D1/ECON257D2, EPSC215, MATH203, MATH204, MGCR271, MGCR272, PSYC204, PSYC305, SOCI350.
4. For 500-level statistics courses not listed above, students must consult a program adviser to ensure that no significant overlap exists. Where such overlap exists with a course for which the student has already received credit, credit for the 500-level course will not be allowed.
5. Credit for statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Arts (Student Affairs).

Credit for computer courses will be subject to the following restrictions:

1) credit for Arts Educational Technology ARET150, which is offered by the Faculty of Arts Computer Laboratory, will not be given if taken concurrently with or after COMP100, COMP102, COMP202, COMP203, COMP208, COMP250, EDPT200 or MGCR331. For more information, please refer to section 12.2 "General Faculty Courses".
2) credit for courses offered by the School of Computer Science is governed by rules specified as "Notes" in the School's entry in the Faculty of Science section of the Calendar.
3) credit for computer courses offered by faculties other than Arts or Science requires the permission of the Associate Dean of Arts (Student Affairs).

3.6.2 Courses outside the Faculties of Arts and of Science

The following regulations apply to students in the Faculty of Arts who wish to take courses outside the Faculties of Arts and of Science:

- Regardless of their minimum credit requirement towards their B.A. degree, students are allowed a maximum of 12 credits in ELECTIVE and/or COMPLEMENTARY courses taken in faculties other than the Faculties of Arts and of Science.
- Students in certain designated programs that include a number of REQUIRED and COMPLEMENTARY courses in other faculties are permitted a maximum of 30 credits outside the Faculties of Arts and of Science. These programs are the Faculty Programs in Industrial Relations and in Environment, the Minor Concentration in Environment, the Joint Honours in Economics and Finance, the Minor in Management for students in programs in Economics, the Major and Minor Concentrations in Music, the Major Concentration in Geography (Urban Systems), the Minor Concentration in Educational Psychology, and the Minor in Education for Arts Students.

Any courses taught at McGill University may be used towards the maximum allowed with the following exceptions:

- Continuing Education: consult list of not-approved courses at www.mcgill.ca/arts/ciao.
- Distance Education: The Faculty is currently reviewing its policy on Distance Education courses. Please consult the Student Affairs Office for more information.
- For the purpose of this policy, courses taught in other faculties and specifically listed in the Arts or Science section of the printed Calendar are considered as courses taught in the Faculties of Arts and of Science.
- The maximum number of credits allowed will be strictly enforced.

3.6.3 Transfer Credit Policy for Courses Taken Outside the Faculties of Arts and of Science

Students who transfer from faculties outside the Faculties of Arts and of Science either at McGill or at another institution may transfer up to a maximum of 30 credits under the following conditions:

- Only courses passed with a grade of C or better will be transferred. Grades of C- are not acceptable. Grades of P or S are acceptable only if transferred from faculties within McGill. The letter grades applied by the former home institution take precedence over the numerical grades if provided.
- Decisions on whether a course is outside the Faculties of Arts and of Science will be based on the original faculty in which the course was taken.
- The Faculty is currently reviewing its policy on Distance Education courses. Please consult the Student Affairs Office for more information.
- Transfer credits for Continuing Education courses will be granted only if the courses can be used towards a degree program in a faculty other than Continuing Education at the original university.
- Transfer students will be allowed to take courses outside the Faculties of Arts and of Science at McGill only if they have transferred fewer than 12 credits, and then only up to a maximum of 12 credits.
- Transfer students who register for a Faculty of Arts program that requires additional credits outside the Faculties of Arts and of Science will be allowed to take only the number of credits outside the Faculties of Arts and of Science required to complete the program. These programs are the Faculty Programs in Industrial Relations and in Environment, the Minor Concentration in Environment, the Joint Honours in Economics and Finance, the Minor in Management for students in programs in Economics, the Major and Minor Concentrations in Music, the Major Concentration in Geography (Urban Systems), the Minor
3.6.4 Courses Taken Under the Satisfactory/Unsatisfactory Option

Students may take one elective course per term that is graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of their credits taken at McGill to fulfil their degree requirements. The decision to have an elective course graded as Satisfactory/Unsatisfactory must be made by students before the end of the Drop/Add period. For more information and restrictions, please consult “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option” on page 42.

3.6.5 Courses in English as a Second Language

ESL courses are only open to students whose primary language is not English and who have studied for fewer than five years in English-language secondary institutions. Students in the Faculty of Arts may take a maximum of 12 credits, including academic writing courses for non-anglophones.

3.6.6 Auditing of Courses

No auditing of courses is allowed at McGill University.

4 Advising

Fall term academic advising for newly admitted students takes place during the week prior to the beginning of classes. Students newly admitted to the winter term should consult the Calendar of Dates for exact advising dates.

Students who need 96 or fewer credits to complete their degree requirements must consult an academic adviser in their proposed department of study to obtain advice and approval of their course selection. To facilitate program planning, they must present their transcripts and letters of admission. For a detailed description of advising and registration procedures, students should refer to Welcome to McGill, which they receive from the Admissions, Recruitment and Registrar’s Office upon their acceptance, as well as the Student Affairs Website, www.mcgill.ca/artscisao.

Students who need 97-120 credits to complete their degree requirements will normally be registered in a Freshman Program until they complete their first year. They must consult an adviser in the Student Affairs Office to obtain advice and approval of their course selection. For a detailed description of advising and registration procedures, Freshman students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as the Student Affairs Website, www.mcgill.ca/artscisao.

Academic advising for all returning students takes place in March for the coming academic year. For more information, students should refer to the Student Affairs Website, www.mcgill.ca/artscisao. Advising is also available by e-mail. The address is adviser.artsci@mcgill.ca.

5 Registration

All students register by Minerva, McGill’s Web-based registration system.

New students register in August prior to the first day of classes. For detailed information about registration, please refer to “Registration” on page 41. Welcome to McGill, the Student Affairs Website www.mcgill.ca/artscisao, and to the Minerva Website www.mcgill.ca/minerva.

Returning students register at the end of March, April and May for the coming academic year. For detailed information about registration, please refer to “Registration” on page 41, to the information on www.mcgill.ca/artscisao and to the Minerva Website, www.mcgill.ca/minerva.

Students who fall into unsatisfactory standing at the end of the academic year will have their registration cancelled. They may not reregister in the Faculty. However, students who can provide proof of extenuating circumstances that affected their academic performance may appeal to the Associate Dean (Student Affairs) for readmission. For more information, students should consult the Student Affairs Office, Dawson Hall, or the Student Affairs Website www.mcgill.ca/artscisao.

Students who have an outstanding fee balance from a previous term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but who subsequently take summer courses without paying the fees, will have their registration cancelled. Registration will be denied until these debts are paid in full. Students must pay all debts before the end of the registration period to be permitted to register. Students with financial problems should consult the Student Aid Office, Brown Student Services Building.

Students who decide not to return to McGill after initiating registration must withdraw from all of their courses on Minerva or inform the Student Affairs Office in writing. The deadline for withdrawal from the University is the same deadline as for a course withdrawal; see the Calendar of Dates. After the deadline, students may, under exceptional circumstances, be granted permission to withdraw from the University. Such students should contact the Student Affairs Office in Dawson Hall, for further information.

5.1 Program Registration

Students should refer to Welcome to McGill or to the Arts and Science Registration information on how to register for programs on the Student Affairs Website www.mcgill.ca/artscisao and to the Minerva Website, www.mcgill.ca/minerva. See section 11 “Programs in the Faculty” for a list of programs which can be taken by Arts students.

5.2 Course Registration

All courses have limited enrolment.

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

Since the registration system is unable to verify whether or not Faculty regulations are respected, it is technically possible to register for courses that may not be credited towards the B.A. When students’ records are manually verified, however, any courses taken that violate the Faculty regulations will be flagged after the end of course change period as “not for credit towards the B.A.”. As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and/or the Class Schedule well in advance of the Course Change period to determine if permission is required of the instructor, the department, or the Faculty for any course they wish to take.

Students who believe they have valid reasons to take a course that may not be credited towards the B.A. must obtain the permission of the Associate Dean (Student Affairs) of Arts.

5.2.1 Registration for First-Year Seminars

Registration for First-Year Seminars is limited to students in their first year of study at McGill, i.e., newly admitted students in U0 or U1. These courses are designed to provide a closer interaction with professors and better working relationships with peers than is available in large introductory courses. These seminars endeavour to teach the latest scholarly developments and expose participants to advanced research methods. Registration is on a first-come first-served basis. The maximum number of students in any seminar is 25, although some are limited to even fewer than that.

Students may take only one First-Year Seminar. Students who register for more than one will be obliged to withdraw from all but
one of them. For a complete listing, please see section 12.1 “First Year Seminars”. The First-Year Seminars offered by the Faculty of Science are also open to Arts students. For a complete listing, please see “Registration for First-Year Seminars” on page 296.

5.2.2 Registration in Multi-Term Courses

Students who select a multi-term course are making a commitment to that course for its entirety. Students MUST register in the same section in all terms of a multi-term course. Credit will be jeopardized if students deliberately register in different sections of a multi-term course. In exceptional cases, when circumstances are beyond the student’s control, the Student Affairs Office may grant permission to change section mid-way through a multi-term course. Students must make their request in writing to the Associate Dean (Student Affairs) citing their reason for the request. The request must also have the written support of the instructors of the sections involved and of the coordinator of the course (if applicable).

5.3 Registration for Graduation

Students in their final year must indicate the expected date of graduation on Minerva and verify this date on verification forms and unofficial transcripts. When final-year students change their expected date of graduation, they must notify the Student Affairs Office immediately. Failure to do so may postpone graduation.

Students who complete their degree requirements at any time after their last registered term at McGill must apply to the Associate Dean (Student Affairs) to graduate. Application to graduate must be made sufficiently in advance of the expected graduation date to allow the Faculty to verify the student’s record. For further information, students should contact the Student Affairs Office.

6 Grading and Credit

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

• whether there will be a final examination in the course;
• how term work will affect the final mark in the course;
• how term work will be distributed through the term;
• whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses normally have supplemental examinations, and courses with formal final examinations must have supplements);
• whether students with marks of D, F, J, or U will have the option of submitting additional work, and, if so, how the supplemental mark will be calculated with the extra work.

6.1 Incomplete Grades

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

• students graduating in June:
  • fall courses, winter courses, and courses spanning fall/winter: April 30
  • non-graduating students:
    • fall courses: April 30
    • winter courses, and courses spanning fall/winter: July 30

Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time.

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 April 30 for fall courses, or July 30 for winter courses and courses spanning fall/winter, 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 see “Grading and Grade Point Averages (GPA)” on page 48 for more information.

7 Examinations

Students should refer to “Examinations” on page 51 for information about final examinations and deferred examinations.

The exam schedules are posted on the McGill Website, www.mcgill.ca and in the Student Affairs Office, Dawson Hall, Room 110, normally one month after the start of classes for Tentative Exam Schedules, and two months after the start of classes for Final Exam Schedules. Students should also refer to the Student Affairs Website at www.mcgill.ca/arts/cis/ao for more information.

8 Supplemental Assessments

8.1 Supplemental Examinations

Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• students must avail themselves of this privilege at the time of the next supplemental examination period;
• special permission is required if students wish to write supplemental exams totaling more than 8 credits in any supplemental exam period;
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the course change of period;
• the format of the supplemental examination (e.g., multiple-choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;
• supplemental examinations in courses outside the Faculty of Arts or of Science are subject to the deadlines, rules, and regulations of the relevant faculty;
• no supplemental examinations are available for students who fail to achieve satisfactory grades in a course with a deferred examination.
For courses in the Faculties of Arts and of Science, the supplemental examination period for fall courses is during the months of April and May, and for winter courses and courses spanning fall/winter during the last week of August. Supplemental applications are available at the Student Affairs Office. The deadline for submission of applications is March 1 for fall courses and July 15 for winter courses and courses spanning fall/winter. A non-refundable fee for each supplemental paper is payable at the time of application. Students who register for a supplemental examination and subsequently find themselves unprepared for it should not write it; except for the loss of the registration fee, there is no penalty for not writing a supplemental examination. Students should consult the Student Affairs Office for further information.

8.2 Additional Work

Instructors of courses that include graded written term work may choose to provide the option of additional work to eligible students. The following conditions apply:

- if there is an option for additional work, it must be announced in the course outline at the beginning of the course;
- additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;
- students must be in satisfactory or probationary standing;
- students must have received a final grade of D, J, F, or U in the course;
- the mark resulting from the revised or additional work will be recorded as a supplemental mark;
- the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental mark will count in calculating the CGPA;
- the weight of the additional work, in calculating the supplemental mark, will be equal to the weight given the work revised or replaced when the original mark was submitted;
- in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
- additional work in courses outside the Faculties of Arts and of Science is subject to the deadlines, rules, and regulations of the relevant faculty.

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

8.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. The Faculty of Arts recognises two types of reassessments or rereads:

- reassessment of course work (term papers, mid-terms, assignments, quizzes, etc.);
- reread of a final exam.

Reassessment of Course Work

These reassessments are administered and conducted solely by the units involved according to procedures specified by the units and made available to staff and students. Requests for such reassessments must be made within 10 working days of the date of return of the graded materials. The reviewer will assess the fairness of the original grade rather than re-mark the assignment as he or she would have graded it. Reassessments should normally be completed within 20 working days of the request. Grades may be lowered or raised, or they may remain the same, as a result of the reassessment. The grade obtained on the reassessment takes precedence over the original grade.

Rereads of Final Exams

These rereads are administered by the Student Affairs Office, but conducted by the units involved. Students must apply in writing to the Student Affairs Office by March 31 for courses in the Fall term and by September 30 for courses in the Winter or Summer terms (these deadlines are strictly enforced and no requests will be accepted past them). Students are assessed a fee of $35.00 for such rereads. It is strongly recommended, but not required, that students consult with the instructor of the course before requesting a reread of a final exam. The reviewer will assess the fairness of the original grade rather than re-mark the assignment as he or she would have graded it. Grades may be lowered or raised, or they may remain the same, as a result of the reread. The grade obtained on the reread takes precedence over the original grade. Reassessments and rereads in courses not in the Faculty of Arts or of Science are subject to the deadlines, rules, and regulations of the relevant faculty.

9 Academic Standing

Academic standing is based primarily on students’ cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the fall term, in May for the winter term, and in September for the summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students’ fall TGPA. Therefore, academic standing for the fall term that are designated as “interim” should be interpreted as advisory. Note that interim standing will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.
- New students are admitted to satisfactory standing.
- Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing

Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.
- Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
- Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between
1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the summer term.
• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
• Students who were previously in unsatisfactory readmitted standing will be placed in probationary standing (fall or winter term) if their CGPA is less than 2.00, and if they satisfy relevant conditions specified in their letter of readmission.

Unsatisfactory Readmitted Standing
Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean (Student Affairs) or the Committee on Student Standing will have their standing changed to unsatisfactory readmitted standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing
Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Student Affairs) no later than July 15 for readmission to the fall term and November 15 for the winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean (Student Affairs) for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

• Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.
• Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing (fall or winter term) if their TGPA falls below 2.50 and their CGPA is below 2.00.
• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean (Student Affairs) or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

Incomplete Standings
Standing awaits deferred exam.
Must clear K’s, L’s or Suppleminals.
Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean (Student Affairs) as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

At the end of the winter term, students with a mark of K or L will be placed in the appropriate standing in June, if the outstanding mark in the course will not affect their result. Otherwise the standing decision will only be made once their incomplete marks have been cleared. For more information about incomplete grades please refer to “Incomplete Grades” on page 72.

10 Awards and Honourary Designations

10.1 Honours and First-Class Honours
Departments may recommend to the Faculty that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:
• students must complete all requirements imposed by the department;
  • for Honours, the CGPA at graduation must be at least 3.00;
  • for First-Class Honours, the CGPA at graduation must be 3.50 or better;
• some departments have additional requirements which must be met before students are recommended for Honours or First-Class Honours (see the departmental entries).

Students in an Honours program whose program GPA or CGPA is below 3.00 or who did not satisfy certain additional program requirements must consult their adviser to determine if they are eligible to graduate in a program other than Honours.

10.2 Distinction and Great Distinction
Students in the Faculty or the Multi-track programs whose academic performance is appropriate may be awarded their degrees with Distinction or Great Distinction under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;
  • for Distinction, the CGPA at graduation must be 3.30 to 3.49;
  • for Great Distinction, the CGPA at graduation must be at least 3.50;
• these designations may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Arts.

10.3 Dean’s Honour List
The designation Dean’s Honour List may be awarded to a graduating student under the following conditions:
• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;
• students must be among the top 10% of the Faculty’s graduating class of students; this calculation is based on the CGPA;
• this designation may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Arts.
The designation Dean’s Honour List may be awarded at the end of each academic year to continuing students under the following conditions:
• students must have completed at least 27 graded credits during the academic year to be considered;
• students must be among the top 10% of the Faculty. This calculation is based on the sessional GPA.

10.4 Medals and Prizes
Various medals, scholarships, and prizes are open to continuing and graduating students. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available from the Admissions, Recruitment and Registrar’s Office or on the Web www.mcgill.ca. No application is required except in the case of the Moyse Travelling Scholarships.

11 Programs in the Faculty

11.1 Major Concentrations

African Studies
Anthropology
Art History
Canadian Studies
Classics
Computing, Foundations of
[application required, see unit entry for information]
Contemporary German Studies
East Asian Studies
Economics
English – Literature
English – Drama and Theatre
English – Cultural Studies
Langue et littérature françaises – Lettres
Langue et littérature françaises – Lettres et traduction
Langue et littérature françaises – Linguistique du français
Geography
Geography (Urban Systems)
German Language and Literature
German Literature and Culture
Hispanic Literature and Culture
Hispanic Languages
History
Humanistic Studies
International Development Studies
Italian Language and Literature
Italian Civilization
Jewish Studies
Latin-American Studies
Linguistics
Mathematics
Middle East Studies
Music
North American Studies
Philosophy
Philosophy and Western Religions - new
Political Science
Psychology
Québec Studies
Russian
Scriptures and Interpretations [see Religious Studies]
Sociology
Women’s Studies
World Religions [see Religious Studies]

11.2 Faculty Programs

Industrial Relations
Environment [see McGill School of Environment]

11.3 Honours Programs

Anthropology
Art History
Canadian Studies - new
Classics
East Asian Studies
Economics
English (Literature)
English (Drama and Theatre)
English (Cultural Studies)
Langue et littérature françaises – Lettres
Langue et littérature françaises – Lettres et traduction
Geography
German Studies
Hispanic Studies
History
International Development Studies
Italian Studies (Literature)
Jewish Studies
Latin American and Caribbean Studies – Area
Latin American and Caribbean Studies – Thematic
Linguistics
Mathematics
Middle East Studies
Philosophy
Philosophy and Western Religions - new
Political Science
Psychology
Religious Studies – Asian Religions
Religious Studies – Western Religions
Russian
Sociology
Women’s Studies

11.4 Joint Honours Programs

There are two types of Joint Honours Programs available in the Faculty of Arts:
1. fully integrated programs such as Mathematics and Computer Science, and Economics and Finance, and
2. programs that are created by combining the Joint Honours Program components from two Arts disciplines. Students must register for both Joint Honours Program components. Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Students can choose Joint Honours Program components from any two of the following disciplines:

Anthropology
Art History
Canadian Studies
Classics
East Asian Studies
Economics
English – one of:
  Cultural Studies, Drama and Theatre, or Literature
  Langue et littérature françaises – one of:
  Lettres, or Lettres et traduction
Geography
German Studies
Hispanic Studies
History
International Development Studies
Italian Language and Literature
Jewish Studies
Linguistics
Mathematics
Middle East Studies
11.5 Minor Concentrations

African Studies
Socio-Cultural Anthropology – see Anthropology
Anthropological Archaeology – see Anthropology
Art History
Behavioural Science [see Psychology]
Canadian Ethnic Studies
Canadian Studies
Catholic Studies
Classics
Computer Science
[application required, see unit entry for information]
East Asian Language and Literature
East Asian Cultural Studies
Advanced East Asian Studies
Economics
Educational Psychology
Education for Arts Students
English – Literature
English – Drama and Theatre
English – Cultural Studies
Foundations of Computing [see Computer Science]
Langue et littérature françaises – Langue française
Langue et littérature françaises – Lettres
Langue et littérature françaises – Lettres et traduction
Langue et littérature françaises – Langue et traduction
Langue et littérature françaises – Théorie et critique littéraires
Geographical Information Systems
Geography
Geography (Urban Systems)
German Language
German Literature
German Literature and Culture in Translation
Hispanic Languages
Hispanic Literature
History
History and Philosophy of Science
Humanistic Studies
International Development Studies
Italian Language and Literature
Italian Civilization
Jewish Studies
Jewish Law
Theoretical Linguistics
Applied Linguistics
Mathematics
Statistics [see Mathematics and Statistics]
Middle East Studies
Middle East Languages
Music
Music Technology
North American Studies
Philosophy
Philosophy and Western Religions -new
Political Science
Political Science: Canada/Québec
Comparative Politics [see Political Science]
International Relations [see Political Science]
Political Economy [see Political Science]
Politics, Law and Society [see Political Science]

South Asia [see Political Science]
Psychology
Behavioural Science [see Psychology]
Québec Studies
Russian
Russian Civilization
Science for Arts Students
Scriptural Languages [see Religious Studies]
Social Studies of Medicine
Sociology
Women’s Studies
World Religions [see Religious Studies]

12 Academic Programs

12.1 First Year Seminars

See Course section for descriptions.
ECON199 FYS: The Role of Government
ENGL199 FYS: Literature and Democracy
FREN199 FYS: Litterature française
GEOG199 FYS: Geo-Environments
GERM197 FYS: Images of Otherness
ITAL199 FYS: Italy's Literature in Context
JWST199 FYS: Images - Jewish Identities
SWRK199 FYS: Social Work Profession

12.2 General Faculty Courses

12.2.1 Arts Educational Technology (ARET)
The Faculty of Arts Computer Services (FACS) offers an elementary computing course, ARET150 (1 credit).
FACS also operates the Faculty of Arts Computer Laboratory which offers a wide range of services to the Faculty. The labs provide access to the internet, the library catalogue and Canadian Census data, and some other electronic data stored in various locations on campus. The Teaching Lab provides a venue for training in specialized graphic and statistical software, and for other course-related computerized teaching tools. Standard word-processing, statistical and spread-sheet software is available, as well as specialized desk-top publishing software. Laser printing, scanning and colour-printing are available for nominal fees.
NB: ARET150 is not open to Science, Management or Engineering students, or to Arts students registered in Computer Science programs, or in Mathematics and Computer Science programs. Credit will not be given for ARET150 if taken concurrently with or after COMP100, COMP102, COMP202, COMP203, COMP208, COMP250, EDPT200 or MGCR331.

12.3 Faculty of Arts Internship Program

Several departments in the Faculty of Arts offer undergraduate students the opportunity to earn university credit while gaining experience in areas relevant to their fields of study. Open to U2 and U3 students, normally after completing 30 credits of a 90 credit program or 45 credits of a 96-120 credit program, normally with a minimum CGPA of 2.7, and permission of the departmental Internship Advisor. Arts internships involve a minimum of 150 hours of work with an approved host institution or organization. Students are required to submit a major topical paper that discusses an aspect of the internship from academic perspective.
For more information about the Faculty of Arts Internship Program: www.mcgill.ca/arts-internships.
12.4 African Studies Program (AFRI)

General Inquiries:
Pikett, Hall, Room 318
3460 McTavish Street
Montreal, QC H3A 1X9
Telephone: (514) 398-4301
E-mail: faye.scrim@mcgill.ca
Website: www.mcgill.ca/africanstudies

Program Coordinator — M. Echenberg (History)
Program Committee:
K. Fallon (Sociology) J. Galaty (Anthropology), J. Jorgensen (Faculty of Management), S. McCall (Philosophy), T. Meredith (Geography)

MINOR CONCENTRATION IN AFRICAN STUDIES
(Expandable) (18 credits)
A Minor Concentration in African Studies is available for students majoring in a discipline of the Faculty of Arts who wish to acquire interdisciplinary knowledge of Africa.

Required Course (3 credits): AFRI598 Research Seminar in African Studies

Complementary Courses (15 credits)
To be selected from the courses listed below. Priority should be given to key African courses, designated with an asterisk (*), whenever they are offered.

MAJOR CONCENTRATION IN AFRICAN STUDIES (36 credits)
The Major Concentration in African Studies provides students with an interdisciplinary approach to the study of the African continent.

Students wishing to major in African Studies should consult the Program Coordinator at the beginning of their first academic year. In the African Studies Major Concentration, students will be encouraged to identify an area within a discipline of the Faculty, taking as many relevant courses as possible in that field.

Required Course (3 credits): AFRI598 Research Seminar in African Studies

Complementary Courses (33 credits)
To be selected from the courses listed below. Priority should be given to key African courses, designated with an asterisk (*), whenever they are offered.

COMPLEMENTARY COURSE LIST
These courses are either on African subjects or have significant African content.

If courses listed below are not available in any particular year, modifications to the Programs may be made with the approval of the Program Coordinator.

Students who wish program credit for other courses with African content, or in which they have pursued individual research or written papers on African topics, should seek approval from the Program Coordinator. African content may be found in certain courses offered in Islamic Studies and Religious Studies.

AFRICAN STUDIES (3 credits)
AFRI480 Special Topics
AFRI481 Special Topics

Anthropology
ANTH212 Anthropology of Development
ANTH301 Nomadic Pastoralists
ANTH321* People and Cultures of Africa
ANTH322* Social Change in Modern Africa
ANTH335 Ancient Egyptian Civilization
ANTH345 Prehistory of Africa
ANTH412 Topics: Anthropological Theory
ANTH415 Problems in African Anthropology
ANTH439 Theories of Development
ANTH445 Property and Land Tenure

AFRICAN FIELD STUDY SEMESTER, see page 325 under the Department of Geography, Faculty of Science, for details of the 15-credit interdisciplinary AFSS. Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

12.5 Anthropology (ANTH)

Stephen Leacock Building, Room 717
855 Sherbrooke Street West
Montreal, QC H3A2T7
Telephone: (514) 398-4300
Fax: (514) 398-7476
Website: www.arts.mcgill.ca/programs/anthro

Chair — Michael S. Bissone

Professors
Donald W. Attwood; B.A.(Calif.), Ph.D.(McG.)
Jérôme Rousseau; B.Sc., M.A.(Montr.), Ph.D.(Cantab.)
Philip Carl Salzman; B.A.(Antloch), M.A., Ph.D.(Chic.) (on leave 2004-2005)
Bruce G. Trigger; B.A.(Tor.), Ph.D.(Yale), F.R.S.C. (James McGill Professor) (on leave Jan.-Dec. 2004)
Allan Young; B.A.(Penn.), M.A.(Wash.), Ph.D.(Penn.) (joint appoint. with Social Studies of Medicine)

Economics
ECON208 Microeconomic Analysis and Applications
ECON313 Economic Development 1
ECON416 Topics in Economic Development 2

English
ENGL352 Current Topics in Criticism and Critical Theory
ENGL421* African Literature

French
FREN312 Francophonie 2

Geography
GEOG216 Geography of the World Economy
GEOG408 Geography of Development
GEOG410 Geography of Underdevelopment: Current Problems

History
HIST200* Introduction to African History
HIST201* Modern African History
HIST374 West Africa Since 1800
HIST381 Colonial Africa: Health/Disease
HIST382 History of South Africa
HIST396 Disease in Africa Since 1960
HIST444 British Colonies: Africa and Asia
HIST486D1 Topics: African Social History
HIST486D2 Topics: African Social History

Islamic Studies
ISLA410 History: Middle-East 1798-1918
ISLA521D1 Introductory Arabic
ISLA521D2 Introductory Arabic

Political Science
POLI227 Developing Areas/Introduction
POLI300D1 Developing Areas/Revolution
POLI300D2 Developing Areas/Revolution
POLI471 Democracy in the Modern World
POLI472 Developing Areas/Social Movements
POLI522 Seminar: Developing Areas

Sociology
SOCI370 Sociology: Gender & Development
SOCI484 Emerging Democratic States
SOCI550 Developing Societies

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ANTHROPOLOGY MINOR CONCENTRATIONS

A Minor Concentration in Anthropology consists of 18 credits (six 3-credit courses) in the discipline. The two Minor Concentrations currently offered are designed to complement students' study in related disciplines or in interdisciplinary programs. The degree may enhance the employment profile of graduating students wishing to work in social services, in multicultural or multiethnic settings, in international development, aboriginal history, museum work, or in educational or media related professions. The Department offers a Minor Concentration in Socio-Cultural Anthropology providing a broad-based exposure to the discipline and the maximum flexibility in the choice of courses. There is also a sub-disciplinary Minor Concentration in Anthropological Archaeology.

Students should register in the Minor Concentration prior to their second year of study at McGill. No credits taken in a Minor may overlap with another degree program. These Minor Concentrations may be expanded into the single Anthropology Major Concentration.

MINOR CONCENTRATION IN SOCIO-CULTURAL ANTHROPOLOGY (Expandable) (18 credits)

Go to www.mcgill.ca (Course Calendars) in July for details.

The Minor Concentration in Socio-Cultural Anthropology permits students to take courses from all theoretical perspectives and areas offered by the Department. Students must take the following profile of courses to fulfill the requirements for this Minor Concentration.

Complementary Courses (18 credits)

6 credits, two 200-level courses selected from:

ANTH222 (3) Comparative Cultures
ANTH203 (3) Human Evolution
ANTH204 (3) Symbol Systems and Ideologies
ANTH205 (3) Cultures of the World
ANTH206 (3) Environment and Culture
ANTH207 (3) Ethnography through Film
ANTH209 (3) Anthropology of Religion
ANTH212 (3) Anthropology of Development
ANTH214 (3) Violence, Warfare, Culture
ANTH227 (3) Medical Anthropology

3 credits, one Area course selected from:

ANTH306 (3) Native Peoples' History in Canada
ANTH331 (3) Prehistory of East Asia
ANTH321 (3) People and Cultures of Africa
ANTH322 (3) Social Change in Modern Africa
ANTH326 (3) Peoples of Central and South America
ANTH327 (3) Peoples of South Asia
ANTH328 (3) Peoples and Cultures of South-East Asia
ANTH329 (3) Modern Chinese Society and Change
ANTH332 (3) Peoples of Oceania
ANTH337 (3) Mediterranean Society and Culture
ANTH338 (3) Native Peoples of North America
ANTH340 (3) Middle Eastern Society and Culture
ANTH415 (3) Problems in African Anthropology
ANTH427 (3) Social Change in South Asia
ANTH436 (3) North American Native Peoples

9 credits of additional Anthropology courses of which no more than 3 credits may be at the 200 level.

MINOR CONCENTRATION IN ANTHROPOLOGICAL ARCHAEOLOGY (Expandable) (18 credits)

[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

The Minor Concentration in Anthropological Archaeology focuses on archaeological theory and methods, and the evolution of human behaviour. It will complement students' programs in History, Art History, Classics, Geology, or Biology.

Required Course (3 credits)

ANTH201 (3) Prehistoric Archaeology

Complementary Courses (15 credits)

3 credits, one Area course selected from:

ANTH307 (3) Prehistory of North America
ANTH331 (3) Prehistory of East Asia
ANTH335 (3) Ancient Egyptian Civilization
ANTH345 (3) Prehistory of Africa
ANTH347 (3) Paleolithic Cultures
ANTH348 (3) Early Prehistory: New World

12 credits, selected from:

ANTH203 (3) Human Evolution
ANTH313 (3) Early Civilizations
ANTH317 (3) Prehistory of North America
ANTH331 (3) Prehistory of East Asia
ANTH335 (3) Ancient Egyptian Civilization
ANTH345 (3) Prehistory of Africa
ANTH347 (3) Paleolithic Cultures
ANTH348 (3) Early Prehistory: New World
ANTH359 (3) History of Archaeological Theory
ANTH403 (3) Current Issues in Archaeology
ANTH412 (3) Gender in Archaeology
ANTH417 (3) Ethnoarchaeology
ANTH419 (3) Archaeology of Hunter-Gatherers
ANTH420 (3) Lithic Technology and Analysis
ANTH431 (3) Problems in East Asian Archaeology
MAJOR CONCENTRATION

The Major Concentration is especially appropriate for students who aim to take courses across several sub-disciplinary or topical concentrations, and for whom specialization is premature. There are no prerequisites for admission to the Major Concentration in Anthropology. Students are encouraged to take a course in quantitative methods (listed under the Honours program below), but this course cannot count as part of this Concentration.

MAJOR CONCENTRATION IN ANTHROPOLOGY (36 credits)

[Addition to course lists under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Complementary Courses (36 credits)

6 credits selected from the 200-level courses in Anthropology

6 credits, two Core courses (350-level) selected from:

ANTH352 (3) History of Anthropological Theory
ANTH355 (3) Theories of Culture and Society
ANTH357 (3) Archaeological Methods
ANTH358 (3) The Process of Anthropological Research
ANTH359 (3) History of Anthropological Theory

6 credits, two Area courses selected from:

Ethnography

ANTH306 (3) Native Peoples’ History in Canada
ANTH321 (3) People and Cultures of Africa
ANTH322 (3) Social Change in Modern Africa
ANTH326 (3) Peoples of Central and South America
ANTH327 (3) Peoples of South Asia
ANTH328 (3) Peoples and Cultures of South-East Asia
ANTH329 (3) Modern Chinese Society and Change
ANTH332 (3) Peoples of Oceania
ANTH337 (3) Mediterranean Society and Culture
ANTH338 (3) Native Peoples of North America
ANTH340 (3) Middle Eastern Society and Culture
ANTH415 (3) Problems in African Anthropology
ANTH427 (3) Social Change in South Asia
ANTH436 (3) North American Native Peoples

Archaeology

ANTH317 (3) Prehistory of North America
ANTH331 (3) Prehistory of East Asia
ANTH335 (3) Ancient Egyptian Civilization
ANTH345 (3) Prehistory of Africa
ANTH347 (3) Paleolithic Cultures
ANTH348 (3) Early Prehistory: New World
ANTH552 (3) Problems: Prehistory North Eastern America

6 credits, two 400-level Anthropology courses

12 credits of additional Anthropology courses of which no more than 6 credits may be at the 200 level

HONOURS IN ANTHROPOLOGY (60 credits)

Minimum number of credits (unless otherwise stated)

The course selection for the program must satisfy the following requirements:

300- and 400-level courses in other departments (subject to departmental approval) max. 9

200-level courses max. 21

Core courses (350-level) 9

400-level courses in Anthropology 9

Honours thesis 6

Nine of the 60 credits of the Honours program can be courses at the 300 level or above given by other departments, if they are directly related to the student’s focus of study within Anthropology and are approved by the student’s adviser on the Undergraduate Committee of the Anthropology Department.

The following guidelines represent a program recommended, though not required, for Honours students. It is recommended that students gain a comprehensive background in anthropological methods and theory by taking one history of theory course (ANTH352 or ANTH359), two courses dealing with social and cultural theory (ANTH308, ANTH314, ANTH320, ANTH324, ANTH333, ANTH355 or ANTH412), one course in anthropological research (ANTH358), one course in research methods (ANTH357 or ANTH461) and one course in quantitative methods (SOC350, PSYC204, ECON317, GEOG 202, or MATH203) for credit as an Anthropology course. In order to acquire a desirable regional background, students are encouraged to take two area courses, ideally pertaining to two distinct geographical concentrations.

Each student has the opportunity to construct within the Honours program a concentration focused on a particular field of interest, such as prehistory and evolution, cultural systems, social and political organization, or on a particular geographical area, such as Africa, North America, Central and South America, Mediterranean, Middle East, South, East or Southeast Asia. A single paper may be submitted for two courses at the 300-level or above, provided that prior written permission has been received from the professors teaching both courses. It is expected that such papers would be more substantial than one submitted for either course.

In the first year of the program, students should take introductory courses from a range of topics available at the 200-level. Some 300-level courses may also be taken. The objective of the first year is the development of a grasp of the anthropological discipline, and an exposure to a broad selection of topics.

In the second year of the program, students should acquire knowledge of anthropological theories and methods, primarily by taking core courses and other relevant offerings. They should also begin to consider a substantive topic and geographical region of specialization.

The third year of the program should advance the process of specialization within the discipline, through 400-level seminars and preparing an Honours Thesis, based on independent research. Permission of an adviser is necessary in order to register for an Honours Thesis in the fall, so students should approach staff before that time to discuss possible topics and gain approval. The required thesis must be a six-credit course. It may be completed in a single term (ANTH490 or ANTH491) or in two consecutive terms (ANTH492D1/ANTH492D2).

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – ANTHROPOLOGY COMPONENT (36 credits)

Minimum number of credits (unless otherwise stated)

Joint Honors program (Anthropology portion) 36

Courses above 200-level, Anthropology portion 24

Core courses in Anthropology (350-level) 9

400-level courses in Anthropology 6

Honours thesis 6

(4 of which 3 credits are normally in the other Joint Honours Program)

Students interested in Joint Honours should consult an adviser in the other department for specific course requirements. A form will be supplied by the Anthropology Department to keep track of courses required by both departments for the program selected.

Students who wish to study at the Honours level in two disciplines can combine Joint Honors Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

For the Honours project, students register for a 3 credit “Special Topic” course (e.g., ANTH480, ANTH481, ANTH482, ANTH483, ANTH484, or ANTH485) in Anthropology, and a similar course (“Honours Thesis” or “Special Topic”) in the other department. For information on the requirements for the other dis-
AFRICAN FIELD STUDY SEMESTER, see page 325 under the Department of Geography, Faculty of Science, for details of the 15-credit interdisciplinary AFSS. Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

12.6 Art History and Communication Studies
(ARTH and ENGC)

Arts Building, W-225 (West Wing, top floor)
853 Sherbrooke Street West
Montreal, QC H3A 2T6

Telephone: (514) 398-6541
Fax: (514) 398-7247
Website: www.arts.mcgill.ca/programs/AHCS

Chair, Director of Graduate Programs in Communication Studies — Will Straw (on leave Sept. 2004 - Aug. 2005)

Director of Graduate programs in Art History — Christine Ross

Emeritus Professors
John M. Fossey; B.A. (Birm.), D.U.(Lyon II), F.S.A., R.P.A.
George Szanto; B.A.(Dart.), Ph.D.(Harv.)

Professor
Hans J. Böker; Ph.D.(Saarbrücken), Dr.-Ing. habil (Hannover)

Associate Professors
David Crowley; B.A.(Johns H.), M.Sc.(Penns.), Ph.D.(McG.)
Christine Ross; M.A.(C'dia), Ph.D.(Paris I)

Assistant Professors
Jennifer Burman; B.A. (C'dia), M.A., Ph.D. (York)
Ting Chang; B.A.(McG.), M.A.(Tor.), Ph.D.(Sussex)
Charmaine Nelson; B.F.A., M.A. (C’dia), Ph.D. (Manchester)
Angela Vanhaelen; B.A. (Western), M.A., Ph.D. (U.B.C.)
Bronwen Wilson; B.A. ,M.A.(U.B.C.), Ph.D.(Northwestern)

Adjunct Professors
David W. Booth; B.A., M.A., M.Phil, Ph.D.(Tor.)
Johanne Lamoureux; B.A., M.A.(Montr.), Ph.D.(E.H.E.S.S., Paris)
Louis De Moura Sobral; M.A., Ph.D.(Louvain)
Constance Naubert-Riser; B.A., M.A.(Ott.), Ph.D.(Lyon III)

In the field of Art History the Department offers comprehensive programs of courses and seminars on the history of the visual arts, material culture, and architecture from antiquity to the present, focusing primarily on Europe and North America. The works of art and architecture are discussed within their cultural, political, historical, religious, philosophical and social context.

Major and Minor Concentrations, and Honours. Joint Honours and graduate programs are available in Art History. For the most up-to-date information on Department requirements and detailed course descriptions, please visit our Department's website or consult an appropriate Undergraduate advisor through the Departmental Office, Arts Building, Room W-225, (514) 398-6541.

The Department offers two introductory undergraduate courses in the Communication Studies area, as well as programs at the graduate level as described in the Graduate and Postdoctoral Studies Calendar.

Orientation Session for New Students
All new students entering the Art History undergraduate programs are required to attend an information session prior to registration. In 2004, this session will be held on Wednesday, August 25 at 13:30 hours in Arts W-220.
Honours students must maintain a GPA of 3.30 in their program courses, and, according to Faculty regulations, a minimum CGPA of 3.00 in general. In addition to the above requirements, Honours students, according to Faculty regulations, also must complete at least a Minor Concentration (18 credits) in another academic unit. NB: For students accepted into the Honours program for 1999/2000 and later, Faculty regulations state that Honours students who have not met the Honours requirements at graduation will not be able to graduate with a Major Concentration unless they have completed the requirements for both a Major Concentration and a Minor Concentration in another discipline.

Honours students who plan to proceed to graduate work are strongly encouraged to study a third language other than English and French.

**JOINT HONOURS – ART HISTORY COMPONENT (36 credits)**
[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

There are no pre-university requirements for this program.

Qualified students may submit proposals for Joint Honours in Art History and other related subjects to the Chairs of the departments concerned.

**Required Course (3 credits)**

ARTH203 (3) Methods in Art History

**Complementary Courses (33 credits)**

27 credits in Art History to be chosen in the following manner:
- minimum 3 credits in Architectural History (II)
- minimum 3 credits in Medieval & Renaissance Art (III)
- minimum 3 credits in Baroque to 19th Century European Art (IV)
- minimum 3 credits in Contemporary Art, Media and Visual Culture (V)
- 6 credits in Art History at the 400 level

Note: courses in studio practice cannot be counted towards the Joint Honours requirements.

Joint Honours students must maintain a GPA of 3.30 in their program courses and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their research project (if applicable).

**ART HISTORY COURSE FIELDS**

Art History courses are divided into five fields:

1. Methodologies
2. Architectural History
3. Medieval and Renaissance Art
4. Baroque to 19th Century European Art
5. Contemporary Art, Media and Visual Culture

**I. Methodologies**

ARTH203 (3) Methods in Art History
ARTH351 (3) Vision and Visuality in Art History
ARTH352 (3) Feminism in Art and Art History
ARTH400 (3) Selected Methods in Art History
ARTH500 (3) Pro-Seminar

**II. Architectural History**

ARTH204 (3) Introduction to Medieval Art and Architecture
ARTH314 (3) The Medieval City
ARTH332 (3) Italian Renaissance Architecture
ARTH333 (3) Italian Baroque Architecture
ARTH340 (3) The Gothic Cathedral
ARTH341 (3) Romanesque Architecture in the West
ARTH345 (3) History of German Architecture
ARTH347 (3) 19th Century Architecture
ARTH348 (3) 20th Century Architecture
ARTH415 (3) Late Medieval & Renaissance Architecture in Northern Europe

**ARTH416 (3) English Medieval Architecture**
ARTH460 (3) Studies in Architectural History 1
ARTH461 (3) Studies in Architectural History 2

**III. Medieval and Renaissance Art**

ARTH207 (3) European Art (1400-1700)
ARTH223 (3) Early Renaissance Art in Italy
ARTH312 (3) Medieval Art 1
ARTH313 (3) Medieval Art 2
ARTH324 (3) High Renaissance Art in Italy
ARTH325 (3) Venetian High Renaissance Painting

**ARTH343 (3) Northern European Art: Renaissance Period**
ARTH344 (3) Northern European Art: 16th Century

**IV. Baroque to 19th Century European Art**

ARTH205 (3) Introduction to Modern Art
ARTH207 (3) European Art (1400-1700)
ARTH310 (3) Postcolonialism
ARTH320 (3) Baroque Art in Italy
ARTH321 (3) Baroque in the North
ARTH323 (3) Realism and Impressionism
ARTH334 (3) Eighteenth Century European Art
ARTH335 (3) Art in the Age of Revolution

**ARTH337 (3) Modern Painting and Sculpture, Post-Impress to WWI**
ARTH345 (3) Rubens, Van Dyck and Velasquez
ARTH474 (3) Studies in Later 18th and 19th Century Art

**V. Contemporary Art, Media & Visual Culture**

ARTH300 (3) Canadian Art to 1914
ARTH301 (3) Canadian Art 1914 - Present
ARTH302 (3) Aspects of Canadian Art
ARTH338 (3) Modern Art and Theory from WWI - 1960s
ARTH339 (3) Critical Issues - Contemporary Art
ARTH360 (3) Photography and Art
ARTH510 (3) The Body and Visual Culture

**Special Courses**

ARTH209 (3) Introduction to Classical Art
ARTH353 (3) Selected Topics in Art History 1
ARTH354 (3) Selected Topics in Art History 2
ARTH374 (3) Studies in Later 18th and 19th Century Art
ARTH379 (3) Studies: Modern Art and Theoretical Problems
ARTH420 (3) Selected Topics in Art and Architecture 1
ARTH421 (3) Selected Topics in Art and Architecture 2
ARTH422 (3) Selected Topics in Art and Architecture 3
ARTH447 (3) Independent Research Course
ARTH474 (3) Studies in Later 18th and 19th Century Art
ARTH479 (3) Studies: Modern Art and Theoretical Problems
ARTH490 (3) Museum Internship

Note: In addition to architectural courses given by the Department, Program students are encouraged to consider courses given in the School of Architecture, and the Departments of East Asian Studies and Philosophy which may, upon consultation with the Department, be regarded as fulfilling part of the requirements.

**ARCH252 Introduction to Architectural History 1 [II]**
**ARCH253 Introduction to Architectural History 2 [II]**
**EAST303 Current Topics: Chinese Studies 1 [III]**
**PHIL336 Aesthetics [I]**
**PHIL436 Aesthetics 2 [I]**

**12.7 Canadian Ethnic Studies Minor Concentration**

**Chair**
Morton Weinfeld, Department of Sociology, morton.weinfeld@mcgill.ca
Leacock 714, (514) 398-6853

**Advisory Committee**
G. Burgos (Sociology), Ian H. Henderson (Religious Studies), A. Hsia (German Studies), S. T. Saitdeman (Political Science), J. Torczyner (Social Work), U. Turgay (Islamic Studies)
The Minor Concentration in Canadian Ethnic Studies is an interdisciplinary program administered by the Faculty of Arts. It is affiliated with the McGill Institute for the Study of Canada. The Concentration can be taken in conjunction with any primary program in Arts or Science. It offers to undergraduate students a structured framework in which to appreciate the range of social scientific approaches to the study of ethnic diversity in Canada. The term “ethnic” is used in a very broad sense, to include the full spectrum of ethnic, cultural, aboriginal, linguistic, and racial groups in Canada.

The disciplines featured in the program are Sociology, Anthropology, Geography, History, and Political Science. In special cases, courses taken from other Arts departments, and other units at McGill, may be considered (e.g., Social Work, Education), with the consent of the Chair. The same is true of new relevant courses not yet listed below.

Apart from the intrinsic interest and importance of the subject, the Concentration may be of practical use. Students pursuing further graduate and professional training or employment in a variety of areas will find familiarity with issues relating to cultural diversity to be an asset. These include the fields of health, social services, education, law, law enforcement, human resources and personnel; occupations in government agencies, in ethnic and other non-governmental organizations; and graduate work in all the social sciences.

The Canadian Ethnic Studies Concentration will also sponsor programs of interest for the McGill Community during the course of the year. Students interested in registering in this program should contact the Chair.

**MINOR CONCENTRATION IN CANADIAN ETHNIC STUDIES**

(18 credits)

**Required Courses** (9 credits)

- SOCI210 (3) Sociological Perspectives
- SOCI230 (3) Sociology of Ethnic Relations
- SOCI475 (3) Canadian Ethnic Studies Seminar

Of the 18 credits, selected with due regard to Faculty guidelines and course prerequisites, at least 9 must be above the 200 level.

**Complementary Courses** (9 credits)

9 credits, at least 6 of which must be 300-level or higher, selected from two of the following departmental lists.

**Anthropology**

- ANTH202 (3) Comparative Cultures
- ANTH205 (3) Cultures of the World
- ANTH306 (3) Native Peoples’ History in Canada
- ANTH320 (3) Social Evolution
- ANTH333 (3) Class and Ethnicity
- ANTH338 (3) Native Peoples of North America
- ANTH436 (3) North American Native Peoples

**Geography**

- GEG301 (3) Geography of Nunavut
- GEG331 (3) Urban Social Geography
- GEG424 (3) Europe: Places and Peoples

**History**

- HIST203 (3) Survey: Canada since 1867
- HIST371 (3) Race/Ethnicity: U.S. since 1800
- HIST408 (3) Colonialism and Native Peoples
- HIST423 (3) Topics: Migration and Ethnicity
- HIST424 (3) Asian Diaspora: Chinese Overseas
- HIST471D1 (3) Canadian Immigration History
- HIST471D2 (3) Canadian Immigration History

**Political Science**

- POLI226 (3) La vie politique québécoise
- POLI321 (3) Issues: Canadian Public Policy
- POLI336 (3) Le Québec et le Canada
- POLI370 (3) Révolution tranquille/changements politiques/Québec de 1960
- POLI411 (3) Immigration and Multiculturalism in Canada
- POLI412 (3) Canadian Voting/Public Opinion

**POLI431** (3) Nations and States/Developed World

**POLI478** (3) The Canadian Constitution

**Sociology**

- SOCI234 (3) Population and Society
- SOCI327 (3) Jews in North America
- SOCI333 (3) Social Stratification
- SOCI353 (3) Inequality and Social Conflict
- SOCI366 (3) Social Change in the Caribbean
- SOCI519 (3) Sociology of Ethnic Conflict
- SOCI520 (3) Migration and Immigrant Groups
- SOCI529 (3) Social Inequality and Public Policy

**Social Work**

- SWRK400 (3) Policy and Practice for Refugees

12.8 Canadian Studies Program (CANS)

McGill Institute for the Study of Canada
3463 Peel Street
Montreal, QC H3A 1W7

Telephone: (514) 398-8346
Fax: (514) 398-7336
Website: www.misc-iecm.mcgill.ca

**Director** — Antonia Maioni

**Curriculum and Program Sub-Committee:**

- Nathalie Cooke (English)
- Victoria Dickenson (McCord Museum)
- Jane Everett (French Language and Literature)
- Antonia Maioni (M.I.S.C.)
- Christopher Manfredi (Political Science)
- David McKnight (Libraries)
- Gall Schmura (Geography)
- Bruce Trigger (Anthropology)

One Representative from CSAUS
One Representative from GSGSA

**Program Director (Student Adviser) — Nathalie Cooke**

Canadian Studies will be of value to any student considering a career in education, law, government, social service, human resources, journalism and the media, and graduate work in the social sciences and humanities.

The Canadian Studies Major and Minor Concentrations seek to provide students with a comprehensive multidisciplinary view of the nature and growth of Canada. Students completing a Major Concentration in Canadian Studies are encouraged to complete a second Major Concentration in a discipline such as Anthropology, Economics, English Literature, History, Political Science or Sociology as a complement to their Canadian Studies requirements. The Minor Concentration may be taken in conjunction with any primary program in Arts or Science.

Students interested in pursuing Canadian Studies at the graduate level should consider a Joint Honours Program which includes the Canadian Studies Component.

**MINOR CONCENTRATION IN CANADIAN STUDIES**

(Expandable) (18 credits)

**Required Course** (3 credits)

- CAN200 (3) Introduction to the Study of Canada

**Complementary Courses** (15 credits)

6 credits chosen from Canadian Studies (CANS) courses

9 credits to be chosen from two disciplines (see Complementary courses list below) other than the ones in which the student is doing other Major or Minor Concentrations. A minimum of 3 credits must be above the 200 level. A maximum of 3 credits may be chosen from French as a Second Language.
MAJOR CONCENTRATION IN CANADIAN STUDIES

(36 credits)

Required Course (3 credits)
CANS200 (3) Introduction to the Study of Canada

Complementary Courses (33 credits*)
3 credits, one of the following courses:
POLI221 (3) Government of Canada
POLI222 (3) Political Process and Behaviour in Canada

9 credits chosen from Canadian Studies (CANS) courses
3 credits taught in French, including language courses (see Complementary Courses listed below)

12 credits chosen from the Complementary Courses listed below, in the following manner:
3 credits in English or French-Canadian literature
3 credits in History
6 credits in Anthropology, Economics, Geography, Political Science or Sociology

6 additional credits from the Complementary Courses at the 300 level or above
* at least 3 of the 33 credits must be at the 400 level

COMPLEMENTARY COURSE LIST

Anthropology
ANTH306 (3) Native Peoples' History in Canada
ANTH336 (3) Ethnohistory: North Eastern North America

Art History
ARTH479 (3) Studies: Modern Art and Theoretical Problems

Economics
ECON219 (3) Current Economic Problems: Topics
ECON223 (3) Political Economy of Trade Policy
ECON305 (3) Industrial Organization
ECON306D1 (3) Labour Economics and Institutions
ECON306D2 (3) Labour Economics and Institutions
ECON405 (3) Natural Resource Economics
ECON406 (3) Topics In Economic Policy
ECON408D1 (3) Public Sector Economics
ECON408D2 (3) Public Sector Economics
ECON434 (3) Current Economic Problems
ECON440 (3) Health Economics
ECON480 (3) Research Project
ECON481 (3) Research Project

English
ENGL229 (3) Canadian Literature 2
ENGL328 (3) Development of Canadian Poetry 1
ENGL339 (3) Canadian Prose Fiction 2
ENGL345 (3) Literature and Society
ENGL409 (3) Studies in a Canadian Author
ENGL410 (3) Theme or Movement Canadian Literature
ENGL415 (3) Studies in 20th Century Literature 2
ENGL419 (3) Studies in 20th Century Literature
ENGL499 (3) Departmental Seminar

French as a Second Language
FRSL207 (6) Elementary French
FRSL208 (6) Intensive Elementary French
FRSL211 (6) Oral and Written French 1
FRSL212 (3) Oral and Written French 1
FRSL215 (6) Oral and Written French 1 - Intensive
FRSL216 (3) Découvrons Montréal en français
FRSL302 (3) Listening Comprehension and Oral Expression 1
FRSL303 (3) Listening Comprehension and Oral Expression 2
FRSL321 (6) Oral and Written French 2
FRSL322 (3) Oral and Written French 2
FRSL325 (6) Oral and Written French 2 - Intensive
FRSL326 (3) Découvrons le Québec en français
FRSL332 (3) Intermediate French: Grammar
FRSL333 (3) Intermediate French: Grammar
FRSL407 (3) Compréhension et expression orales
FRSL408 (3) Français oral: Textes et expressions
FRSL431 (6) Français fonctionnel avancé
FRSL432 (3) Français fonctionnel
FRSL445 (3) Français fonctionnel, écrit 1
FRSL446 (3) Français fonctionnel, écrit 2
FRSL449 (3) Le Français des médias
FRSL455 (3) Grammaire et création

French Language and Literature
FREN252 (3) Littérature québécoise
FREN315 (3) Le cinéma québécois
FREN375 (3) Théâtre québécois
FREN382 (3) Le roman québécois 2
FREN487 (3) L'essai québécois

Geography
GEOG217 (3) The Canadian City
GEOG272 (3) Earth's Changing Surface
GEOG301 (3) Geography of Nunavut
GEOG309 (3) Geography of Canada
GEOG311 (3) Canada - A Geo-Economic Perspective
GEOG494 (3) Urban Field Studies
GEOG495 (3) Field Studies – Physical Geography
GEOG497 (3) Ecology of Coastal Waters
GEOG499 (3) Subarctic Field Studies
GEOG502 (3) Geography of Northern Development

History
HIST202 (3) Survey: Canada to 1867
HIST203 (3) Survey: Canada since 1867
HIST303 (3) History of Quebec
HIST322 (3) Canada: American Presence since 1939
HIST333 (3) History of New France: Part 1
HIST334 (3) History of New France: Part 2
HIST363 (3) Canada 1870-1914
HIST370 (3) Canada: 20th Century Political History
HIST395 (3) Canadian Military Experience
HIST403 (3) History of Quebec Institutions
HIST423 (3) Topics: Migration and Ethnicity
HIST429 (3) Topics: Canadian Family History
HIST493D1 (3) Topics: Canadian Social History
HIST493D2 (3) Topics: Canadian Social History

Linguistics
LING320 (3) Sociolinguistics 1
LING350 (3) Linguistic Aspects of Bilingualism
LING521 (3) Dialectology

Music
MUHL391 (3) Canadian Music

Political Science
POLI221 (3) Government of Canada
POLI222 (3) Political Process and Behaviour in Canada
POLI226 (3) La vie politique québécoise
POLI378 (3) The Canadian Judicial Process
POLI412 (3) Canadian Voting/Public Opinion
POLI447 (3) Canadian Constitutional Politics
POLI478 (3) The Canadian Constitution

Québec, Études sur le
QCST300 (3) Études sur le Québec
QCST440 (3) Aspects du Québec contemporain/ Aspects of Contemp. Quebec

Sociology
SOCI120 (3) Sociological Perspectives
SOCI127 (3) Canadian Mass Communications
SOCI125 (3) Medicine and Health in Modern Society
SOCI230 (3) Sociology of Ethnic Relations
SOCI318 (3) Television in Society
SOCI327 (3) Jews in North America

HONOURS IN CANADIAN STUDIES (57 credits)

Students planning to pursue an Honours Program option are reminded that they must complete a Major Concentration (18 credits) in another Arts discipline to graduate.

Students with a GPA of 3.30 in their program courses and, in keeping with Faculty regulations, a minimum CGPA of 3.00 in general, are eligible to apply to the Honours Program in Canadian Studies; application deadlines are December 15 and May 15.

Forms are available from the MISC Office.

Required Courses (18 credits)
CANS200 (3) Introduction to the Study of Canada
CANS480 (3) Honours Thesis 1
CANS481 (3) Honours Thesis 2
CANS501 (3) Professional Development Seminar 1
HIST202 (3) Survey: Canada to 1867
HIST203 (3) Survey: Canada since 1867

Complementary Courses (39 credits)

6 credits in Political Science, including one of the following courses:
POLI221 (3) Government of Canada
POLI222 (3) Political Process and Behaviour in Canada
3 credits in Canadian History
3 credits: French as a Second Language or courses given in French
3 credits: French-Canadian Literature or Quebec Literature in French
3 credits: English-Canadian Literature
3 credits: Canadian Geography
12 credits: Canadian Studies (CANS) courses, with a minimum of 6 credits at the 400 level or above
6 credits from the Complementary Courses list, with a minimum of 3 credits at the 400 level or above

CANADIAN STUDIES HONOURS COMPLEMENTARY COURSE LIST

Anthropology
ANTH306 (3) Native Peoples’ History in Canada
ANTH317 (3) Prehistory of North America
ANTH333 (3) Class and Ethnicity
ANTH336 (3) Ethnohistory: North Eastern North America
ANTH338 (3) Native Peoples of North America
ANTH346 (3) North American Native Peoples

Art History
ARTH301 (3) Canadian Art 1914 - Present
ARTH479 (3) Studies: Modern Art and Theoretical Problems

Economics
ECON219 (3) Current Economic Problems: Topics
ECON223 (3) Political Economy of Trade Policy
ECON305 (3) Industrial Organization
ECON306D1 (3) Labour Economics and Institutions
ECON306D2 (3) Labour Economics and Institutions
ECON405 (3) Natural Resource Economics
ECON406 (3) Topics In Economic Policy
ECON408D1 (3) Public Sector Economics
ECON408D2 (3) Public Sector Economics
ECON434 (3) Current Economic Problems
ECON440 (3) Health Economics
ECON480 (3) Research Project
ECON481 (3) Research Project

English
ENGL228 (3) Canadian Literature 1
ENGL229 (3) Canadian Literature 2
ENGL327 (3) Canadian Prose Fiction 1
ENGL328 (3) Development of Canadian Poetry 1
ENGL333 (3) Development of Canadian Poetry 2
ENGL339 (3) Canadian Prose Fiction 2
ENGL409 (3) Studies in a Canadian Author
ENGL410 (3) Theme or Movement Canadian Literature
ENGL411 (3) Studies in Canadian Fiction
ENGL527 (3) Canadian Literature

French as a Second Language
FRSL207D1 (3) Elementary French
FRSL207D2 (3) Elementary French
FRSL208 (6) Intensive Elementary French
FRSL211D1 (3) Oral and Written French 1
FRSL211D1 (3) Oral and Written French 1
FRSL212 (3) Oral and Written French 1
FRSL215 (6) Oral and Written French 1 - Intensive
FRSL216 (3) Découvrir Montréal en français
FRSL302 (3) Listening Comprehension and Oral Expression 1
FRSL303 (3) Listening Comprehension and Oral Expression 2
FRSL308 (3) Français oral: Textes et expressions
FRSL431D1 (3) Français fonctionnel avancé
FRSL431D2 (3) Français fonctionnel avancé
FRSL432 (3) Français fonctionnel
FRSL445 (3) Français fonctionnel, écrit 1
FRSL446 (3) Français fonctionnel, écrit 2
FRSL449 (3) Le Français des médias
FRSL455 (3) Grammaire et création

French Language and Literature
FREN252 (3) Littérature québécoise
FREN315 (3) Le cinéma québécois
FREN375 (3) Théâtre québécois
FREN382 (3) Le roman québécois 2
FREN480 (3) Roman québécois 3
FREN487 (3) L’essai québécois

Geography
GEOG217 (3) The Canadian City
GEOG301 (3) Geography of Nunavut
GEOG309 (3) Geography of Canada
GEOG311 (3) Canada - A Geo-Economic Perspective
GEOG497 (3) Ecology of Coastal Waters
GEOG499 (3) Subarctic Field Studies
GEOG502 (3) Geography of Northern Development

History
HIST202 (3) Survey: Canada to 1867
HIST203 (3) Survey: Canada since 1867
HIST303 (3) History of Quebec
HIST322 (3) Canada: American Presence since 1939
HIST332 (3) Constitutional History: Canada - 1867
HIST333 (3) History of New France: Part 1
HIST334 (3) History of New France: Part 2
HIST342 (3) Canada: External Relations since 1867
HIST343 (3) Women in Post-Confederation Canada
HIST357 (3) Religion and Canadian Society in Historical Perspective
HIST361 (3) The Canadian West to 1905
HIST362 (3) The Canadian West since 1905
HIST363 (3) Canada 1870-1914
JOINT HONOURS – CANADIAN STUDIES COMPONENT (18 credits)

Students with a minimum program GPA of 3.30 in Canadian Studies Required and Complementary courses may apply to the Joint Honours Program in Canadian Studies. Forms are available from the MISC. There are two application deadlines, January 31 and the last day of classes for the Winter term.

**Required Courses** (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>HIST364</td>
<td>Canada 1914-1945</td>
<td>3</td>
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<tr>
<td>HIST367</td>
<td>Canada since 1945</td>
<td>3</td>
</tr>
<tr>
<td>HIST370</td>
<td>Canadian 20th Century Political History</td>
<td>3</td>
</tr>
<tr>
<td>HIST373</td>
<td>Canadian Labour History</td>
<td>3</td>
</tr>
<tr>
<td>HIST395</td>
<td>Canadian Military Experience</td>
<td>3</td>
</tr>
<tr>
<td>HIST397</td>
<td>Canada: Ethnicity, Migration</td>
<td>3</td>
</tr>
<tr>
<td>HIST403</td>
<td>History of Quebec Institutions</td>
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</tr>
<tr>
<td>HIST423</td>
<td>Topics: Migration and Ethnicity</td>
<td>3</td>
</tr>
<tr>
<td>HIST429</td>
<td>Topics: Canadian Family History</td>
<td>3</td>
</tr>
<tr>
<td>HIST432</td>
<td>The Atlantic Provinces</td>
<td>3</td>
</tr>
<tr>
<td>HIST434</td>
<td>British North America 1760-1867</td>
<td>3</td>
</tr>
<tr>
<td>HIST462D1</td>
<td>Topics: Canadian Conservatism</td>
<td>3</td>
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<tr>
<td>HIST462D2</td>
<td>Topics: Canadian Conservatism</td>
<td>3</td>
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<tr>
<td>HIST463D1</td>
<td>Topics: History of Women in Canada</td>
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</tr>
<tr>
<td>HIST463D2</td>
<td>Topics: History of Women in Canada</td>
<td>3</td>
</tr>
<tr>
<td>HIST469D1</td>
<td>Topics in Canadian Religious History</td>
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</tr>
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<td>HIST469D2</td>
<td>Topics in Canadian Religious History</td>
<td>3</td>
</tr>
<tr>
<td>HIST483D1</td>
<td>History of Montreal</td>
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<tr>
<td>HIST483D2</td>
<td>History of Montreal</td>
<td>3</td>
</tr>
<tr>
<td>HIST493D1</td>
<td>Topics: Canadian Social History</td>
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<tr>
<td>HIST493D2</td>
<td>Topics: Canadian Social History</td>
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**Linguistics**

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<th>Level</th>
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<tbody>
<tr>
<td>LING320</td>
<td>Sociolinguistics 1</td>
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<tr>
<td>LING350</td>
<td>Linguistic Aspects of Bilingualism</td>
<td>3</td>
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<td>LING520</td>
<td>Sociolinguistics 2</td>
<td>3</td>
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<td>LING521</td>
<td>Dialectology</td>
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**Music**

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<td>MUHL391</td>
<td>Canadian Music</td>
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**Political Science**

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<td>Government of Canada</td>
<td>3</td>
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<tr>
<td>POLI222</td>
<td>Political Process and Behaviour in Canada</td>
<td>3</td>
</tr>
<tr>
<td>POLI375</td>
<td>The Canadian Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>POLI379</td>
<td>Topics in Canadian Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLI411</td>
<td>Immigration and Multiculturalism in Canada</td>
<td>3</td>
</tr>
<tr>
<td>POLI412</td>
<td>Canadian Voting/Public Opinion</td>
<td>3</td>
</tr>
<tr>
<td>POLI446</td>
<td>Les politiques publiques au Québec</td>
<td>3</td>
</tr>
<tr>
<td>POLI447</td>
<td>Canadian Constitutional Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLI478</td>
<td>The Canadian Constitution</td>
<td>3</td>
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**Québec, Études sur le**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>QCST300</td>
<td>Études sur le Québec</td>
<td>3</td>
</tr>
<tr>
<td>QCST440</td>
<td>Aspects du Québec contemporain/ Aspects of Contemp. Quebec</td>
<td>3</td>
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</table>

**Sociology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
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<tr>
<td>SOC120</td>
<td>Sociological Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>SOC127</td>
<td>Canadian Mass Communications</td>
<td>3</td>
</tr>
<tr>
<td>SOC145</td>
<td>Canadian Ethnic Studies Seminar</td>
<td>3</td>
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</tbody>
</table>

**JOINT HONOURS – CANADIAN STUDIES COMPONENT (18 credits)**

Students with a minimum program GPA of 3.30 in Canadian Studies Required and Complementary courses may apply to the Joint Honours Program in Canadian Studies. Forms are available from the MISC. There are two application deadlines, January 31 and the last day of classes for the Winter term.

**Required Courses** (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANS200</td>
<td>Introduction to the Study of Canada</td>
<td>3</td>
</tr>
<tr>
<td>CANS492</td>
<td>Joint Honours Thesis</td>
<td>3</td>
</tr>
<tr>
<td>CANS501</td>
<td>Pro-Seminar 1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses** (27 credits)

3 credits, one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI221</td>
<td>Government of Canada</td>
<td>3</td>
</tr>
<tr>
<td>POLI222</td>
<td>Political Process and Behaviour in Canada</td>
<td>3</td>
</tr>
</tbody>
</table>

9 credits: Canadian Studies (CANS) courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANS492</td>
<td>Joint Honours Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

3 credits: French as a Second Language or courses given in French

3 credits: French-Canadian or English-Canadian literature

**3 credits: History**

6 credits at the 400-level or above, chosen from the

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH436</td>
<td>North American Native Peoples</td>
<td>3</td>
</tr>
<tr>
<td>FREN480</td>
<td>Roman québécois</td>
<td>3</td>
</tr>
<tr>
<td>LING520</td>
<td>Sociolinguistics 2</td>
<td>3</td>
</tr>
</tbody>
</table>

Joint Honours students must maintain a GPA of 3.30 in their program courses and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

**12.9 Catholic Studies Program (CATH)**

Website: www.mcgill.ca/catholicstudies

Advisory Committee Chair — Professor David Williams, (Kennedy-Smith Professor of Catholic Studies) (English)

Advisory Committee

M. Dorsinville (English), P. Kirkpatrick (Religious Studies), R. Myles (English and French Language Centre), F. Sibetti (Political Science), J. Schmidt (German Studies), H. Senior (History), J. Zucchi (History)

Adviser — Ines Scharnweber (Interdisciplinary Studies)

Interdisciplinary Studies, Leacock 439

Phone: (514) 398-4804

E-Mail: ines.scharnweber@mcgill.ca

The Minor Concentration in Catholic Studies seeks to enrich the intellectual experience and academic options available to students, to broaden the course offerings across the disciplines, and to complement the visibility given to other programs such as Jewish Studies, Islamic Studies, and North American Studies.

The Minor Concentration consists of 18 credits. Core and complementary courses provide students an opportunity to deepen their understanding of Catholicism in an increasingly pluralistic world. The program offers a systematic and critical exploration of the diverse ways in which the Catholic tradition informs culture, institutions, and identity.

**MINOR CONCENTRATION IN CATHOLIC STUDIES (18 credits)**

**Required Course** (3 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATH200</td>
<td>Introduction to Catholicism</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses** (15 credits)

9 credits chosen from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATH310</td>
<td>Catholic Intellectual Traditions</td>
<td>3</td>
</tr>
<tr>
<td>CATH315</td>
<td>Catholicism and Morality</td>
<td>3</td>
</tr>
<tr>
<td>CATH320</td>
<td>Scripture and Catholicism</td>
<td>3</td>
</tr>
<tr>
<td>CATH340</td>
<td>Catholic Social Thought</td>
<td>3</td>
</tr>
<tr>
<td>CATH370</td>
<td>Topics in Catholic Studies</td>
<td>3</td>
</tr>
<tr>
<td>CATH460</td>
<td>Catholic Studies Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

6 credits chosen from the Complementary Course lists below:

3 credits from Group I: Catholicism and the Arts

3 credits from Group II: Catholic Social and Intellectual Traditions

**COMPLEMENTARY COURSE LISTS**

**Group I: Catholicism and the Arts**

**Art History and Communication Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH320</td>
<td>Baroque Art in Italy</td>
<td>3</td>
</tr>
<tr>
<td>ARTH340</td>
<td>The Gothic Cathedral</td>
<td>3</td>
</tr>
<tr>
<td>ARTH415</td>
<td>Late Medieval &amp; Renaissance Architecture in Northern Europe</td>
<td>3</td>
</tr>
</tbody>
</table>

**Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDER203</td>
<td>Philosophy of Religion</td>
<td>3</td>
</tr>
</tbody>
</table>
Foundations: 24 credits

- History: 12 credits, 6 credits in each of two Classics areas at the 200 level;
- Philosophy: 6 credits in one of the two areas chosen.
- Music: 6 credits in the 300+ level.
- Political Science: 6 credits in the 300+ level.
- Religious Studies: 6 credits in any of the three Classics areas at the 300+ level.

Group II: Catholic Social and Intellectual Traditions

East Asian Studies

EAST385 (3) Society and Community in Korea

Education

EDER208 (3) Philosophy of Human Nature
EDER394 (3) Philosophy of God
EDER395 (3) Moral Values and Human Action
EDER494 (3) Ethics in Practice

History

HIST319 (3) The Scientific Revolution
HIST320 (3) European Thought and Culture 1
HIST321 (3) European Thought and Culture 2
HIST324 (3) History of Ireland
HIST325 (3) Renaissance-Reformation Europe
HIST326 (3) France, 1789 to 1914
HIST357 (3) Religion and Canadian Society in Historical Perspective
HIST360 (3) Latin America since 1825
HIST401 (3) Topics: Medieval Culture and Society
HIST405 (3) European Cultural History 1
HIST469D1 (3) Topics in Canadian Religious History
HIST469D2 (3) Topics in Canadian Religious History

Philosophy

PHIL334 (3) Ethics I
PHIL356 (3) Early Medieval Philosophy
PHIL357 (3) Late Medieval and Renaissance Philosophy
PHIL474 (3) Phenomenology

Political Science

POLI226 (3) La vie politique québécoise
POLI318 (3) Comparative Local Government
POLI319 (3) Politics of Latin America
POLI321 (3) Issues: Canadian Public Policy
POLI370 (3) Révolution tranquille/changements politiques/Québec de 1960
POLI414 (3) Society and Politics in Italy

Religious Studies

RELG302 (3) History of Christian Thought 1
RELG322 (3) The Church in History 1
RELG323 (3) The Church in History 2
RELG327 (3) History of Christian Thought 2
RELG340 (3) Religion and the Sciences

Sociology

SOC315 (3) Sociology of Religion

12.10 Classics Program (CLAS)

Stephen Leacock Building, Room 608
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-3975
Fax: (514) 398-8365
Website: www.arts.mcgill.ca/programs/history/classics
E-mail: undergrad.history@mcgill.ca

Emeritus Professor
Paolo Vivante (John MacNaughton Emeritus Professor of Classics)
Professor
T. Wade Richardson; B.A.(McG.), M.A., Ph.D.(Harv.)

Classics for the Non-Specialist

The Major and Minor Concentrations provide a useful complement for students in the arts and sciences. Several courses are offered which do not require a knowledge of Ancient Greek or Latin, suitable for students in other programs such as Anthropology, Art History, English, Languages, Linguistics, Philosophy, Political Science, Religious Studies.

Students of languages, literature and history may be interested in the introductory language courses offered: Latin, Ancient Greek and Modern Greek.

All courses in the Classics Program belong to one of three areas: Ancient Greek, Latin, and Ancient Greek and Roman History and Civilization.

All requirements are minimum requirements; students may take further courses in Classics if they so wish, in consultation with an adviser.

Classics for the Specialist

The Honours program is suitable for students who wish to pursue careers in the Classical languages and literature.

The following outlines represent Departmental requirements only. Each student’s program must also satisfy the regulations imposed by the Faculty of Arts. Please consult the Faculty General Information section.

MINOR CONCENTRATION IN CLASSICS (Expandable) (18 credits)

In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses”.

Complementary Courses (18 credits)

- 12 credits, 6 credits in each of two Classics areas at the 200 level;
- 6 credits in one of the two areas chosen.

MAJOR CONCENTRATION IN CLASSICS (36 credits)

In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses”.

Complementary Courses (36 credits)

- 12 credits, 6 credits in each of two Classics areas at the 200 level;
- 18 credits, 9 credits in each of two Classics areas at the 300+ level;
- 6 credits in any of the three Classics areas at the 300+ level.
HONOURS IN CLASSICS (60 credits)
In order to give students freedom to choose suitable concentrations, all courses in Classics programs are placed into the category “Complementary Courses”.

Classical Languages and Literatures

Complementary Courses (60 credits)
21 credits in Ancient Greek or Latin;
12 - 21 credits in the other classical language;
6 credits for completion of a Reading List in one of the two languages (CLAS515D1/CLAS515D2 or CLAS525D1/CLAS525D2);
6 credits in Ancient Greek and Roman History;
6 - 15 credits in Classics or related courses.

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – CLASSICS COMPONENT (36 credits)
Thirty-six credits in Classics and related courses selected with the approval of the appropriate Undergraduate Adviser and 36 credits in the courses of another department. The 36 credits in Classics and related courses must include a sequence of at least 18 credits in Ancient Greek or Latin language and literature in the original, with a minimum of 3 credits at the 600 or 500 levels.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable). For Classics, see the Undergraduate Adviser, L821, (514) 398-6206.

Notes:
1. Students who intend to pursue graduate studies in Classics are advised to follow an Honours program.
2. Honours students must maintain a CGPA of 3.00 or higher.
3. Courses considered to be related to Classics are those given by the Departments of English, History, Linguistics, Philosophy, Political Science, and the Faculty of Religious Studies which are listed at the end of this section.

COURSES IN ANCIENT GREEK AND ROMAN HISTORY
Where courses in History are required for Classics programs, they must be taken from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>HIST205</td>
<td>Ancient Greek History</td>
</tr>
<tr>
<td>HIST209</td>
<td>Ancient Roman History</td>
</tr>
<tr>
<td>HIST366</td>
<td>History of Roman Law</td>
</tr>
<tr>
<td>HIST368</td>
<td>Greek History: Classical</td>
</tr>
<tr>
<td>HIST369</td>
<td>Greek History: Archaic</td>
</tr>
<tr>
<td>HIST375</td>
<td>History of the Early Roman Empire</td>
</tr>
<tr>
<td>HIST376</td>
<td>History of the Later Roman Empire</td>
</tr>
<tr>
<td>HIST377</td>
<td>The Late Antique Roman World</td>
</tr>
<tr>
<td>HIST379</td>
<td>Classical Greek Democracy</td>
</tr>
<tr>
<td>HIST391</td>
<td>History of the Roman Republic</td>
</tr>
<tr>
<td>HIST404</td>
<td>Greek History: Hellenistic Period</td>
</tr>
<tr>
<td>HIST422</td>
<td>Roman Greece</td>
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</table>

RELATED COURSES
The following are “related courses” for the purpose of programs in Classics. Requests for other courses should be addressed to the Adviser.

English

<table>
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<tr>
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<tbody>
<tr>
<td>ENGL348</td>
<td>Great Writings of Europe 2</td>
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<tr>
<td>ENGL354</td>
<td>Issues in Interpretative Practice</td>
</tr>
<tr>
<td>ENGL371</td>
<td>History of the Theatre 2</td>
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History

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HIST205</td>
<td>Ancient Greek History</td>
</tr>
<tr>
<td>HIST209</td>
<td>Ancient Roman History</td>
</tr>
<tr>
<td>HIST339</td>
<td>Writing of History in Antiquity</td>
</tr>
<tr>
<td>HIST366</td>
<td>History of Roman Law</td>
</tr>
<tr>
<td>HIST368</td>
<td>Greek History: Classical</td>
</tr>
<tr>
<td>HIST369</td>
<td>Greek History: Archaic</td>
</tr>
<tr>
<td>HIST375</td>
<td>History of the Early Roman Empire</td>
</tr>
<tr>
<td>HIST376</td>
<td>History of the Later Roman Empire</td>
</tr>
<tr>
<td>HIST377</td>
<td>The Late Antique Roman World</td>
</tr>
<tr>
<td>HIST379</td>
<td>Classical Greek Democracy</td>
</tr>
<tr>
<td>HIST391</td>
<td>History of the Roman Republic</td>
</tr>
<tr>
<td>HIST404</td>
<td>Greek History: Hellenistic Period</td>
</tr>
<tr>
<td>HIST422</td>
<td>Roman Greece</td>
</tr>
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</table>

Linguistics

<table>
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<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING200</td>
<td>Introduction to the Study of Language</td>
</tr>
<tr>
<td>LING201</td>
<td>Introduction to Linguistics</td>
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</table>

Philosophy

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
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<td>Greek Political Theory</td>
</tr>
<tr>
<td>PHIL353</td>
<td>The Presocratic Philosophers</td>
</tr>
<tr>
<td>PHIL354</td>
<td>Plato</td>
</tr>
<tr>
<td>PHIL355</td>
<td>Aristotle</td>
</tr>
<tr>
<td>PHIL452</td>
<td>Later Greek Philosophy</td>
</tr>
<tr>
<td>PHIL453</td>
<td>Ancient Metaphysics and Natural Philosophy</td>
</tr>
<tr>
<td>PHIL454</td>
<td>Ancient Moral Theory</td>
</tr>
<tr>
<td>PHIL551</td>
<td>Seminar: Ancient Philosophy 2</td>
</tr>
</tbody>
</table>

Political Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI333</td>
<td>Western Political Theory 1</td>
</tr>
</tbody>
</table>

Religious Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG280</td>
<td>Elementary New Testament Greek</td>
</tr>
<tr>
<td>RELG381</td>
<td>Advanced New Testament Greek</td>
</tr>
</tbody>
</table>

12.11 Minor in Cognitive Science

Students with an interest in cognition may want to consider the Minor in Cognitive Science, see page317, under Science.

Computing Course for Arts

See section 12.2.1 “Arts Educational Technology (ARET)”.

12.12 Computer Science (COMP)

McConnell Engineering Building, Room 318
Telephone: (514) 398-7071
Fax: (514) 398-3883
E-mail: judy.kenigsberg@mcgill.ca
Website: www.cs.mcgill.ca

Students must have completed MATH133, MATH140, MATH141 or equivalents in order to begin taking courses in this program.

For a list of teaching staff, an outline of the nature of computer science and the opportunities for study in this discipline, see the Science entry “Computer Science (COMP)” on page317. The School also offers programs in the Faculties of Engineering, Management and Music.

MINOR CONCENTRATION IN COMPUTER SCIENCE
(Non-expandable) (18 credits)

This Minor Concentration may be taken in conjunction with any program in the Faculty of Arts with the approval of the Adviser of the student’s main program and the School of Computer Science. At the time of registration in the penultimate year, students must declare their intent to receive the Minor and approval must be given by the School for the particular sequence of courses the student wishes to use for the Minor Concentration.
COMP435 (3) Basics of Computer Networks
COMP433 (3) Personal Software Engineering
COMP424 (3) Topics: Artificial Intelligence 1
COMP423 (3) Data Compression
COMP420 (3) Files and Databases
COMP412 (3) Software for e-commerce
COMP410 (3) Mobile Computing
COMP409 (3) Concurrent Programming
COMP335 (3) Software Engineering Methods
COMP304 (3) Object-Oriented Design
COMP303 (4) Programming Techniques

COMPLEMENTARY COURSES (6 credits)
selected from:
COMP273 (3) Introduction to Computer Systems
COMP310 (3) Computer Systems and Organization
COMP335 (3) Software Engineering Methods
COMP350 (3) Numerical Computing
or MATH317 (3) Numerical Analysis
COMP360 (3) Algorithm Design Techniques
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP424 (3) Topics: Artificial Intelligence 1
COMP426 (3) Automated Reasoning
COMP433 (3) Personal Software Engineering
COMP435 (3) Basics of Computer Networks
COMP462 (3) Computational Biology Methods
COMP505 (3) Advanced Computer Architecture
COMP506 (3) Advanced Analysis of Algorithms
COMP507 (3) Computational Geometry
COMP520 (4) Compiler Design
COMP523 (3) Language-based Security
COMP524 (3) Theoretical Foundations of Programming Languages
COMP533 (3) Object-Oriented Software Development
COMP535 (3) Computer Networks 1
COMP536 (3) Introduction to Computer Networks
COMP537 (3) Internet Programming
COMP538 (3) Person-Machine Communication
COMP540 (3) Matrix Computations
COMP547 (3) Cryptography and Data Security
COMP557 (3) Fundamentals of Computer Graphics
COMP560 (3) Graph Algorithms and Applications
COMP563 (3) Molecular Evolution Theory
COMP564 (3) Computational Gene Regulation
COMP566 (3) Discrete Optimization 1
COMP573 (3) Microcomputers
COMP575 (3) Fundamentals of Distributed Algorithms
COMP577 (3) Distributed Database Systems

MINOR CONCENTRATION IN FOUNDATIONS OF COMPUTING (Expandable) (18 credits)

Required Courses (18 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP206 (3) Introduction to Software Systems
COMP302 (3) Programming Languages and Paradigms
COMP327 (3) Introduction to Computer Systems
COMP330 (3) Theoretical Aspects: Computer Science
COMP335 (3) Software Engineering Methods
COMP340 (3) Discrete Structures 1
COMP349 (3) Introduction to Computing 1
COMP350 (3) Numerical Computing
COMP360 (3) Algorithm Design Techniques
COMP362 (3) Computational Biology Methods
COMP363 (3) Molecular Evolution Theory
COMP364 (3) Computational Gene Regulation
COMP366 (3) Discrete Optimization 1
COMP373 (3) Microcomputers
COMP375 (3) Fundamentals of Distributed Algorithms
COMP377 (3) Distributed Database Systems

MINOR CONCENTRATION IN COMPUTER SYSTEMS (Combiable) (18 credits)

This Minor Concentration may be taken only by students registered in the Major Concentration in Foundations of Computing. Taken together, they constitute a program very close to the Major in Computer Science offered by the Faculty of Science. Students who are interested in a career as a computing professional should take this combination in order to match the traditional expectations of employers.

Students with two programs in the same department must have a third in a different discipline to be eligible to graduate. Please refer to the Faculty of Arts Degree Requirements, departmental programs.

Required Courses (9 credits)
COMP206 (3) Introduction to Software Systems
COMP273 (3) Introduction to Computer Systems
COMP310 (3) Computer Systems and Organization
COMP303 (4) Programming Techniques
COMP304 (3) Object-Oriented Design
COMP335 (3) Software Engineering Methods
COMP409 (3) Concurrent Programming
COMP410 (3) Mobile Computing
COMP412 (3) Software for e-commerce
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP423 (3) Data Compression
COMP424 (3) Topics: Artificial Intelligence 1
COMP433 (3) Personal Software Engineering
COMP435 (3) Basics of Computer Networks

Comp462 (3) Computational Biology Methods
Comp490 (3) Introduction to Probabilistic Analysis of Algorithms
Comp505 (3) Advanced Computer Architecture
Comp506 (3) Advanced Analysis of Algorithms
Comp507 (3) Computational Geometry
Comp520 (4) Compiler Design
Comp522 (4) Modelling and Simulation
Comp523 (3) Language-based Security
Comp524 (3) Theoretical Foundations of Programming Languages
Comp526 (3) Probabilistic Reasoning and AI
Comp531 (3) Theory of Computation
Comp533 (3) Object-Oriented Software Development
Comp534 (3) Team Software Engineering
Comp535 (3) Computer Networks 1
Comp537 (3) Internet Programming
Comp547 (3) Cryptography and Data Security
Comp557 (3) Fundamentals of Computer Graphics
Comp558 (3) Fundamentals of Computer Vision
Comp563 (3) Molecular Evolution Theory
Comp564 (3) Computational Gene Regulation
Comp573 (3) Microcomputers
Comp575 (3) Fundamentals of Distributed Algorithms
Comp577 (3) Distributed Database Systems

MINOR CONCENTRATION IN FOUNDATIONS OF COMPUTING (Expandable) (18 credits)

Required Courses (18 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP206 (3) Introduction to Software Systems
COMP302 (3) Programming Languages and Paradigms
COMP327 (3) Introduction to Computer Systems
COMP330 (3) Theoretical Aspects: Computer Science
COMP335 (3) Software Engineering Methods
COMP340 (3) Discrete Structures 1
COMP349 (3) Introduction to Computing 1
COMP350 (3) Numerical Computing
COMP360 (3) Algorithm Design Techniques
COMP362 (3) Computational Biology Methods
COMP363 (3) Molecular Evolution Theory
COMP364 (3) Computational Gene Regulation
COMP366 (3) Discrete Optimization 1
COMP373 (3) Microcomputers
COMP375 (3) Fundamentals of Distributed Algorithms
COMP377 (3) Distributed Database Systems

MAJOR CONCENTRATION IN FOUNDATIONS OF COMPUTING (36 credits)

Students with two programs in the same department must have a third in a different discipline to be eligible to graduate. Please refer to the Faculty of Arts Degree Requirements, departmental programs.

Required Courses (36 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP206 (3) Introduction to Software Systems
COMP273 (3) Introduction to Computer Systems
COMP310 (3) Computer Systems and Organization
COMP303 (4) Programming Techniques
COMP304 (3) Object-Oriented Design
COMP335 (3) Software Engineering Methods
COMP409 (3) Concurrent Programming
COMP410 (3) Mobile Computing
COMP412 (3) Software for e-commerce
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP423 (3) Data Compression
COMP424 (3) Topics: Artificial Intelligence 1
COMP433 (3) Personal Software Engineering
COMP435 (3) Basics of Computer Networks

Comp462 (3) Computational Biology Methods
Comp490 (3) Introduction to Probabilistic Analysis of Algorithms
Comp505 (3) Advanced Computer Architecture
Comp506 (3) Advanced Analysis of Algorithms
Comp507 (3) Computational Geometry
Comp520 (4) Compiler Design
Comp522 (4) Modelling and Simulation
Comp523 (3) Language-based Security
Comp524 (3) Theoretical Foundations of Programming Languages
Comp526 (3) Probabilistic Reasoning and AI
Comp531 (3) Theory of Computation
Comp533 (3) Object-Oriented Software Development
Comp534 (3) Team Software Engineering
Comp535 (3) Computer Networks 1
Comp537 (3) Internet Programming
Comp547 (3) Cryptography and Data Security
Comp557 (3) Fundamentals of Computer Graphics
Comp558 (3) Fundamentals of Computer Vision
Comp563 (3) Molecular Evolution Theory
Comp564 (3) Computational Gene Regulation
Comp573 (3) Microcomputers
Comp575 (3) Fundamentals of Distributed Algorithms
Comp577 (3) Distributed Database Systems

JOINT HONOURS IN MATHEMATICS AND COMPUTER SCIENCE, see page 332 under the Department of Mathematics and Statistics, Faculty of Science.

Admission to the program is based on a strong performance in CEGEP-level mathematics courses. Students must consult an Honours adviser in both departments.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.
12.13 East Asian Studies (EAST)

3434 McTavish Street
Montreal, QC H3A1X9
Telephone: (514) 398-6742
Fax: (514) 398-1892
E-mail: asian.studies@mcmillan.ca
Website: www.arts.mcgill.ca/programs/eas

Chair — Grace Fong

Professors
Kenneth Dean; B.A.(Brown), M.A., Ph.D.(Stan.)
Robin D.S. Yates; B.A., M.A.(Oxon.), M.A.(Calif.) Ph.D.(Harv.)

Associate Professors
Grace S. Fong; B.A., M.A.(Tokyo), Ph.D.(U.B.C.)
Thomas LaMarre; B.A.(Georgetown), M.A., Ph.D.(Chic.),
D.Sc.(d’Aix-Marseille II)

Assistant Professors
Peter Button; B.A.(Col.), M.A., Ph.D.(C’nell)
Thomas Looser; B.A.,(UC Santa Cruz), M.A., Ph.D.(Chic.)
Anne McKnight; B.A.(Wellesley), M.A., Ph.D.(UC Berkley)

Lecturers
Jennie Chang; B.A.(Taiwan), M.A.(Harv.)
Sumi Hasegawa; M.A.(Montr.)
Myung Hee Kim; B.A., M.A.(Montr.)
Miwako Uesaka; B.Sc. (Kyoto Univ); M.A.(McGill)
B. Wang; B.A.(Heilongjiang), M.A.(Calg.)

Associate Members
Laurel Bossen (Anthropology)
Sandra Hyde (Anthropology)
Victor Hori (Religious Studies)
Fumiko Ikawa-Smith (Anthropology)
Margaret Kuo (History)
Margaret Luei (Anthropology and Social Studies of Medicine)
Lorenz Lüthi (History)
Sam Noumoff (Political Science)
Yuzo Ota (History)
Sarah Turner (Geography)
Griet Vankeerberghen (History)

Heirs to ancient cultures and traditions that are rich, complex, and
too little known in the West, East Asian societies are among the
most dynamic and rapidly developing in the world today and are
having an increasing impact on the international scene, both eco-
nomically and politically. The study of the languages and cultures of
East Asia, whether at the Major or Minor Concentration or Hon-
ours level, offers the student an intellectually challenging and per-
sonally stimulating educational experience. As well as offering a
different perspective on the human condition, it provides excellent
preparation for a future career in the professions, international
business management, education, law, journalism and communi-
cations, in addition to the necessary training for advanced study at
the graduate level.

For the courses in the East Asian field that may be used as com-
plementary, please refer to the Departmental listing and the list of
courses offered by other departments and in other faculties.

MINOR CONCENTRATION IN EAST ASIAN LANGUAGE AND
LITERATURE (Expandable) (18 credits)

Complementary Courses (18 credits)
3 credits, one of the following introductory culture courses
EAST211 (3) Introduction: East Asian Culture: China
EAST212 (3) Introduction: East Asian Culture: Japan
EAST213 (3) Introduction: East Asian Culture: Korea

9 credit Language Component:
Students may meet this requirement by passing with a grade of
"C" the First Level language (EAST220D1/EAST220D2,
EAST230D1/EAST230D2, EAST240D1/EAST240D2; or
with third or fourth level language (EAST420D1/EAST420D2;
EAST430D1/EAST430D2; EAST440D1/EAST440D2; or
with 6 credits of Classical Chinese (EAST433;
EAST434), or Classical Japanese (EAST543; EAST544);
or with 6 credits of Chinese for
Business (EAST535; EAST536) or China Today through
Translation (EAST537D1/EAST537D2) and an additional 3-
credit course in East Asian Area Studies. (Admission to
language courses is subject to placement tests.)
6 credits in culture or literature at the 300-level or above taken
from the list of courses offered by the Department or in other
departments or faculties, or a substitute chosen in consultation
with the Minors adviser.

MINOR CONCENTRATION IN EAST ASIAN CULTURAL
STUDIES (Expandable) (18 credits)

Complementary Courses (18 credits)
6 credits in Introduction to East Asian Culture
3 credits in East Asian Culture and Literature
9 credits in East Asian Area Studies

MINOR CONCENTRATION IN ADVANCED EAST ASIAN
STUDIES (Non-expandable) (18 credits)

Complementary Courses (18 credits)
18 credits in Second, Third or Fourth level language
or a combination of advanced language and other courses in East
Asian culture, literature, or area studies, at the 400-level or above
chosen in consultation with the Minors adviser.

MAJOR CONCENTRATION IN EAST ASIAN STUDIES
(36 credits)

Complementary Courses (36 credits)
6 credits, two of the following introductory East Asian courses
EAST211 (3) Introduction: East Asian Culture: China
EAST212 (3) Introduction: East Asian Culture: Japan
EAST213 (3) Introduction: East Asian Culture: Korea

6 - 9 credits to be chosen from the following East Asian language courses:
EAST220D1 (4.5) First Level Korean
EAST220D2 (4.5) First Level Korean
EAST230D1 (4.5) First Level Chinese
EAST230D2 (4.5) First Level Chinese
EAST240D1 (4.5) First Level Japanese
EAST240D2 (4.5) First Level Japanese
EAST320D1 (4.5) Second Level Chinese
EAST320D2 (4.5) Second Level Chinese
EAST330D2 (4.5) Second Level Chinese
EAST340D1 (4.5) Second Level Japanese
EAST340D2 (4.5) Second Level Japanese
EAST420D1 (3) Third Level Korean
EAST420D2 (3) Third Level Korean
EAST430D1 (3) Third Level Chinese
EAST430D2 (3) Third Level Chinese
EAST433 (3) Classical Chinese 1
EAST434 (3) Classical Chinese 2
EAST440D1 (3) Third Level Japanese
EAST440D2 (3) Third Level Japanese
EAST520D1 (3) Fourth Level Korean
EAST520D2 (3) Fourth Level Korean
EAST530D1 (3) Fourth Level Chinese
EAST530D2 (3) Fourth Level Chinese
EAST535 (3) Chinese for Business 1
EAST536 (3) Chinese for Business 2
EAST537D1 (3) China Today through Translation
EAST537D2 (3) China Today through Translation
EAST540D1 (3) Fourth Level Japanese
EAST540D2 (3) Fourth Level Japanese
EAST543 (3) Classical Japanese 1
EAST544 (3) Classical Japanese 2

(Admission to language courses is subject to placement tests.)

6 - 18 credits, at least 3 of which must be at the 400 or 500 level, in East Asian Culture and Literature, chosen from the following courses:

EAST214 (3) Japanese Animation and New Media
EAST313 (3) Current Topics: Korean Studies 1
EAST314 (3) Current Topics: Korean Studies 2
EAST315 (3) Survey: Modern Korean Literature in Translation
EAST351 (3) Women in Chinese Literature
EAST353 (3) Approaches to Chinese Cinema
EAST354 (3) Taoist and Buddhist Apocalypses
EAST362 (3) Japanese Cinema
EAST363 (3) Aesthetics and Politics of Vision Premodern Japan
EAST364 (3) Mass Culture and Postwar Japan
EAST452 (3) Song and Lyric in Traditional China
EAST453 (3) Topics: Chinese Literature
EAST456 (3) Chinese Drama and Popular Culture
EAST461 (3) Inventing Modern Japanese Novel
EAST462 (3) Japan in Asia
EAST464 (3) Image, Text, Performance
EAST466 (3) Feminism and Japan
EAST467 (3) Topics: Japanese Cinema
EAST515 (3) Seminar: Beyond Orientalism
EAST550 (3) Classical Chinese Poetry Themes and Genres
EAST551 (3) Technologies of Self in Early China
EAST552 (3) Japanese Literary Theory and Practice
EAST553 (3) Approaches to Chinese Cinema
EAST554 (3) Chinese Religions
EAST555 (3) Structures of Modernity: Japan
EAST560 (3) Classical Chinese Poetry Themes and Genres
EAST561 (3) Inventing Modern Japanese Novel
EAST562 (3) Japan in Asia
EAST564 (3) Image, Text, Performance
EAST566 (3) Feminism and Japan
EAST567 (3) Topics: Japanese Cinema
EAST575 (3) Seminar: Beyond Orientalism
EAST580 (3) Classical Chinese Poetry Themes and Genres
EAST582 (3) Japanese Literary Theory and Practice
EAST584 (3) Classical Chinese Poetry Themes and Genres
EAST585 (3) Japan in Asia
EAST586 (3) Image, Text, Performance
EAST588 (3) Feminism and Japan
EAST589 (3) Topics: Japanese Cinema
EAST590 (3) Multiple Narratives of “Ori ent”

6 - 18 credits, at least 3 of which must be at the 400 or 500 level, in East Asian Area Studies. Courses from at least two disciplines or departments must be included.

East Asian Studies courses offered within East Asian Studies and in other Departments and Faculties

Anthropology
ANTH329 (3) Modern Chinese Society and Change
ANTH331 (3) Prehistory of East Asia
ANTH431 (3) Problems in East Asian Archaeology

East Asian Studies
EAST382 (3) Modern Japanese Society: People and Institutions
EAST384 (3) Comparative Socioeconomic History Japan and Korea
EAST385 (3) Society and Community in Korea
EAST484 (3) Communities and Change in Japan

Economics
ECON335 (3) The Japanese Economy
ECON411 (3) Economic Development: A World Area

History
HIST208 (3) Introduction to East Asian History
HIST218 (3) Modern East Asian History
HIST308 (3) Modern History of Japan
HIST318 (3) History of Japan 1
HIST328 (3) China in Revolution 1: 1840-1921
HIST337 (3) Japanese Intellectual History 1
HIST338 (3) China in Revolution 2: 1921-1997
HIST348 (3) China: Science-Medicine-Technology
HIST352 (3) Japanese Intellectual History 2
HIST358 (3) Medieval to Early Modern China
HIST359 (3) History of Japan 2
HIST439 (3) History of Women in China
HIST441 (3) Topics: Culture and Ritual in China
HIST442 (3) Asian Diaspora: Chinese Overseas

HIST443 (3) China in the Modern World
HIST445 (3) Late Imperial China
HIST485D1 (3) Seminar in Japanese History
HIST485D2 (3) Seminar in Japanese History
HIST497D1 (3) Topics in Chinese History
HIST497D2 (3) Topics in Chinese History
HIST579 (3) The Arts of Healing in China
HIST581 (3) The Art of War in China

Management
ORG380 (3) Cross Cultural Management

Political Science
POLI323 (3) Developing Areas/China and Japan
POLI349 (3) Foreign Policy: Asia

Religious Studies
RELG253 (3) Religions of East Asia
RELG339 (3) Hindu and Buddhist Images of Feminine
RELG344 (3) Maháyána Buddhism
RELG352 (3) Japanese Religions
RELG354 (3) Chinese Religions
RELG442 (3) Pure Land Buddhism
RELG451 (3) Zen: Maxims and Methods
RELG452 (3) East Asian Buddhism
RELG454 (3) East Asian Buddhist Philosophy

HONOURS IN EAST ASIAN STUDIES (60 credits)

[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Required Courses (6 credits)

EAST498D1 (3) Honours Thesis: East Asian Studies
EAST498D2 (3) Honours Thesis: East Asian Studies

Complementary Courses (54 credits)

18 credits of an East Asian Language above the introductory level chosen from the following:

EAST320D/EAST320D, or EAST330D/EAST330D, or EAST340D/EAST340D, or EAST350D/EAST350D, or EAST360D/EAST360D, or EAST370D/EAST370D, or EAST380D/EAST380D, or EAST390D/EAST390D, or EAST400D/EAST400D, or EAST410D/EAST410D, or EAST420D/EAST420D, or EAST430D/EAST430D, or EAST440D/EAST440D, or EAST450D/EAST450D, or EAST460D/EAST460D, or EAST470D/EAST470D, or EAST480D/EAST480D, or EAST490D/EAST490D.

15 credits in East Asian culture and literature

6 credits, two of EAST211, EAST212, EAST213; plus 9 credits selected from EAST214, EAST315, EAST351, EAST353, EAST354, EAST362, EAST363, EAST364, EAST452, EAST453, EAST456, EAST461, EAST462, EAST464, EAST466, EAST467, EAST564, or equivalent.

12 credits in East Asian society

one of EAST382 or EAST529 plus 9 credits selected from EAST384, EAST385, EAST484, EAST580, EAST582, EAST584, ANTH329, ANTH331, ANTH431; ECON335, ECON411; HIST208, HIST218, HIST308, HIST318, HIST328, HIST337, HIST338, HIST348, HIST352, HIST358, HIST359, HIST439, HIST441, HIST442, HIST443, HIST445, HIST485D1, HIST485D2, HIST497D1/HIST497D2, HIST579, HIST581; ORGB380; POLI323, POLI439; RELG253, RELG339, RELG344, RELG352, RELG354, RELG442, RELG451, RELG454, RELG549; or equivalent.

9 credits of additional complementary East Asian Studies courses selected from courses at the 300-level or above in East Asian language, literature, culture, or society.

Honours students are required to maintain a CGPA of 3.00 or above and a program GPA of 3.00 or above.

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Go to www.mcgill.ca  (Course Calendars) in July for details.
JOINT HONOURS – EAST ASIAN STUDIES COMPONENT  
(36 credits)

**Required Courses** (3 credits)
EAST495D1 (1.5) Joint Honours Thesis: East Asian Studies
EAST495D2 (1.5) Joint Honours Thesis: East Asian Studies

**Complementary Courses** (33 credits)
6 credits of introductory courses, two of:
EAST211 (3) Introduction to East Asian Culture: China
EAST212 (3) Introduction to East Asian Culture: Japan
EAST213 (3) Introduction to East Asian Culture: Korea
18 credits in an East Asian language above the introductory level.
9 credits of other East Asian Studies Departmental offerings.
12 credits of other East Asian Studies Departmental offerings.
3 credits of Arts courses.

Students who wish to study at the Honours level in two disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 11.4 ‘Joint Honours Programs’ for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

### 12.14 Economics (ECON)
Room 443, Stephen Leacock Building
855 Sherbrooke Street West
Montreal, QC H3A2T7
Telephone: (514) 398-4850
Fax: (514) 398-4938
E-mail: undergraduate.economics@mcgill.ca
Website: www.mcgill.ca/economics

**Chair — Christopher Green**

**Professors Emeritus**
Irving Brecher; B.A.(McG.), M.A., Ph.D.(Harv.)
Kari Levitt; B.Sc.(Lond.), M.A.(Tor.)

**Professors**
Robert B. Gurns; B.Sc.(Tor.), Ph.D.(M.I.T.)
Russell Davidson; B.Sc., Ph.D.(Glas.), Ph.D.(U.B.C.) (Canada Research Chair)
Antal Deutsch; B.Com.(Sir G.Wms.), Ph.D.(McG.)
John Galbraith; B.A.(Qu.), M.Phil., D.Phil.(Oxon.) (James McGill Professor)
Christopher Green; M.A.(Conn.), Ph.D.(Wis.)
Joseph Greenberg; B.A., M.A., Ph.D.(Hebrew) (Dow Professor of Political Economy)
Jagdish Handa; B.Sc.(Lond.), Ph.D.(Johns H.)
Ngo Van Long; B.Ec.(LaT.), Ph.D.(A.N.U.) (James McGill Professor)
Robin Thomas Naylor; B.A.(Tor.), M.Sc.(Lond.), Ph.D.(Cantab.)
J.C. Robin Rowley; B.Sc., M.Sc., Ph.D.(Lond.)
Victoria Zinde-Walsh; M.A.(Wat.), M.Sc., Ph.D.(Moscow St.)

**Associate Professors**
Myron Frankman; B.Mgt.E.(Renss.), Ph.D.(Texas)
Franke Grimard; B.A.(York), Ph.D.(Princeton)
George Grantham; B.A.(Antioch), M.A., Ph.D.(Yale)
John Iton; B.A., Ph.D.(Johns H.)
C. John Kurien; B.A.(Kerala), M.A., Ph.D.(Vanderbilt)
Mary E. Mackinnon; B.A.(Queen’s), M.Phil, D.Phil.(Oxon.)
Christopher T.S. Ragan; B.A.(Vic.), M.A.(Queen’s), Ph.D.(M.I.T.)
Lee Soderstrom; B.A., Ph.D.(Calif.)
Thomas Velk; M.S., Ph.D.(Wis.)
Alexander Vicas; B.Com.(McG.), M.A., Ph.D.(Prin.)
William Watson; B.A.(McG.), Ph.D.(Yale)

**Assistant Professors**
Hassan Berchekroun; Diplôme d’ingénieur d’état (Ecole Mohamedia des Ingénieurs, Morocco), Ph.D.(Laval)
James Engle-Warnick; B.S.(Akron), MBA (Carnegie Melon), Ph.D. (Pittsburgh)
Sonia Laszlo; B.A. (Ottawa), M.A. (Western Ontario), Ph.D. (Toronto)
Daniel Parent; B.A., M.A.(Laval), Ph.D.(Montr.) (William Dawson Scholar)
Nurlan Turdaliev; B.Sc.(Moscow), M.A.(Ark.), Ph.D.(Minn.)
Licun Xue; B.Eng. (Tianjin), M.Eng. (Tianjin), M.A. (McG), Ph.D. (McGill)

**Faculty Lecturers**
Paul Dickinson, Kenneth MacKenzie

**GENERAL**
For more up-to-date, detailed information about the Department and its programs, please visit our Websites as follows:

U0 students interested in economics should take ECON208 and ECON209. These courses provide good preparation for the Honours and Major programs, although neither course is a prerequisite for either program.

The first year of microeconomics courses for the Honours Program (ECON250D1/ECON250D2) and for the Majors Program (ECON230D1/ECON230D2) should not be taken in the U0 year.

**PROGRAMS IN ECONOMICS**

**MINOR CONCENTRATION IN ECONOMICS**

The Minor Concentration in Economics is offered in four streams:
- Stream I – Expandable
- Stream II – Non-expandable
- Stream III – for Management students
- Stream IV – Combinalbe, for students already registered in a Major Concentration in Economics.

In general, 200-level courses have no prerequisites, ECON208 and ECON209 (substitutable by the combination of MGCR293 and ECON295 or the more advanced course ECON230D1/ ECON230D2 or ECON250D1/ ECON250D2) are prerequisites for 300-level courses. ECON230D1/ECON230D2 or ECON250D1/ ECON250D2 are prerequisite for 400-level courses.

**MINOR CONCENTRATION IN ECONOMICS – STREAM I**
(Expandable) (18 credits)
For students whose primary interest is in a field other than Economics but who wish to keep the option of upgrading to a Major Concentration in future.

**Required Course** (6 credits)
ECON230D1 (3) Microeconomic Theory
ECON230D2 (3) Microeconomic Theory

**Complementary Courses** (12 credits)

12 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400- level courses.

**MINOR CONCENTRATION IN ECONOMICS – STREAM II**
(Non-expandable) (18 credits)

**Required Courses** (6 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON209 (3) Macroeconomic Analysis and Applications

**Complementary Courses** (12 credits)

12 credits in Economics (with numbers above 209). At least 6 of these credits must be in 300- or 400- level courses.

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MINOR CONCENTRATION IN ECONOMICS – STREAM III
For Management Students (18 credits)

Complementary Courses (18 credits)
18 credits in Economics (with numbers above 209). At least 6 of
these credits must be in 300- or 400-level courses.
Note: ECON295, ECON227 and ECON257D1/ECON257D2
will not count as part of this Minor Concentration.

MINOR CONCENTRATION IN ECONOMICS – STREAM IV
(Combinable – for students already registered in a Major
Concentration in Economics) (18 credits)

Prerequisites: None

Students who are registered in a Major Concentration in
Economics and a Minor Concentration in another unit may com-
plete a second Minor Concentration in Economics with the follow-
ing structure.

Complementary Courses (18 credits)
18 credits of approved courses in Economics above 209 of which
at least 6 credits are of 400- or 500-level and of which not more
than 3 credits are at 200-level.

Students should also consult the section on the Minor Concentra-
tion at the beginning of the Faculty of Arts section for detailed rules
on Minor Concentrations.

MANAGEMENT MINOR
A limited enrolment Management Minor is available to selected
Economics Majors and Honours students. Applications are enter-
tained only early in the calendar year, usually February. Students
intending to complete a Minor in Management should consult the
Department’s Website www.mcgill.ca/economics/programs/majorman-
or/RegManAG or the Economics Department
adviser for further details and restrictions.

MAJOR CONCENTRATION IN ECONOMICS (36 credits)
The Major Concentration in Economics is a planned sequence of
courses designed to permit the student a degree of specialization
in economics. It consists of 36 credits in courses approved by the
Economics Department.

All students who wish to begin (or continue) a Major Concentra-
tion in Economics should see a Majors adviser in the Department
of Economics before registering in each of their university years.
Further information may be obtained from the Department’s Web-
site, or from any Major adviser; consult the Departmental office for
a list of advisers.

Students who are registering for the first time with the Depart-
ment should attend the orientation meeting before seeing an
adviser. It will be held on Wednesday, August 27th at 14:00, room
26 Leacock (see the Website).

A student choosing a Major Concentration in Economics must take
36 credits in Economics. The Economics courses will nor-


18 credits in Economics selected from other 200- (with numbers
above 209), 300-, 400- and 500-level courses. At least 6 of these
credits must be in 400- or 500-level courses. No more than 6
credits may be at the 200 level.

Prerequisites: in general 200-level courses have no prerequisites;
300-level courses have ECON230D1/ECON230D2 (or the lower
level courses ECON208 and ECON209, or the combination of
MGCR293 and ECON295) as prerequisites; and 400-level
courses have ECON230D1/ECON230D2 as a prerequisite.

Mathematics: it is recommended, but not required, that students
acquire mastery of elementary calculus and matrix algebra in their
undergraduate years. (See courses listed under the Honours sec-
tion.)

HONOURS PROGRAM
The Economics Honours program is offered to both B.A. and
B.Com. students. All Honours students should consult the handout
describing the Honours programs in Economics, available in the
Economics Department Office, 443 Leacock Building. All Honours
students must be registered by a Department Honours adviser in
each year of their Honours program.

HONOURS IN ECONOMICS (42 credits)
The Honours program in Economics (B.A. and B.Com.) consists of
30 specified credits of Honours courses and a further 12 credits of
approved Economics courses. Honours students are also required
to complete courses in basic calculus and linear algebra.

Required Courses (24 credits)
ECON250D1 (3) Introduction to Economic Theory: Honours
ECON250D2 (3) Introduction to Economic Theory: Honours
ECON257D1 (3) Economic Statistics - Honours
ECON257D2 (3) Economic Statistics - Honours
ECON352D1 (3) Macroeconomics - Honours
ECON352D2 (3) Macroeconomics - Honours
ECON450D1 (3) Advanced Economic Theory - Honours
ECON450D2 (3) Advanced Economic Theory - Honours

Complementary Courses (18 credits)
6 credits selected from:
ECON460 (3) History of Thought 1 - Honours
and ECON461 (3) History of Thought 2 - Honours
or ECON467D1 (3) Econometrics - Honours
and ECON467D2 (3) Econometrics - Honours

12 credits of Economics courses at the 300-, 400- or 500-level,
approved by an Honours adviser. Normally at least 9 of the 12 will
be at the 400- or 500-level. (NB: Honours students are not
permitted to register for general Economics courses where an
Honours course in the same field is offered.) ECON450D1/
ECON450D2 is the capstone course for the Honours program.

Normally, ECON250D1/ECON250D2 is taken in the U1 year,
ECON352D1/ECON352D2 in U2, and ECON450D1/
ECON450D2 in U3. ECON257D1/ECON257D2 can be taken in
U1 or U2; ECON460, ECON461, ECON467D1/ECON467D2
can be taken in U2 or U3. Students who have taken an equivalent
statistics course prior to entering the program may be waived from
the ECON257D1/ECON257D2 requirement. These students will
normally be required to take ECON467D1/ECON467D2. The
remaining 12 credits of Economics courses are usually taken in U2
or U3.

Mathematics Courses
All Honours students must complete the following three courses
with a grade of C or higher (normally by the end of U1):
MATH139 Calculus (students without high school calculus)
or MATH140 Calculus 1 (students with high school calculus)
MATH141 Calculus 2
MATH133 Vectors, Matrices and Geometry
These requirements can be met by having passed equivalent
courses at CEGEP or elsewhere. Honours students are encour-
gaged, but not required, to take MATH222 Calculus 3.

JOINT HONOURS – ECONOMICS COMPONENT (30 credits)
The Economics Joint Honours programs offered with the Faculty
of Management are B.Com. Joint Honours in Economics and
Accounting; B.Com. Joint Honours in Economics and Finance
(these programs are available only to B.Com students); and a B.A.
Joint Honours in Economics and Finance (available only to B.A. students).

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Joint Honours students are required to complete the 30 specified credits of Honours courses listed in the Honours Program as well as the mathematics courses. The additional requirements for the two B.Com. Joint Honours programs are described in the Faculty of Management section. The B.A. Joint Honours in Economics and Finance requires 30 credits in Management. These are also described in the booklet on the Honours programs available from the Department of Economics.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

HONOURS STANDING
To remain in Honours in the U2 year, students are expected to obtain at least a B- in ECON250D1/ECON250D2. Students who narrowly miss this grade may apply for “redemptive” status. They must make their application by July 15 to the Department of Economics. They will normally be required to write an examination in microeconomic theory, given by the Department in August, as part of their application.

Students who obtain an A in ECON230D1/ECON230D2 may enter the Honours program in their U2 year. Other students who have taken ECON230D1/ECON230D2 may sit an examination in microeconomic theory, comparable to the supplemental examination in ECON250D1/ECON250D2 given by the Department in August. They must register for this exam by July 15 in the Department of Economics. If they pass this examination with a grade of B-, they may enter the Honours program in their U2 year, and need not take ECON250D1/ECON250D2.

Normally, to be awarded an Honours degree a student must obtain a 3.00 program GPA in the 42 required and complementary credits in Economics including a 3.00 average GPA in the 30 specified credits of Honours level courses, and must also obtain an overall 3.00 GPA. For a First Class Honours degree, the minimum requirements are normally a 3.50 average GPA in both the 42 program credits and the 30 specified credits of Honours level courses.

12.15 Education for Arts Students Minor Concentration
Student Affairs Office — Faculty of Education, 3700 McTavish Street E-mail: sao.education@mcgill.ca Website: www.mcgill.ca/edu-sao/minors

This Minor Concentration allows Arts students to develop and explore an interest in education. It will give students a solid footing in the basics of pedagogy and may provide a starting point towards a B.Ed. degree.

Completion of the Minor Concentration does not qualify a student for certification to teach in the province of Quebec. Students interested in a teaching career should consult the Faculty of Education, “Faculty Programs” on page 175.

MINOR CONCENTRATION IN EDUCATION FOR ARTS STUDENTS (18 credits)
Required Courses (12 credits)
- EDEC402 (3) Media, Technology and Education
- EDEM405 (3) Policy Issues in Quebec Education
- EDPE300 (3) Educational Psychology
- EDPI309 (3) Exceptional Students

Complementary Courses (6 credits)
- 3 credits, one of: EDER400 (3) Philosophical Foundations of Education
- EDER398 (3) Philosophy of Catholic Education
- 3 credits, one of: EDER464 (3) Intercultural Education
- EDEC410 (3) Multi-Cultured/Multi-Racial Class
- EDEE441 (3) First Nations and Inuit Education

12.16 Educational Psychology Minor Concentration
Program Director — Professor Alenoush Saroyan
Department of Educational and Counselling Psychology
Faculty of Education
(514) 398-4248
Website: www.mcgill.ca/ecp

Educational Psychology encompasses: (a) the theoretical and applied study of learning, cognition, and instruction in a variety of educational settings across ages and domains; (b) instructional technology and computers as cognitive tools in learning; (c) cognitive and social processes in learning; (d) evaluation and enhancement of learning and teaching; (e) education of learners with special needs or difficulties; (f) relationships of these or related phenomena to issues in human development, especially for children and adolescents; and (g) the impact of family and community on children’s learning and development.

Completion of this Minor Concentration does not qualify a student to enter the teaching profession. Students interested in a teaching career should consult the Faculty of Education, “Faculty Programs” on page 175.

In respect of Faculty of Arts multi-track regulations, students registering for the Major Concentration in Psychology and the Minor Concentration in Educational Psychology must complete an additional Minor Concentration in Arts in a unit other than Psychology.

Students should consult section 3.5 “Program Requirements” for additional information on course restrictions, credit counting, etc.

For further information on the Department of Educational and Counselling Psychology, see page 184.

MINOR CONCENTRATION IN EDUCATIONAL PSYCHOLOGY (18 credits - Non-expandable)
Required Course (3 credits)
- EDPE335 (3) Instructional Psychology

This required course has a prerequisite of an introductory course in psychology taken at either CEGEP or university level (e.g., PSYC100 or EDPE300). Students who do not have this prerequisite prior to entry into this Minor Concentration may take either PSYC100 or EDPE300 and count EDPE300 as one of the complementary courses for this Minor Concentration.

Complementary Courses (15 credits)
- 3 credits (to be taken near the end of the sequence), one of: EDPE355* (3) Cognition and Education
- EDPE555 (3) Applied Cognitive Science
- 12 credits selected from
- EDPI309 (3) Exceptional Students
- EDPI526 (3) Talented and Gifted Students
- EDPI527 (3) Creativity and its Cultivation
- EDPI543 (3) Family, School and Community
- EDPE208* (3) Personality and Social Development
- EDPE304 (3) Measurement and Evaluation
- EDPE355 (3) Cognition and Education
- EDPE377 (3) Adolescence and Education
- EDPE510 (3) Learning and Technology
EDPE515*** (3) Gender Identity Development
EDPE535 (3) Instructional Design
EDPE555 (3) Applied Cognitive Science

* Students with a background in psychology should normally select EDPE535. Note: EDPE535 has a prerequisite, either PSYC213 or permission of the instructor.

** Students may not receive credit for both EDPE208 and PSYC304. EDPE208 is not open to students registered in a Major or Minor Concentration in Psychology.

*** EDPE515 is also a complementary course in the B.A. Minor Concentration in Women’s Studies (Social Sciences Option).

12.17 English (ENGL)

Departmental Office: Room 155, Arts Building
853 Sherbrooke Street West
Montreal, QC H3A 2T6

Telephone: (514) 398-6550
Fax: (514) 398-1465

Website: www.arts.mcgill.ca/programs/english/english.html

Chair — M. Kilgour

Emeritus Professors
M. Puhrvel; B.A., M.A.(McG.), Ph.D.(Harv.)
J. Ripley; B.A., M.A.(U.N.B.), Ph.D.(Birm.)
D. Suvin; B.A., M.Sc., Ph.D.(Zabreb), F.R.S.C.
W.C. Wees; B.A.(Northwestern), M.A.(Roch.), Ph.D.(Northwestern)

Professors
K. Norris; B.A.(U.Vict.), Ph.D.(Edin.)
M.D. Bristol; A.B.(Yale), Ph.D.(Prin.) (David J. Greenshields Professor of English)
M. Dorsinville; B.A., M.A.(Sher.), Ph.D.(C.U.N.Y.)
M. A. Kilgour; B.A.(Tor.), Ph.D.(Yale)
R. Lecker; B.A., M.A., Ph.D.(York)
K. McSweeney; B.A., Ph.D.(Toronto) (Molson Professor of English)
P. Sabor; B.A.(Cambridge), M.A.(Queen's), Ph.D.(Lond.) (Canada Research Chair in 18th Century Studies)
M. Stenbaek; B.A.(Copen.), M.A., Ph.D.(Montr.)
B. Trehearn; B.A., M.A., Ph.D.(McG.)
D. Williams; B.A.(Boston), M.A., Ph.D.(Toronto) (Kennedy-Smith Professor of Catholic Studies)
P. Yachnin; B.A.(McG.), M.Litt.(Edin.), Ph.D.(Toronto) (Tomlinson Chair in Shakespeare Studies)

Associate Professors
D. A. Bray; B.A.(McG.), Ph.D.(Edin.)
M.N. Cooke; B.A.(Queen's), M.A.(C'nell), Ph.D.(Toronto)
P. Gibian; B.A.(Yale), M.A.(N.Y.), M.A., Ph.D.(Stan.)
D. C. Hensley; B.A., M.A.(Gantab.), B.A., Ph.D(Yale)
B. Kaite; B.A.(O'dia), M.A.(McM.), Ph.D.(Car.)
L. Lieblein; B.A.(C.C.N.Y.), A.M., Ph.D.(Roch.)
P. Neilson; B.A.(Bishop's), M.F.A.(Calg.)
T. Ponech; B.A.(McG.), Ph.D.(Northwestern)
D. Salter; B.A.(U.B.C.), M.A., Ph.D.(Toronto)
M.W. Selkirk; B.A.(Alta.), M.A.(III.)

Assistant Professors
S. Carney; B.A.(Manit.), M.A.(Alta.), Ph.D.(York)
T.W. Fokkerth; B.A.(CSU, Chico), M.A., Ph.D.(McO.)
Y. Halevi-Wise; B.A.(Hebrew U, Jerusalem), M.A.(Georgetown), Ph.D.(Princ.)
A. Hepburn; B.A., M.A.(W. Ont.), Ph.D.(Princ.)
M. Hickman; B.A.(Brown), M.A., Ph.D.(Mich.)
M. Morgan; B.A.(Harv.), Ph.D.(Stan.)
D. Nyström; B.A. (Univ. of Wisconsin), M.A. (Univ. of Virginia), Ph.D. (Univ. of Virginia, Charlottesville)
E. Schantz; B.A. (Stanford), M.A., Ph.D. (U.S.C.)
T. Sparks; B.A. (Bates College), M.A., Ph.D. (Univ. of Washington)

The Department of English offers a wide variety of courses covering three linked and overlapping areas: literature written in English; drama, including both courses in dramatic literature and courses that introduce the student to the basic elements of theatrical performance; and cultural studies, including analysis of a variety of visual media. These three areas are integrally related, and all students in English Department programs are invited to do work in all three, while concentrating in one of them.

The Literature option provides a grounding in the basic texts and methods of the discipline as well as wide acquaintance with substantial areas of the field.

The Drama and Theatre option tries to place its subject in as broad a social and philosophical context as possible. The Drama and Theatre program is not designed to provide professional theatre training. The aim is rather to encourage students to explore the subject as a liberal arts discipline.

The Cultural Studies option concentrates on analysis of forms of cultural expression and symbolic interaction, and of the various media through which these may be disseminated and transformed. Such study concerns symbolic form, aesthetically based forms of analysis, and the various modes of criticism and theory relevant to media which contain both verbal and non-verbal elements. The aim is above all to hone students' analytical and interpretive skills while introducing them to specific critical approaches to cultural studies. This is not a major in journalism or communications; and while many of our graduates go on to do creative work in a variety of media, instruction in film and video production is not part of the curriculum.

Department Handbook on the Web

For the most up-to-date information on Department requirements and detailed course descriptions, please see the English Department Handbook at www.arts.mcgill.ca/programs/english/english.html.

MINOR CONCENTRATIONS

For the current lists of complementary courses in the categories referred to in the Minor Concentrations:

• Major Authors
• Pre-1800 courses
• Various drama courses
• Cultural studies courses

see the Department's Website or consult the Departmental office.

MINOR CONCENTRATION IN ENGLISH – LITERATURE

(18 credits) (Expandable to the Major Concentration in English - Literature)

Required Courses (6 credits)
ENGL202 (3) Departmental Survey of English Literature 1
ENGL203 (3) Departmental Survey of English Literature 2

Complementary Courses (12 credits)
3 credits from a list of courses on Major Authors
3 credits from a list of pre-1800 courses
6 additional credits from the option's offerings

MINOR CONCENTRATION IN ENGLISH – DRAMA AND THEATRE

(18 credits) (Expandable to the Major Concentration in English - Drama and Theatre)

Required Courses (6 credits)
ENGL230 (3) Introduction to Theatre Studies
ENGL269 (3) Introduction to Performance

Complementary Courses (12 credits)
3 credits from a list of courses on Major Figures in Drama/Theatre
3 credits from a list of courses in Drama and/or Theatre with an historical dimension
6 additional credits from the option's offerings

MINOR CONCENTRATION IN ENGLISH – CULTURAL STUDIES

(18 credits) (Expandable to the Major Concentration in English - Cultural Studies)

Required Courses (6 credits)
ENGL275 (3) Introduction to Cultural Studies
ENGL276 (3) Methods of Cultural Analysis
Complementary Courses (12 credits)
3 credits from a list of courses on Major Figures in Cultural Studies
3 credits from a list of courses in Cultural Studies with an historical dimension
6 additional credits from the option’s offerings

MAJOR CONCENTRATIONS
Major Concentration students are required to take a 36-credit program, the specific content of which differs in the three options. *Faculty policy states that, after or while taking a 36-credit Major Concentration in the English Department and an 18-credit Minor Concentration in another department, students may take an additional 18-credit Minor Concentration in English.

For the current lists of complementary courses referred to in the Major Concentrations:
- Major Authors,
- courses with Canadian content,
- pre-1800 courses,
- various drama courses, and
- cultural studies courses,
see the Department’s Website or consult the Departmental Office.

MAJOR CONCENTRATION IN ENGLISH – LITERATURE (36 credits)
Required Courses (9 credits)
ENGL202* (3) Departmental Survey of English Literature 1
ENGL203* (3) Departmental Survey of English Literature 2
ENGL311* (3) Poetics
* to be taken in the first two terms of the program

Complementary Courses (27 credits)
3 credits from a list of courses on Major Authors
3 credits from a list of Canadian Literature courses
3 credits in Theory or Criticism
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
6 credits from a list of pre-1800 courses
12 additional credits from the option’s offerings

MAJOR CONCENTRATION IN ENGLISH – DRAMA AND THEATRE (36 credits)
Required Courses (9 credits)
ENGL230* (3) Introduction to Theatre Studies
ENGL269* (3) Introduction to Performance
ENGL355* (3) The Poetics of Performance
* to be taken in the first two terms of the program

Complementary Courses (27 credits)
3 credits from a list of courses on Major Figures in Drama and/or Theatre
3 credits from a list of courses in Drama and/or Theatre with a Canadian component
3 credits in Theory or Criticism
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
6 credits from a list of courses in Drama and/or Theatre with an historical dimension
12 additional credits from the option’s offerings

MAJOR CONCENTRATION IN ENGLISH – CULTURAL STUDIES (36 credits)
Required Courses (9 credits)
ENGL275* (3) Introduction to Cultural Studies
ENGL276* (3) Methods of Cultural Analysis
ENGL359* (3) The Poetics of the Image
* to be taken in the first two terms of the program.

Complementary Courses (27 credits)
3 credits from a list of courses on Major Figures in Cultural Studies
3 credits from a list of courses in Cultural Studies with a Canadian component
3 credits in Theory or Criticism:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
6 credits from a list of courses in Cultural Studies with an historical dimension
12 additional credits from the option’s offerings

HONOURS PROGRAMS IN ENGLISH (each 60 credits)
Entry to Honours is by application, normally after two terms in a Departmental program, including at least 18 credits of English. Students intending to apply for Honours or already accepted should consult an Honours adviser regarding their course selections throughout their program. The Faculty of Arts now requires that all students admitted to Honours programs after 2000/2001 complete a second-program Minor in addition to their Honours program.

Admission to the Honours program is limited to a small number of students with excellent records. The minimum CGPA for application to the Honours program is 3.50; students meeting the 3.50 minimum in English Department courses alone (although not in CGPA) may also apply and make a case for their acceptance. In neither instance is admission guaranteed. After admission into the Honours program, the student is required to maintain a CGPA at a level set by the Faculty for graduation with Honours and a program GPA at the level set by the Department. (See requirements for graduation with Honours listed below.)

The Honours program in English requires 60 credits. Students intending to apply for Honours should plan to complete as many of the specific requirements of their option as possible within the first two years. With the written approval of an adviser, up to nine credits may be taken outside the department. All Honours students must complete at least 6 of their complementary credits at the 500 level. Ideally, 500-level seminars chosen will be relevant to the area of the student’s independent study in the Honours Essay course (ENGL491D1/ENGL491D2), taken without exception in the final year of the program. The Honours Essay is first planned in consultation with a supervisor at the time of application to the Honours program; it is then guided and evaluated by that supervisor during the completion of ENG 491. Graduation with Honours requires 60 credits of English, a minimum mark of B+ on the Honours Essay, a minimum CGPA of 3.00, and a minimum program GPA of 3.50. Graduation with First Class Honours currently requires a minimum mark of A- on the Honours Essay, a minimum CGPA of 3.50, and a minimum program GPA of 3.50.

HONOURS IN ENGLISH (LITERATURE) (60 credits)
Required Courses (18 credits)
ENGL202* (3) Departmental Survey of English Literature 1
ENGL203* (3) Departmental Survey of English Literature 2
ENGL311* (3) Poetics
ENGL360** (3) Literary Criticism
ENGL491D1 (3) Honours Essay
ENGL491D2 (3) Honours Essay
* to be taken in the first two terms of the program.
** normally taken in the second year of the program.

Complementary Courses (42 credits)
15 credits, 3 credits each, of Shakespeare, Canadian Literature, American Literature, Cultural Studies, Drama/Theatre.
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
15 credits in English Literature, chosen with the approval of the adviser, at least 9 credits of which must be in English Literature before 1800.
9 credits chosen from among Department offerings.
At least 6 complementary credits must be at the 500 level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

HONOURS IN ENGLISH (DRAMA AND THEATRE) (60 credits)

Required Courses (15 credits)
ENGL230* (3) Introduction to Theatre Studies
ENGL269* (3) Introduction to Performance
ENGL355* (3) The Poetics of Performance
ENGL491D1 (3) Honours Essay
ENGL491D2 (3) Honours Essay
* must have been taken by the end of the first two terms of the program

Complementary Courses (45 credits)
3 credits from a list of courses on Major Figures in Drama and/or Theatre.
3 credits from a list of courses in Drama and/or Theatre with a Canadian component.
6 credits from a list of courses in Drama and/or Theatre with an historical dimension.
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
3 credits from a list of courses with a theoretical component, from the option's offerings at the 400 level or above.
9 credits from a list of performance-oriented courses.
6 credits chosen from Departmental offerings in English Literature and/or Cultural Studies.
12 credits in English selected in consultation with an academic adviser.

At least 6 complementary credits must be at the 500-level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

HONOURS IN ENGLISH (CULTURAL STUDIES) (60 credits)

Required Courses (15 credits)
ENGL275* (3) Introduction to Cultural Studies
ENGL276* (3) Methods of Cultural Analysis
ENGL359* (3) The Poetics of the Image
ENGL491D1 (3) Honours Essay
ENGL491D2 (3) Honours Essay
* must have been taken by the end of the first two terms of the program

Complementary Courses (45 credits)
3 credits from a list of courses on Major Figures in Cultural Studies.
3 credits from a list of courses in Cultural Studies with a Canadian component.
6 credits from a list of courses in Cultural Studies with an historical dimension.
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
3 credits from a list of courses in theory, from the option's offerings at the 400-level or above.
12 credits in English Literature and/or Drama and Theatre, of which 6 credits are at the 300 level or higher.
15 credits in additional courses in Cultural Studies.

At least 6 complementary credits must be at the 500-level.
A maximum of 9 credits may be from other departments with the signed permission of the adviser.

JOINT HONOURS PROGRAM – ENGLISH COMPONENT (36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from two Arts disciplines; see section 11.4 "Joint Honours Programs" for a list of available programs.

Applications to do a Joint Honours Program in English and another subject in the Faculty of Arts should be submitted once a minimum of 6 credits, and no more than 18 credits, have been completed in English. There are normally two possible application dates for Joint Honours in English: either by the end of January (by which time first-term courses are completed and the grades are available), or at the same time as the Honours application date, typically in mid-April. (Only students who will have completed more than 18 credits in English by the end of January may apply in the Fall.)

Applications will be considered by the Department's Honours Committee on the basis of the student's GPA in English courses, at a minimum of 3.50; the application form available in the Department's General Office (Arts 155); and the specific submissions described and required by that form. The latter will take some time to prepare, and allowance for that (at least several weeks) must be made in order to meet the application deadline. Incomplete applications will not be considered.

Acceptance into Joint Honours English may be conditional on particular revisions to the Program Course Proposal to be submitted with the application form, and which then goes on file in the General Office with the other submissions. Only course choices that are appropriate, given the nature of the Joint Honours program proposed, including the Honours Essay if applicable, will be approved. In order to graduate with Joint Honours, all subsequent course substitutions in the initially approved Joint Honours English program must be endorsed by the Joint Honours adviser at the point they are made (i.e. at the start of each term) and entered on the Program Course Proposal with the adviser's initialed approval.

The maintenance of a 3.50 GPA in English courses is required for continuation in Joint Honours. (N.B. students already admitted to Joint Honours on the basis of a minimum CGPA of 3.40 must maintain a 3.40 program GPA for continuation and graduation in Joint Honours.)

Each academic year there is a special adviser for Joint Honours students, and the receptionist in the General Office can provide his or her name and contact information. The Department's Website provides additional information on the Joint Honours program and applications, and that should also be consulted prior to contacting the adviser.

Joint Honours Program Descriptions

400 level. All Joint Honours students' programs of study shall include 6 credits of study at the 400 level or above.

Advanced study. All Joint Honours students shall undertake at least 6 credits of advanced study, and in order of preference this consists of:

- ENGL491D1/ENGL491D2, an Honours Essay, or
- Two 500-level courses

(In very rare cases, a third alternative may be approved at the discretion of the Joint Honours adviser, but only when it is formally recommended for the joint subject according to the description of that Joint Honours program in the University Calendar, as for, e.g., Anthropology: 3 credits of essay work combined with 3 credits in the joint subject, to create a joint essay.)

JOINT HONOURS IN ENGLISH (LITERATURE) (36 credits)

Required Courses (6 credits)
ENGL311 (3) Poetics
ENGL360 (3) Literary Criticism

Complementary Courses (30 credits)
9 credits of pre-1800 English literature
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2

JOINT HONOURS IN ENGLISH (LITERATURE) (36 credits)

Required Courses (6 credits)
ENGL311 (3) Poetics
ENGL360 (3) Literary Criticism

Complementary Courses (30 credits)
9 credits of pre-1800 English literature
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
3 credits of English courses at the 500 level.
6 credits of advanced study as specified above.
9 credits chosen from among Department offerings.

JOINT HONOURS IN ENGLISH (DRAMA AND THEATRE)
(36 credits)
Required Courses (9 credits)
ENGL230 (3) Introduction to Theatre Studies
ENGL269 (3) Introduction to Performance
ENGL355 (3) The Poetics of Performance
Complementary Courses (27 credits)
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
3 credits in dramatic literature.
3 credits in history of the theatre.
6 credits of advanced study as specified above.
12 credits chosen from among Department offerings.

JOINT HONOURS IN ENGLISH (CULTURAL STUDIES)
(36 credits)
Required Courses (9 credits)
ENGL275 (3) Introduction to Cultural Studies
ENGL276 (3) Methods of Cultural Analysis
ENGL359 (3) The Poetics of the Image
Complementary Courses (27 credits)
3 credits of theory:
ENGL317 (3) Theory of English Studies 1
or ENGL318 (3) Theory of English Studies 2
or ENGL319 (3) Theory of English Studies 3
3 credits from a list of courses in Cultural Studies with an historical dimension.
3 credits from a list of courses on Major Figures in Cultural Studies.
6 credits of advanced study as specified above.
12 credits chosen from among Department offerings.

MAJOR CONCENTRATION AND HONOURS STUDENTS may choose courses from the following list as part of their programs; for further details see relevant pages of this Calendar.

CANS410 (3) Canadian Studies Seminar 10
GATH370 (3) Topics in Catholic Studies
JWST206 (3) Introduction to Yiddish Literature
JWST351 (3) Studies in Modern Jewish Literature
JWST361 (3) The Shetl: 1500-1897
JWST362 (3) The Shetl: 1897-1939
JWST363 (3) Shetl Uprooted 1881-1920
JWST364 (3) Shetl Uprooted 1920-1939
JWST381 (3) Modern Yiddish Literature
JWST383 (3) Holocaust Literature
JWST386 (3) American Jewish Literature
JWST387 (3) Modern Jewish Authors
JWST587 (3) Tutorial in Yiddish Literature
JWST588 (3) Tutorial in Yiddish Literature

Department of English Student Association (DESA)
DESA is the representative body for the students of the English Department at McGill. Any student taking one or more courses in the Department is automatically a member. For more information, please read the description on the Department’s Website.

12.18 English as a Second Language (ESLN)
English and French Language Centre
688 Sherbrooke Street West, 2nd Floor
Montreal, QC H3A 3R1
Telephone: (514) 398-4172
Fax: (514) 398-5449
Website: www.mcgill.ca/eflc

Director — Hélène Riel-Salvatore
Lecturers
Robert Myles; B.A., M.A.(Car.), Ph.D.(McG.)
Carolyn Samuel; B.A., Dip.Ed.(McG.), M.Ed.(OISE, Tor.)

Full-time, non-anglophone students whose secondary education (high school and CEGEP) has been in institutions where the primary language of instruction was not English, or who have attended English language secondary institutions (high school and CEGEP) for four years or less, are eligible to take up to 12 credits in English as a Second Language (ESL). All courses require Placement Tests and departmental permission.

Placement tests in 2004 will be August 26, 27, 30, 31 and September 1, 2 and 3, in the Arts Multimedia Language Facility (AMLF) in the basement of the McLennan-Redpath Library, 3459 McTavish Street and subsequently upon request at the AMLF until end of Drop/Add period. Tests begin at 10:00, 11:30, 13:00 and 14:30. Registration is on a first come, first served basis.

Departmental permission will be given after Placement tests have been evaluated. All students are required to attend class without fail during the first two weeks, in order to retain their places.

12.19 English for Academic Purposes (EFRL)
English and French Language Centre
688 Sherbrooke Street West, 2nd Floor
Montreal, QC H3A 3R1
Telephone: (514) 398-4172
Fax: (514) 398-5449
Website: www.mcgill.ca/eflc

Director — Hélène Riel-Salvatore
Lecturers
Robert Myles; B.A., M.A.(Car.), Ph.D.(McG.)
Carolyn Samuel; B.A., Dip.Ed.(McG.), M.Ed.(OISE, Tor.)

The English for Academic Purposes (EAP) course, EFRL250 Research Essay & Rhetoric, develops academic writing and critical thinking skills.

The course is for native speakers of English. Near-native English speakers may also take the course, but students with less than advanced English Second Language (ESL) skills are advised to take the academic writing courses listed under ESLN (English as a Second Language) in this Calendar.

Entrance Test: Short composition first day of class. Students with less than advanced ESL skills and students with serious writing problems will be advised on other courses they might take.

12.20 Environment
Arts students who are interested in studying the environment should refer to the McGill School of Environment section where they will find information concerning the Minor Concentration in Environment and the B.A. Faculty Program in Environment on page379.

12.21 French as a Second Language (FRSL)
English and French Language Centre
688 Sherbrooke Street West, 2nd Floor
Montreal, QC H3A 3R1
Telephone: (514) 398-4172
Fax: (514) 398-5449
Website: www.mcgill.ca/eflc

Director — Hélène Riel-Salvatore
Lecturers
Cécile Fay-Baulu; B.Ed., M.A.(Montr.)
Loretta Hyrat; B.A., M.A.(McG.)
Denyse Laniel, B.A. (Montr.), M.A. (McG.), Cert. Ed. (C’dia)
Courses in French as a Second Language are open to students in any program who need to develop their oral and written skills in the French language either for use in their future professional career or as preparation for more advanced studies in French linguistics, literature, civilization, translation or in Canadian studies.

Arts Freshman students enrolled in the Option 2: En français may select up to a maximum of 18 credits from FRSL courses. §

ADMISSION AND REGISTRATION

A Placement Test is required before admission to any FRSL course, including Beginners’ French. All students should bring a photocopy of their transcript from high school or CEGEP. Departmental permission will be given after the student’s level has been determined by a placement test. Where students’ levels in French make admission to this Department inappropriate, they will be directed to the Département de langues et littérature françaises.

No auditors are accepted.

Placement tests and registration take place at 688 Sherbrooke Street West, 2nd floor from 09:00, 10:00, 11:00, 14:00 and 15:00 on August 25, 26, 30 and 31. No testing on August 27. Only a limited number of students are tested at a time, beginning each hour. It is important to arrive on the hour.

Registration is limited and Departmental permission is absolutely required. As numbers are limited in all courses, students who meet the required standard for any given course are admitted on a first come, first served basis.

The Department reserves the right to transfer a student to another course if the level is inappropriate. Any absence from class during the Course Change period may lead to losing one’s place to another student.

12.22 French Language and Literature (FREN)

Pavillon Peterson
3460, rue McTavish
Montréal, QC H3A 1X9

Secrétariat Général – Tél. (514) 398-6881
Etudes de 1er cycle – Tél: (514) 398-6885
Fax: (514) 398-8557
Site web: www.arts.mcgill.ca/programs/french

Chair — François Richard

Professors
Marc Angenot; L.Phil.& Lett., Dr.Phil.& Lett.(Brussels), F.R.S.C. (James McGill Professor)
Giuseppe Di Stefano; D.Ês L.(Turin), Dipl. Ecole Pratique Hautes Et., Dr. 3rd Cy.(Paris-Sorbonne)
Jean-Pierre Duquette; L. Ês. L., (Montr.), Dr. 3rd Cy.(Paris X)
Yvan Lamonde; B.A., M.A. Philo., (Montr.), Ph.D.(Laval)
François Ricard; B.A.(Laval), Dr. 3rd Cy.(Aix-Marseille), M.A.(McG.), F.R.S.C. (James McGill Professor)
Yvon Rivard; B.A.(Laval), Dr. 3rd Cy.(Aix-Marseille), M.A.(McG.)
Jean Terrasse; Lic. Philol. Romane, Dipl. Phil., Dr. Phil. et Lettres (Brussels)

Associate Professors
Michel Biron: M.A., Dr. Phil.& Lett. (Belgique) (Canada Research Chair)
Chantal Bouchard; M.A.(Montr.), Dr. 3rd Cy.(Paris VII-Jussieu)
Jean-Pierre Boucher; B.A.(Montr.), Dr. 3rd Cy.(Besançon), M.A.(McG.)
Annick Chapdelaine; M.A., D.E.A., Dr. 3rd Cy.(Paris VII-Jussieu)
Diane Desrosiers-Bonin; M.A., Ph.D.(Montr.) (William Dawson Scholar)
Normand Doiron; B.A., Ph.D.(Montr.)
Jane Everett; M.A.(Car.), Ph.D.(McG.);
Gillian Lane-Mercier; M.A.(Montpellier), Ph.D.(McG.)

Assistant Professor
Frédéric Charbonneau; M.A., Ph.D.(Montr.)

GÉNÉRALITÉS

Le Département de langue et littérature françaises offre un programme de cours qui couvre l'ensemble des littératures française et québécoise ainsi que d'autres aspects des études françaises: civilisation et langue (linguistique, stylistique, traduction).

Le français est la seule langue de travail au Département. Tous les cours sont donnés en français. Les francophones constituent une proportion importante de notre clientèle, ce qui représente un avantage appréciable pour les étudiants qui ne sont pas de langue française, leur permettant de faire leurs études dans un milieu essentiellement français.

Pour ce qui est de la traduction, le programme offert à McGill a comme principale caractéristique de comporter un grand nombre de cours de culture générale.

La plupart des cours peuvent être suivis par tout étudiant ayant les connaissances et les capacités voulues: le professeur jugera en dernier ressort. Il existe toutefois quelques restrictions.

1. L’admission aux cours pratiques de langue (Composition 1 et 2, Grammaire avancée, Traduction) est subordonnée à la réussite d’un test qui a pour but de déterminer le niveau de connaissance de l’étudiant et d’assurer que celui-ci sera dirigé vers un cours correspondant à ses besoins. Si la préparation de l’étudiant s’avère insuffisante pour lui permettre de suivre un cours au Département, un cours au Centre d’enseignement du français et de l’anglais (French as a Second Language) lui sera conseillé.

2. L’admission au programme de Lettres et traduction (pour les étudiants en Spécialisation) est subordonnée à la réussite d’un test.

3. Les étudiants extérieurs au Département peuvent s’inscrire à tous les cours offerts au Département sauf exceptions indiquées dans le libellé des cours.

ASSOCIATION GÉNÉRALE DES ÉTUDIANTS DE LANGUE ET LITTÉRATURE FRANÇAISES (AGELF)

Association regroupant les étudiants de 1er cycle (inscrits à au moins 6 crédits en français) qui a pour but de promouvoir les intérêts de tous ses membres.

CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LANGUE FRANÇAISE (18 crédits)

6 à 12 crédits au Centre d’enseignement du français et de l’anglais parmi:

FRSL321 (6) Oral and Written French 2
FRSL325 (6) Oral and Written French 2 - Intensive
FRSL431 (6) Français fonctionnel avancé
FRSL445 (3) Français fonctionnel, écrit 1
FRSL446 (3) Français fonctionnel, écrit 2
FRSL449 (3) Le Français des médias
FRSL455 (3) Grammaire et création

6 à 12 crédits au Département de langue et littérature françaises parmi:

FREN201 (3) Composition 1
FREN203 (3) Composition 2
FREN239 (3) Stylistique comparée
FREN245 (3) Grammaire avancée
FREN247 (3) Dissertation
FREN250 (3) Littérature française avant 1800
FREN251 (3) Littérature française depuis 1800 ou autres cours au choix

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## CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LANGUE ET TRADUCTION
(18 crédits) (Ne peut pas être convertie en Concentration majeure)

**Cours complémentaires (18 crédits)**
- 9 crédits parmi:
  - FREN201 (3) Composition 1
  - FREN203 (3) Composition 2
  - FREN245 (3) Grammaire avancée
  - FREN247 (3) Dissertation
- 9 crédits parmi:
  - FREN239 (3) Stylistique comparée
  - FREN244 (3) Traduction 1
  - FREN346 (3) Traduction 2
  - FREN349 (3) Traduction 3
  - FREN431 (3) Traduction 4
  - FREN441 (3) Thème anglais

## CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES (18 crédits)
(Convertible en Concentration majeure Lettres)

**Cours obligatoires (9 crédits)**
- FREN250 (3) Littérature française avant 1800
- FREN251 (3) Littérature française depuis 1800
- FREN252 (3) Littérature québécoise

**Cours complémentaires (9 crédits)**
- 9 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

## CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES ET TRADUCTION (18 crédits)
(Convertible en Concentration majeure Lettres et traduction)

**Cours obligatoires (9 crédits)**
- FREN250 (3) Littérature française avant 1800
- FREN251 (3) Littérature française depuis 1800
- FREN252 (3) Littérature québécoise

**Cours complémentaires (9 crédits)**
- 9 crédits parmi:
  - FREN239 (3) Stylistique comparée
  - FREN244 (3) Traduction 1
  - FREN346 (3) Traduction 2
  - FREN349 (3) Traduction 3
  - FREN431 (3) Traduction 4
  - FREN441 (3) Thème anglais
  - FREN443 (3) Version littéraire

## CONCENTRATION MINEURE LANGUE ET LITTÉRATURE FRANÇAISES – THÉORIE ET CRITIQUE LITTÉRAIRES
(18 crédits) (Convertible en Concentration majeure Lettres)

**Cours obligatoires (6 crédits)**
- FREN394 (3) Théorie de la traduction
- FREN490 (3) Critique et théorie

**Cours complémentaires (12 crédits)**
- 3 crédits parmi:
  - FREN250 (3) Littérature française avant 1800
  - FREN251 (3) Littérature française depuis 1800
  - FREN252 (3) Littérature québécoise
- 3 crédits parmi:
  - FREN334 (3) Méthodes d'analyse des textes littéraires 1
  - FREN335 (3) Méthodes d'analyse des textes littéraires 2
- 6 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

## CONCENTRATION MAJEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES (36 crédits)

**Cours obligatoires (9 crédits)**
- FREN250 (3) Littérature française avant 1800
- FREN251 (3) Littérature française depuis 1800
- FREN252 (3) Littérature québécoise

**Cours complémentaires (27 crédits)**
- 3 crédits parmi:
  - FREN334 (3) Méthodes d'analyse des textes littéraires 1
  - FREN335 (3) Méthodes d'analyse des textes littéraires 2
- 6 crédits parmi:
  - FREN201 (3) Composition 1
  - FREN203 (3) Composition 2
  - FREN245 (3) Grammaire avancée
  - FREN247 (3) Dissertation
- 18 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

## CONCENTRATION MAJEURE LANGUE ET LITTÉRATURE FRANÇAISES – LETTRES ET TRADUCTION (36 crédits)

**Cours obligatoires (15 crédits)**
- FREN231 (3) Linguistique française
- FREN250 (3) Littérature française avant 1800
- FREN251 (3) Littérature française depuis 1800
- FREN252 (3) Littérature québécoise
- FREN347 (3) Terminologie générale

**Cours complémentaires (21 crédits)**
- 12 crédits parmi:
  - FREN239 (3) Stylistique comparée
  - FREN244 (3) Traduction 1
  - FREN346 (3) Traduction 2
  - FREN349 (3) Traduction 3
  - FREN431 (3) Traduction 4
  - FREN441 (3) Thème anglais
  - FREN443 (3) Version littéraire
  - FREN494 (3) Séminaire: Traduction spécialisée
- 9 crédits parmi les cours de littérature française, québécoise ou francophone offerts par le Département de langue et littérature françaises (de niveau 300 ou plus).

## CONCENTRATION MAJEURE LANGUE ET LITTÉRATURE FRANÇAISES – LINGUISTIQUE DU FRANÇAIS (36 crédits)

**Cours obligatoires (21 crédits)**
- FREN231 (3) Linguistique française
- FREN239 (3) Stylistique comparée
- FREN433 (3) Sémantique et lexicologie
- FREN434 (3) Sociolinguistique du français
- LING201 (3) Introduction to Linguistics
- LING230 (3) Phonetics
- LING371 (3) Syntax 1

**Cours complémentaires (15 crédits)**
- dont au moins trois cours au préfixe LING parmi les groupes suivants:
  - un cours (3 crédits) parmi:
    - LING200 (3) Introduction to the Study of Language
    - LING320 (3) Sociolinguistics 1
    - LING350 (3) Linguistic Aspects of Bilingualism
    - LING355 (3) Language Acquisition 1
  - un cours (3 crédits) parmi:
    - LING331 (3) Phonology 1
    - LING370 (3) Introduction to Semantics
    - LING440 (3) Morphology
  - n'importe quel cours (3 crédits) parmi les autres cours de linguistique au niveau 400 ou 500
un ou deux cours (6 crédits) parmi:
FREN245 (3) Grammaire avancée
FREN336 (3) La langue française
FREN337 (3) Terminologie générale
FRSL431 (6) Français fonctionnel avancé
FRSL445 (3) Français fonctionnel, écrit 1
FRSL446 (3) Français fonctionnel, écrit 2

PROGRAMME DE SPÉCIALISATION ("HONOURS") ET DE DOUBLE SPÉCIALISATION ("JOINT HONOURS")

L’obtention d’un baccalauréat avec Spécialisation ou Double Spécialisation est obligatoire pour l’admission dans les programmes de 2e et 3e cycles (maîtrise et doctorat).

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme et maintenir un CGPA de 3.00.

Les étudiants qui souhaitent poursuivre leurs études en spécialisation dans deux domaines distincts peuvent s’inscrire dans deux départements de la Faculté des Arts (consulter l’Annuaire de la Faculté section 11.4 "Joint Honours Programs"). Ces étudiants devraient rencontrer un conseiller dans chacun des deux départements concernés, pour établir leur choix de cours et formuler leur projet de recherche interdisciplinaire, le cas échéant.

PROGRAMME DE SPÉCIALISATION, OPTION LETTRES
(60 crédits)

Cours obligatoires (42 crédits)
FREN250 (3) Littérature française avant 1800
FREN251 (3) Littérature française avant 1800
FREN252 (3) Littérature québécoise
FREN352 (3) Lectures 1
FREN353 (3) Lectures 2
FREN374 (3) Lectures 3
FREN395 (3) Travaux pratiques 1
FREN396 (3) Travaux pratiques 2
FREN397 (3) Travaux pratiques 3
FREN464D1 (3) Mémoire de spécialisation
FREN464D2 (3) Mémoire de spécialisation
FREN490 (3) Critique et théorie
FREN493 (3) Lectures 4
FREN497 (3) Travaux pratiques 4

Cours complémentaires (18 crédits)
6 crédits parmi les cours suivants (U3):
FREN461 (3) Questions de littérature 1
FREN472 (3) Questions de littérature 2
FREN498 (3) Questions de littérature 3
FREN499 (3) Questions de littérature 4

12 crédits au Département, répartis comme suit (maximum de 6 crédits dans les cours de niveau 200; minimum de 6 crédits dans les cours de niveau 400):
3 crédits de littérature/civilisation française
3 crédits de littérature/civilisation québécoise
3 crédits de langue/traduction
3 crédits au choix

En plus des cours du programme de Spécialisation, les étudiants doivent faire une Concentration mineure (18 crédits) dans un département autre que celui de leur programme de Spécialisation.

En Spécialisation, les étudiants doivent conserver au minimum une moyenne de B pour l’ensemble des cours du programme et un CGPA de 3.00.

PROGRAMME DE SPÉCIALISATION, OPTION LETTRES ET TRADUCTION (60 crédits)

Cours obligatoires (48 crédits)
FREN231 (3) Linguistique française
FREN244 (3) Traduction 1
FREN250 (3) Littérature française avant 1800
FREN251 (3) Littérature française depuis 1800
FREN252 (3) Littérature québécoise
FREN346 (3) Traduction 2
FREN347 (3) Terminologie générale
FREN349 (3) Traduction 3
FREN352 (3) Lectures 1
FREN353 (3) Lectures 2
FREN374 (3) Lectures 3
FREN431 (3) Traduction 4
FREN441 (3) Thème anglais
FREN490 (3) Critique et théorie
FREN493 (3) Lectures 4
FREN494 (3) Séminaire: Traduction spécialisée

Cours complémentaires (12 crédits)
3 crédits parmi les Travaux pratiques (T.P.) le FREN395: T.P. I,
FREN396 (3) Travaux pratiques 2
FREN397 (3) Travaux pratiques 3
FREN490 (3) Critique et théorie
FREN493 (3) Lectures 4

Cours obligatoires (24 crédits)
FREN250 (3) Littérature française avant 1800
FREN251 (3) Littérature française avant 1800
FREN252 (3) Littérature québécoise
FREN352 (3) Lectures 1
FREN353 (3) Lectures 2
FREN374 (3) Lectures 3
FREN490 (3) Critique et théorie
FREN493 (3) Lectures 4

Cours complémentaires (12 crédits)
9 crédits parmi les Travaux pratiques (T.P.) le FREN395: T.P. I,
FREN490 (3) Critique et théorie
FREN493 (3) Lectures 4

Cours obligatoires (36 crédits)
FREN231 (3) Linguistique française
FREN244 (3) Traduction 1
FREN250 (3) Littérature française avant 1800
FREN251 (3) Littérature française avant 1800
FREN252 (3) Littérature québécoise
FREN346 (3) Traduction 2
FREN347 (3) Terminologie générale
FREN349 (3) Traduction 3
FREN431 (3) Traduction 4
FREN490 (3) Critique et théorie

Cours complémentaires (6 crédits)
choisis parmi les cours complémentaires de langue/traduction
FREN250 (3) Littérature québécoise
FREN346 (3) Traduction 2
FREN347 (3) Terminologie générale
FREN349 (3) Traduction 3
FREN431 (3) Traduction 4

12.23 Geography (GEOG)

Burnside Hall, Room 705
805 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-4951 (or leave message 398-4111)
Fax: (514) 398-7437
Website: www.geog.mcgill.ca

The Geography Department offers programs in both Arts and Science. Consult the Science entry “Geography (GEOG)” on page 323 for B.Sc. Geography programs, a list of teaching staff, an outline of the nature of Geography and the opportunities for study in this discipline.

Students planning to enter a B.A. program in Geography or a Joint Honours program should telephone (514) 398-4951 (or leave a message at 398-4111) for an appointment with a departmental adviser. Students should consult the Undergraduate information on the departmental website.

The World Commission on Environment and Development has identified the evidence and possible consequences of currently widespread land use practices which cannot be sustained. Geography is an integrative discipline concerned with the relations between culture systems and resource bases. Students interested in understanding, or working towards the resolution of, our environmental “crisis” should select courses which deal with (1) the dynamics of natural systems (courses in the physical geography of terrestrial, atmospheric and hydrological systems); (2) the dynamics of human systems (courses in cultural, social, economic, political and urban geography); (3) the context of development and land use changes; and (4) practical skills such as Geographical Information Science, remote sensing, image analysis, quantitative methods and resource management.

Prerequisites
There are no departmental prerequisites for entrance to the B.A. Major Concentrations or Honours programs in Geography. It is helpful for Arts students to include 6 credits of Mathematics in their CEGEP or pre-university programs. A student who has completed college or pre-university geography courses fully equivalent to those of first year university may, with an adviser’s approval, substitute other courses as part of the Major Concentrations or Honours programs. B.A. students in U0 are invited to take GEOG205 for science credit, GEOG200 for social science credit.

MINOR CONCENTRATION IN GEOGRAPHY (18 credits) [Expandable into the Major Concentration in Geography (Urban Systems).]

The Minor Concentration in Geography is designed to provide students in the Faculty of Arts with an overview of basic elements of human geography at the introductory and advanced level.

Complementary Courses (18 credits)
9 credits (3 courses) from:
GEOG201 (3) Introductory Geo-Information Science
GEOG203 (3) Environmental Systems
GEOG210 (3) Global Places and Peoples
GEOG216 (3) Geography of the World Economy
GEOG217 (3) The Canadian City
GEOG272 (3) Earth’s Changing Surface
9 credits (3 courses) from any Geography courses at the 300- or 400-level.

MINOR CONCENTRATION IN GEOGRAPHIC INFORMATION SYSTEMS (18 credits) [Expandable into the Major Concentration in Geography, but not into the Major Concentration in Geography (Urban Systems).]

This Minor is designed to provide students in the Faculty of Arts who have an interest in GIS with a basic, but comprehensive knowledge of concepts and methods relating to the analysis of geospatial data.

Required Courses (15 credits)
GEOG201 (3) Introductory Geo-Information Science
GEOG306 (3) Raster Geo-Information Science
GEOG307 (3) Socioeconomic Applications of GIS
GEOG308 (3) Principles of Remote Sensing
GEOG506 (3) Perspectives on Geographic Information Analysis

Complementary Courses (3 credits)
One course to be chosen from:
ATOC414 (3) Applications of Remote Sensing
COMP420 (3) Files and Databases
COMP557 (3) Fundamentals of Computer Graphics (Note: prerequisites)
GEOG535 (3) Remote Sensing and Interpretation
GEOG551 (3) Environmental Decisions
URBP505 (3) Geographic Information Systems

MINOR CONCENTRATION IN GEOGRAPHY (URBAN SYSTEMS) (18 credits) [Expandable into the Major Concentration in Geography (Urban Systems).]

Complementary Courses (18 credits)

Group A (9 or 12 credits)
GEOG201 (3) Introductory Geo-Information Science
GEOG206 (3) Environmental Systems
GEOG210 (3) Global Places and Peoples
GEOG216 (3) Geography of the World Economy
GEOG217 (3) The Canadian City
GEOG306 (3) Raster Geo-Information Science
GEOG315 (3) Urban Transportation Geography
GEOG331 (3) Urban Social Geography
GEOG494 (3) Urban Field Studies

Group B (6 or 9 credits)
Architecture* (Faculty of Engineering)
ARCH378 (3) Site Usage (U2)
ARCH520 (3) Montreal: Urban Morphology
ARCH521 (3) Structure of Cities
ARCH527 (3) Civic Design (U3)
ARCH528 (3) History of Housing (U3)
ARCH529 (3) Housing Theory (U3)
ARCH550 (3) Urban Planning 1 (U3)
(same course as CIVE433)
ARCH551 (3) Urban Planning 2 (U3)

*Although Architecture courses have prerequisites, they are waived for Urban Systems students, but the course may not be taken before the year indicated.

Arts History
ARTH314 (3) The Medieval City
CIVIL ENGINEERING
CIVE433 (3) Urban Planning (same course as ARCH550)

Geography
GEOG307 (3) Socioeconomic Applications of GIS

Jewish Studies
JWST371D1 (3) Jews and the Modern City
JWST371D2 (3) Jews and the Modern City

Law
PUB1004 (3) Land Use Planning

Political Science
POLI318 (3) Comparative Local Government

Sociology
SOC1222 (3) Urban Sociology

Urban Planning
URBP501 (2) Principles and Practice 1

B.A. MAJOR CONCENTRATION IN GEOGRAPHY (36 credits)
This program is designed to cover the main elements of human geography.

Required Course (6 credits)
GEOG201 (3) Introductory Geo-Information Science
GEOG210 (3) Global Places and Peoples
Complementary Courses (30 credits)
3 credits of introductory physical geography, one of:
GEOG203 (3) Environmental Systems
GEOG272 (3) Earth's Changing Surface
3 credits of statistics*, one of:
BIOI373 (3) Biometry
GEOG202 (3) Statistics and Spatial Analysis
MATH203 (3) Principles of Statistics 1
PSYC204 (3) Introduction to Psychological Statistics
SOCI350 (3) Statistics in Social Research
* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 3.6.1 “Course Overlap”.

3 credits from field courses (Field course availability is determined each year in February):.
GEOG290 (1) Local Geographical Excursion
(In 2004, reserve Oct. 1-3)
GEOG398 (3) Field Studies in Human Geography
GEOG494 (3) Urban Field Studies
GEOG495 (3) Field Studies - Physical Geography
GEOG496 (3) Geographical Excursion
GEOG497 (3) Ecology of Coastal Waters
GEOG499 (3) Subarctic Field Studies
3 credits of analysis and methodology:
GEOG304 (3) Raster Geo-Information Science
GEOG307 (3) Socioeconomic Applications of GIS
GEOG308 (3) Principles of Remote Sensing
GEOG351 (3) Quantitative Methods
GEOG506 (3) Perspectives on Geographic Information Analysis
18 credits in Geography (excluding GEOG200, GEOG205) at least 3 of these 18 to be at the 400 level or above.

MAJOR CONCENTRATION IN GEOGRAPHY (URBAN SYSTEMS) (36 credits)
This interdisciplinary Concentration exposes students to the various approaches to urban studies in many disciplines. Students who wish to retain the option of entering a Geography honours program, should include GEOG201, GEOG203, GEOG216, and GEOG272 as well as the 9 credits of Required Courses listed below.

Students should observe the levels indicated by course numbers: 200-level are first year; 300-level, second year; 400 or 500-level, third year.
For further information on the Urban Systems Concentration telephone (514) 398-4951 or leave a message at (514) 398-4111.
For Urban Systems Majors, the total number of credits permitted outside Arts and Science is 30, see section 3.6.2 “Courses outside the Faculties of Arts and of Science”.

Required Courses (9 credits)
GEOG217 (3) The Canadian City
GEOG331 (3) Urban Social Geography
GEOG351 (3) Quantitative Methods
Complementary Courses (27 credits)
3 credits of statistics*, one of:
BIOI373 (3) Biometry
GEOG202 (3) Statistics and Spatial Analysis
MATH203 (3) Principles of Statistics 1
PSYC204 (3) Introduction to Psychological Statistics
SOCI350 (3) Statistics in Social Research
* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 3.6.1 “Course Overlap”.
24 credits selected from the following courses:

Geography
GEOG201 (3) Introductory Geo-Information Science
GEOG210 (3) Global Places and Peoples
GEOG290 (1) Local Geographical Excursion
(In 2004, reserve Oct. 1-3)
GEOG303 (3) Health Geography
GEOG307 (3) Socioeconomic Applications of GIS
GEOG315 (3) Urban Transportation Geography
GEOG494 (3) Urban Field Studies
GEOG504 (3) Industrial Restructuring - Geographic Implications

Architecture* (Faculty of Engineering)
ARCH378 (3) Site Usage (U2)
ARCH520 (3) Montreal: Urban Morphology
ARCH527 (3) Civic Design (U3)
ARCH528 (3) History of Housing (U3)
ARCH529 (3) Housing Theory (U3)
ARCH550 (3) Urban Planning 1 (U3)
(same course as CIVE433)

Civil Engineering
CIVE433 (3) Urban Planning (same course as ARCH550)
- limited enrolment, departmental permission required, call (514) 398-6345

Jewish Studies
JWST371D1 (3) Jews and the Modern City
JWST371D2 (3) Jews and the Modern City

Law
PUB1004 (3) Land Use Planning

Management (Faculty of Management)
FINE445 (3) Real Estate Finance (prereq.)
FINE446 (3) Real Estate Investment Analysis (prereq.)
FINE447 (3) Real Estate Valuation (prereq.)
FINE546 (3) Land Law (prereq.)

Political Science
POLI318 (3) Comparative Local Government

Sociology
SOCI222 (3) Urban Sociology

Urban Planning (Faculty of Engineering)
URBP501 (2) Principles and Practice 1 (6-week intensive)
URBP505 (3) Geographic Information Systems (permission)

B.A. HONOURS IN GEOGRAPHY (60 credits)
The B.A. Honours program is more concentrated and focused than the Major Concentration. Students must maintain a minimum program GPA of 3.00 and complete a 6-credit Honours thesis. Honours students are encouraged to participate in 500-level seminars with graduate students.

Required Courses (15 credits)
GEOG201 (3) Introductory Geo-Information Science
GEOG351 (3) Quantitative Methods
GEOG381 (3) Geographic Thought and Practice
GEOG491D1 (3) Honours Research
GEOG491D2 (3) Honours Research

Complementary Courses (45 credits)
12 credits of introductory courses, four of:
GEOG203 (3) Environmental Systems
GEOG210 (3) Global Places and Peoples
GEOG216 (3) Geography of the World Economy
GEOG217 (3) The Canadian City
GEOG272 (3) Earth's Changing Surface
3 credits of statistics*, one of:
BIOI373 (3) Biometry
GEOG202 (3) Statistics and Spatial Analysis
MATH203 (3) Principles of Statistics 1
According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

**AFRICAN FIELD STUDY SEMESTER**, see page325 under the Department of Geography, Faculty of Science, for details of the 15-credit interdisciplinary AFSS. *Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.*

**Geography courses of most interest to Arts students:**

- GEOG199 FYS: Geo-Environments
- GEOG200 Geographical Perspectives: World Environmental Problems
- GEOG201 Introductory Geo-Information Science
- GEOG210 Global Places and Peoples
- GEOG216 Geography of the World Economy
- GEOG217 The Canadian City
- GEOG290 Local Geographical Excursion
- GEOG300 Human Ecology in Geography
- GEOG301 Geography of Nunavut
- GEOG302 Environmental Management I
- GEOG303 Health Geography
- GEOG306 Raster Geo-Information Science
- GEOG307 Socioeconomic Applications of GIS
- GEOG308 Principles of Remote Sensing
- GEOG309 Geography of Canada
- GEOG311 Canada - A Geo-Economic Perspective
- GEOG315 Urban Transportation Geography
- GEOG316 Political Geography
- GEOG331 Urban Social Geography
- GEOG351 Quantitative Methods
- GEOG370 Protected Areas
- GEOG381 Geographic Thought and Practice
- GEOG398 Humans in Tropical Environments
- GEOG400 Geographical Perspectives: World Environmental Problems
- GEOG404 Environmental Management 2
- GEOG407 Issues in Geography
- GEOG408 Geography of Development
- GEOG410 Geography of Underdevelopment: Current Problems
- GEOG416 Africa South of the Sahara
- GEOG424 Europe: Places and Peoples
- GEOG490 Geography: Independent Studies
- GEOG491D1 Honours Research
- GEOG491D2 Honours Research
- GEOG492D1 Joint Honours Research
- GEOG492D2 Joint Honours Research
- GEOG494 Urban Field Studies
- GEOG496 Geographical Excursion
- GEOG498 Humans in Tropical Environments
- GEOG500 Geography of Regional Identity
- GEOG501 Modelling Environmental Systems
- GEOG502 Geography of Northern Development
- GEOG504 Industrial Restructuring - Geographic Implications
- GEOG506 Perspectives on Geographic Information Analysis
- GEOG508 Resources, People, and Power
- GEOG510 Humid Tropical Environments
- GEOG513 Behavioural Geography
- GEOG551 Environmental Decisions

**12.24 German Studies (GERM)**

688 Sherbrooke Street West, Suite 425
Montreal, QC H3A 3R1
Telephone: (514) 398-3650
Fax: (514) 398-1748
E-mail: german.studies@mcgill.ca
Website: www.mcgill.ca/german

*Chair — Karin Bauer*
MINOR CONCENTRATION IN GERMAN LITERATURE AND CULTURE IN TRANSLATION (18 credits) (Non-expandable)
Adviser: Professor Adrian Hsia (514) 398-3646 (Fall 2004)
Professor Paul Peters (514) 398-5050 (Winter 2005)
Complementary Courses (18 credits)
18 credits chosen from courses in German literature or culture in translation, such as:
GERM361 (3) Women of the Victorian Era
GERM360 (3) Women of the 19th Century
GERM359 (3) Bertolt Brecht
GERM358 (3) Franz Kafka
GERM357 (3) Topics in German Thought
GERM356 (3) Postwar German Literature/Film
GERM355 (3) Nietzsche and Wagner
GERM354 (3) Literary Approach to Song
GERM353 (3) Individual and Society in German Literature 2
GERM352 (3) Individual and Society in German Literature 1
GERM351 (3) Classical Period in German Literature
GERM345 (3) The International Economy since 1914
GERM340 (3) Ex-Socialist Economies
ECON340 (3) Ex-Socialist Economies
ECON345 (3) The International Economy since 1914
ECON423D2 (3) International Trade and Finance
ECON423D1 (3) International Trade and Finance
MGCR382 (3) International Business
MGCR382 (3) International Business Law
HIST355D1 (3) Germany 1806-1918
HIST355D2 (3) Germany 1806-1918
HIST355D3 (3) Germany in the 20th Century
MGCR382 (3) International Business
### MAJOR CONCENTRATION IN GERMAN LANGUAGE AND LITERATURE (36 credits)

#### Adviser: Professor Adrian Hsia (514)398-3646 (Fall 2004)

#### Professor Paul Peters (514) 398-5050 (Winter 2005)

**Required Courses (18 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>GERM200</td>
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<td>German Language, Intensive Beginners'</td>
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<td>German Language, Beginners</td>
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<td>GERM202D2</td>
<td>3</td>
<td>German Language, Beginners</td>
</tr>
<tr>
<td>GERM300</td>
<td>6</td>
<td>German Language Intensive Intermediate</td>
</tr>
<tr>
<td>GERM307D1</td>
<td>3</td>
<td>German Language - Intermediate</td>
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<tr>
<td>GERM307D2</td>
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<td>German Language - Intermediate</td>
</tr>
<tr>
<td>GERM325</td>
<td>6</td>
<td>German Language - Intensive Advanced</td>
</tr>
</tbody>
</table>

* Students with advanced standing in the language will substitute language courses with more advanced courses in language, culture or literature.

**Complementary Courses (18 credits)**

18 credits of courses in literature distributed across different periods chosen from the courses listed below:

- at least one 3-credit course in 20th Century:
  - GERM331 (3) Germany after Reunification
  - GERM354 (3) Literary Approach to Song
  - GERM360 (3) German Literature 1890 to 1918
  - GERM361 (3) German Literature 1918 to 1945
  - GERM362 (3) 20th Century Literature Topics
  - GERM363 (3) German Postwar Literature
  - GERM364 (3) German Culture: Gender and Society
  - GERM365 (3) Media Studies in German
  - GERM366 (3) Postwar German Literature/Film
  - GERM367 (3) Topics in German Thought

- at least one 3-credit course in Classicism or Romanticism:
  - GERM450 (3) Classical Period in German Literature
  - GERM451 (3) German Romanticism
  - GERM455 (3) Women of the Romantic Era

- at least one 3-credit course from any other period:
  - GERM352 (3) German Literature - 19th Century 3
  - GERM353 (3) 19th Century Literary Topics
  - GERM380 (3) 18th Century German Literature
  - GERM382 (3) Faust in European Literature
  - GERM412 (3) Heroes, Lovers and Crusaders
  - GERM511 (3) Middle High German Literature
  - GERM561 (3) German Literature: Baroque

9 credits selected from any of the literature courses above not already taken or from:

- GERM330 (3) Landeskunde
- GERM331 (3) Germany after Reunification
- GERM400 (3) Interdisciplinary Seminar: Contemporary German Studies

* Courses on German literature or culture given in English may be substituted for any courses in the above lists, to a maximum of 6 credits.

### MAJOR CONCENTRATION IN GERMAN LITERATURE AND CULTURE (36 credits)

Adviser: Professor Adrian Hsia (514)398-3646 (Fall 2004)

Professor Paul Peters (514) 398-5050 (Winter 2005)

**Note:** All German literature courses given in German have as prerequisite a linguistic competence as acquired in GERM325 or equivalent. Such equivalence will be established by the program adviser.

#### Complementary Courses (36 credits)

9 credits chosen from:

- GERM331 (3) Germany after Reunification
- GERM360 (3) German Literature 1890 to 1918
- GERM361 (3) German Literature 1918 to 1945
- GERM363 (3) German Postwar Literature

15 credits chosen from:

- GERM352 (3) German Literature - 19th Century 3
- GERM353 (3) 19th Century Literary Topics
- GERM380 (3) 18th Century German Literature
- GERM412 (3) Heroes, Lovers and Crusaders
- GERM450 (3) Classical Period in German Literature
- GERM451 (3) German Romanticism
- GERM455 (3) Women of the Romantic Era
- GERM511 (3) Middle High German Literature
- GERM561 (3) German Literature: Baroque

12 credits chosen from:

- GERM259 (3) Individual and Society in German Literature 1
- GERM260 (3) Individual and Society in German Literature 2
- GERM354 (3) Literary Approach to Song
- GERM355 (3) Nietzsche and Wagner
- GERM358 (3) Franz Kafka
- GERM359 (3) Bertolt Brecht
- GERM364 (3) German Culture: Gender and Society
- GERM365 (3) Media Studies in German
- GERM366 (3) Postwar German Literature/Film
- GERM367 (3) Topics in German Thought
- GERM371 (3) Cultural Change and Evolution of German
- GERM382 (3) Faust in European Literature
- GERM400 (3) Interdisciplinary Seminar: Contemporary German Studies
HONOURS IN GERMAN STUDIES (60 credits)
Adviser: Professor Horst Richter (514)398-3648
The Honours program in German Studies consists of 60 credits in German. Literature courses provide an introduction to the major periods from the Middle Ages to the present. Admission to the Honours Program in German Studies requires departmental approval. Students may begin Honours in German Studies in their first year. Honours students must maintain a GPA of 3.30 in their program courses, and, according to Faculty regulations, a minimum CGPA of 3.00 in general. In addition to the above requirements, Honours students, according to Faculty regulations, also must complete at least a Minor Concentration (18 credits) in another academic unit.

Required Courses (42 credits)
GERM200 (6) German Language, Intensive Beginners’
GERM300 (6) German Language Intensive Intermediate
GERM325 (6) German Language - Intensive Advanced
GERM352 (3) German Literature - 19th Century 3
GERM360 (3) German Literature 1890 to 1918
GERM363 (3) German Postwar Literature
GERM450 (3) Classical Period in German Literature
GERM451 (3) German Romanticism
GERM511 (3) Middle High German Literature
GERM575 (6) Honours Thesis

With permission of the adviser, students with advanced standing in German language will replace language courses for more advanced courses in language, culture or literature.

Complementary Courses (18 credits)
12 credits selected from:
GERM331 (3) Germany after Reunification
GERM353 (3) 19th Century Literary Topics
GERM361 (3) German Literature 1918 to 1945
GERM362 (3) 20th Century Literature Topics
GERM365 (3) Media Studies in German
GERM380 (3) 20th Century German Literature
GERM400 (3) Interdisciplinary Seminar: Contemporary German Studies

Note: In the event that there are not enough courses offered in German, substitution with courses from the list below is allowed only with permission of the adviser.

6 credits selected from:
GERM259 (3) Individual and Society in German Literature 1
GERM260 (3) Individual and Society in German Literature 2
GERM336 (3) German Grammar Review
GERM354 (3) Literary Approach to Song
GERM355 (3) Nietzsche and Wagner
GERM358 (3) Franz Kafka
GERM359 (3) Bertolt Brecht
GERM364 (3) German Culture: Gender and Society
GERM367 (3) Topics in German Thought
GERM371 (3) Cultural Change and Evolution of German
GERM382 (3) Faust in European Literature
GERM397 (3) Individual Reading Course
GERM398 (3) Individual Reading Course
GERM561 (3) German Literature: Baroque

or other suitable courses in the Department or in other related disciplines and departments with the approval of adviser.

JOINT HONOURS – GERMAN STUDIES COMPONENT (36 credits)
Adviser: Professor Horst Richter (514)398-3648
Admission to the Joint Honours program in German Studies requires Departmental approval.

Required Courses (21 credits)
GERM200 (6) German Language, Intensive Beginners’
GERM300 (6) German Language Intensive Intermediate
GERM325 (6) German Language - Intensive Advanced
GERM570 (3) Joint Honours Thesis

With permission of the adviser, students with advanced standing in German language will replace language courses for more advanced courses in language, culture or literature.

Complementary Courses (15 credits)
Selected from 400- to 500-level German literature and culture courses, from at least three centuries, with the approval of the adviser.

Joint Honours students must maintain a GPA of 3.30 in their program courses, and, according to Faculty regulations, a minimum CGPA of 3.00 in general.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Prerequisites for Literature Courses – The prerequisite for all literature courses taught in German is GERM325, or equivalent, or permission of the Department.

TOPICAL LISTINGS

Language
a) General courses
GERM200 German Language, Intensive Beginners’
GERM202 German Language, Beginners
GERM300 German Language Intensive Intermediate
GERM307 German Language - Intermediate
GERM325 German Language - Intensive Advanced

b) Special courses
GERM316 German: Analytic Study of Texts
GERM330 Landeskunde
GERM336 German Grammar Review
GERM341 Essay Writing
GERM342 Translation
GERM345 Business German 1
GERM346 Business German 2

Literature and Culture
GERM331 Germany after Reunification
GERM349 Methods of Literary Analysis
GERM352 German Literature in the 19th Century
GERM353 19th Century Literary Topics
GERM360 German Literature 1890 to 1918
GERM361 German Literature 1918 to 1945
GERM362 20th Century Literature Topics
GERM363 German Postwar Literature
GERM380 18th Century German Literature
GERM450 Classical Period in German Literature
GERM451 German Romanticism
GERM511 Middle High German Literature
GERM561 German Literature: Baroque

Literature and Culture in Translation
GERM197 FYS: Images of Otherness
GERM259 Individual and Society in German Literature 1
GERM260 Individual and Society in German Literature 2
GERM355 Nietzsche and Wagner
GERM358 Franz Kafka
GERM359 Bertolt Brecht
GERM364 German Culture: Gender and Society
GERM365 Media Studies in German
GERM366 Postwar German Literature/Film
GERM367 Topics in German Thought
GERM371 Cultural Change and Evolution of German
GERM382 Faust in European Literature
GERM400 Interdisciplinary Seminar: Contemporary German Studies
12.25 Hispanic Studies (HISP)

688 Sherbrooke Street West, Room 425
Montreal, QC H3A 3R1
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Fax: (514) 398-1748
E-mail: hispanic.studies@mcgill.ca
Website: www.arts.mcgill.ca/programs/hispanic

Chair — Jesus Pérez-Magallón
Emeritus Professor
Solomon Lipp; M.S., (C.C.N.Y.), Ph.D. (Harv.)

Professors
K.M. Sibbett; M.A. (Cantab.), M.A. (Liv.), Ph.D. (McG.)
Jesus Pérez-Magallón; Lic. Fil. (Barcelona), Ph.D. (Penn.)

Associate Professor
David A. Boruchoff; A.B., A.M., Ph.D. (Harv.)

Assistant Professors
Amanda Holmes; B.A. (McG.), M.A., Ph.D. (Oregon)
José Jouve-Martín; Lic. Phil. (Madrid), Ph.D. (Georgetown)
Fernanda Macchi; Lic. Lit. (Buenos Aires), M.A. (Oregon), Ph.D. (Yale)

The Department of Hispanic Studies offers courses on literature, intellectual history and the civilization of Spain and Hispanic America, as well as in the Spanish and Portuguese languages. The Department and its programs are committed to expanding the liberal arts background of students by helping to develop the skills of communication and critical reasoning, and by providing insight into the culture of other regional, linguistic and national groups.

McGill University has bilateral exchange agreements with the Universidad de Salamanca (Spain), the Universidad Nacional Autónoma de México, and the Universidad de las Américas, Puebla (Mexico), as well as with other leading universities in the Spanish and Portuguese-speaking world which allow student and faculty exchanges, and other collaborative ventures. Further information about these exchanges may be obtained from the Department. Application forms are available from the Student Exchange Officer in the Admissions, Recruitment and Registrar’s Office, James Building Annex.

The Department collaborates closely with the Program in Latin-American and Caribbean Studies, and students are encouraged to consult that program’s listing.

UNDERGRADUATE PROGRAMS

Adviser: Professor Fernanda Macchi, 688 Sherbrooke, Room 381, (514) 398-6687/6683

The Department of Hispanic Studies offers the following undergraduate programs and concentrations, which permit students to pursue a variety of intellectual and pre-professional options:

Minor Concentration in Hispanic Languages (Expandable)
Minor Concentration in Hispanic Literature and Culture (Expandable)
Major Concentration in Hispanic Languages
Major Concentration in Hispanic Literature and Culture
Honours Program in Hispanic Studies
Joint Honours Program in Hispanic Studies

Students who envision graduate studies upon completion of the B.A. are strongly advised to pursue a program of Honours or Joint Honours. Although the Major and Minor Concentrations form an important part of the multi-track B.A. in Arts, this general degree does not provide the specialized training called for by most graduate programs in the Humanities and Social Sciences.

MINOR CONCENTRATION IN HISPANIC LANGUAGES

(18 credits) (Expandable to the Major Concentration in Hispanic Languages)

Note: Advanced Placement (AP) credits and courses taken at other universities in Quebec will not be accredited towards the Minor.

Complementary Courses (18 credits)

selected from:

HISP202D1 (3) Portuguese Language: Beginners
HISP202D2 (3) Portuguese Language: Beginners
HISP204D1 (3) Portuguese Language: Intermediate
HISP204D2 (3) Portuguese Language: Intermediate
HISP210D1 (3) Spanish Language: Beginners
HISP210D2 (3) Spanish Language: Beginners
HISP218 (6) Spanish Language Intensive - Elementary
HISP219 (6) Spanish Language Intensive - Intermediate
HISP220D1 (3) Spanish Language: Intermediate
HISP220D2 (3) Spanish Language: Intermediate
HISP225 (3) Hispanic Civilization
HISP226 (3) Hispanic Civilization

Students with advanced standing in the language will replace language courses with more advanced courses in language, culture or literature at the 200-level or above, selected from Departmental offerings.

MINOR CONCENTRATION IN HISPANIC LITERATURE AND CULTURE

(18 credits) (Expandable to the Major Concentration in Hispanic Literature and Culture)

Note: Advanced Placement (AP) credits and courses taken at other universities in Quebec will not be accredited towards the Minor.

Required Courses (6 credits)

HISP225 (3) Hispanic Civilization
HISP226 (3) Hispanic Civilization

Complementary Courses (12 credits)

6 credits selected from:

HISP241 (3) Survey of Spanish Literature 1
HISP242 (3) Survey of Spanish Literature 2
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2

6 credits in literature and/or culture at the 300-level or above, selected from the following:

HISP321 (3) Spanish Literature - 18th Century
HISP324 (3) 20th Century Drama
HISP325 (3) Spanish Novel of the 19th Century
HISP326 (3) Spanish Romanticism
HISP327 (3) Literature of Ideas: Spain
HISP328 (3) Literature of Ideas: Spanish America
HISP333 (3) Spanish-American Theatre
HISP349 (3) Generation of 1898: Essay
HISP350 (3) Generation - 1898: Creative Genres
HISP351 (3) Spanish-American Novel
HISP352 (3) Contemporary Spanish-American Novel
HISP356 (3) Spanish-American Short Story
HISP358 (3) Women Writers Fiction Spanish-America
HISP421 (3) Golden Age Prose
HISP423 (3) Modern Lyric Poetry
HISP424 (3) Spanish Novel since Civil War
HISP425 (3) The World of Pérez Galdós
HISP432 (3) Literature - Discovery and Exploration Spain
HISP433 (3) Gaucho Literature
HISP434 (3) Dictatorship: Hispanic America
HISP437 (3) Viceregal Spanish America
HISP442 (3) Modernismo
HISP451D1 (3) Cervantes
HISP451D2 (3) Cervantes
Facility of Arts

HISP453 (3) 20th Century Spanish-American Poetry
HISP457 (3) Medieval Literature
HISP458 (3) Golden Age Drama
HISP460 (3) Golden Age Poetry
HISP501 (3) History of the Spanish Language
HISP505 (3) Seminar in Hispanic Studies
HISP506 (3) Seminar in Hispanic Studies
HISP507 (3) Seminar in Hispanic Studies
The Minor Concentration in Spanish Literature and Culture and the Minor Concentration in Spanish-American Literature and Culture were retired at the end of the 2003-04 academic year. Students enrolled in either program at that time should consult with a Departmental adviser.

MAJOR CONCENTRATION IN HISPANIC LANGUAGES
(36 credits)

Complementary Courses (36 credits)
0 - 18 credits in language and civilization
6 credits in Survey of Language
12 - 30 credits in Hispanic literature at the 300-level or above, at least 6 credits of which must be in literature of the pre-1700 period (courses marked with an asterisk *), selected from the Complementary course list given under the Major Concentration in Hispanic Literature and Culture.

MAJOR CONCENTRATION IN HISPANIC LITERATURE AND CULTURE
(36 credits)

Required Courses (18 credits)
HISP241 (3) Survey of Spanish Literature 1
HISP242 (3) Survey of Spanish Literature 2
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HISP451D1 (3) Cervantes
HISP451D2 (3) Cervantes
Complementary Courses (18 credits)
0 - 3 credits from:
HISP250 (3) Reading Hispanic Literature
at least 15 credits in Hispanic literature at the 300-level or above, at least 3 credits of which must be in literature of the pre-1700 period (courses marked with an asterisk *), selected from the following:
HISP321 (3) Spanish Literature - 18th Century
HISP324 (3) 20th Century Drama
HISP325 (3) Spanish Novel of the 19th Century
HISP326 (3) Spanish Romanticism
HISP327 (3) Literature of Ideas: Spain
HISP328 (3) Literature of Ideas: Spanish America
HISP332 (3) Spanish-American Literature of 19th Century
HISP333 (3) Spanish-American Drama
HISP349 (3) Generation of 1898: Essay
HISP350 (3) Generation - 1898: Creative Genres
HISP351 (3) Spanish-American Novel
HISP352 (3) Contemporary Spanish-American Novel
HISP356 (3) Spanish-American Short Story
HISP358 (3) Women Writers Fiction Spanish-America
HISP421* (3) Golden Age Prose
HISP423 (3) Modern Lyric Poetry
HISP424 (3) Spanish Novel since Civil War
HISP425 (3) The World of Pérez Galdós
HISP432* (3) Literature - Discovery and Exploration Spain
HISP433 (3) Gaucho Literature
HISP434 (3) Dictatorship: Hispanic America
HISP437* (3) Viceregal Spanish America
HISP442 (3) Modernismo
HISP453 (3) 20th Century Spanish-American Poetry
HISP457* (3) Medieval Literature
HISP458* (3) Golden Age Drama
HISP460* (3) Golden Age Poetry
HISP501* (3) History of the Spanish Language
HISP505 (3) Seminar in Hispanic Studies
HISP506 (3) Seminar in Hispanic Studies
HISP507 (3) Seminar in Hispanic Studies
HISP458 (3) Golden Age Drama
HISP451D2 (3) Cervantes
HISP451D1 (3) Cervantes
HISP450D1 (3) Honours Thesis
HISP450D2 (3) Honours Thesis

Complementary Courses (36 credits)
at least 6 credits selected from:
HISP421 (3) Golden Age Prose
HISP432 (3) Literature - Discovery and Exploration Spain
HISP437 (3) Viceregal Spanish America
HISP458 (3) Golden Age Drama
HISP460 (3) Golden Age Poetry
All remaining credits may be selected from courses given in Spanish in the Department at or above the Intermediate Spanish language level (HISP219 OR HISP220D1/HISP220D2).

JOINT HONOURS – HISPANIC STUDIES COMPONENT
(36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines. See section 11.4 "Joint Honours Programs" for a list of available programs.
Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).
Joint Honours students are expected to maintain a program GPA of 3.30 and an overall CGPA of 3.00.

Required Courses (12 credits)
HISP451D1 (3) Cervantes
HISP451D2 (3) Cervantes
HISP490D1 (3) Honours Thesis
HISP490D2 (3) Honours Thesis

Complementary Courses (24 credits)
6 credits selected from:
HISP241 (3) Survey of Spanish Literature 1
HISP242 (3) Survey of Spanish Literature 2
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HISP421 (3) Golden Age Prose
HISP432 (3) Literature - Discovery and Exploration Spain
HISP437 (3) Viceregal Spanish America
HISP458 (3) Golden Age Drama
HISP460 (3) Golden Age Poetry
All remaining credits may be selected from courses given in Spanish in the Department above the Intermediate Spanish language level (HISP219 OR HISP220D1/HISP220D2).
12.26 History (HIST)

General Office, Room 608
Sixth Floor, Stephen Leacock Building
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-3975
Fax: (514) 398-8365
Website: www.arts.mcgill.ca/programs/history
E-mail: undergrad.history@mcgill.ca

Chair — Brian Lewis

Emeritus Professors
Michael P. Maxwell; B.A.(Sir G. Wms.), M.A., Ph.D.(McG.)
Albert Schachter; B.A.(McG.), D.Phil.(Oxon.) (Hiram Mills Emeritus Professor of Classics)

Professors
Valentin J. Boss; B.A.(Cantab.), Ph.D.(Harv.)
Myron J. Echenberg; M.A.(McG.), Ph.D.(Wis.)
John W. Hellman, B.A.(Marquette), M.A., Ph.D.(Harv.)
Peter Hoffmann; Ph.D.(Munich), F.R.S.C. (William Kingsford Professor of History)
Gershon D. Hundert; B.A., M.A.(Ohio St.), Ph.D.(Col.) (Leanon Segal Professor of Jewish Studies) (joint appoint. with Jewish Studies)
Carman I. Miller; B.A., B.Ed.(Acad.), M.A.(Dal.), Ph.D.(Lond.)
Desmond Morton; B.A.(R.M.C.), B.A., M.A.(Oxon.), Ph.D.(Lond.) (Hiram Mills Professor of History)
Yuzo Ota; B.A., M.A., Ph.D.(Tokyo)
Nancy F. Partner; B.A., M.A., Ph.D.(Calif.)
T. Wade Richardson; B.A.(McG.), M.A., Ph.D.(Harv.)
Hereward Senior; M.A., Ph.D.(McG.)
Gil E. Troy; A.B., A.M., Ph.D.(Harv.)
Robin D.S. Yates; B.A., M.A.(Oxon.), M.A.(Calif.), Ph.D.(Harv.) (James McGill Professor) (joint appoint. with East Asian Studies)

Brian J. Young; B.A.(Tor.), M.A., Ph.D.(Queen's)(James McGill Professor)

John Zucchi; B.A., M.A., Ph.D.(Tor.)

Associate Professors
Pierre H. Boule; A.B.(Ind.), M.A.(Stan.), Ph.D.(Calif.)
Paula Clarke; B.A.(Oxon. and Mem.), M.A.(Tor.), B.A.(Harv.)

Catherine Desbarats; B.A.(Queen's), D.Phil.(Oxon.), Ph.D.(McG.)
Elizabeth Elbourne; B.A., M.A.(Tor.), D.Phil.(Oxon.)
Catherine C. LeGrand; B.A.(Reed), M.A., Ph.D.(Stan.)
Brian Lewis; B.A., M.A.(Oxon.), A.M., Ph.D.(Harv.)
Leonard Moore, A.B., M.A., Ph.D.(Calif.)
Suzanne Morton, B.A.(Trent), M.A., Ph.D.(Dal.)
Faith Wallis; B.A., M.A.(McG.), Ph.D.(Tor.) (joint appoint. with Social Studies of Medicine)

Assistant Professors
James D. Delbourgo; B.A.(East Anglia), M.Phil.(Cantab), Ph.D.(Columbia)
Elisabeth Heaman; B.A., M.A.(McG.) Ph.D.(Tor.)
Margaret Kuo; Ph.D. (UCLA)
Lorenz Lüthi; lic. phil. I (Zürich), Ph.D. (Yale)
Daviken Studnicki-Gizbert; Ph.d. (Yale)

In today’s world, people who can research thoroughly, write effectively, speak eloquently, and think clearly are in great demand. Recent graduates of our programs are currently pursuing careers in a variety of professions, including law, business, journalism, academia, finance, government, the arts, science, education, and medicine. All have benefited as professionals, individuals, and citizens from their study of history. The study of history develops skills in research, writing, and critical thinking and provides a context for understanding the present world. History requires and develops flexible thinking as it normally employs inductive reasoning. Historians usually begin with a specific, temporally and spatially defined issue and try to determine a pattern in the chaos. They move from the particular to the general and since historians usually begin with an open-ended question, they often find themselves borrowing from other disciplines to understand the problem.

PROGRAMS IN HISTORY

The Department offers three kinds of undergraduate programs: Honours, Major Concentration and Minor Concentration. In each case, students choose one of two options:

(1) to specialize in one of the four following areas:
Africa/Asia/Latin America; Canada; Europe; North America;

(2) to construct a program around a theme, such as Medical History, War and Society, Empire and Colonialism, etc.

Please see a Departmental Adviser for details.

Tables are designed to help Major, Minor and Honours students to plan their programs within the framework of the Department’s requirements, by showing which courses fall within the four areas. Please refer to our website for a listing of courses being offered in 2004-05 in each area.

AREA: AFRICA, ASIA, LATIN AMERICA

Prerequisites for upper-level courses in African history:
HIST200 Introduction to African History
HIST201 Modern African History

Prerequisites for upper-level courses in Asian history:
HIST208 Introduction to East Asian History
HIST218 Modern East Asian History

Prerequisites for upper-level courses in Latin American history:
HIST309 History of Latin America to 1825
HIST360 History of Latin America since 1825

AREA: CANADA

Prerequisites for upper-level courses in Canadian History:
HIST202 Survey: Canada to 1867
HIST203 Survey: Canada since 1867

AREA: EUROPE

Prerequisites for many upper-level courses in General European History:
HIST214 Introduction to European History
HIST215 Modern European History

Prerequisites for many upper-level courses in Western Europe:
HIST214 Introduction to European History
HIST215 Modern European History

Prerequisites for many upper-level courses in Eastern Europe:
HIST214 Introduction to European History
HIST215 Modern European History

Prerequisites for upper-level courses in Ancient History:
HIST205 Ancient Greek History
HIST209 Ancient Roman History

AREA: NORTH AMERICA – UNITED STATES

Prerequisites for upper-level courses in United States History:
HIST211 American History to 1865
HIST221 United States since 1865

Candidates entering University as U0 or U1 students may, during their first year, take all courses at the 200 level as well as courses at the 300 level for which they have prerequisites. First-Year Seminars are also available in History, see section 5.2.1 “Registration for First-Year Seminars”.

MINOR CONCENTRATION IN HISTORY (18 credits)
(Expandable)

Chair—Professor Paula Clarke

In order to give students freedom to choose suitable concentrations, all courses in History programs are placed into the category “Complementary Courses”. These are to be chosen with an adviser.
Complementary Courses (18 credits)
18 credits in History, 12 credits (minimum) at the 300-level and up.
15 credits to be taken in one of the following areas: Africa/Asia/Latin America; Canada; Europe; North America; or in an approved theme such as History of Medicine, Jewish History, Migration, War and Society.

MAJOR CONCENTRATION IN HISTORY (36 credits)
Director: Professor Myron Echenberg

In order to give students freedom to choose suitable thematic and geographic concentrations, all courses in History programs are placed into the category "Complementary Courses". These are to be chosen with an advisor.

Complementary Courses (36 credits)
36 credits in History, 24 credits (minimum) at the 300-level or above,
with a minimum of 6 credits from at least two of the following areas: Canada; North America (which may or may not include Canada); Europe; Africa/Latin America;
3 credits in history of the pre-1800 period;
3 credits in history of the post-1800 period.

Students are strongly urged to distribute their history courses as follows: Year 1 - 12 credits; Year 2 - 12 credits; Year 3 - 12 credits.

The History Major Concentration is designed to provide both flexibility and breadth for our students. Each student will pursue an individually distinct program according to his or her interests and intellectual concerns. Students who choose a Major Concentration in History should consult an adviser in the Department before registering for their courses. Students are advised that no more than 12 credits taken at another university will be accepted within their Major program.

HONOURS IN HISTORY (60 credits)
Director: TBA

In order to give students freedom to choose suitable concentrations, all courses in History programs are placed into the category "Complementary Courses". These are to be chosen with an adviser.

Complementary Courses (60 credits)
60 credits in History distributed as follows, 42 credits (minimum) at the 300 level or above:
42 credits in the student’s chosen concentration such as Africa/Asia/Latin America, Canada, Europe, North America, Ancient History; or in an approved theme such as Colonialism, History of Medicine, War and Society; 8 credits (minimum) must be seminar credits.
18 credits (maximum) outside the student’s chosen concentration, 6 of which must be seminar credits.

Students must maintain a 3.30 grade point average in their program courses and must have no less than a "B" in any program course. In addition, and in accordance with Faculty of Arts rules, students must maintain an overall CGPA of 3.00.

The purpose of the Honours program is to give students an opportunity to study an area or theme of history in some depth. Each Honours student's program is worked out to suit the student's specific needs within the general framework of the program. The rules of the program are designed to lead the student from introductory courses to more advanced courses while, at the same time, enabling the student to acquire ancillary skills which are necessary for historical research in particular areas.

The full Honours student normally takes 60 credits in history over a three-year period, 42 credits to be selected from within an area or theme including one of two seminars or the tutorial option. If a student must acquire a language or other ancillary skill, or if there is a strong case for taking a historically oriented course in another discipline, the history requirement may be diminished. (See note at the end of the statement.)

The first year of the program is devoted primarily to introductory history courses (12 - 18 credits) to obtain a general perspective on the past. These courses are important prerequisites for upper year courses.

In the second year students begin to specialize by taking a seminar or, if necessary, by beginning the two-year tutorial method. Note that the second seminar is normally taken in the third year. A seminar is a class composed of Honours students who pursue advanced studies in a specific area. A tutorial is a series of classes in which the student works individually or in small groups with a member of staff. The tutorial route is designed for those students who wish to concentrate on projects not accommodated by the seminar offerings. Students taking tutorials instead of seminars work with one member of staff over a period of two years. As in other courses, evaluation and marks during each of the two years are based on the student's written and oral work. At the end of the second tutorial year, a project is presented which is usually a substantial piece of work based on primary sources.

Students may enter Honours as early as their U1 year.

JOINT HONOURS – HISTORY COMPONENT (36 credits)

Complementary Courses (36 credits)
36 credits in History distributed as follows, 24 credits (minimum) at the 300 level or above.
24 credits (minimum) in History in the student's chosen concentration such as Africa/Asia/Latin America, Canada, Europe, North America, Ancient History; or in an approved theme such as Colonialism, History of Medicine, War and Society; 6 of these credits (minimum) must be seminar credits.
12 credits (maximum) in History outside the student’s chosen concentration.

Students must maintain a 3.30 grade point average in their program courses and must have no less than a “B” in any program course. In addition, and in accordance with Faculty of Arts rules, students must maintain an overall CGPA of 3.00.

In a few cases Joint Honours students enter one of the two-year tutorials.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

NOTE: Not as an encouragement for deviation from the programs outlined above, but in recognition of compelling circumstances and academically legitimate wishes on the part of the students, the possibilities for deviation from the usual 60 credit requirement are defined as follows. No more than 12 historically oriented credits may be taken, in exceptional cases, outside the Department of History, or outside the University. A maximum of six credits, taken as a summer course may be accepted within the limits of the 12 credits outside the Department if strong academic reasons favour it. History courses taken at CEGEPs cannot be part of the 60 credit requirement. In Joint Honours programs, no more than six credits may be taken outside the Department. Full Honours Students may take one advanced language course in each of their U2 and U3 years and have them count in their 60 credit requirement, if these language courses are necessary and relevant to their program. Introductory language courses cannot be accepted as part of the Honours course requirements. Bilingual students will not be permitted to take language courses in one of their two languages as part of their Honours program requirements.

The following course(s) may be chosen by History Major Concentration and Honours students as part of their programs (for other possible courses, please see the general descriptions of the programs).
Anthropology
ANTH306 (3) Native Peoples’ History in Canada

Canadian Studies
Please consult with advisers.

Islamic Studies
Please consult with advisers.

Jewish Studies
JWST305 (3) American Jewish History/Colonial Era to WWI
JWST306 (3) The American Jewish Community
JWST356 (3) Jewish Labour Movement/Eastern Europe
JWST357 (3) Jewish Labour Movement/North America

12.27 History and Philosophy of Science (HPSC)

Stephen Leacock Building, Room 908
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-6060
Website: www.arts.mcgill.ca/hpsp/hpsp.htm

Director — Eric Lewis (Philosophy)
Committee
Valentine Boss (History), Mario Bunge (Philosophy),
Emily Carson (Philosophy), Roger Krohn (Sociology),
J. Lambek (Mathematics and Statistics),
Storrs McCall (Philosophy)

History and Philosophy of Science at McGill is an interdisciplinary program that aims to provide students with an understanding of science through the study of both its historical development and of some of the fundamental philosophical principles upon which it rests.

MINOR CONCENTRATION IN HISTORY AND PHILOSOPHY OF SCIENCE (18 credits)

Complementary Courses (18 credits)
18 credits, with a maximum of 9 credits at the 200-level, distributed as follows:

GROUP A: PHILOSOPHY OF SCIENCE
6 - 12 credits, no more than 6 credits of which may be at the 200-level, chosen from the following:

History and Philosophy of Science
HPSC300 (3) Independent Studies: History and Philosophy of Science
HPSC500 (3) Interdisciplinary Seminar: History & Philosophy of Science

Philosophy
PHIL210 (3) Introduction to Deductive Logic
PHIL310 (3) Intermediate Logic
PHIL220 (3) Introduction to History and Philosophy of Science
PHIL221 (3) Introduction to History and Philosophy of Science 2
PHIL306 (3) Philosophy of Mind
PHIL340 (3) Philosophy of the Social Sciences 1
PHIL341 (3) Philosophy of Science 1
PHIL350 (3) History and Philosophy of Ancient Science
PHIL411 (3) Topics in Philosophy of Logic and Mathematics
PHIL440 (3) Philosophy of Social Sciences 2
PHIL441 (3) Philosophy of Science 2
PHIL453 (3) Ancient Metaphysics and Natural Philosophy
PHIL511 (3) Seminar: Philosophy of Logic and Mathematics
PHIL541 (3) Seminar: Philosophy of Science
PHIL580 (3) Seminar: Problems of Philosophy 1

Psychology
PSYC401 (3) Theories of Cognition
PSYC472 (3) Scientific Thinking and Reasoning

Religious Studies
RELG340 (3) Religion and the Sciences

GROUP B: HISTORY OF SCIENCE
6 - 12 credits, no more than 6 credits of which may be at the 200-level, chosen from the following:

Anthropology
ANTH359 (3) History of Archaeological Theory

Biological Sciences
BIOI210 (3) Perspectives of Science

Geography
GEOG381 (3) Geographic Thought and Practice

History
HIST319 (3) The Scientific Revolution
HIST335 (3) Science from Greeks to Newton
HIST348 (3) China: Science-Medicine-Technology
HIST349 (3) Health and Healer in Western History
HIST356 (3) Medieval Science and Medicine
HIST381 (3) Colonial Africa: Health/Disease
HIST454 (3) Seminar: Early Modern Medicine
HIST455 (3) Research: Early Modern Medicine
HIST457 (3) Topics in Medical History
HIST458 (3) Modern Medicine: Seminar
HIST459 (3) Modern Medicine: Research
HIST466 (3) Seminar: Medieval Medicine
HIST496 (3) Research: Medieval Medicine

History and Philosophy of Science
HPSC300 (3) Independent Studies: History and Philosophy of Science
HPSC500 (3) Interdisciplinary Seminar: History & Philosophy of Science

Mathematics
MATH338 (3) History and Philosophy of Mathematics

Psychology
PSYC403 (3) Modern Psychology in Historical Perspective

12.28 Humanistic Studies (HMST)

Peterson Hall, Room 318
3460 McTavish Street
Montreal, QC H3A 1X9
Telephone: (514) 398-4301
Fax: (514) 398-8049
E-mail: faye.scrim@mcgill.ca
Website: www.arts.mcgill.ca/humanistic/

Director — Robert Myles (English and French Language Centre)
Committee
Laura Beraha (Russian and Slavic Studies), Charles Boberg (Linguistics), Elena Lombardi (Italian Studies), Storrs McCall (Philosophy), Josef Schmidt (German Studies), Myrna Watt-Seikirk (English), David Williams (English)

Humanistic Studies provides a broad liberal arts education that is personally enriching. It is also practical in its goal of developing the analytical, critical, and contextual thinking skills that are vital for the creation, expression and transmission of ideas. Humanistic Studies is not a department, but a program wherein students are advised and guided by professors from each of the disciplines involved. It has been designed so that students can devise individual interdisciplinary concentrations or explore one of the core humanistic subjects in more depth. The fundamental assumption of Humanistic Studies is that human knowledge as acquired and developed in the university is cumulative and interconnected. A historical sense is crucial for an understanding of the continuity and changes in human thinking and other human activity. Students are encouraged to seek links between and among subjects in the arts – for example, literature, history, philosophy, religion, music, history of fine arts – the social sciences, and natural sciences.

Advising
Students are strongly encouraged to seek advising. Courses should be “clustered” so that different fields complement each
other or are interconnected. Students are strongly advised to take this program in tandem with concentrations in language and literature.

Orientation Meeting
New students should attend the orientation meeting which will be held on Wednesday, August 25, 2004 at 11:30 in Arts 150. The general philosophy of the program will be discussed, sample clusters provided, and advising sessions scheduled.

MINOR CONCENTRATION IN HUMANISTIC STUDIES
(Expandable) (18 credits)
Required Courses (6 credits)
HMST296 (3) Western Humanistic Tradition 1
HMST297 (3) Western Humanistic Tradition 2
Complementary Courses (12 credits)
Courses from the list published on the Humanistic Studies Website will be taken in the following manner:
3 credits History of Fine Arts
3 credits Social Science
and 6 credits, all of which must be at the 300-level or above as follows:
(a) to acquire a more extensive knowledge of any ONE of the areas listed above;
(b) to be used to construct individual interdisciplinary concentrations with the permission of the Humanistic Studies Office.
It is strongly recommended that this Minor Concentration be accompanied by Major and/or Minor Concentrations in literature and/or languages.

MAJOR CONCENTRATION IN HUMANISTIC STUDIES
(36 credits)
Required Courses (6 credits)
HMST296 (3) Western Humanistic Tradition 1
HMST297 (3) Western Humanistic Tradition 2
Complementary Courses (30 credits)
Courses from the list published on the Humanistic Studies Website will be taken in the following manner:
6 credits from the Humanities
6 credits History of Fine Arts
6 credits Social Science
3 credits Natural Science
and 9 credits, all of which must be at the 300-level or above as follows:
(a) to be used to acquire a more extensive knowledge of any ONE of the areas listed above;
(b) to be used to construct individual interdisciplinary concentrations with the permission of the Humanistic Studies Office.
It is strongly recommended that this Major Concentration be accompanied by Major and/or Minor Concentrations in literature and/or languages.

12.29 Industrial Relations Faculty Program
Peterson Hall, Room 318
3460 McTavish Street
Montreal, QC H3A 1X9
Telephone: (514) 398-4301
Fax: (514) 398-8049
E-mail: faye.scrim@mcgill.ca
Website: www.arts.mcgill.ca/programs/industrial-relations

The Faculty of Arts Faculty Program in Industrial Relations provides students with a basic knowledge of industrial relations institutions and practices as well as the principal social and economic forces that underlie them. The program is composed of 54 credits of courses drawn from the Departments of Economics and Sociology within the Faculty of Arts and from labour-management relations within the Faculty of Management.

Further Information
Changes may be made in the program after this Calendar was prepared. For the most up-to-date information on the program, new and returning students should refer to the Website.

Advisers
For a list of advisers, new and returning students should refer to the Website.

Orientation Meeting for New Students
Students entering this program should attend the orientation meeting which will be held on Wednesday, August 25, 2004, at 10:00 in Arts 150. All new students should plan to attend.

Continuance in the Program
To remain in the program beyond the first year, students must take the six ‘U1 Required Courses’ listed below during their first year and earn a 2.50 GPA in ECON208, ECON209, SOCI235, SOCI312 and INDR294.

Continuing Education Courses
Courses in Continuing Education may not be used to fulfill IR program requirements. Similarly, courses in Continuing Education taken before entering the program may not be used to fulfill program requirements.

B.A. FACULTY PROGRAM IN INDUSTRIAL RELATIONS
(54 credits)
[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

U1 Required Courses (18 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON209 (3) Macroeconomic Analysis and Applications
SOCI235 (3) Technology and Society
SOCI312 (3) Industrial Sociology
INDR294 (3) Introduction to Labour-Management Relations
MGCR222 (3) Introduction to Organizational Behaviour

U2 Required Courses (18 credits)
ECON306D1 (3) Labour Economics and Institutions
ECON306D2 (3) Labour Economics and Institutions
SOC1420 (3) Organizations
SOC1444 (3) The Sociology of Labour Force
INDR494 (3) Labour Law
MGCR320 (3) Managing Human Resources

U2 Complementary Courses (6 credits)
either Economics
ECON227D1 (3) Economic Statistics
ECON227D2 (3) Economic Statistics
or Sociology
SOCI350 (3) Statistics in Social Research
SOCI461 (3) Quantitative Data Analysis

U3 Required Courses (9 credits)
INDR492 (3) Public Policy in Industrial Relations
INDR496 (3) Collective Bargaining
INDR497 (3) Contract Administration

U3 Complementary Courses (3 credits) 3 additional credits from approved courses. See the Program Website for a list of possible courses.

Credits outside Arts and Science
Students in the Faculty Program in Industrial Relations may take no more than 30 credits in courses outside of the Faculties of Arts and of Science. This total includes required and complementary courses taken for the IR Program and elective courses. Moreover, in the U1 year a student should take at most only one 3-credit elective course in the Faculty of Management in addition to the required courses, INDR294 and MGCR222.
12.30 International Development Studies (INTD)

Office of Interdisciplinary Programs
Stephen Leacock Building, Room 439
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-4804
Fax: (514) 398-1770
E-mail: ids@mcgill.ca
IDS Program Website: www.mcgill.ca/ids

Program Adviser — Ines Scharnweber
Program Chair —
Myron Frankman, Economics, Leacock 536
Telephone: (514)398-4829

Advisory Committee (2004-05)
Rosalind Boyd, Centre for Developing Area Studies, (514)398-3507
Oliver Coomes, Geography, Burnside Hall, (514) 398-4943
Myron Echenberg, History, Leacock, (514) 398-4863
Kathleen Fallon, Sociology, Leacock, (514) 398-6851
Franque Grimard, Economics, Leacock, (514) 398-4847
John Kurien, Economics, Leacock, (514) 398-4826
Krisn Norten, Anthropology, Leacock, (514) 398-4294

The International Development Studies (IDS) programs are designed for those students who wish to take advantage of the resources available at McGill to pursue an interdisciplinary program of study focusing on the problems of the developing countries.

Most courses above the 200 level have prerequisites. Although these may be waived by instructors in some cases, students are urged to confirm their eligibility for courses when they prepare their programs of study. Note that certain courses (especially those in Management) may not be available owing to space limitations. Students should check the Class Schedule for confirmation as to which term courses are offered.

For more up-to-date information consult the IDS Website.

MINOR CONCENTRATION IN INTERNATIONAL DEVELOPMENT STUDIES (18 credits) (Expandable)

Required Courses (6 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON313 (3) Economic Development 1

Complementary Courses (12 credits)
A minimum of 3 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

The remaining credits to be selected from the IDS Complementary Course list Group B.

At least 9 of the 18 credits must be at the 300 level or above.

MAJOR CONCENTRATION IN INTERNATIONAL DEVELOPMENT STUDIES (36 credits)

Required Courses (12 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON313 (3) Economic Development 1
ECON314 (3) Economic Development 2
INTD497 (3) Research Seminar on International Development

Complementary Courses (24 credits)
A minimum of 6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

The remaining credits to be selected from the IDS Complementary Course list Group B, at least 12 credits must be taken from one of the three categories. Students must take courses from at least three disciplines.

At least 18 of the 36 credits must be at the 300 level or above.

HONOURS IN INTERNATIONAL DEVELOPMENT STUDIES (57 credits)
Honours students must maintain a program GPA of 3.00 and an overall CGPA of 3.00.

Required Courses (12 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON313 (3) Economic Development 1
ECON314 (3) Economic Development 2
INTD497 (3) Research Seminar on International Development

Complementary Courses (45 credits)
No more than 21 credits can be taken in any one discipline.

Thesis or research project, 3 to 6 credits, one of:
INTD491 (3) Research Project
INTD492 (6) Honours Thesis

A minimum of 6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

24 to 36 credits to be selected from the IDS Complementary Course list Group B; at least 12 credits must be taken from one of the three categories. Students must take courses from at least three disciplines.

Group C – 0 to 9 credits of Introductory and/or Intermediate Language Training.

Students are strongly encouraged to master a language appropriate to an area of the developing world in which they have a particular interest.

Among the languages that are included in this option are Arabic, Chinese, French, Korean, Portuguese, Spanish, and Urdu. Other language options can be approved by the Honours Adviser.

Students who already have appropriate language capability, or who have distinct interests not likely to necessitate such training, may substitute an additional 9 credits from the Group B Complementary Courses.

At least 30 of the 57 credits must be at the 300 level or above; nine credits of these must be at the 400 level or above.

JOINT HONOURS – INTERNATIONAL DEVELOPMENT STUDIES COMPONENT (36 credits)
Joint Honours students must maintain a program GPA of 3.00 and an overall CGPA of 3.00.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Required Courses (12 credits)
ECON208 (3) Microeconomic Analysis and Applications
ECON313 (3) Economic Development 1
ECON314 (3) Economic Development 2
INTD497 (3) Research Seminar on International Development

Complementary Courses (24 credits)
No more than 15 credits can be taken in any one discipline.

Thesis or research project, 3 to 6 credits

Students may either do a 6-credit thesis in IDS, or divide the thesis between INTD491 and the other department; one of:
INTD491 (3) Research Project
INTD492 (6) Honours Thesis

A minimum of 6 credits selected from the IDS Complementary Course list Group A. Only one course from each discipline can be counted.

12 to 15 credits to be selected from the IDS Complementary Course list Group B; at least 12 credits must be taken from one of the three categories. Students must take courses from at least three disciplines.

At least 24 of the 36 credits must be at the 300 level or above; six of these must be at the 400 level.
### IDS Complementary Course Lists for Minor Concentration, Major Concentration, Honours, Joint Honours

#### GROUP A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH202</td>
<td>Comparative Cultures</td>
</tr>
<tr>
<td>or ANTH212</td>
<td>Anthropology of Development</td>
</tr>
<tr>
<td>GEOG210</td>
<td>Global Places and Peoples</td>
</tr>
<tr>
<td>or GEOG216</td>
<td>Geography of the World Economy</td>
</tr>
<tr>
<td>POLI227</td>
<td>Developing Areas/Introduction</td>
</tr>
<tr>
<td>SOCI254</td>
<td>Development and Underdevelopment</td>
</tr>
</tbody>
</table>

#### GROUP B

**Development Theory and World View**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH341</td>
<td>Women in Cross-Cultural Perspective</td>
</tr>
<tr>
<td>ANTH342</td>
<td>Gender, Inequality and the State</td>
</tr>
<tr>
<td>ANTH349</td>
<td>Transformation of Third World Societies</td>
</tr>
<tr>
<td>ANTH439</td>
<td>Theories of Development</td>
</tr>
<tr>
<td>ISLA501</td>
<td>The Qur'an: Text and History</td>
</tr>
<tr>
<td>ISLA505</td>
<td>Islam: Origin and Early Development</td>
</tr>
<tr>
<td>ISLA506</td>
<td>Islam: Later Developments</td>
</tr>
<tr>
<td>RELG204</td>
<td>The Study of World Religions 1</td>
</tr>
<tr>
<td>RELG207</td>
<td>Judaism, Christianity and Islam</td>
</tr>
<tr>
<td>RELG252</td>
<td>Hinduism and Buddhism</td>
</tr>
<tr>
<td>RELG253</td>
<td>Religions of East Asia</td>
</tr>
<tr>
<td>RELG254</td>
<td>Introduction to Sikhism</td>
</tr>
<tr>
<td>RELG337</td>
<td>Themes in Buddhist Studies</td>
</tr>
<tr>
<td>RELG354</td>
<td>Chinese Religions</td>
</tr>
<tr>
<td>RELG371</td>
<td>Ethics of Violence/Non-Violence</td>
</tr>
<tr>
<td>RELG452</td>
<td>East Asian Buddhism</td>
</tr>
<tr>
<td>RELG454</td>
<td>Modern Hindu Thought</td>
</tr>
<tr>
<td>RELG557</td>
<td>Asian Ethical Systems</td>
</tr>
</tbody>
</table>

Up to 6 credits of Group A courses (not previously counted) may be used in this category.

**Regions**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH315</td>
<td>Society/Culture: East Africa (Field Study in Africa only)</td>
</tr>
<tr>
<td>ANTH321</td>
<td>People and Cultures of Africa</td>
</tr>
<tr>
<td>ANTH322</td>
<td>Social Change in Modern Africa</td>
</tr>
<tr>
<td>ANTH326</td>
<td>Peoples of Central and South America</td>
</tr>
<tr>
<td>ANTH327</td>
<td>Peoples of South Asia</td>
</tr>
<tr>
<td>ANTH328</td>
<td>Peoples and Cultures of South-East Asia</td>
</tr>
<tr>
<td>ANTH329</td>
<td>Modern Chinese Society and Change</td>
</tr>
<tr>
<td>ANTH340</td>
<td>Middle Eastern Society and Culture</td>
</tr>
<tr>
<td>ANTH416</td>
<td>Environment/Development: Africa (Field Study in Africa only)</td>
</tr>
<tr>
<td>ANTH427</td>
<td>Social Change in South Asia</td>
</tr>
<tr>
<td>EAST211</td>
<td>Introduction: East Asian Culture: China</td>
</tr>
<tr>
<td>EAST213</td>
<td>Introduction: East Asian Culture: Korea</td>
</tr>
<tr>
<td>EAST309</td>
<td>Current Topics: Chinese Studies 2</td>
</tr>
<tr>
<td>EAST309</td>
<td>Pacific Asia in the 20th Century</td>
</tr>
<tr>
<td>EAST313</td>
<td>Current Topics: Korean Studies 1</td>
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<tr>
<td>EAST314</td>
<td>Current Topics: Korean Studies 2</td>
</tr>
<tr>
<td>EAST353</td>
<td>Approaches to Chinese Cinema</td>
</tr>
<tr>
<td>EAST515</td>
<td>Seminar: Beyond Orientalism</td>
</tr>
<tr>
<td>ECON411</td>
<td>Economic Development: A World Area</td>
</tr>
<tr>
<td>ENGL321</td>
<td>Caribbean Fiction</td>
</tr>
<tr>
<td>FREN313</td>
<td>Francophone 3</td>
</tr>
<tr>
<td>GEOG416</td>
<td>Africa South of the Sahara</td>
</tr>
<tr>
<td>HISP434</td>
<td>Dictatorship: Hispanic America</td>
</tr>
<tr>
<td>HIST197</td>
<td>FYS: Race in Latin America</td>
</tr>
<tr>
<td>HIST200</td>
<td>Introduction to African History</td>
</tr>
<tr>
<td>HIST201</td>
<td>Modern African History</td>
</tr>
<tr>
<td>HIST208</td>
<td>Introduction to East Asian History</td>
</tr>
<tr>
<td>HIST218</td>
<td>Modern East Asian History</td>
</tr>
<tr>
<td>HIST309</td>
<td>History of Latin America to 1825</td>
</tr>
<tr>
<td>HIST338</td>
<td>China in Revolution: 1921-1997</td>
</tr>
<tr>
<td>HIST348</td>
<td>China: Science-Medicine-Technology</td>
</tr>
<tr>
<td>HIST360</td>
<td>Latin America since 1825</td>
</tr>
<tr>
<td>HIST374</td>
<td>West Africa since 1800</td>
</tr>
<tr>
<td>HIST381</td>
<td>Colonial Africa: Health/Disease</td>
</tr>
<tr>
<td>HIST382</td>
<td>History of South Africa</td>
</tr>
<tr>
<td>HIST396</td>
<td>Disease in Africa Since 1960</td>
</tr>
<tr>
<td>HIST419</td>
<td>Central America</td>
</tr>
<tr>
<td>HIST441</td>
<td>Topics: Culture and Ritual in China</td>
</tr>
<tr>
<td>HIST443</td>
<td>China in the Modern World</td>
</tr>
<tr>
<td>ISLA411</td>
<td>History of the Middle East, 1918-1945</td>
</tr>
<tr>
<td>POLI319</td>
<td>Politics of Latin America</td>
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<tr>
<td>POLI322</td>
<td>Political Change in South Asia</td>
</tr>
<tr>
<td>POLI323</td>
<td>Developing Areas/China and Japan</td>
</tr>
<tr>
<td>POLI324</td>
<td>Developing Areas/Africa</td>
</tr>
<tr>
<td>POLI340</td>
<td>Developing Areas/Middle East</td>
</tr>
<tr>
<td>POLI341</td>
<td>Foreign Policy: The Middle East</td>
</tr>
<tr>
<td>POLI347</td>
<td>Arab-Israeli Conflict, Crisis, Peace</td>
</tr>
<tr>
<td>POLI349</td>
<td>Foreign Policy: Asia</td>
</tr>
<tr>
<td>POLI352</td>
<td>International Policy/Foreign Policy: Africa</td>
</tr>
<tr>
<td>SOCI366</td>
<td>Social Change in the Caribbean</td>
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</tbody>
</table>

**Development Policies and Practices**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>AGEC430*</td>
<td>Agriculture, Food and Resource Policy</td>
</tr>
<tr>
<td>AGEC442*</td>
<td>Economics of International Agricultural Development</td>
</tr>
<tr>
<td>AGR1305</td>
<td>Barbados Agro-Ecosystems (Field course)</td>
</tr>
<tr>
<td>AGR1411*</td>
<td>International Agriculture</td>
</tr>
<tr>
<td>AGR1550</td>
<td>Sustained Tropical Agriculture (Panama Program only)</td>
</tr>
<tr>
<td>ANTH227</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>ANTH324</td>
<td>Economic Anthropology</td>
</tr>
<tr>
<td>ANTH339</td>
<td>Ecological Anthropology</td>
</tr>
<tr>
<td>ANTH346</td>
<td>Development in Agrarian Societies</td>
</tr>
<tr>
<td>ANTH418</td>
<td>Environment and Development</td>
</tr>
<tr>
<td>ANTH445</td>
<td>Property and Land Tenure</td>
</tr>
<tr>
<td>ECON209</td>
<td>Macroeconomic Analysis and Applications</td>
</tr>
<tr>
<td>ECON314</td>
<td>Economic Development 2 (Minor Concentration only)</td>
</tr>
<tr>
<td>ECON412</td>
<td>Topics in Economic Development 1</td>
</tr>
<tr>
<td>ECON416</td>
<td>Topics in Economic Development 2</td>
</tr>
<tr>
<td>GEOG404</td>
<td>Environmental Management 2 (Panama and Africa programs only)</td>
</tr>
<tr>
<td>GEOG407</td>
<td>Issues in Geography</td>
</tr>
<tr>
<td>GEOG408</td>
<td>Geography of Development</td>
</tr>
<tr>
<td>GEOG410</td>
<td>Geography of Underdevelopment: Current Problems</td>
</tr>
<tr>
<td>GEOG498</td>
<td>Humans in Tropical Environments (Panama and Africa Programs only)</td>
</tr>
<tr>
<td>GEOG504</td>
<td>Industrial Restructuring - Geographic Implications</td>
</tr>
<tr>
<td>GEOG508</td>
<td>Resources, People and Power</td>
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<tr>
<td>GEOG510</td>
<td>Humid Tropical Environments</td>
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<tr>
<td>INTD490</td>
<td>Development Field Research</td>
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<tr>
<td>MGCR382</td>
<td>International Business</td>
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<tr>
<td>MIME524</td>
<td>Mineral Resources Economics</td>
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<tr>
<td>NSCR340*</td>
<td>Global Perspectives on Food</td>
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<tr>
<td>NSCR540*</td>
<td>Socio-Cultural Issues in Water</td>
</tr>
<tr>
<td>NUTR501*</td>
<td>Nutrition in Developing Countries</td>
</tr>
<tr>
<td>ORG380</td>
<td>Cross Cultural Management</td>
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<tr>
<td>POLI300D1</td>
<td>Developing Areas/Revolution</td>
</tr>
<tr>
<td>POLI300D2</td>
<td>Developing Areas/Revolution</td>
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<td>POLI338</td>
<td>Developing Areas/Topics 1</td>
</tr>
<tr>
<td>POLI345</td>
<td>International Organization</td>
</tr>
<tr>
<td>POLI348</td>
<td>Foreign Policy: Third World</td>
</tr>
<tr>
<td>POLI422</td>
<td>Developing Areas/Topics 2</td>
</tr>
<tr>
<td>POLI423</td>
<td>Politics of Ethno-Nationalism</td>
</tr>
<tr>
<td>POLI445</td>
<td>IPE: North-South Relations</td>
</tr>
<tr>
<td>POLI450</td>
<td>Peacebuilding</td>
</tr>
<tr>
<td>POLI471</td>
<td>Democracy in the Modern World</td>
</tr>
<tr>
<td>POLI472</td>
<td>Developing Areas/Social Movements</td>
</tr>
<tr>
<td>POLI473</td>
<td>Democracy and the Market</td>
</tr>
<tr>
<td>POLI522</td>
<td>Seminar: Developing Areas</td>
</tr>
<tr>
<td>SOCI222</td>
<td>Urban Sociology</td>
</tr>
</tbody>
</table>
SOCI234 (3) Population and Society
SOCI335 (3) Sociology of State Repression
SOCI418 (3) Human Rights and Humanitarianism
SOCI520 (3) Migration and Immigrant Groups
SOCI550 (3) Developing Societies
SOCI590 (3) Conflict and State Breakdown
SWRK400 (3) Policy and Practice for Refugees
SWRK532 (3) International Social Work
* These courses are normally offered only at Macdonald Campus.

AFRICA FElD STUDY SEMESTER, see page325 under the Department of Geography, Faculty of Science, for details of the 15-credit interdisciplinary AFSS. Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

12.31 Islamic Studies (ISLA)

Morrice Hall, Room 319
3485 McTavish Street
Montreal, QC H3A 1Y1
Telephone: (514) 398-6077
Fax: (514) 398-6731
E-mail: info.islamic@mcgill.ca
Website: www.arts.mcgill.ca/programs/islamic

Director — Eric L. Ormsby
Emeritus Professor
Donald P. Little; B.A.(Vanderbilt), M.A.(Stan.), Ph.D.(Calif.)
Professors
Sajida S. Alvi; B.A., M.A., Ph.D.(Punj.)
Wael Hallaq; B.A.(Halifa), Ph.D.(Wash.)
Eric L. Ormsby; B.A.(Penn.), M.L.S.(Rutgers), M.A., Ph.D.(Prin.)
Associate Professor
A. Uner Turgay; B.A.(Robert Coll., Istanbul), M.A., Ph.D.(Madison-Wis.)
Assistant Professor
Michelle L. Hartman; B.A.(Col.), Ph.D.(Oxford)
Lecturers (part-time)
Issa J. Boullata; B.A., Ph.D.(Lond.) (post-retirement)
Henry Habib; Ph.D.(McG.)
Faruq Hassan; Ph.D.(Leeds)
Bilal Kuspinar; Ph.D.(McG.)

In addition to its graduate programs, the Institute of Islamic Studies offers courses in history, civilization and languages (Arabic, Turkish, Persian and Urdu) at the 400- and 500-level.

12.32 Italian Studies (ITAL)

688 Sherbrooke Street West, Room 425
Montreal, QC H3A 3R1
Telephone: (514) 398-3953
Fax: (514) 398-1748
E-mail: italian.studies@mcgill.ca
Website: www.arts.mcgill.ca/italian

Chair — Lucienne Kroha
Emeritus Professor
Pamela D. Stewart; B.A.(Montr.), M.A.(McG.), F.R.S.C.
Professor
Maria Predelli; Lic.Cl., Dott.Lett.(Florence)
Associate Professor
Lucienne Kroha; B.A., M.A.(McG.), Ph.D.(Harv.)
Assistant Professor
Eugenio Bolongaro; B.A., L.Lb. (UBC), Ph.D. (McG.)
Elena Lombardi; Dott. Lett.(Pavia), M.A., Ph.D.(NYU)
Lecturers
Enrica Quaroni; B.A., Ph.D.(McG.)
Jen Wienstein; B.A., M.A., Ph.D.(McG.)

Associate Members
Paula Clarke (History)
Anthony Masi (Sociology)
Eric Ormsby (Islamic Studies)
Filippo Sabetti (Political Science)
Bronwen Wilson (Art History and Communication Studies)

Advisers:
Minor – Dr. Jen Wienstein, (514) 398-3955
Majors, Honours and Joint Honours –
Professor Maria Predelli, (514) 398-3149

MINOR CONCENTRATION IN ITALIAN LANGUAGE AND LITERATURE (18 credits) (Expandable)
(formerly “Minor Concentration in Italian Studies”)
Students with advanced standing in the language must replace language courses with courses from groups B and C.

Complementary Courses (18 credits)
chosen from the following three groups:
0 - 12 credits Group A – Basic Language Courses.
6 - 18 credits Group B – Courses taught in Italian.
0 - 6 credits Group C – Courses taught in English.

MINOR CONCENTRATION IN ITALIAN CIVILIZATION (18 credits) (Expandable)
Students with advanced standing in the language must replace language courses with courses from groups B, C and D.

Complementary Courses (18 credits)
0 - 12 credits chosen from Group A – Basic Language Courses.
0 - 12 credits chosen from Group B – Courses taught in Italian.
3 - 18 credits chosen from Group C – Courses taught in English.
0 - 6 credits chosen from Group D – Courses offered in other departments.

MAJOR CONCENTRATION IN ITALIAN LANGUAGE AND LITERATURE (36 credits)
All students wishing to register for the Major Concentration in Italian Language and Literature are strongly urged to meet with a departmental adviser.

Complementary Courses (36 credits)
0 - 12 credits chosen from Group A – Basic Language Courses.
18 - 36 credits (at least 6 of which must be at the 350-level or above) chosen from courses at the 300-level or above as listed in Group B – Courses taught in Italian.
Note: ITAL300 may not be taken by students who have taken 132-306.
0 - 18 credits chosen from courses at the 300-level or above as listed in Group C – Courses taught in English.
0 - 6 credits chosen from Group D – Courses offered in other departments.

MAJOR CONCENTRATION IN ITALIAN CIVILIZATION (36 credits) (formerly “Major Concentration in Italian Studies”)
This program is designed to enable students with no previous knowledge of Italian to pursue a Major Concentration by allowing them to take some literature and culture courses in English translation while acquiring language competency in other courses (including some literature courses taught in the original). All students wishing to register for the Major Concentration in Italian Civilization are strongly urged to meet with a Departmental adviser.

Complementary Courses (36 credits)
6 - 12 credits chosen from Group A – Basic Language Courses.
Students with no knowledge of the Italian language must take 12 credits.
Students arriving with some knowledge of the language may take 6 credits (ITAL210D1/ITAL210D2 or ITAL215D1/ITAL215D2 or ITAL216).
ITALIAN STUDIES COURSE GROUPS

**Group A – Basic Language Courses:**
ITAL205D2 (3) Italian for Beginners
ITAL206 (6) Beginners’ Italian Intensive
ITAL210D1 (3) Elementary Italian
ITAL210D2 (3) Elementary Italian
ITAL215D1 (3) Intermediate Italian
ITAL215D2 (3) Intermediate Italian
ITAL216 (6) Intermediate Italian Intensive
ITAL300* (3) Italian Literary Composition
ITAL306* (6) Advanced Reading and Composition

* only one of ITAL300 or ITAL306 can count towards all programs

**Group B – Courses taught in Italian:**
ITAL307 (3) Topics in Italian Culture
ITAL308 (3) Business Italian 1
ITAL311 (3) Twentieth Century Texts
ITAL320 (3) Manzoni: Novel and Nationhood
ITAL325 (3) Masterpieces of Italian Literature 1
ITAL326 (3) Masterpieces of Italian Literature 2
ITAL330 (3) Commedia dell’Arte
ITAL331 (3) Drama from Goldoni to Pirandello
ITAL334 (3) The Art of Essay Writing
ITAL335 (3) Medieval Discourses on Love
ITAL360 (3) Contemporary Italian Prose
ITAL368 (3) Literature of the Renaissance
ITAL370 (3) Italian Poetry and Music
ITAL376 (3) Medieval Romance in Italy
ITAL380 (3) Verga: The Illusion of Reality
ITAL383 (3) Women’s Writing since 1880
ITAL410 (3) Modern Italian Literature
ITAL411 (3) Pirandello
ITAL415 (3) Italian Poetry 20th Century
ITAL420 (3) Leopardi and Italian Romanticism
ITAL435 (3) Ariosto’s “Orlando Furioso”
ITAL436 (3) Tasso’s “Gerusalemme Liberata”
ITAL461 (3) Dante: “The Divine Comedy”
ITAL530 (3) 17th - 18th Century Culture
ITAL542 (3) History of Italian Language
ITAL551 (3) Boccaccio and the Italian Novella
ITAL562 (3) Petrarch and Petrarchism
ITAL563 (3) 13th-16th Century Literature
ITAL590 (3) Italian Literary Criticism

**Group C – Courses taught in English:**
ITAL199 (3) FYS: Italy’s Literature in Context
ITAL355 (3) Dante and The Middle Ages
ITAL361 (3) Italian Prose after 1945
ITAL363 (3) Gender, Literature and Society
ITAL365 (3) The Italian Renaissance
ITAL375 (3) Cinema and Society in Modern Italy
ITAL385 (3) Italian Futurist Movement
ITAL395 (3) Interdisciplinary Seminar
ITAL412 (3) Pirandello and European Theatre
ITAL416 (3) The Twentieth Century
ITAL464 (3) Machiavelli
ITAL477 (3) Italian Cinema and Video

**Group D – Courses offered in other departments:**
ANTH337 (3) Mediterranean Society and Culture
ARTH223 (3) Early Renaissance Art in Italy
ARTH324 (3) High Renaissance Art in Italy
ARTH325 (3) Venetian High Renaissance Painting
ARTH332 (3) Italian Renaissance Architecture
CLAS208 (3) Roman Literature and Society
CLAS307 (3) Roman Comedy
CLAS404 (3) Classical Tradition

Students arriving with competency in the language may substitute courses from Groups B, C, and D for Basic Language Courses. All students with some background must consult with the Department for proper placement. 18 - 30 credits chosen from courses at the 300-level or above as listed in Group B – Courses taught in Italian and Group C – Courses taught in English. 0 - 6 credits chosen from Group D – Courses offered in other departments.

**HONOURS IN ITALIAN STUDIES** (54 credits)

Students with advanced standing in the language must replace language courses with courses from Groups B, C and D.

**Required Courses** (6 credits)
ITAL341 (3) The Art of Essay Writing
ITAL470 (3) Honours Thesis

**Complementary Courses** (48 credits)
48 credits, 9 of which must be at the 400 level or above. 0 - 12 credits from Group A – Basic Language Courses. 30 - 48 credits Group B – Courses taught in Italian. 0 - 9 credits combined from Group C – Courses taught in English, and Group D – Courses offered in other departments.

Students must maintain a minimum CGPA of 3.00 and a GPA of 3.30 in the program courses.

Admission to the Honours program in Italian requires Departmental approval. Students wishing to register should consult with the Department as early as possible.

Students may begin Honours in Italian Studies in the first year, instead of the second, if in the opinion of the Department they are found to be qualified.

**JOINT HONOURS – ITALIAN STUDIES COMPONENT** (36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines; see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Admission to Joint Honours requires departmental approval. Students wishing to register in the program should consult with the Department as early as possible.

Students may register for Joint Honours in the first year, instead of the second, if in the opinion of the departments they are found to be qualified.

Students with advanced standing in the language must replace language courses with courses from groups B, C and D.

**Required Courses** (6 credits)
ITAL341 (3) The Art of Essay Writing
ITAL470 (3) Honours Thesis

**Complementary Courses** (30 credits)
30 credits, 6 of which must be at the 400 level or above: 0 - 12 credits from Group A – Basic Language Courses. 12 - 30 credits from Group B – Courses taught in Italian. 0 - 18 credits combined from Group C – Courses taught in English and Group D – Courses offered in other departments.

Students must maintain a minimum CGPA of 3.00 and a GPA of 3.30 in the program courses.

**ITALIAN STUDIES COURSE GROUPS**

**Group A – Basic Language Courses:**
ITAL205D1 (3) Italian for Beginners
ITAL205D2 (3) Italian for Beginners
ITAL206 (6) Beginners’ Italian Intensive
ITAL210D1 (3) Elementary Italian
ITAL210D2 (3) Elementary Italian
ITAL215D1 (3) Intermediate Italian
ITAL215D2 (3) Intermediate Italian
ITAL216 (6) Intermediate Italian Intensive
ITAL300* (3) Italian Literary Composition
ITAL306* (6) Advanced Reading and Composition

* only one of ITAL300 or ITAL306 can count towards all programs

**Group B – Courses taught in Italian:**
ITAL307 (3) Topics in Italian Culture
ITAL308 (3) Business Italian 1
ITAL311 (3) Twentieth Century Texts
ITAL320 (3) Manzoni: Novel and Nationhood
ITAL325 (3) Masterpieces of Italian Literature 1
ITAL326 (3) Masterpieces of Italian Literature 2
ITAL330 (3) Commedia dell’Arte
ITAL331 (3) Drama from Goldoni to Pirandello
ITAL334 (3) The Art of Essay Writing
ITAL335 (3) Medieval Discourses on Love
ITAL360 (3) Contemporary Italian Prose
ITAL368 (3) Literature of the Renaissance
ITAL370 (3) Italian Poetry and Music
ITAL376 (3) Medieval Romance in Italy
ITAL380 (3) Verga: The Illusion of Reality
ITAL383 (3) Women’s Writing since 1880
ITAL410 (3) Modern Italian Literature
ITAL411 (3) Pirandello
ITAL415 (3) Italian Poetry 20th Century
ITAL420 (3) Leopardi and Italian Romanticism
ITAL435 (3) Ariosto’s “Orlando Furioso”
ITAL436 (3) Tasso’s “Gerusalemme Liberata”
ITAL461 (3) Dante: “The Divine Comedy”
ITAL530 (3) 17th - 18th Century Culture
ITAL542 (3) History of Italian Language
ITAL551 (3) Boccaccio and the Italian Novella
ITAL562 (3) Petrarch and Petrarchism
ITAL563 (3) 13th-16th Century Literature
ITAL590 (3) Italian Literary Criticism

**Group C – Courses taught in English:**
ITAL199 (3) FYS: Italy’s Literature in Context
ITAL355 (3) Dante and The Middle Ages
ITAL361 (3) Italian Prose after 1945
ITAL363 (3) Gender, Literature and Society
ITAL365 (3) The Italian Renaissance
ITAL375 (3) Cinema and Society in Modern Italy
ITAL385 (3) Italian Futurist Movement
ITAL395 (3) Interdisciplinary Seminar
ITAL412 (3) Pirandello and European Theatre
ITAL416 (3) The Twentieth Century
ITAL464 (3) Machiavelli
ITAL477 (3) Italian Cinema and Video

**Group D – Courses offered in other departments:**
ANTH337 (3) Mediterranean Society and Culture
ARTH223 (3) Early Renaissance Art in Italy
ARTH324 (3) High Renaissance Art in Italy
ARTH325 (3) Venetian High Renaissance Painting
ARTH332 (3) Italian Renaissance Architecture
CLAS208 (3) Roman Literature and Society
CLAS307 (3) Roman Comedy
CLAS404 (3) Classical Tradition
ENGL447 (3) Crosscurrents/English Literature and European Literature 1  
HIST345 (3) History of Italian Renaissance  
HIST380 (3) Western Europe: The Middle Ages  
HIST398 (3) Topics in Italian History  
HIST401 (3) Topics: Medieval Culture and Society  
MUHL387 (3) Opera from Mozart to Puccini  
POLI414 (3) Society and Politics in Italy  
SOCI485 (3) Society, Economy and Polity in Italy

12.33 Jewish Studies (JWST)
3438 McTavish Street, Room 202  
Montreal, QC H3A 1X9  
Telephone: (514) 398-6543  
Fax: (514) 398-5158  
Website: www.arts.mcgill.ca/programs/jewish

Chair — Eugene Orenstein  

Professors
Gershon D. Hundert; B.A.(Col.), M.A.(Ohio St.), Ph.D.(Col.)  
(Leoan Segal Professor of Jewish Studies)

Associate Professors
David Aberbach; B.A., B.Sc.(Univ.Coll., Lond.), M.Litt., D.Phil.(Oxon.)
Lawrence Kaplan; B.A.(Yeshiva), M.A., Ph.D. (Harv.)
Eugene Orenstein; B.A.(C.C.N.Y.), M.A., Ph.D.(Col.)

Assistant Professors
Eric Caplan, B.A.(McG.), M.A.(Tor.), Ph.D.(McG.)
Carlos Fraenkel; B.A., M.A., Ph.D.(Freie U., Berlin)
Yael Halevi-Wise, B.A.(Heb. U.), M.A.(Georgetown), Ph.D.(Prin.)

Lecturers
Karen Bauer; B.Ed.(McG.)
Lea Fima; B.Ed.(Beit Berl College), M.A.(McG.)
Esther Frank; B.A., M.A.(McG.)
Anna Gonsor; B.A., M.L.S., M.A.(McG.)
Bracha Shauli; B.Ed.C.A.D. (Gordon College)

Adjunct Professors
Ruth Wisse; M.A.(Col.), Ph.D.(McG.)
Magdalena Opalski; M.A.(Warsaw), Ph.D. (Ottawa)

The Department of Jewish Studies, established in 1968, offers an interdisciplinary approach to the study of Judaica. It includes:

- a selection of courses that will enable students not taking a Concentration in Jewish Studies to broaden their knowledge of Jewish history and culture;
- elementary, intermediate and advanced courses in Jewish languages – Hebrew, Yiddish, and Aramaic. In the case of the first two, this includes attention to both spoken idiom and written texts;
- specialized courses in the various disciplines that comprise Jewish Studies for students who have specific academic interests;
- a Minor Concentration for students who wish to add competence in Jewish Studies to their major field of study;
- a comprehensive Major Concentration, and an Honours program culminating in advanced seminars and tutorials for students contemplating careers in the various fields of Judaica.

The Honours Program in Jewish Studies will give students the necessary linguistic, textual and bibliographical knowledge to

The Honours Program in Jewish Studies will give students the background necessary to complete the advanced language requirement may substitute up to 12 credits in language.

6 credits (minimum) in the history of Jewish Civilization to be chosen from:

- Jewish Studies 1: Biblical Period  
- Jewish Studies 2: 400 BCE - 1000  
- Jewish Studies 3: 1000 to 2000  
- Jewish History: 400 B.C.E. to 1000  
- Jewish History: 1000-2000

6 credits reflecting an advanced level of competence in either Hebrew or Yiddish chosen from the following: JWST327, JWST328, JWST329, JWST330; JWST331, JWST332, JWST333, JWST340D1, JWST340D2, JWST367, JWST368, JWST369, JWST370 or any course at the 400 level (except JWST404 and JWST405).

Consultation with the Adviser is strongly recommended.

HONOURS IN JEWISH STUDIES (60 credits)
Adviser: Eugene Orenstein, (514) 398-5964

Required Courses (9 credits)
JWST211 (3) Jewish Studies 1: Biblical Period
JWST491 (3) Honours Thesis 1
JWST492 (3) Honours Thesis 2

Complementary Courses (51 credits)
6 credits, one of:
JWST216 (3) Jewish Studies 2: 400 BCE - 1000
European Studies.

Study: Biblical Studies, Rabbinic Studies, Literature, Jewish
reflect progress to the advanced level in one of the Areas of
15 - 21 credits, planned with an adviser and normally chosen to
0 - 6 credits: Language

HIST219 (3) Jewish History: 1000-2000

JWST217 (3) Jewish Studies 3: 1000 to 2000
JWST218 (3) Jewish History: 1000-2000

0 - 18 credits: Language

Each Honours student will complete at least one Jewish
language at the advanced level of instruction. A student who
can demonstrate competence in a Jewish language may be
permitted to substitute other courses for all or part of the
language requirement.

JWST220D1 (3) Introductory Hebrew
JWST220D2 (3) Introductory Hebrew
JWST320D1 (3) Intermediate Hebrew
JWST320D2 (3) Intermediate Hebrew
JWST340D1 (3) Intermediate Yiddish
JWST340D2 (3) Intermediate Yiddish
JWST480 (3) Advanced Yiddish 1
JWST481 (3) Advanced Yiddish 2

27 - 45 credits, planned with an adviser and normally chosen to
reflect progress to the advanced level in two of the Areas of
study: Biblical Studies, Rabbinic Studies, Literature, Jewish
Thought, Jewish History, Modern Jewish Studies, and East
European Studies.

According to Faculty regulations, Honours students must maintain a
minimum CGPA of 3.00 and a Program GPA of 3.0 or higher.

JOINT HONOURS – JEWISH STUDIES COMPONENT
(36 credits)

Students who wish to study at the Honours level in two Arts disci-
plines can combine Joint Honours program components from any
two Arts disciplines, see section 11.4 “Joint Honours Programs” for
a list of available programs.

Joint Honours students should consult an adviser in each
department to discuss their course selection and their interdiscipli-
ary research project (if applicable).

Required Courses (9 credits)
JWST211 (3) Jewish Studies 1: Biblical Period
JWST491 (3) Honours Thesis 1
JWST492 (3) Honours Thesis 2

Complementary Courses (27 credits)
3 credits, one of:
JWST216 (3) Jewish Studies 2: 400 B.C.E. - 1000
HIST207 (3) Jewish History: 400 B.C.E. - 1000

3 credits, one of:
JWST217 (3) Jewish Studies 3: 1000 to 2000
HIST219 (3) Jewish History: 1000-2000

0 - 6 credits: Language

Each Joint Honours student will complete at least one Jewish
language at the advanced level of instruction. A student who
can demonstrate competence in a Jewish language may be
permitted to substitute other courses for all or part of the
language requirement.

JWST340D1 (3) Advanced Hebrew
JWST340D2 (3) Advanced Hebrew
JWST480 (3) Advanced Yiddish 1
JWST481 (3) Advanced Yiddish 2

15 - 21 credits, planned with an adviser and normally chosen to
reflect progress to the advanced level in one of the Areas of
Study: Biblical Studies, Rabbinic Studies, Literature, Jewish
Thought, Jewish History, Modern Jewish Studies, and East
European Studies.

According to Faculty regulations, Joint Honours students must
maintain a minimum CGPA of 3.00 and maintain a minimum pro-
gram GPA of 3.00.

JEWISH TEACHER TRAINING PROGRAM

Established in 1973 in the Faculty of Education in conjunction with
the Department of Jewish Studies, this program prepares students
to teach at the elementary and secondary school levels.

Students are encouraged to acquire a strong general back-
ground in Bible, Jewish liturgy, traditions and history prior to regis-
tering in the program. Students lacking the ability to teach in
Hebrew should consider spending a term at an Israeli university.

Further information can be obtained by contacting the Director,
Dr. Eric Caplan, at (514) 398-6544; by consulting the Faculty of
Education “Bachelor of Education Kindergarten and Elementary
Program (JewishStudies Option)” on page 191; and from the

Interdepartmental Programming

Many of the courses in Jewish Studies are related to other depart-
ments, e.g., History, Religious Studies. There are also related
courses in other departments which students specializing in cer-
tain areas of Jewish Studies might be encouraged to include in
their programs, e.g., Classical Greek, Arabic, theories of literature,
etc.

The following History Department courses may be used as Jewish
Studies courses in the Department of Jewish Studies programs.
HIST207 (3) Jewish History: 400 B.C.E. to 1000
HIST219 (3) Jewish History: 1000-2000
HIST307 (3) Jews in Poland
HIST327 (3) Jews in the Orbit of Islam
HIST427 (3) The Hasidic Movement
HIST477D1 (3) Seminar In Jewish History

AREAS OF STUDY

It is possible to group the course offerings in Jewish Studies into a
number of areas of study. The following is a representative but not
exhaustive list.

Biblical Studies
JWST211 Jewish Studies 1: Biblical Period
JWST310 Believers, Heretics and Critics
JWST324 Biblical Interpretation - Antiquity
JWST327/328/329/330 A Book of the Bible
JWST331 Bible Interpretation/Medieval Ashkenaz
JWST332 Bible Interpretation/Sefardic Tradition
JWST428 Jewish Interpretation of Bible
JWST429 Biblical Poetry
JWST456/457/458/459 Studies in the Hebrew Bible
JWST510 Jewish Bible Interpretation 1
JWST511 Jewish Bible Interpretation 2
JWST520 Bible Interpretation in Antiquity
JWST521 Bible in Dead Sea Scrolls
JWST523 Ancient Bible Interpretation
JWST532 Narrative Midrash
JWST533 Halakhic Midrash
JWST534 Homiletical Midrash
JWST535 Exegetical Midrash
JWST536 Readings: Aramaic Bible Translation
JWST537 The Bible in the Talmud Bavli
JWST538 Early Rabbinic Parshanut 1
JWST541 Medieval Ashkenazi Parshanut
JWST542 Abraham ibn Ezra as Parshan
JWST543 Maimonides as Parshan
JWST544 Nachmanides as Parshan
JWST545 Parshanut in Renaissance Italy
JWST546 Innovative Medieval Parshanut
JWST547 Mystical Biblical Interpretation
JWST548 Medieval Parshanut
JWST550 The Bible in Hebrew Literature
JWST551 20th Century Parshanut
JWST554 Modern Jewish Biblical Scholarship
JWST555 The Bible in Jewish Philosophy
JWST556 Modern Parshanut 1
JWST571 Biblical Literature
HIST427 The Hasidic Movement
HIST477D1/477D2 Seminar in Jewish History
POL1347 Arab-Israel Conflict, Crisis, Peace
SOCI327 Jews in North America

East European Studies
JWST206 Introduction to Yiddish Literature
JWST217 Jewish Studies 3: 1000 to 2000
JWST240 The Holocaust
JWST351 Studies in Modern Jewish Literature
JWST356 Jewish Labour Movement/Eastern Europe
JWST357 Jewish Labour Movement/North America
JWST361 The Shtetl: 1500-1897
JWST362 The Shtetl: 1897-1939
JWST365 Modern Jewish Ideologies
JWST366 History of Zionism
JWST371D1/JWST371D2 Jews and the Modern City
JWST381 Modern Yiddish Literature
JWST383 Holocaust Literature
JWST404 Literary Response to Loss/Separation
JWST411 Topics: Modern Hebrew Literature 1881-1946
JWST412 Topics: Modern Hebrew Literature 2
JWST438 Survey of Hebrew Literature 1
JWST439 Survey of Hebrew Literature 2
JWST445 The Poetry of Nationalism
JWST450 Survey of Yiddish Literature
JWST451D1/JWST451D2 Tutorial in Yiddish Literature
JWST453D1/JWST453D2 Studies in Yiddish Literature
JWST565 Tutorial: Eastern European Studies 1
JWST566 Tutorial: Eastern European Studies 2
HIST307 Jews in Poland
HIST427 The Hasidic Movement

12.34 Latin-American and Caribbean Studies (LACS)

Website: www.mcgill.ca/lacs
E-mail: info.lacs@mcgill.ca

Advisory Committee Chair — K.M. Sibbald
Advisory Committee (2004-2005)
R. Castro (Architecture), J. Jouve-Martin (Hispanic Studies), O. Coomes (Geography), A. Holmes (Hispanic Studies), C. LeGrand (History), U. Locher (Sociology), T. Meredith (Geography), K. Norget (Anthropology), P. Oxhorn (Political Science), D. Studnicki-Gibert (History)
Adviser —
Ines Scharnweber, Leacock 439,
Telephone: (514) 398-4804

Established in 1971, the interdisciplinary Program in Latin-American and Caribbean Studies offers a comprehensive array of courses on the peoples, cultures, history, literature, politics, economy and geography of Latin America and the Caribbean, providing students with a broad-based understanding of this geographic region, and with the language and research skills required for advanced scholarship. The program in Latin-American and Caribbean Studies encourages the free exchange of ideas and perspectives in order to foster an environment suitable for serious reflection and critical analysis.

Students in the Program in Latin-American and Caribbean Studies are encouraged to consider the opportunities for foreign study and research made available by bilateral exchange agreements with the Universidad de Salamanca (Spain), the Universidad Nacional Autónoma de México, the Universidad de las Américas, Puebla (Mexico), the Universidad de los Andes (Colombia), and other leading universities in the Spanish and Portuguese-speaking world. These exchanges are open to all members of the McGill University community. Further information may be obtained from the Program Adviser. Application forms are available from the Student Exchange Officer in the Admissions, Recruitment and Registrar's Office, James Building Annex.

An agreement of cooperation with the Center for Latin American Studies at Georgetown University (Washington, D.C.) permits Honours students in Latin-American and Caribbean Studies at McGill to count a portion of their undergraduate work toward the degree requirements for Georgetown's M.A. in Latin American Studies, thus permitting completion of the M.A. in one calendar year. See the Program Adviser for additional information.

Undergraduate Degree Programs
The program in Latin-American and Caribbean Studies offers an interdisciplinary Honours degree and an interdisciplinary Major Concentration as part of the Multi-track B.A. in Arts. Given the constraints of the Multi-track B.A. and our belief that an interdisciplinary program of area studies must include within it the language(s) used by the peoples and cultures under examination, there is at present no interdisciplinary Minor Concentration in Latin-American and Caribbean Studies. Students with more specialized interests may choose, however, to pursue the Minor Concentration in Spanish-American Literature and Culture offered by the Department of Hispanic Studies. This program can be expanded into the Major Concentration in Latin-American Studies with the addition of 18 credits from the Complementary Course List.

MAJOR CONCENTRATION IN LATIN-AMERICAN STUDIES
(36 credits)

Required Courses (18 credits)
HISP243* (3) Survey of Spanish-American Literature 1
HISP244* (3) Survey of Spanish-American Literature 2
HIST309 (3) History of Latin America to 1825
HIST360 (3) Latin America since 1825
LACS497 (3) Research Seminar: Latin America and the Caribbean
POLI319 (3) Politics of Latin America

* Please note that successful completion of Intermediate Spanish Language (HISP220D1/HISP220D2, HISP219 or the equivalent) is required for admission to HISP243 and HISP244.

Complementary Courses (18 credits)
18 credits selected from the Complementary Course List in consultation with the Program Adviser.

Courses from at least two disciplines or departments must be included; at least 6 of the 18 credits must be at the 300 level or above.

No more than 6 credits in Spanish or Portuguese language (HISP202D1/HISP202D2, HISP204D1/HISP204D2, HISP210D1/HISP210D2, HISP218, HISP219, HISP220D1/HISP220D2, HISP222) shall count for the Major Concentration.

HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES

The Honours Program in Latin-American and Caribbean Studies is designed to meet the needs of students who plan to attend graduate or professional school upon completion of the B.A. Both options provide a comprehensive interdisciplinary understanding of Latin America and the Caribbean, upon which more specialized course work and research may be based.

Students pursuing Honours in Latin-American and Caribbean Studies must normally maintain a B+ (3.30) average in all Program courses, and must meet all additional Faculty of Arts requirements for graduation with Honours.

Please note that successful completion of Intermediate Spanish Language (HISP220D1/HISP220D2 or HISP219 or equivalent) is required for admission to HISP243 and HISP244, courses required in both options.

HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES
– AREA OPTION
(60 credits)
The Area Option, with its disciplinary clusters, is recommended for students who envision graduate study in a specific discipline, such as History or Political Science.

Required Courses (21 credits)
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HIST309 (3) History of Latin America to 1825
HIST360 (3) Latin America since 1825
LACS497 (3) Research Seminar: Latin America and the Caribbean
LACS498 (3) Independent Research Project
POLI319 (3) Politics of Latin America

Complementary Courses (39 credits)
12 credits in Spanish or Portuguese.

27 additional credits on Latin America and the Caribbean, exclusive of language courses, selected from the Complementary Course List in consultation with the Program Adviser.

At least 15 of these 27 credits must be taken in one of the following disciplinary clusters, which may also include up to 6 credits of theoretical and/or methodological courses of particular relevance to the student's research interests:

- Economics
- History, Economics and Political Science; Anthropology, Geography and Sociology.

HONOURS IN LATIN-AMERICAN AND CARIBBEAN STUDIES – THEMATIC OPTION (60 credits)

This option permits highly motivated students to combine the study of Latin America and the Caribbean with a theme or intellectual focus whose roots extend beyond the geographic confines of this area, and for which a high level of methodological and/or theoretical expertise is required.

Themes of study may include, but are not limited to:
- ethnography and ethnohistory; the age of European expansion; transnationalism; the concepts and practice of law and justice; nationalism and nation-building; ecology and the management of human and natural resources.

Required Courses (21 credits)

HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HIST309 (3) History of Latin America to 1825
HIST360 (3) Latin America since 1825
LACS497 (3) Research Seminar: Latin America and the Caribbean
LACS498 (3) Independent Research Project
POLI319 (3) Politics of Latin America

Complementary Courses (39 credits)
12 credits in Spanish or Portuguese

12 credits on Latin America and the Caribbean, exclusive of language courses, selected from the Complementary Course List in consultation with the Program Adviser.

15 credits from outside the Complementary Course List, within a coherent theme of specialization, selected in consultation with the Program Adviser

LACS Complementary Course List

Consult the Courses section for course descriptions and information on prerequisites. Not all courses listed are offered in any given year. NB: no credit will be given for multi-term courses unless all components are successfully completed as specified, for example, D1 and D2 components must both be successfully completed in consecutive terms.

Anthropology

ANTH212 (3) Anthropology of Development
ANTH326 (3) Peoples of Central and South America
ANTH349 (3) Transformation of Third World Societies
ANTH439 (3) Theories of Development

Economics

ECON313 (3) Economic Development 1
ECON314 (3) Economic Development 2
ECON410 (3) Economic Development: Selected World Area

English

ENGL321 (3) Caribbean Fiction

Geography

GEOG310 (3) Geography of the Caribbean
GEOG320 (3) Geography of Food Systems
GEOG408 (3) Geography of Development
GEOG410 (3) Geography of Underdevelopment: Current Problems

HISP202D1 (3) Portuguese Language: Beginners
HISP202D2 (3) Portuguese Language: Beginners
HISP204D1 (3) Portuguese Language: Intermediate
HISP204D2 (3) Portuguese Language: Intermediate
HISP210D1 (3) Spanish Language: Beginners
HISP210D2 (3) Spanish Language: Beginners
HISP218 (6) Spanish Language Intensive - Elementary
HISP219 (6) Spanish Language Intensive - Intermediate
HISP220D1 (3) Spanish Language: Intermediate
HISP220D2 (3) Spanish Language: Intermediate
HISP222 (3) Advanced Oral and Written Expression
HISP225 (3) Hispanic Civilization 1
HISP226 (3) Hispanic Civilization 2
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HISP302 (3) Hispanic Literature - English Translation 2
HISP328 (3) Literature of Ideas: Spanish America
HISP332 (3) Spanish-American Literature of 19th Century
HISP333 (3) Spanish-American Drama
HISP351 (3) Spanish-American Novel
HISP352 (3) Contemporary Spanish-American Novel
HISP356 (3) Spanish-American Short Story
HISP358 (3) Women Writers Fiction Spanish-America
HISP432 (3) Literature - Discovery and Exploration Spain New World
HISP433 (3) Gaucho Literature
HISP434 (3) Dictatorship: Hispanic America
HISP437 (3) Viceregal Spanish America
HISP442 (3) Modernismo
HISP453 (3) 20th Century Spanish-American Poetry
HISP505 (3) Seminar in Hispanic Studies
HISP506 (3) Seminar in Hispanic Studies
HISP507 (3) Seminar in Hispanic Studies

History

HIST197 (3) FYS: Race in Latin America
HIST217 (3) A Survey of Spanish History
HIST309 (3) History of Latin America to 1825
HIST360 (3) Latin America since 1825
HIST419 (3) Central America
HIST464D1 (3) Topics: Latin American History
HIST464D2 (3) Topics: Latin American History
HIST480D1 (3) Capitalism and Empire: European Domination
HIST480D2 (3) Capitalism and Empire: European Domination
HIST580D1 (3) European and Native-American Encounters
HIST580D2 (3) European and Native-American Encounters

Political Science

POLI227 (3) Developing Areas/Introduction
POLI300D1 (3) Developing Areas/Revolution
POLI300D2 (3) Developing Areas/Revolution
POLI319 (3) Politics of Latin America
POLI343 (3) Foreign Policy: Latin America
POLI471 (3) Democracy in the Modern World
POLI472 (3) Developing Areas/Social Movements
POLI473 (3) Democracy and the Market

Sociology

SOCI366 (3) Social Change in the Caribbean
12.35 Linguistics (LING)

1085 Dr. Penfield Avenue
Montreal, QC H3A 1A7

Telephone: (514) 398-4222
Website: www.arts.mcgill.ca/programs/linguistics

Chair — Lydia White

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Myrna Gopnik; M.A., Ph.D.(Penn.)

Michel Paradis; B.A.(Montr.), M.A., Ph.D.(McG.), Ph.D.(Montr.), F.R.S.C.

Professors
Yosef Grodzinsky; B.Sc.(Hebrew U. of Jerusalem), Ph.D.(Brandeis) (Canada Research Chair)
Glyne L. Piggott; B.A.(W.I.), M.A., Ph.D.(Tor.)
Lydia White; M.A.(Cantab), Ph.D.(McG.) (James McGill Professor)

Associate Professors
Heather Good; B.A.(U.B.C.), M.A., Ph.D.(U.S.C.)
Kyle Johnson; B.A.(Calif., Irvine), Ph.D. (M.I.T.)
Lisade M. Travis; B.A.(Yale), Ph.D.(M.I.T.)

Assistant Professors
Charles Boberg; B.A.(Alta.), Ph.D.(Penn.)
Jonathan Nissenbaum; B.A. (Oberlin College), Ph.D. (M.I.T.)

Linguistics is the scientific study of human language. Topics include: the structure of the world’s languages at the level of sounds (phonetics and phonology), words (morphology), sentences (syntax), and meaning (semantics); how people learn languages (acquisition); how people use two languages (bilingualism); how language is processed and represented in the brain (psycho- and neurolinguistics); how languages change over time (historical linguistics); and how languages vary in relation to region and social identity (dialectology and sociolinguistics). In addition to preparing students for advanced academic work in linguistics and related disciplines (e.g. anthropology, cognitive neuroscience, computer science, philosophy, or psychology), courses in linguistics provide a useful background for many careers, for example, language teaching, translation, child psychology, speech-language pathology, communication, and speech technology.

The Linguistics Department offers two Minor Concentrations (Applied Linguistics and Theoretical Linguistics), a Major Concentration, an Honours program, and a Joint Honours program with other departments in the Faculty of Arts.

New Students
Students who are registering with the Department for the first time must attend the Department orientation meeting before seeing an adviser.

Requirements
Linguistics students must do at least two-thirds of their linguistics courses at McGill. Honours students must also do their Honours thesis at McGill.

MINOR CONCENTRATION IN APPLIED LINGUISTICS
(Expandable) (18 credits)
Inquiries may be addressed to the departmental office or the advisers for undergraduate studies.

Required Course (3 credits)
LING201 (3) Introduction to Linguistics

Complementary Courses (15 credits)
6 credits to be selected from:
LING230 (3) Phonetics
LING301 (3) Structure of English
LING331 (3) Phonology 1
LING370 (3) Introduction to Semantics
LING371 (3) Syntax 1
LING440 (3) Morphology
LING450 (3) Linguistic Theory and Processing
LING455 (3) Second Language Syntax
LING520 (3) Sociolinguistics 2
LING521 (3) Dialectology
LING555 (3) Language Acquisition 2
LING590 (3) Introduction to Neurolinguistics

9 credits, 3 credits of which must be at the 400/500 level, to be selected from:
LING200 (3) Introduction to the Study of Language
LING320 (3) Sociolinguistics 1
LING350 (3) Linguistic Aspects of Bilingualism
LING355 (3) Language Acquisition 1
LING390 (3) Neuroscience of Language
LING419 (3) Linguistic Theory 1
LING425 (3) Historical Linguistics
LING450 (3) Linguistic Theory and Processing
LING451 (3) Acquisition of Phonology
LING455 (3) Second Language Syntax
LING520 (3) Sociolinguistics 2
LING555 (3) Language Acquisition 2
LING590 (3) Introduction to Neurolinguistics

MINOR CONCENTRATION IN THEORETICAL LINGUISTICS
(Expandable) (18 credits)

Required Courses (9 credits)
LING201 (3) Introduction to Linguistics
LING230 (3) Phonetics
LING371 (3) Syntax 1

Complementary Courses (9 credits)
3 credits to be selected from:
LING331 (3) Phonology 1
LING370 (3) Introduction to Semantics
LING440 (3) Morphology

6 credits in other Linguistics courses, 3 credits of which must be above the 200-level (3 credits may be PHIL210).

MAJOR CONCENTRATION IN LINGUISTICS
(36 credits)

Required Courses (21 credits)
LING201 (3) Introduction to Linguistics
LING230 (3) Phonetics
LING331 (3) Phonology 1
LING370 (3) Introduction to Semantics
LING371 (3) Syntax 1
LING440 (3) Morphology
LING455 (3) Second Language Syntax
LING451 (3) Acquisition of Phonology
LING521 (3) Introduction to Deductive Logic 1

Complementary Courses (15 credits)
9 credits in Linguistics at the 400/500-level
6 credits in Linguistics (normally at the 200/300-level)

HONOURS IN LINGUISTICS
(60 credits)

Required Courses (27 credits)
LING201 (3) Introduction to Linguistics
LING230 (3) Phonetics
LING331 (3) Phonology 1
LING370 (3) Introduction to Semantics
LING371 (3) Syntax 1
LING440 (3) Morphology
LING480D1 (3) Honours Thesis
LING480D2 (3) Honours Thesis
PHIL210 (3) Introduction to Deductive Logic 1

Complementary Courses (33 credits)
21 credits in Linguistics:
15 credits at the 400/500 level, 3 of which must be selected from:
LING425 (3) Historical Linguistics
LING450 (3) Linguistic Theory and Processing
LING451 (3) Acquisition of Phonology
LING455 (3) Second Language Syntax
LING520 (3) Sociolinguistics 2
LING521 (3) Dialectology
LING525 (3) Topics in Historical Linguistics
LING555 (3) Language Acquisition 2
LING590 (3) Introduction to Neurolinguistics

6 credits others, usually at the 200/300 level.

12 credits in related fields to be selected from the following list:

**Computer Science**
- COMP202 (3) Introduction to Computing 1
- COMP203 (3) Introduction to Computing 2

**French Language and Literature**
- FREN231 (3) Linguistique française
- FREN336 (3) La langue française
- FREN434 (3) Sociolinguistique du français

**Language**
- Any course in language (other than the student’s native language)
  - literature courses are not acceptable.

**Mathematics**
- MATH240 (3) Discrete Structures 1
- MATH328 (3) Computability and Mathematical Linguistics

**Philosophy**
- Any course in logic or philosophy of science.
- PHIL304 (3) Chomsky
- PHIL306 (3) Philosophy of Mind
- PHIL415 (3) Philosophy of Language
- PHIL515 (3) Seminar: Philosophy of Language

**Psychology**
- PSYC311 (3) Human Cognition and the Brain
- PSYC316 (3) Psychology of Deafness
- PSYC340 (3) Psychology of Language
- PSYC341 (3) The Psychology of Bilingualism
- PSYC343 (3) Language Learning in Children
- PSYC530 (3) Applied Topics in Deafness
- PSYC532 (3) Cognitive Science
- PSYC561 (3) Methods: Developmental Psycholinguistics

**Statistics**
- Any course in statistics (from any department).
- AB* average (program GPA 3.30) is required to maintain Honours standing in Linguistics and a minimum grade of B* must be obtained in four out of five of the following courses LING230, LING331, LING370, LING371, LING440, as well as in the Honours Thesis, LING480D1/LING480D2. As per Faculty of Arts rules, a minimum CGPA of 3.00 must be maintained. The requirement for First Class Honours is a CGPA of 3.50 and a minimum grade of A- in the Honours Thesis. Inquiries may be addressed to the departmental office or to the adviser for undergraduate studies.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

12.36 Mathematics and Statistics (MATH)

Burnside Hall, Room 1005
Telephone: (514) 398-3800
Website: www.math.mcgill.ca

The Department of Mathematics and Statistics offers programs in both Arts and Science. For a list of teaching staff and an outline of the nature of the discipline refer to the Science entry “Mathematics and Statistics (MATH)” on page 327. A Faculty of Management B.Com. degree with a Major in Mathematics and a Faculty of Music B.Mus. degree with Honours in Theory with Mathematics option are also available. Students entering a Mathematics program are normally expected to have completed MATH133, MATH139 or MATH140, MATH141, or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the program credits.

The programs specifically for Arts students are described in this section. The following programs, which are fully described in the Faculty of Science section, may be taken by students in either Arts or Science.

Honours in Mathematics
Honours in Applied Mathematics
Honours in Probability and Statistics

Joint Honours in Mathematics and ComputerScience

Students entering one of the Minor or Major Concentrations listed below who have successfully completed a course equivalent to MATH222 (Calculus 3) prior to coming to McGill are given exemption from taking MATH222, but must replace it with a Complementary Mathematics course in the program of at least 3 credits.

MINOR CONCENTRATION IN MATHEMATICS (18 credits)
(Expandable and Non-expandable Versions)

Students entering the Minor Concentration in Mathematics are normally expected to have completed MATH133, MATH140 and MATH141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 18 credits required by the program.

The Minor Concentration in Mathematics may be taken in conjunction with a Major Concentration in some other discipline under option A of the Multi-track Program, or together with a Major Concentration and a Minor Concentration in other disciplines under option C.

The Minor Concentration in Mathematics is offered in two versions. An expandable version, for students who wish to leave open the option of expanding the program into a Major Concentration in Mathematics, and a non-expandable version for students who know on entry into the Minor that they do not wish to expand it into a Major.

All courses counted towards the Minor Concentration must be passed with a grade of C or better.
No overlap is permitted with other programs.
MINOR CONCENTRATION IN MATHEMATICS (Expandable) (18 credits)

Program prerequisites: MATH133, MATH140 and MATH141 or their equivalents.

Required Courses (12 credits)
MATH222 (3) Calculus 3
MATH235 (3) Basic Algebra
MATH236* (3) Linear Algebra
MATH315 (3) Ordinary Differential Equations
* credit cannot be received for both MATH223 and MATH236

Complementary courses (6 credits)
6 credits to be selected from the Complementary Course list below (MATH323 strongly recommended).

MINOR CONCENTRATION IN MATHEMATICS (Non-Expandable) (18 credits)

Program prerequisites: MATH133, MATH140 and MATH141 or their equivalents.

Required Courses (9 credits)
MATH222 (3) Calculus 3
MATH236* (3) Linear Algebra
MATH315 (3) Ordinary Differential Equations
* credit cannot be received for both MATH223 and MATH236

Complementary courses (9 credits)
9 credits to be selected from the Complementary Course list below (MATH323 strongly recommended).

Complementary Course List – Mathematics Minor Concentrations

MATH314 (3) Advanced Calculus
MATH316 (3) Functions of a Complex Variable
or MATH249 (3) Advanced Calculus 2
MATH317 (3) Numerical Analysis
MATH318 (3) Mathematical Logic
MATH319 (3) Partial Differential Equations
MATH320 (3) Differential Geometry
MATH323* (3) Probability Theory
MATH324 (3) Statistics
MATH326 (3) Nonlinear Dynamics and Chaos
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH339 (3) Foundations of Mathematics
MATH340 (3) Discrete Structures 2
MATH342 (3) Number Theory
MATH348 (3) Topics in Geometry
MATH407 (3) Dynamic Programming
MATH417 (3) Mathematical Programming

* It is strongly recommended that students in this program take MATH323.

MINOR CONCENTRATION IN STATISTICS (Non-expandable) (18 credits)

Students entering the Minor Concentration in Statistics are expected to have completed MATH133, MATH140 and MATH141 or their equivalents. The Minor Concentration in Statistics may be taken in conjunction with a Major Concentration in some other discipline under option A of the Multi-track Program, or together with a Major Concentration (which may be in Mathematics or some other discipline) and a Minor Concentration (which must be in some other discipline) under option C.

It is not possible to combine this program with the Minor Concentration in Mathematics under option C. Students wishing to do this should instead take the Major Concentration in Statistics under option B and select a large number of Statistics electives.

The Minor Concentration in Statistics is offered only in a non-expandable version that is, one that cannot be expanded into the Major Concentration in Mathematics. While it is not possible to expand the Minor Concentration, it is possible for students taking the Major Concentration in Mathematics to adopt this program as one of their Minor Concentrations under option C. Credit cannot be received for both MATH223 and MATH236.

All courses counted towards the Minor Concentration must be passed with a grade of C or better.

No overlap is permitted with other programs.

Program prerequisites: MATH133, MATH140 and MATH141 or their equivalents.

Required Courses (15 credits)
MATH222 (3) Calculus 3
MATH236* (3) Linear Algebra
MATH323 (3) Probability Theory
MATH324 (3) Statistics
MATH423 (3) Regression and Analysis of Variance
* credit cannot be received for both MATH223 and MATH236

Note: If this Minor Concentration is combined with the Major Concentration in Mathematics, the required courses MATH222, MATH233, and MATH323 must be replaced by courses on the list of Complementary Statistics courses.

Complementary Course (3 credits)
one of the following:
COMP202 (3) Introduction to Computing 1
MATH317 (3) Numerical Analysis
MATH447 (3) Stochastic Processes
MATH523 (4) Generalized Linear Models
MATH524 (4) Nonparametric Statistics
MATH525 (4) Sampling Theory and Applications

MAJOR CONCENTRATION IN MATHEMATICS (36 credits)

Students entering the Major Concentration are normally expected to have completed MATH133, MATH140 and MATH141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 36 credits required by the program. Students who have done well in MATH242 and MATH325 at the end of their first term should consider, in consultation with their adviser and the instructors of the courses involved, the possibility of entering into an Honours program in Mathematics, in Applied Mathematics in Probability and Statistics or a Joint Honours program in Mathematics and another discipline.

Guidelines for the selection of courses in the Major Concentration

Where appropriate, Honours-level courses may be substituted for their Majors-level counterparts. Students planning to undertake graduate studies in mathematics are urged to make such substitutions.

Students interested in computer science should consider the courses MATH317, MATH318, MATH327, MATH328, MATH343, MATH407, MATH417 and take a Minor Concentration in computer science.

Students interested in probability and statistics should consider either taking the Minor Concentration in statistics under option C, or else including some or all of the courses MATH423, MATH447, MATH523, MATH524, and MATH525.

Students interested in applied mathematics should consider the courses MATH317, MATH319, MATH322, MATH324, MATH327, MATH407 and MATH417.

Students interested in careers in business, industry or government should consider the courses MATH317, MATH319, MATH322, MATH324, MATH327, MATH407, MATH417, MATH423, MATH447, MATH523, and MATH525.

Program prerequisites: MATH133, MATH140, and MATH141 or their equivalents.

Required Courses (21 credits)
MATH222 (3) Calculus 3
MATH235 (3) Basic Algebra
MATH236 (3) Linear Algebra
MATH242 (3) Analysis 1
MATH243 (3) Real Analysis
MATH314 (3) Advanced Calculus
MATH323 (3) Probability Theory

Complementary Courses (15 credits)

at least 9 credits selected from:
MATH315 (3) Ordinary Differential Equations
MATH316 (3) Functions of a Complex Variable
or MATH249 (3) Advanced Calculus 2
MATH317 (3) Numerical Analysis
MATH324 (3) Statistics
MATH340 (3) Discrete Structures 2
MATH423 (3) Regression and Analysis of Variance

the remaining credits to be selected from the following list:
MATH318 (3) Mathematical Logic
MATH319 (3) Partial Differential Equations
MATH320 (3) Differential Geometry
MATH326 (3) Nonlinear Dynamics and Chaos
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH339 (3) Foundations of Mathematics
MATH346 (3) Number Theory
MATH348 (3) Topics in Geometry
MATH407 (3) Dynamic Programming
MATH410 (3) Majors Project
MATH417 (3) Mathematical Programming
MATH424 (4) Nonparametric Statistics
MATH523 (4) Generalized Linear Models
MATH524 (4) Nonparametric Statistics
MATH525 (4) Sampling Theory and Applications

Where appropriate, Honours courses may be substituted for their Majors equivalents.

JOINT HONOURS – MATHEMATICS COMPONENT (36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program courses from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

A student who has not completed the equivalent of MATH222 will need to take that course in addition to the 36-credit program outlined below.

To remain in the Joint Honours program and receive the Joint Honours degree, a student must maintain the standards set by each discipline, as well as by the Faculty. In the Mathematics courses of the program a GPA of 3.00 and a CGPA of 3.00 must be maintained. Students who have difficulty in maintaining the required level should change to another program before entering their final year.

Required Courses (15 credits)

MATH235 (3) Basic Algebra
MATH242 (3) Analysis 1
MATH248 (3) Advanced Calculus 1
MATH251 (3) Algebra 2
MATH255 (3) Analysis 2

Complementary Courses (21 credits)

at least 15 credits selected from the following:
MATH325 (3) Ordinary Differential Equations
MATH354 (3) Analysis 3
MATH355 (3) Analysis 4
MATH356 (3) Probability
MATH357 (3) Statistics
MATH370 (3) Algebra 3
MATH371 (3) Algebra 4
MATH380 (3) Differential Geometry
MATH466 (3) Complex Analysis

the remaining credits to be chosen from the full list of available Honours courses in Mathematics and Statistics.

12.37 Middle East Studies Program (MEST)

Program Adviser — Professor Rex Brynen, Department of Political Science, (514)298-5075

Program Committee Chair — R.Brynen

Program Committee:
S.Alvi (Islamic Studies), R.Brynen (Political Science), Michelle Hartman (Islamic Studies), LawrenceKaplan (Jewish Studies),
E. Ormsby (Islamic Studies), P.Salzman (Anthropology),
U.Turgay (Islamic Studies), StudentMembers

Website: www.mcgill.ca/mes

The Middle East Studies Program is designed for students who wish to pursue an interdisciplinary program of study focusing on the Middle East since the rise of Islam. Courses offered include language, history, religion and philosophy, political science and anthropology. From these are drawn combinations which make up the Major and Minor Concentrations, Honours and Joint Honours in Middle East Studies.

Students wishing to pursue a program in Middle East Studies must consult a Program Adviser each year to devise a suitable program. Before doing so, students should read the leaflet “Middle East Studies: Program Descriptions”. Failure to consult an adviser could lead to a delay in completing program requirements. Students wishing to have courses taken at other universities counted as satisfying program requirements must bring copies of their transcripts and course syllabi to the Program Adviser.

For details of programs, consult www.mcgill.ca/mes.

MINOR CONCENTRATION IN MIDDLE EAST STUDIES

(Expandable) (18 credits)

Complementary Courses (18 credits)

6 credits selected from History core courses:
ISLA410 (3) History: Middle-East 1798-1918
ISLA411 (3) History of the Middle East 1819-1945
ISLA510D1 (3) History: Islamic Civilization - Classical
ISLA510D2 (3) History: Islamic Civilization - Mediaeval Era
ISLA511D1 (3) History: Islamic Civilization - Mediaeval Era
ISLA511D2 (3) History: Islamic Civilization - Mediaeval Era

6 credits in Religion and Philosophy

at least 3 credits from:
ISLA505 (3) Islam: Origin and Early Developments
ISLA506 (3) Islam: Later Developments
ISLA531D1 (3) Survey Development of Islamic Thought
ISLA531D2 (3) Survey Development of Islamic Thought

the remaining credits, if any, from:
PHIL356 (3) Early Medieval Philosophy
RELG204* (3) Judaism, Christianity and Islam
* RELG204 can only be taken prior to ISLA505 and ISLA506

6 credits in Social Science selected from:
ANTH340 (3) Middle Eastern Society and Culture
POLI340 (3) Developing Areas/Middle East
POLI341 (3) Foreign Policy: The Middle East
POLI347 (3) Arab-Israel Conflict, Crisis, Peace
POLI437 (3) Politics in Israel

MINOR CONCENTRATION IN MIDDLE EAST LANGUAGES

(Expandable) (18 credits)

Complementary Courses (18 credits)

18 credits of Middle Eastern language (Arabic, Hebrew, Persian, Turkish), either:
all 18 credits (3 levels) in one language
or 12 credits (2 levels) in one language and 6 credits (1 level) in another language
MAJOR CONCENTRATION IN MIDDLE EAST STUDIES
(36 credits)

Complementary Courses (36 credits)
12 credits (2 levels) in one Middle East language – Arabic, Hebrew, Persian, Turkish.
(In the case of Arabic, the first two levels involve 15 credits. The extra 3 credits will be counted towards the remainder of the program requirements.)
24 credits in Middle East Studies (21 credits if Arabic has been chosen):
6 - 9 credits in History, a minimum of 6 credits from core courses;
6 - 9 credits in Religion and Philosophy, a minimum of 6 credits from core courses;
6 - 9 credits in Social Science.

HONOURS IN MIDDLE EAST STUDIES (60 credits)
The Honours program involves 60 credits in Middle East Studies:
18 credits (3 levels) in one Middle Eastern language;
12 credits in Middle Eastern history, a minimum of 9 credits from Core courses;
6 credits in Middle Eastern religion and philosophy, a minimum of 3 credits from Core courses;
12 credits in Middle East social science courses;
12 credits in Middle East Studies electives.
Honours students must maintain a program GPA of 3.30 in their Middle East Studies courses.
According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00.

JOINT HONOURS – MIDDLE EAST STUDIES COMPONENT
(36 credits)
Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Complementary Courses (36 credits)
Language:
12 credits (2 levels) in one Middle East language (in the case of Arabic, the first two levels involve 15 credits. The extra 3 credits will be counted toward the remainder of the program.)

Middle East Studies:
24 credits (2 if Arabic has been chosen), distributed as follows:
6 - 9 credits, a minimum of 6 credits from the following courses:
ISLA410 (3) History: Middle East 1798-1918
ISLA411 (3) History of the Middle East 1918-1945
ISLA510D1 (3) History: Islamic Civilization - Classical
ISLA510D2 (3) History: Islamic Civilization - Classical
ISLA511D1 (3) History: Islamic Civilization - Mediaeval Era
ISLA511D2 (3) History: Islamic Civilization - Mediaeval Era

Religion and Philosophy
6 - 9 credits, a minimum of 6 credits from the following courses:
ISLA505 (3) Islam: Origin and Early Developments
ISLA506 (3) Islam: Later Developments
ISLA531D1 (3) Survey Development of Islamic Thought
ISLA531D2 (3) Survey Development of Islamic Thought

Social Science
6 - 9 credits to be selected from:
POLI340 (3) Developing Areas/Middle East
POLI341 (3) Foreign Policy: The Middle East
POLI347 (3) Arab-Israeli Conflict, Crisis, Peace
POLI437 (3) Politics in Israel
or ANTH340 (3) Middle Eastern Society and Culture
Independent Research/Honours Seminar,
3 credits selected from:
MEST495 (3) Middle East Studies: Research Seminar
MEST496 (3) Independent Reading and Research

Joint Honours students must maintain a program GPA of 3.30 in their Middle East Studies courses. According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00.

COURSES
[Additions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Students wishing to take upper-level courses in Anthropology and Political Science are expected to take the necessary prerequisites.

Languages
Arabic (Islamic Studies)
ISLA521D1 (4.5) Introductory Arabic
ISLA521D2 (4.5) Introductory Arabic
ISLA522D1 (3) Lower Intermediate Arabic
ISLA522D2 (3) Lower Intermediate Arabic
ISLA523D1 (3) Higher Intermediate Arabic
ISLA523D2 (3) Higher Intermediate Arabic

Hebrew (Hebrew Studies)
JWST200 (12) Hebrew Language (Intensive)
JWST220D1 (3) Introductory Hebrew
JWST220D2 (3) Introductory Hebrew
JWST320D1 (3) Intermediate Hebrew
JWST320D2 (3) Intermediate Hebrew
JWST340D1 (3) Advanced Hebrew
JWST340D2 (3) Advanced Hebrew
JWST367 (3) Studies in Hebrew Language and Literature
JWST368 (3) Studies in Hebrew Language and Literature
JWST369 (3) Studies in Hebrew Language and Literature
JWST370 (3) Studies in Hebrew Language and Literature
JWST411 (3) Topics: Modern Hebrew Literature 1881-1948
JWST412 (3) Topics: Modern Hebrew Literature 2
JWST438 (3) Topics in Hebrew Literature 1
JWST439 (3) Topics: Modern Hebrew Literature 2

Persian (Islamic Studies)
ISLA541D1 (3) Introductory Persian
ISLA541D2 (3) Introductory Persian
ISLA542D1 (3) Lower Intermediate Persian
ISLA542D2 (3) Lower Intermediate Persian
ISLA643D1 (3) Upper Intermediate Persian
ISLA643D2 (3) Upper Intermediate Persian

Turkish (Islamic Studies)
ISLA532D1 (3) Introductory Turkish
ISLA532D2 (3) Introductory Turkish
ISLA533D1 (3) Lower Intermediate Turkish
ISLA533D2 (3) Lower Intermediate Turkish
ISLA633D1 (3) Higher Intermediate Turkish
ISLA633D2 (3) Higher Intermediate Turkish

History
Islamic Studies (*Core Course)
ISLA410* (3) History: Middle East 1798-1918
ISLA411* (3) History of the Middle East 1918-1945
ISLA510D1* (3) History: Islamic Civilization - Classical
ISLA510D2* (3) History: Islamic Civilization - Classical
ISLA511D1* (3) History: Islamic Civilization - Mediaeval Era
ISLA511D2* (3) History: Islamic Civilization - Mediaeval Era
(500-level courses can only be taken in U2 or U3)

History
HIST327 (3) Jews in the Orbit of Islam
Jewish Studies
JWST366 (3) History of Zionism

Religion/Philosophy
Islamic Studies (*Core Course)
ISLA505* (3) Islam: Origin and Early Developments
ISLA506* (3) Islam: Later Developments
ISLA 531D1* (3) Survey Development of Islamic Thought
ISLA 531D2* (3) Survey Development of Islamic Thought
(500-level courses can only be taken in U2 or U3)

Philosophy
PHIL356 (3) Early Medieval Philosophy
Religious Studies
RELG204** (3) Judaism, Christianity and Islam
RELG256** (3) Women in Judaism and Islam
**RELG204 and RELG256 can only be taken for program credit prior to any Core courses.

Social Sciences
Anthropology
ANTH348 (3) Middle Eastern Society and Culture
Political Science
POLI340 (3) Developing Areas/Middle East
POLI341 (3) Foreign Policy: The Middle East
POLI347 (3) Arab-Israel Conflict, Crisis, Peace
POLI437 (3) Politics in Israel

Middle East Studies
MEST375 (3) Topics in Middle East Studies
MEST475 (3) Problems in Middle East Studies
MEST495 (3) Middle East Studies: Research Seminar
MEST496 (3) Independent Reading and Research

12.38 Music (MUAR)
Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Telephone: (514) 398-4535
Fax: (514) 398-8061
Website: www.mcgill.ca/music

Department of Theory — Brian Cherney (Chair)
Department of Performance — Douglas McNabney (Chair)
Adviser (B.A./B.Sc. Music programs) —
B. Minorgan (514) 398-4535, ext.6333

Music Programs in Arts
Available within the Faculty of Arts are a Major and a Minor Concentration in Music, and a Minor Concentration in Music Technology.

Admission to the B.A. program is granted according to criteria established by the Faculty of Arts.

Students in the B.A. Freshman Program who are considering a Music Concentration should see the Freshman Adviser in the Arts Student Affairs Office in Dawson Hall. They should also see the Music Adviser in order to ensure that they include any necessary prerequisite Music courses (based on the results of placement examinations) in their first-year selection.

Students interested in a more intensive music program, including practical instruction on an instrument or in voice and additional ensemble participation, should consider the B.Mus. degree or the diplomas offered by the Faculty of Music; see “Degrees and Diplomas Offered” on page 258.

MINOR CONCENTRATION IN MUSIC (18 credits) (Expandable)

Required Courses (6 credits)
MUTH210 (3) Tonal Theory and Analysis 1*
MUTH211 (3) Tonal Theory and Analysis 2*
* Students must take a diagnostic placement examination before registering for this course. If the appropriate level is not achieved on the examination, students will be required to register for Melody and Counterpoint MUTH110 (3 credits) and/or Elementary Harmony and Analysis MUTH111 (3 credits). These courses may not be counted toward the 18-credit Music Minor Concentration.

Complementary Courses (12 credits)
9 credits in Music History, Literature or Performance Practice, from any courses with an MUHL prefix at the 300-level – see list of courses in the Faculty of Music section; an historical performance practice course with an MUPP prefix may be taken with Departmental permission.
3 credits in Music Theory, any course with an MUTH prefix at the 300-level.

MINOR CONCENTRATION IN MUSIC TECHNOLOGY (18 credits) (Non-Expandable)
Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Department of Theory Office of the Faculty of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2004 and must be completed and returned to that office by May 15, 2004. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2004.

Required Courses (18 credits)
MUHL342 (3) History of Electroacoustic Music
MUMT202 (3) Fundamentals of New Media
MUMT203 (3) Introduction to Digital Audio
MUMT301 (3) Music and the Internet
MUMT302 (3) New Media Production 1
MUMT303 (3) New Media Production 2

With permission of the Chair, Department of Theory, students with advanced programming skills may substitute more advanced MUMT courses in Music Technology for MUMT301, MUMT302, and/or MUMT303.

MAJOR CONCENTRATION IN MUSIC (36 credits)
This Concentration studies music as a vital art form in contemporary society and in the history of Western civilization. Its central purpose emphasizes music within broader intellectual and cultural contexts; the Concentration’s premise is that, as a product of culture, music must be considered in relation to the other humanistic disciplines. This degree could be an excellent preparation for graduate work in music (musicology, music theory, music librarianship, music journalism, arts administration) or for professional studies in other fields.

Students in the Major Concentration MUST consult the Adviser PRIOR to registration each year. Questions regarding the requirements of the B.A. Major Concentration and especially elective courses should be addressed to the Arts Student Affairs Office in Dawson Hall.

Required Courses (13 credits)
MUTH210 (3) Tonal Theory and Analysis 1*
MUTH211 (3) Tonal Theory and Analysis 2*
MUPP229 (2) Musicianship 3**
MUPP231 (2) Musicianship 4**
MUHL570 (3) Research Methods in Music

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*Students must take a diagnostic placement examination before registering for this course. If the appropriate level is not achieved on the examination, students will be required to register for Melody and Counterpoint MUTH110 (3 credits) and/or Elementary Harmony and Analysis MUTH111 (3 credits). These courses may not be counted toward the 36-credit Music Major Concentration.

** Students must take a diagnostic placement examination in both Musicianship and Keyboard Proficiency before registering for this course. If the appropriate level is not achieved on these examinations, students will be required to register for Musicianship 1 MUSP129 (2 credits) and/or Musicianship 2 MUSP131 (2 credits) and/or Keyboard Proficiency MUSP170 (1 credit) and/or Keyboard Lab 1 MUSP171 (1 credit). These courses may not be counted toward the 36-credit Music Major Concentration.

Complementary Courses (23 credits)
9 credits in Music History, Literature or Performance Practice, from any courses with an MUHL prefix at the 300 level; an historical performance practice course with an MUPP prefix may be taken with Departmental permission.

6 credits in Music Theory from any course with an MUTH prefix at the 300 level, see list of courses in the Faculty of Music section.

8 credits selected from:

MUTH301 (3) Modal Counterpoint 1
MUTH302 (3) Modal Counterpoint 2
MUTH303 (3) Tonal Counterpoint 1
MUTH304 (3) Tonal Counterpoint 2
MUTH310 (3) Mid and Late 19th-Century Theory and Analysis

or MUTH327 (4) 19th-Century Analysis
MUTH331 (3) 20th-Century Theory and Analysis

and MUTH427D1 (3) 20th-Century Analysis
MUTH522D1 (3) Advanced Counterpoint
MUTH522D2 (3) Advanced Counterpoint
MUTH523D1 (3) Advanced Harmony
MUTH523D2 (3) Advanced Harmony
MUTH528 (3) Schenkerian Techniques
MUCO230D1 (2) The Art of Composition
MUCO230D2 (2) The Art of Composition
MUCO260 (2) Instruments of the Orchestra
MUCO261 (2) Elementary Orchestration
MUHL220 (3) Women in Music
MUHL3xx (3) Music History complementary (maximum of 3 credits)

MUSIC ENSEMBLES
Arts students may, with the permission of the instructor and the Associate Dean (Student Affairs) of the Faculty of Arts, participate in one of the following ensembles in a given year. Auditions are held starting the week prior to the beginning of classes in September and continuing during that first week and, in the case of the McGill Symphony Orchestra (MUCO 497), in early January for the winter term. The schedule and requirements for these auditions are available at the end of June from the Department of Performance office, (514) 398-4542. Normally both the Fall and Winter sections of an ensemble are taken in the same academic year.

MUCO489 Woodwind Ensembles
MUCO490 McGill Winds
MUCO491 Brass Ensembles
MUCO493 Choral Ensembles
MUCO494 Contemporary Music Ensemble
MUCO495 Jazz Ensembles
MUCO496 Opera Studio
MUCO497 Orchestral Ensembles
MUCO498 Percussion Ensembles
MUCO499 String Ensembles

COURSES OFFERED BY THE FACULTY OF MUSIC AS ELECTIVES for students in the Faculties of Arts, Science, and Education.

The courses referred to below are also open to students from other faculties. Other Music courses may be taken by qualified students from other faculties providing they obtain permission from the relevant department in the Faculty of Music and from the Associate Dean of their own faculty.

All courses with the prefix MUAR. These are considered to be courses taught in the Faculty of Arts, but they cannot be credited toward the B.A. or B.Sc. Music programs.

The Music History and Literature (MUHL), Music Theory and Analysis (MUTH), and Music Technology (MUMT) courses listed below are considered by the Faculty of Arts as courses taught in the Faculty; however, the Faculty of Science considers them to be courses taught outside of the Faculty.

These courses are intended for students who have at least high school matriculation music or the equivalent. Students who do not have the formal music prerequisites require the permission of the Chair of the Department of Theory to register for any of these courses.

MUHL (Music History and Literature)
MUHL184 History Survey - Medieval, Renaissance, Baroque
MUHL185 History Survey - Classical, Romantic, 20th-C.
MUHL220 Women in Music

MUTH (Music Theory and Analysis)
Students not in the B.A. or B.Sc. Music programs are not required to take the corequisites for the following MUTH courses. However, students intending later to enter either the B.A. Major Concentration or the B.Mus. program would then be required to sit placement tests in Musicianship and Keyboard Proficiency and may be required to take the corequisite courses.

MUTH110 Melody and Counterpoint
MUHL111 Elementary Harmony and Analysis
MUTH210 Tonal Theory and Analysis 1
MUTH211 Tonal Theory and Analysis 2

MUMT (Music Technology)
MUMT202 Fundamentals of New Media
MUMT203 Introduction to Digital Audio
MUMT301 Music and the Internet
MUMT302 New Media Production 1
MUMT303 New Media Production 2

12.39 North American Studies Program (NAST)

Office of Interdisciplinary Programs
Stephen Leacock Building, Room 439
855 Sherbrooke Street West
Montreal, QC H3A 2T7
Telephone: (514) 398-4804
E-mail: ines.scharnweber@mcgill.ca
NAST Program Website: www.mcgill.ca/nast

Program Adviser — Ines Scharnweber

Program Committee Chair — TTBA

Program Committee (2004-05):
James Delbourgo (History), Catherine Desbarats (History), Allan Hepburn (English), Leonard Moore (History), Gil Troy (History)

The purpose of North American Studies is to provide a comprehensive view of civilization on this continent. Proceeding from the premise that similarities between North American peoples are greater than their differences, the first year in the program requires the traditional mix of history and literature, with the addition of political science and economics courses to underline differences that may be more substantial.

The introductory complementary credits in the first year are a prelude to a broader list of courses in Economics, Political Science, History, and Arts and Letters, where students are allowed greater freedom to direct their own study according to their per-
sonal needs and inclinations. Students must ENSURE they have fulfilled the 200-level prerequisites before registering for the advanced-level courses listed below.

Students may choose to spend a term on a student exchange program with Dartmouth, American University, Duke or Carleton. See Advisers for details – there is a competition.

Independent study, internships and university exchange arrangements can be worked into a student’s program (a certain amount of flexibility is allowed here, but in close conjunction with the program as outlined below).

Each Major Concentration student in third year must enrol in the required North American Studies Seminar offered by the Department of English.

MINOR CONCENTRATION IN NORTH AMERICAN STUDIES

(18 credits) (Expandable)

Complementary Courses (18 credits)
6 credits, two of the introductory complementary courses (in different categories) listed for the Major Concentration
12 credits of intermediate and senior level courses, 3 from each of the four categories

MAJOR CONCENTRATION IN NORTH AMERICAN STUDIES

(36 credits)

Required Course (3 credits)
ENGL529D1 (1.5) Interdisciplinary Seminar - North American Studies
ENGL529D2 (1.5) Interdisciplinary Seminar - North American Studies

Complementary Courses (33 credits)
9 credits at the introductory level, normally taken in the first year of the program

3 credits in Canadian and American History, selected from:
HIST202 (3) Survey: Canada to 1867
HIST203 (3) Survey: Canada since 1867
HIST211 (3) American History to 1865
HIST221 (3) United States since 1865

3 credits in Canadian and American Literature, selected from:
ENGL225 (3) American Literature 1
ENGL226 (3) American Literature 2
ENGL228 (3) Canadian Literature 1
ENGL229 (3) Canadian Literature 2

3 credits in Canadian and American Political Science and Economics selected from:
CANS200 (3) Introduction to the Study of Canada
ECON208 (3) Microeconomic Analysis and Applications
ECON209 (3) Macroeconomic Analysis and Applications
ECON219 (3) Current Economic Problems: Topics
ECON223 (3) Political Economy of Trade Policy
POLI221 (3) Government of Canada
POLI222 (3) Political Process and Behaviour in Canada
POLI325D1 (3) Government and Politics: United States
POLI325D2 (3) Government and Politics: United States

24 credits from courses at intermediate and senior levels, 6 from each of the following groups: Canadian and American Economics, Canadian and American Political Science, Canadian and American History, Canadian and American Arts and Letters. In consultation with an adviser, a maximum of 3 credits may be selected from the Miscellaneous grouping. Students should be aware that some courses listed below may have prerequisites at the introductory level, which may have to be taken as electives. No more than 12 credits can be taken outside of the Faculties of Arts and Science.

Economics

BUSA364 (3) Business Law 1
BUSA368 (3) Business Law 2
ECON302D1 (3) Money and Banking
ECON302D2 (3) Money and Banking

ECON303D1 (3) Canadian Economic Policy
ECON303D2 (3) Canadian Economic Policy
ECON305 (3) Industrial Organization
ECON306D1 (3) Labour Economics and Institutions
ECON306D2 (3) Labour Economics and Institutions
ECON308 (3) Governmental Policy Toward Business
ECON311 (3) United States Economic Development
ECON321 (3) The Quebec Economy
ECON326 (3) Ecological Economics
ECON329 (3) Economics of Confederation
ECON344 (3) The International Economy 1830-1914
ECON345 (3) The International Economy since 1914
ECON404 (3) Transportation
ECON406 (3) Topics in Economic Policy
ECON408D1 (3) Public Sector Economics
ECON408D2 (3) Public Sector Economics
ECON426 (3) Labour Economics
ECON434 (3) Current Economic Problems
ECON440 (3) Health Economics
MGCR352 (3) Marketing Management 1
MRKT354 (3) Marketing Management 2
MRKT452 (3) Consumer Behaviour

Political Science

POLI318 (3) Comparative Local Government
POLI320 (3) Issues in Canadian Democracy
POLI321 (3) Issues: Canadian Public Policy
POLI325D1 (3) Government and Politics: United States
POLI325D2 (3) Government and Politics: United States
POLI326 (3) Provincial Politics
POLI336 (3) Le Québec et le Canada
POLI337 (3) Canadian Public Administration
POLI339 (3) Comparative Developed: Topics 1
POLI342 (3) Canadian Foreign Policy
POLI346 (3) American Foreign Policy
POLI370 (3) Révolution tranquille/changes politiques/Québécois de 1960
POLI371 (3) Challenge of Canadian Federalism
POLI378 (3) The Canadian Judicial Process
POLI410 (3) Canadian Political Parties
POLI411 (3) Immigration and Multiculturalism in Canada
POLI416 (3) Political Economy of Canada
POLI421 (3) Social Movements in Canada
POLI425 (3) Topics in American Politics
POLI427 (3) Selected Topics: Canadian Politics
POLI446 (3) Les politiques publiques au Québec
POLI449 (3) Politics of Regulation
POLI472 (3) Developing Areas/Social Movements
POLI478 (3) The Canadian Constitution

History

ANTH306 (3) Native Peoples’ History in Canada
ANTH336 (3) Ethnography: North Eastern North America
ANTH338 (3) Native Peoples of North America
CANS401 (3) Canadian Studies Seminar 1
CANS405 (3) Canadian Studies Seminar 2
HIST301 (3) U.S. Presidential Campaigning
HIST303 (3) History of Quebec
HIST311 (3) Theodore Roosevelt and Progressive Era
HIST322 (3) Canada: American Presence since 1939
HIST323 (3) Le Québec contemporain
HIST331 (3) F.D. Roosevelt and the New Deal
HIST332 (3) Constitutional History: Canada -1867
HIST333 (3) History of New France: Part 1
HIST334 (3) History of New France: Part 2
HIST341 (3) The New Nation: U.S. 1800-1850
HIST342 (3) Canada: External Relations since 1867
HIST343 (3) Women in Post-Confederation Canada
HIST351 (3) Themes in U.S. History since 1865
HIST353 (3) Canada: Work and Society, 1830-1919
**12.40 Philosophy (PHIL)**

Leacock Building, Room 908  
855 Sherbrooke Street West  
Montreal, QC H3A 2T7  
Telephone: (514) 398-6060  
Fax: (514) 398-7148  
E-mail: info.philosophy@mcgill.ca  
Website: www.arts.mcgill.ca/programs/philo

*Chair — R. Philip Buckley*

**Emeritus Professors**
Raymond Klibansky; M.A.(Oxon.), D.Phil.(Heidel.), F.R.Hist., F.R.S.C. (John Frothingham Emeritus Professor of Logic and Metaphysics)
Alastair McKinnon; M.A.(Tor.), Ph.D.(Edin.), B.D.(McG.), F.R.S.C., R.D., D.H.L.(St.Olaf) (William C. Macdonald Emeritus Professor of Moral Philosophy)
David Norton; M.A.(Claremont), Ph.D.(Calif.), F.R.S.C.

Charles Taylor; M.A., D.Phil.(Oxon.), F.R.S.C.  

**Professors**
Mario A. Bunge; Ph.D.(LaPlata), F.R.S.C. (John Frothingham Professor of Logic and Metaphysics)
George Di Giovanni; B.A., M.A., S.T.B., Ph.D.(Tor.)
Storris McCall; B.A.(McG.), B.Phil., D.Phil.(Oxon.)

**Associate Professors**
R. Philip Buckley; Ph.D.(Louvain)
David Davies; B.A.(Oxon), M.A.(Manit.) Ph.D.(W.Ont.)
Marguerite Deslauriers; B.A.(McG.), M.A., Ph.D.(Tor.)
Michael Hallett; B.Sc., Ph.D.(Lond.)
Alison Laywine; B.A.(Ott.), M.A.(Montr.), Ph.D.(Chic.)
Eric Lewis; B.A.(C'mell), Ph.D.(Ill. at Chic.)
James McGilvary; B.A.(Carleton College), Ph.D.(Yale)
Stephen Menn; M.A., Ph.D.(Chic.), M.A., Ph.D.(Johns H.)
Sarah Stroud; A.B.(Harv.), Ph.D.(Prin.)

**Assistant Professors**
Alia Al-Saji; M.A.(Louvain), Ph.D.(Emory)
Emily Carson; M.A.(McG.), Ph.D.(Harv.)
Gablé Fiasse; B.A., M.A., Ph.D.(Louvain) (joint appoint. with Faculty of Religious Studies)
Gregory Mikkelsen; M.S., Ph.D.(Chic.) (joint appoint. with McGill School of Environment)
Jeffrey Speaks; B.A.; (Notre Dame), Ph.D.(Prin.)

**Adjunct Professors**
Steven Davis (Simon Fraser)
Ian Gold (Monash)

**Auxiliary Professor**

**Associate Members**
Carlos Fraenkel (Jewish Studies)
Lawrence Kaplan (Jewish Studies)
Alan Patten (Political Science)

Broadly speaking, the principal aim of philosophy is to increase our understanding of ourselves, the world, and our place in it. Philosophy differs from the empirical and social sciences in important respects. One way to characterise philosophy is by the sorts of questions it seeks to answer, and the ways in which it seeks to answer them. Different areas of philosophy are characterised by the questions they address. For example, Epistemology inquires into the nature of knowledge; Metaphysics is concerned with the fundamental nature of the world and of the types of things that it contains; Ethics investigates the nature of moral judgment and moral reasoning, while Political Philosophy examines such matters as justice, freedom, rights, democracy, and power; and Logic is broadly the analysis of the structure of correct reasoning. In addition, there are the various "Philosophies of...", e.g., Philosophy of Science, Philosophy of Language, Philosophy of Mind, Philosophy of Religion.

Some of the courses in the Department are explicitly devoted to these specific areas of philosophy, each exploring one or several ways of construing and answering the questions it poses. Other courses explore some period or individual figure in the history of philosophy, approaching philosophical questions through the work of past thinkers, and often exploring connections between the different areas of philosophy.

The discipline of Philosophy, as a particular way of thinking, emphasizes clarity in expression, both written and oral, and rigour in argument. Philosophical questions are intriguing and hard, and so philosophical method stresses thoroughness and intellectual generosity — the willingness and ability to grasp another's argument and respond to them. The Department requires of all (and only) Honours and Joint Honours students that they take a special 3-credit course (PHIL301, the principal aim of which is to equip students with the distinctively philosophical skills required for advanced work in the field.

The B.A. in philosophy is not a professional qualification. It prepares students for graduate work in philosophy and for study in...
other disciplines, e.g., Law. As the interdisciplinary discipline par excellence, philosophy also maintains and encourages ties with other fields, so many students will find that certain classes in philosophy are directly relevant to their major area of study. The department has a strong commitment to providing an intensive yet broad-based philosophical education. The research interests of members of the Department are wide-ranging.

See also the separate listing for History and Philosophy of Science (HPSC), section 12.27.

Note: Philosophy students may use either PHIL200 or PHIL201 towards their program requirements, but not both. Students may, however, take both for credit (using the second as an elective), as the content in PHIL201 does not overlap with PHIL200.

MINOR CONCENTRATION IN PHILOSOPHY (18 credits)

Complementary Courses (18 credits)
15 credits from Groups A - E, with one course from at least four of the five groups.

Group A
PHIL230 (3) Introduction to Moral Philosophy 1
PHIL237 (3) Contemporary Moral Issues
PHIL242 (3) Introduction to Feminist Theory
PHIL334 (3) Ethics 1
PHIL343 (3) Biomedical Ethics
PHIL348 (3) Philosophy of Law 1
PHIL434 (3) Ethics 2
PHIL442 (3) Topics in Feminist Theory

Group B
PHIL210 (3) Introduction to Deductive Logic 1
PHIL220 (3) Introduction to History and Philosophy of Science 1
PHIL221 (3) Introduction to History and Philosophy of Science 2
PHIL304 (3) Chomsky
PHIL306 (3) Philosophy of Mind
PHIL310 (3) Intermediate Logic
PHIL341 (3) Philosophy of Science 1
PHIL370 (3) Problems in Analytic Philosophy
PHIL410 (3) Advanced Topics in Logic 1
PHIL411 (3) Topics in the Philosophy of Logic and Mathematics
PHIL415 (3) Philosophy of Language
PHIL419 (3) Epistemology
PHIL421 (3) Metaphysics
PHIL441 (3) Philosophy of Science 2
PHIL470 (3) Topics in Contemporary Analytic Philosophy

Group C
PHIL375 (3) Existentialism
PHIL474 (3) Phenomenology
PHIL475 (3) Topics in Contemporary European Philosophy

6 credits, two courses from Group C OR two from Group D:

Group C
PHIL344 (3) Medieval and Renaissance Political Theory
PHIL345 (3) Greek Political Theory
PHIL350 (3) History and Philosophy of Ancient Science
PHIL353 (3) The Presocratic Philosophers
PHIL355 (3) Aristotle
PHIL356 (3) Early Medieval Philosophy
PHIL357 (3) Late Medieval and Renaissance Philosophy
PHIL361 (3) Later Greek Philosophy
PHIL365 (3) Ancient Metaphysics and Natural Philosophy
PHIL454 (3) Ancient Moral Theory

Group D
PHIL344 (3) Medieval and Renaissance Political Theory
PHIL345 (3) Greek Political Theory
PHIL350 (3) History and Philosophy of Ancient Science
PHIL353 (3) The Presocratic Philosophers
PHIL355 (3) Aristotle
PHIL356 (3) Early Medieval Philosophy
PHIL357 (3) Late Medieval and Renaissance Philosophy
PHIL361 (3) Later Greek Philosophy
PHIL453 (3) Ancient Metaphysics and Natural Philosophy
PHIL454 (3) Ancient Moral Theory

PHIL445 (3) 19th Century Political Theory
3 additional credits from the lists above or from other Philosophy courses.

In total, no more than 9 credits may be at the 200-level, and at least 3 credits must be at the 400 or 500 level.

MAJOR CONCENTRATION IN PHILOSOPHY (36 credits)

Required Course (3 credits)
PHIL210 (3) Introduction to Deductive Logic 1

Complementary Courses (33 credits)
33 credits, of which no more than 9 may be at the 200-level, and at least 9 must be at the 400 or 500 level, distributed as follows:

6 credits, one course from each of Groups A and B:

Group A
PHIL304 (3) Chomsky
PHIL306 (3) Philosophy of Mind
PHIL310 (3) Intermediate Logic
PHIL341 (3) Philosophy of Science 1
PHIL370 (3) Problems in Analytic Philosophy
PHIL410 (3) Advanced Topics in Logic 1
PHIL421 (3) Metaphysics
PHIL441 (3) Philosophy of Science 2
PHIL470 (3) Topics in Contemporary Analytic Philosophy

Group B
PHIL375 (3) Existentialism
PHIL474 (3) Phenomenology
PHIL475 (3) Topics in Contemporary European Philosophy

6 credits, two courses from Group C OR two from Group D:

Group C
PHIL344 (3) Medieval and Renaissance Political Theory
PHIL345 (3) Greek Political Theory
PHIL350 (3) History and Philosophy of Ancient Science
PHIL353 (3) The Presocratic Philosophers
PHIL355 (3) Aristotle
PHIL356 (3) Early Medieval Philosophy
PHIL357 (3) Late Medieval and Renaissance Philosophy
PHIL361 (3) Later Greek Philosophy
PHIL365 (3) Ancient Metaphysics and Natural Philosophy
PHIL454 (3) Ancient Moral Theory

Group D
PHIL344 (3) Medieval and Renaissance Political Theory
PHIL345 (3) Greek Political Theory
PHIL350 (3) History and Philosophy of Ancient Science
PHIL353 (3) The Presocratic Philosophers
PHIL355 (3) Aristotle
PHIL356 (3) Early Medieval Philosophy
PHIL357 (3) Late Medieval and Renaissance Philosophy
PHIL361 (3) Later Greek Philosophy
PHIL453 (3) Ancient Metaphysics and Natural Philosophy
PHIL454 (3) Ancient Moral Theory

PHIL445 (3) 19th Century Political Theory

6 credits, one course from each of Groups E and F:

Group E
PHIL230 (3) Introduction to Moral Philosophy 1
PHIL397 (3) Contemporary Moral Issues
PHIL242 (3) Introduction to Feminist Theory

Group F
PHIL334 (3) Ethics 1
PHIL343 (3) Biomedical Ethics
PHIL348 (3) Philosophy of Law 1
PHIL434 (3) Ethics 2
PHIL442 (3) Topics in Feminist Theory

15 additional credits from the lists above or from other Philosophy courses. Only one of PHIL200 and PHIL201 can be included in the program.
HONOURS IN PHILOSOPHY (60 credits)
60 credits in Philosophy, to include:
- PHIL210, or equivalent, and one of: PHIL306, PHIL310, PHIL370, PHIL410, PHIL411, PHIL415, PHIL419, PHIL421, PHIL470
- PHIL301
- PHIL334, and one of: PHIL230, PHIL237, PHIL240, PHIL241, PHIL242
- two of: PHIL345, PHIL350, PHIL353, PHIL354, PHIL355, PHIL452, PHIL453, PHIL454
- two of: PHIL360, PHIL361, PHIL366, PHIL367, PHIL444, PHIL445
- one of: PHIL375, PHIL474, PHIL475
- 12 credits from 400–500 level courses (not including the Honours tutorial), at least 3 of which must be 500-level
- 6 credits of Honours tutorial with thesis (PHIL499)

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – PHILOSOPHY COMPONENT (36 credits)
36 credits in Philosophy, to include:
- PHIL210, or equivalent, and one of PHIL306, PHIL310, PHIL370, PHIL410, PHIL411, PHIL415, PHIL419, PHIL421, PHIL470
- PHIL301
- PHIL334, and one of PHIL230, PHIL237, PHIL240, PHIL241, PHIL242
- two of: PHIL345, PHIL350, PHIL353, PHIL354, PHIL355, PHIL452, PHIL453, PHIL454
- OR two of: PHIL360, PHIL361, PHIL366, PHIL367, PHIL444, PHIL445
- one of: PHIL375, PHIL474, PHIL475
- 9 credits from 400–500 level courses (not including the Honours tutorial), at least 3 of which must be 500-level
- 3 credits of Honours tutorial with thesis, which can take either of two forms: a 6-credit interdisciplinary thesis, or a 3-credit thesis in philosophy (PHIL498).

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

ADMISSION TO HONOURS AND JOINT HONOURS
Students must attain a 3.00 CGPA and have a 3.00 GPA in Philosophy courses.

All Honours and Joint Honours students are bound by the following constraints:
- students may use a maximum of 15 credits from 200-level courses towards satisfaction of their program requirements in Philosophy;
- students cannot count both PHIL200 and PHIL201 towards satisfaction of their program requirements in Philosophy.

Minor in Cognitive Science
Students following Major or Honours programs in Philosophy with an interest in cognition may consider the Minor in Cognitive Science, described in the Faculty of Science section.

12.41 Philosophy and Western Religions (PHWR)
Office of Interdisciplinary Programs
Stephen Leacock Building, Room 439
855 Sherbrooke Street West
Montreal, QC H3A 2T7

Telephone: (514) 398-4804
Fax: (514) 398-1770
E-Mail: ines.scharnweber@mcgill.ca
PHWR Program Website www.mcgill.ca/phwr

Chair – Carlos Fraenkel

Executive Committee — Carlos Fraenkel, Philosophy and Jewish Studies; T. Kirby, Religious Studies; S. Menn, Philosophy; E. Ormsby, Islamic Studies

Advisory Committee (2004-05)
P. Buckley (Philosophy), E. Caplan (Education), M. Deslauriers (Philosophy), D. Farrow (Religious Studies), I. Henderson (Religious Studies), G. Hundert (Jewish Studies), L. Kaplan (Jewish Studies), T. Kirby (Religious Studies), B. Levy (Religious Studies), S. Menn (Philosophy), R. Myles (English and French Language Centre), G. Oegema (Religious Studies), E. Ormsby (Islamic Studies), U. Turgay (Islamic Studies)

This interdisciplinary program, in which the Department of Philosophy, the Institute of Islamic Studies, the Department of Jewish Studies and the Faculty of Religious Studies collaborate, was designed for students who wish to study the encounter between philosophy and the three Abrahamic religions (Judaism, Christian- ity, and Islam), an encounter which shaped the basic patterns of Western and Muslim intellectual history. The program covers the period from Antiquity to the Enlightenment during which philoso- phy and religious thought were inseparably interwoven, making visible the wide range of links between the intellectual worlds of these three religious traditions. Although the interaction between philosophy and religious thought continued in a variety of forms also after the Enlightenment’s critique of religion, this critique transformed their relationship in a fundamental way, and for this reason will be used to delimit the chronological scope of the pro- gram. During the period in question, the impact of Greek philoso- phy on theologians, philosophers, and mystics within Judaism, Christianity, and Islam determined often in a decisive way – both positively and negatively – the interpretation of their Holy Scrip- tures, and their understanding of crucial religious concepts such as God, creation, revelation, providence, divine Law, and the ori- gin of evil. The interdisciplinary approach takes into account that the history of the encounter in question crossed the linguistic, cul- tural and religious boundaries which define the areas of the tradi- tional academic disciplines. This approach permits the student to pursue the development of a philosophical or religious concept from its origin through the different historical and geographical contexts in which it was received by Jewish, Christian and Muslim thinkers.

In order to achieve its goal the program focuses on (i) the acquisi- tion of relevant languages (Greek, Latin, Arabic, Hebrew), (ii) the history of Ancient, Medieval and Early Modern Philosophy, (iii) the Holy Scriptures and the history of Judaism, Christianity, and Islam, (iv) the reception and transformation of philosophical ideas in Jew- ish, Christian, and Islamic thought, and (v) the multiple points of contact among the different traditions of religious thought.

The program provides excellent preparation for graduate stud- ies in Philosophy (with the appropriate choice of electives, or in combination with a Minor in Philosophy), in Religious Studies and, with the relevant language component, in Islamic Studies and Jewish Studies as well. Students wishing to pursue graduate stud- ies in a particular discipline should consult about specific require- ments with a faculty member of the corresponding department at McGill.

MINOR CONCENTRATION IN PHILOSOPHY AND WESTERN RELIGIONS (18 credits)

Students will benefit most from the Minor if they combine it with programs in Philosophy, Islamic Studies, Jewish Studies, Reli- gious Studies, or Classics. Students are also encouraged to com- plete a Minor Concentration in one of the languages relevant to the academic field.

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.
Required Course (3 credits)
RELG 307 (3) Western Scriptures and Interpretations

Complementary Courses (15 credits)
3 - 6 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

3 - 6 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
The remaining credits, if any, to be chosen from:
CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy
PHIL 452 (3) Later Greek Philosophy

3 - 6 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought.

MAJOR CONCENTRATION IN PHILOSOPHY AND WESTERN RELIGIONS (36 credits)
The Major Concentration in Philosophy and Western Religions has an option without language requirement (Option A), and an option with language requirement (Option B). The latter was designed for students who wish to acquire the linguistic skills allowing them to read and research source texts in the original languages. Students will benefit most from the Major Concentration if they combine it with a program in Philosophy, Islamic Studies, Jewish Studies, Religious Studies, or Classics. Students are also encouraged to complete a Minor Concentration in one of the languages relevant to the academic field.

Students are strongly encouraged to consult an adviser each year to devise a suitable course combination.

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Western Scriptures and Interpretations

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 50001 (1.5) Interdisciplinary Seminar
PHWR 50002 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

24 - 30 credits taken in either Option A or Option B as follows:

Option A - Without Language Component
9 - 12 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
at least one of:
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy
The remaining credits, if any, to be chosen from:
CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 345 (3) Greek Political Theory
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 353 (3) The Presocratic Philosophers
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory
PHIL 551 (3) Seminar: Ancient Philosophy 2

PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy

3 - 6 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

9 - 12 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought, with a maximum of 6 credits from any one of the three groups.

Option B - With Language Component
12 - 15 credits (two years: 12 credits, or in the case of Arabic, 15 credits) in one language (Greek, Latin, Arabic, or Hebrew), chosen from the PHWR Complementary Course List - Languages.

6 - 9 credits, History of Philosophy,
at least one of:
PHIL 354 (3) Plato
PHIL 355 (3) Aristotle
at least one of:
PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy
The remaining credits, if any, to be chosen from:
CLAS 415 (3) Advanced Latin: Oratory
CLAS 426 (3) Advanced Greek: Philosophy
PHIL 345 (3) Greek Political Theory
PHIL 350 (3) History and Philosophy of Ancient Science
PHIL 353 (3) The Presocratic Philosophers
PHIL 452 (3) Later Greek Philosophy
PHIL 453 (3) Ancient Metaphysics and Natural Philosophy
PHIL 454 (3) Ancient Moral Theory
PHIL 551 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy

0 - 3 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

6 - 9 credits to be chosen from the PHWR Complementary Course List - Jewish, Christian, and Islamic Thought, with a maximum of 6 credits from any one of the three groups.

HONOURS IN PHILOSOPHY AND WESTERN RELIGIONS (60 credits)
The Honours Program in Philosophy and Western Religions was designed for students who wish (i) to explore in depth the intertwined intellectual worlds of Judaism, Christianity and Islam, and the interaction between philosophy and religion from Antiquity to the Enlightenment and (ii) to acquire the linguistic and conceptual tools allowing them to read source texts in the original languages, and to conduct research in the areas investigated by the interdisciplinary program. Students are encouraged to complete, in addition, a Minor Concentration in one of the languages relevant to the academic field.

Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

Students are strongly encouraged to consult an adviser each year to devise a suitable course combination.

Students who combine the Honours Program with a Minor Concentration in one of the languages relevant to the academic field, or who have acquired proficiency in one language elsewhere may replace 6 credits of the language requirements through additional credits in other segments of the program.

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Western Scriptures and Interpretations

Complementary Courses (57 credits)
6 - 9 credits*, Philosophy and Western Religions,
PHWR 300 (3) Philosophy & Western Religions 1
PHWR 301 (3) Philosophy & Western Religions 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar
* Students are strongly encouraged to take both PHWR 300 and PHWR 301.

9 - 12 credits, History of Philosophy,

at least one of:

PHIL 354 (3) Plato
PHIL 355 (3) Aristotle

at least one of:

PHIL 356 (3) Early Medieval Philosophy
PHIL 357 (3) Late Medieval and Renaissance Philosophy
PHIL 360 (3) 17th Century Philosophy

The remaining credits, if any, to be chosen from:

PHIL 454 (3) Greek Political Theory
PHIL 455 (3) History and Philosophy of Ancient Science
PHIL 456 (3) Presocratic Philosophers
PHIL 457 (3) Ancient Metaphysics and Natural Philosophy
PHIL 458 (3) Ancient Moral Theory
PHIL 555 (3) Seminar: Ancient Philosophy 2
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy

3 - 6 credits to be chosen from the PHWR Complementary Course List - Scriptures and History of the Western Religious Traditions.

6 credits to be chosen from the PHWR Complementary Course List - Philosophies and History of the Western Religious Traditions.

18 - 21 credits chosen from the PHWR Complementary Course List - Languages (Greek, Latin, Arabic, or Hebrew):
12 - 15 credits (two years: 12 credits, or in the case of Arabic 15 credits) in one language
and 6 - 9 credits (one year: 6 credits or in the case of Arabic, 9 credits) in a second language relevant to the program.

6 credits, specialized skills for conducting research, chosen from:

PHWR 400 (3) Joint Honours/Honours Tutorial
PHWR 401 (3) Honours Thesis Tutorial 1
PHWR 402 (3) Honours Thesis Tutorial 2
PHWR 500D1 (1.5) Interdisciplinary Seminar
PHWR 500D2 (1.5) Interdisciplinary Seminar

JOINT HONOURS – PHILOSOPHY AND WESTERN RELIGIONS COMPONENT (36 credits)
The Joint Honours Philosophy and Western Religions Component was designed for students who wish (i) to explore the intertwined intellectual worlds of Judaism, Christianity and Islam, and the interaction between philosophy and religion from Antiquity to the Enlightenment and (ii) to acquire the linguistic and conceptual tools allowing them to read source texts in the original languages, and to conduct research in the areas investigated by the interdisciplinary program. Students will benefit most from the Joint Honours if they combine it with a program in Philosophy, Islamic Studies, Jewish Studies, Religious Studies, or Classics. Students are also encouraged to complete a Minor Concentration in one of the languages relevant to the academic field.

Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

Students are strongly encouraged to consult an adviser each year to devise a suitable course combination.

Note: Not all courses listed below are offered every year, and some of the courses have limited enrolment.

Required Course (3 credits)
RELG 307 (3) Western Scriptures and Interpretations

Complementary Courses (33 credits)
3 - 9 credits*, Philosophy and Western Religions,
Faculty of Religious Studies
RELG 203 (3) Bible and Western Culture
RELG 210 (3) Jesus of Nazareth
RELG 300 (3) Post-Biblical Jewish Tradition
RELG 302 (3) Old Testament Studies 1
RELG 303 (3) Literature of Ancient Israel 2
RELG 306 (3) Rabbinic Judaism
RELG 311 (3) New Testament Studies 1
RELG 312 (3) New Testament Studies 2
RELG 322 (3) The Church in History 1
RELG 323 (3) The Church in History 2
RELG 326 (3) Ancient Christian Church AD54 - AD604
RELG 330 (3) Reformed Theology
RELG 399 (3) Christian Spirituality
RELG 404 (3) Post Exilic Biblical Literature
RELG 407 (3) The Writings
RELG 408 (3) The Prophets
RELG 411 (3) New Testament Exegetics
RELG 482 (3) Exegesis of Greek New Testament
RELG 491 (3) Hebrew Texts
RELG 492 (3) Hebrew Texts
RELG 500 (3) Methodology Colloquium

Catholic Studies Program
CATH 200 (3) Introduction to Catholicism
CATH 310 (3) Catholic Intellectual Traditions
CATH 320 (3) Scripture and Catholicism

Jewish, Christian, and Islamic Thought

Group 1, Institute of Islamic Studies
ISLA 531D1 (3) Survey Development of Islamic Thought
ISLA 531D2 (3) Survey Development of Islamic Thought

Group 2, Department of Jewish Studies
JWST 261 (3) History of Jewish Philosophy & Thought
JWST 337 (3) Jewish Philosophy and Thought 1
JWST 338 (3) Jewish Philosophy and Thought 2
JWST 358 (3) Topics in Jewish Philosophy 1
JWST 359 (3) Topics in Jewish Philosophy 2
JWST 474 (3) Maimonides’ Mishneh Torah
JWST 543 (3) Maimonides as Parshan
JWST 558 (3) Topics: Modern Jewish Thought (Major Concentration and Honours only)
JWST 562 (3) Medieval Islamic and Jewish Philosophy

Group 3, Faculty of Religious Studies
RELG 334 (3) The Christian Faith
RELG 341 (3) Introduction: Philosophy of Religion
RELG 423 (3) Reformation Thought
RELG 439 (3) Religious Dialogues
RELG 532 (3) History of Christian Thought 1
RELG 533 (3) History of Christian Thought 2

Languages

Arabic (Institute of Islamic Studies)
ISLA 521D1 (4.5) Introductory Arabic
ISLA 521D2 (4.5) Introductory Arabic
ISLA 522D1 (3) Lower Intermediate Arabic
ISLA 522D2 (3) Lower Intermediate Arabic

Greek (Classics Program, Faculty of Religious Studies)
CLAS 220D1 (3) Introductory Ancient Greek
CLAS 220D2 (3) Introductory Ancient Greek
CLAS 321 (3) Intermediate Greek: Plato/Xenophon
CLAS 322 (3) Intermediate Greek: Orators
CLAS 323 (3) Intermediate Greek: Homer
CLAS 324 (3) Intermediate Greek: Poetry
CLAS 325 (3) Intermediate Greek: Later Prose
CLAS 326 (3) Intermediate Greek: Selections
RELG 280D1 (3) Elementary New Testament Greek
RELG 280D2 (3) Elementary New Testament Greek
RELG 381 (3) Advanced New Testament Greek

Hebrew (Department of Jewish Studies, Faculty of Religious Studies)
JWST 200 (12) Hebrew Language Intensive
JWST 220D1 (3) Introductory Hebrew
JWST 220D2 (3) Introductory Hebrew
JWST 320D1 (3) Intermediate Hebrew
JWST 320D2 (3) Intermediate Hebrew
RELG 390D1 (3) Elementary Biblical Hebrew
RELG 390D2 (3) Elementary Biblical Hebrew

Latin (Classics Program)
CLAS 210D1 (3) Introductory Latin 1
CLAS 210D2 (3) Introductory Latin 1
CLAS 311 (3) Catullus/Ovid
CLAS 312 (3) Intermediate Latin: Poetry
CLAS 313 (3) Intermediate Latin: Cicero
CLAS 314 (3) Intermediate Latin: Historians
CLAS 315 (3) Intermediate Latin: Selections
CLAS 316 (3) Intermediate Latin: Medieval

12.42 Political Science (POLI)

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Chair — Christopher Manfredi
Emeritus Professors
Baidev Raj Nayar; B.A. (Punjab), M.A., Ph.D. (Chic.)
Blema Steinberg; B.A. (McG.), M.A. (Cornell), Ph.D. (McG.)

Professors
Michael Brecher; B.A. (McG.), M.A., Ph.D. (Yale), F.R.S.C.
(R.B. Angus Professor of Economics and Political Science)
(on leave winter 2005)
Mark R. Brawley; B.A. (Calif.), M.A., Ph.D. (UCLA)
Rex Brynen; B.A. (U. Vic.), M.A., Ph.D. (Calg.)
Elisabeth Gidengil; B.A. (London School of Econ.), M.A. (N.Y.), Ph.D. (McG.)
Christopher Manfredi; B.A. , M.A. (Calg.), M.A., Ph.D. (Claremont)
T. V. Paul; B.A. (Keral.), M.Phil. (JNU), M.A., Ph.D. (U.C.L.A.)
(William Dawson Professor)
Filippo Sabetti; B.A. (McM.), M.A., Ph.D. (Ind.)
Richard Schultz; B.A. (York), M.A. (Manc.), Ph.D. (York) (James McGill Professor)
Harold M. Waller; M.S. (Northwestern), Ph.D. (Georgetown)
(on leave 2004-2005)

Associate Professors
Arun Agrawal; B.A. (Delhi), M.A., Ph.D. (Duke) (William Dawson Scholar)
Jerome H. Black; B.A. (Tor.), M.A. (Kent & Roch.), Ph.D. (Roch.)
(Professor of Canadian Ethnic Studies)
Barbara Haskel; A.M., Ph.D. (Harv.)
Juliet Johnson; A.B. (Stanford), M.A., Ph.D. (Princeton)
Antonia Maioni; M.A. (Carl.), Ph.D. (Northwestern)
(James McGill Professor)

McGill University, Undergraduate Programs 2004-2005
1. Procedure for NEW Students

All new students entering the Political Science Program (including Minor Concentrations) are strongly urged to attend an Information Meeting scheduled at the end of August. The date and location of the meeting will be posted on the web. Attendance will help students prepare for their session with an adviser. It is the student’s responsibility to be in Montreal for the meeting. The following brochures are available on the Web: “Programs in Political Science”, “Minor Programs in Political Science”, and “List of Political Science Courses offered 2004-2005”. It is essential to read through these prior to attending the Information Meeting.

2. For all Political Science Students

“Programs in Political Science”, “Minor Programs in Political Science”, and “List of Political Science Courses offered 2004-2005” are all available in the Department as well as on the Web. The Calendar provides course descriptions and should be used in conjunction with the “List of Political Science Courses Offered 2004-2005”. Students wishing to have courses taken at other universities counted as satisfying program requirements must bring copies of their transcripts and course syllabi to the Director of the Major or Honours Program or the Director of Undergraduate Studies. Students are not accepted into the Honours Program in Political Science until their second year in Political Science; an exception is made for those in Joint Honours Programs.

As course and personnel changes may occur after this Calendar has gone to press, students should not use it to plan their program of studies without first consulting the Department Office for updated information.

MINOR CONCENTRATION IN POLITICAL SCIENCE

(18 credits) (Expandable)

**Complementary Courses** (18 credits)

6 - 9 credits at the 200 level, from at least two fields:

**Canadian Politics Field**

- POLI212 (3) Government of Canada
- POLI222 (3) Political Process and Behaviour in Canada
- POLI226 (3) La vie politique Québécoise

**Comparative Politics Field**

- POLI211 (3) Comparative Government and Politics
- POLI212 (3) Government and Politics - Developed World
- POLI227 (3) Developing Areas/Introduction

**International Relations Field**

- POLI243 (3) International Politics of Economic Relations
- POLI244 (3) International Politics: State Behaviour

**Political Theory Field**

- POLI231 (3) Introduction to Political Theory
- POLI232 (3) Modern Political Thought

9 - 12 credits above the 200 level from at least two fields:

**Canadian Politics Field**

- POLI316 (3) Le Québec et l’Amérique du Nord
- POLI320 (3) Issues in Canadian Democracy
- POLI321 (3) Issues: Canadian Public Policy
- POLI326 (3) Provincial Politics
- POLI327 (3) Principles of Public Administration
- POLI336 (3) Le Québec et le Canada
- POLI337 (3) Canadian Public Administration
- POLI342 (3) Canadian Foreign Policy
- POLI355 (3) Idéologie et classes sociales au Québec
- POLI370 (3) Révolution tranquille/changements politiques/Québec de 1960

**Comparative Field (Developed and Developing)**

- POLI300D1 (3) Developing Areas/Revolution
- POLI300D2 (3) Developing Areas/Revolution
- POLI315 (3) Approaches to Political Economy
- POLI318 (3) Comparative Local Government
- POLI319 (3) Politics of Latin America
- POLI322 (3) Political Change in South Asia
- POLI332 (3) Developing Areas/China and Japan
- POLI324 (3) Developing Areas/Africa
- POLI325D2 (3) Government and Politics: United States
- POLI328 (3) Modern Politics in Western Europe
- POLI329 (3) Russian and Soviet Politics
- POLI331 (3) Politics in East Central Europe
- POLI332 (3) Politics of Former Soviet Republics
- POLI335 (3) State and Society - Southern Europe and South America

**Comparative Field (Developed and Developing)**

- POLI338 (3) Developing Areas/Topics 1
- POLI339 (3) Comparative Developed: Topics 1
- POLI340 (3) Developing Area/Middle East
- POLI353 (3) British Constitutional Thought
- POLI356 (3) Public Policy: Western Europe
- POLI357 (3) Politics: Contemporary Europe
- POLI358 (3) Comparative State-Society Relations
- POLI368 (3) Comparative Politics of Welfare
- POLI411 (3) Immigration and Multiculturalism in Canada
- POLI412 (3) Canadian Voting/Public Opinion
- POLI413 (3) Immigration and Multiculturalism in Canada
- POLI414 (3) Society and Politics in Italy
- POLI415 (3) Transitions from Communism
- POLI422 (3) Developing Areas/Topics 2
- POLI423 (3) Politics of Ethno-Nationalism
- POLI424 (3) Media and Politics
- POLI425 (3) Topics in American Politics
- POLI428 (3) Politics of France
- POLI429 (3) The Politics of South Africa
- POLI430 (3) The Politics of Scandinavia
- POLI431 (3) Nations and States/Developed World
- POLI432 (3) Selected Topics: Comparative Politics
- POLI437 (3) Politics in Israel
- POLI438 (3) British Politics
- POLI450 (3) Peacebuilding
- POLI451 (3) The European Union
- POLI454 (3) British Political Thought
- POLI463 (3) Politics of Germany
- POLI464 (3) Comparative Political Economy
- POLI466 (3) Public Policy Analysis
- POLI471 (3) Democracy in the Modern World
- POLI472 (3) Developing Areas/Social Movements
- POLI473 (3) Democracy and the Market
International Relations

POLI301 (3) The Modern International System
POLI341 (3) Foreign Policy: The Middle East
POLI342 (3) Canadian Foreign Policy
POLI343 (3) Foreign Policy: Latin America
POLI344 (3) Foreign Policy: Europe
POLI345 (3) International Organization
POLI346 (3) American Foreign Policy
POLI347 (3) Arab-Israel Conflict, Crisis, Peace
POLI349 (3) Foreign Policy: Asia
POLI350 (3) Approaches to War Avoidance, War Limitation, and Peace
POLI351 (3) Crisis, Conflict and War
POLI354 (3) Approaches to International Political Economy
POLI359 (3) Topics in International Politics
POLI360 (3) Security: War and Peace
POLI362 (3) Political Theory and International Relations

POLI441 (3) IPE: North-North Relations
POLI443 (3) Change in International Politics
POLI444 (3) Topics in International Politics
POLI445 (3) IPE: North-South Relations
POLI450 (3) Peacebuilding
POLI451 (3) The European Union

Political Theory

POLI333 (3) Western Political Theory 1
POLI334 (3) Western Political Theory 2
POLI336 (3) Political Theory and International Relations
POLI364 (3) Radical Political Thought
POLI365 (3) Democratic Theory
POLI366 (3) Topics in Political Theory
POLI433 (3) History of Political/Social Theory 3
POLI434 (3) History of Political/Social Theory 4
POLI455 (3) American Political Thought
POLI459 (3) Topics in Political Theory
POLI460 (3) Ideology and Political Ideologies
POLI470 (3) Philosophy, Economy and Society

Other Political Science courses may be used to satisfy this Minor subject to approval.

MINOR CONCENTRATION IN POLITICAL SCIENCE: CANADA/QUEBEC

(Non-expandable) (18 credits)

Complementary Courses (18 credits)

6 credits at the introductory level from:
POLI221 (3) Government of Canada
POLI222 (3) Political Process and Behaviour in Canada
POLI226* (3) La vie politique québécoise

12 credits, 3 of which must be in Quebec politics, from:
POLI226* (3) La vie politique québécoise
POLI316* (3) Le Québec et l'Amérique du Nord
POLI320 (3) Issues in Canadian Democracy
POLI321 (3) Issues: Canadian Public Policy
POLI326 (3) Provincial Politics
POLI327 (3) Principles of Public Administration
POLI336* (3) Le Québec et le Canada
POLI337 (3) Canadian Public Administration
POLI342 (3) Canadian Foreign Policy
POLI355* (3) Idéologie et classes sociales au Québec
POLI370* (3) Révolution tranquille/changements politiques/Québec de 1960
POLI371 (3) Challenge of Canadian Federalism
POLI378 (3) The Canadian Judicial Process
POLI379 (3) Topics in Canadian Politics
POLI410 (3) Canadian Political Parties
POLI411 (3) Immigration and Multiculturalism in Canada
POLI412 (3) Canadian Voting/Public Opinion
POLI415 (3) Political Parties
POLI416 (3) Political Economy of Canada
POLI417 (3) Health Care in Canada

POLI421 (3) Social Movements in Canada
POLI426 (3) Partis politiques et comportements électoraux au Québec
POLI427 (3) Selected Topics: Canadian Politics
POLI446* (3) Les politiques publiques au Québec
POLI447 (3) Canadian Constitutional Politics
POLI467* (3) Politique et société à Montréal
POLI469 (3) Politics of Regulation
POLI477 (3) Business-Government Relations in Canada
POLI478 (3) The Canadian Constitution

QCST440* (3) Aspects du Québec contemporain/Aspects of Contemp. Québec

*Denotes Quebec Politics

MINOR CONCENTRATION IN COMPARATIVE POLITICS

(Non-expandable) (18 credits)

Required Course (3 credits)
POLI211 (3) Introduction to Comparative Politics

Complementary Courses (15 credits)

3 credits selected from the following:
POLI122 (3) Government and Politics - Developed World
POLI227 (3) Developing Areas - Introduction

12 credits selected from the following:
POLI300D1 (3) Developing Areas/Revolution
POLI300D2 (3) Developing Areas/Revolution
POLI315 (3) Approaches to Political Economy
POLI318 (3) Comparative Local Government
POLI319 (3) Politics of Latin America
POLI322 (3) Political Change in South Asia
POLI323 (3) Developing Areas/China and Japan
POLI324 (3) Developing Areas/Africa
POLI325D1 (3) Government and Politics: United States
POLI325D2 (3) Government and Politics: United States
POLI328 (3) Modern Politics in Western Europe
POLI329 (3) Russian and Soviet Politics
POLI331 (3) Politics in East Central Europe
POLI338 (3) Developing Areas/Topics 1
POLI339 (3) Comparative Developed: Topics 1
POLI340 (3) Developing Areas/Middle East
POLI357 (3) Politics: Contemporary Europe
POLI358 (3) Comparative State-Society Relations
POLI411 (3) Immigration and Multiculturalism in Canada
POLI414 (3) Society and Politics in Italy
POLI419 (3) Transitions from Communism
POLI422 (3) Developing Areas/Topics 2
POLI423 (3) Politics of Ethno-Nationalism
POLI424 (3) Media and Politics
POLI426 (3) Partis politiques et comportements électoraux
POLI427 (3) Selected Topics: Canadian Politics
POLI428 (3) Developing Areas/Topics
POLI429 (3) Russian and Soviet Politics
POLI431 (3) Politics in East Central Europe
POLI432 (3) Developing Areas/Topics 1
POLI439 (3) Comparative Developed: Topics 1
POLI440 (3) Developing Areas/Middle East
POLI441 (3) Immigration and Multiculturalism in Canada
POLI447 (3) Canadian Constitutional Politics
POLI448 (3) Canadian Constitutional Politics

MINOR CONCENTRATION IN INTERNATIONAL RELATIONS

(Non-expandable) (18 credits)

Required Courses (6 credits)
POLI1243 (3) International Politics of Economic Relations
POLI1244 (3) International Politics: State Behaviour

Complementary Courses (12 credits)

12 credits, of which 6 credits must be in thematic courses:

Thematic courses

POLI301 (3) The Modern International System
POLI345 (3) Foreign Policy: Europe
POLI346 (3) American Foreign Policy
POLI347 (3) Arab-Israel Conflict, Crisis, Peace
POLI349 (3) Foreign Policy: Asia
POLI350 (3) Approaches to War Avoidance, War Limitation, and Peace
POLI351 (3) Crisis, Conflict and War
POLI354 (3) Approaches to International Political Economy
POLI355* (3) Idéologie et classes sociales au Québec

**RTS – POLITICAL SCIENCE**
MINOR CONCENTRATION IN POLITICAL ECONOMY
(Non-expandable) (18 credits)

Complementary Courses (18 credits)

3 credits selected from:
Poli211 (3) Comparative Government and Politics
Poli227 (3) Developing Areas/Introduction
Poli243 (3) International Politics of Economic Relations

3 credits selected from:
Econ208 (3) Microeconomic Analysis and Applications
Econ209 (3) Macroeconomic Analysis and Applications
Students who take Econ203D2 Econ203D2 or Econ250D1/ Econ250D2 are deemed to have fulfilled the economic requirement;

12 credits selected from:
Poli243 (3) International Politics of Economic Relations
Poli315 (3) Approaches to Political Economy
Poli321 (3) Canadian Public Policy
Poli335 (3) Approaches to International Political Economy
Poli336 (3) Issues: Canadian Public Policy
Poli416 (3) Political Economy of Canada
Poli417 (3) Political Economy of Canada
Poli418 (3) International Politics
Poli451 (3) The European Union
Poli464 (3) Comparative Political Economy
Poli469 (3) Politics of Regulation
Poli473 (3) Democracy and the Market

MINOR CONCENTRATION IN POLITICS, LAW AND SOCIETY
(Non-expandable) (18 credits)

Required Courses (6 credits)
Poli211 (3) Comparative Government and Politics
Poli378 (3) Developing Areas/Introduction

Complementary Courses (12 credits)

3 credits selected from:
Poli221 (3) Government of Canada
Poli222 (3) Political Process and Behaviour in Canada

9 credits, at least 6 of which must be non-political science credits selected from:
Hist344 (3) Police Institutions
Jwst316 (3) Social and Ethical Issues in Jewish Law
Phil348 (3) Philosophy of Law
Poli318 (3) Comparative Local Government
Poli321 (3) Issues: Canadian Public Policy
Poli337 (3) Canadian Public Administration
Poli417 (3) Health Care in Canada
Poli447 (3) Canadian Constitutional Politics
Poli466 (3) Public Policy Analysis
Poli469 (3) Politics of Regulation
Poli478 (3) The Canadian Constitution
Prvi2456* (3) Children and Law
Prvi2482* (3) Law and Poverty
Soci388 (3) Crime

Soci1488 (3) Punishment and Prisons

* Procedure for taking Law courses: to take these courses, the student must apply as a special student through the Faculty of Law and provide the following: curriculum vitae, copy of academic record and reason for wanting to take the course.

MINOR CONCENTRATION IN SOUTH ASIA (Non-expandable)
(18 credits)

Required Courses (6 credits)
Poli227 (3) Developing Areas/Introduction
Poli322 (3) Political Change in South Asia

Complementary Courses (12 credits)

3 - 6 credits selected from:
AntH327 (3) Peoples of South Asia
Islas500D1 (3) History of Islamic India
Islas500D2 (3) History of Islamic India
Relg252 (3) Hinduism and Buddhism
Relg344 (3) Maháyána Buddhism
Relg348 (3) Classical Hinduism
Relg350 (3) Bhakti Hinduism
Relg454 (3) Modern Hindu Thought

6 - 9 credits selected from:
AntH212 (3) Anthropology of Development
Islas505 (3) Major Themes of Islamic Religious Expression
Islas506 (3) Islam: Later Development
Relg333 (3) Hindu and Buddhist Images of Feminine
Relg342 (3) Theravada Buddhist Literature
Relg371 (3) Ethics of Violence/Non-Violence
Soci254 (3) Development and Underdevelopment

MAJOR CONCENTRATION IN POLITICAL SCIENCE
(36 credits)

Complementary Courses (36 credits)

36 credits of Political Science courses, as follows:
No more than one-half (18 credits) of the credits in a single field.
(If the field in question is Comparative Politics, the maximum is 21 credits, provided courses are taken in both Developed Areas and Developing Areas.)

In the first year of the program, students are advised to select 12 - 15 credits from at least three of the four main fields (Comparative Government and Politics, Canadian and Quebec Government and Politics, International Politics, Political Theory).

No more than 15 of the 36 credits may be at the 200 level.

In the final year, no program courses may be taken below the 300 level.

Students who do not have the prerequisite(s) for a course may be asked to withdraw from the course.

Students may take only one 500-level Political Science Honours Seminar and it is to be taken in the final year.

The normal course load for a first-year student is 30 credits; a typical course distribution is given in the Departmental guidelines.

First year students normally may take courses at the 200-level only. First year students in the second term of a 90-credit program may, with the approval of their adviser at Course Change period, transfer into one 300-level course provided that they have obtained an average of B- in their first-term courses and that they have taken the prerequisite 200-level course. Second year students in the third term of a 120-credit program may take one 300-level course provided they have taken the prerequisite course at the 200-level.

HONOURS IN POLITICAL SCIENCE (54 credits)

Note: The following provides only a summary view of the program. Detailed information is provided in the handout “Programs in Political Science”, available from the Department or on the web; all Honours and potential Honours students must read it before seeing an adviser.
The Honours program in Political Science consists of 54 credits of which 48 must be in Political Science. The remaining 6 credits must be in related social studies disciplines and must be taken at the 300 or 400 level.

Students wishing to take Honours Political Science will be admitted to the program in their second year in Political Science. In their first year in political science, they should register as Major students and take 12-15 credits in Political Science spread over at least three of the four main fields offered by the Department (Comparative Politics, Canadian and Québec Politics, International Politics, Political Theory). Potential Honours students are also strongly encouraged to take one of the basic courses in economic analysis (ECON208 and ECON209 or ECON230D1/ ECON230D2). The introductory course requirements in the various fields of Political Science are the same as those presented in the description of the Major program above.

Students in the Honours Political Science program are encouraged to concentrate in one or two of the major fields offered by the Department. While concentration is considered beneficial, excessive specialization is discouraged. Students will normally not be permitted to take more than half their Political Science credits in any one field. Honours students are required to take a 3-credit course in Methods (POLI311) and a 3-credit course in Political Theory (at any level). They are also required to take one-quarter of their Political Science credits (12 credits) at the 400-level or higher, including at least one 500- or 600-level Seminar. Students can satisfy this one-quarter rule by taking one 400-, one 500-, and one 600-level course. Further information may be obtained from one of the Honours advisers.

Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.30.

**JOINT HONOURS – POLITICAL SCIENCE COMPONENT**

(36 credits)

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours Program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

**Note:** The following provides only a summary view of the program.

Detailed information is provided in the handout “Programs in Political Science”, available from the Department; all Joint Honours and potential Joint Honours students must read it before seeing an adviser.

To meet the requirements for Joint Honours degrees, students must complete 36 credits in Political Science and meet the requirements set forth by the other Department. Students wishing to follow a Joint Honours program will be admitted in their first year in political science. Joint Honours students normally take 12 credits in Political Science, 12 credits in the other Honours subject and 6 credits of other courses in each year of their program.

In the first year in political science, the 12 credits in Political Science should cover at least two (preferably three) of the four main fields offered by the Department. While some concentration is encouraged, students will normally not be permitted to take more than half their Political Science credits in any one field. Joint Honours students are required to take a Political Science course in Methods (POLI311) unless they are authorized to take an equivalent social science methods course in another department (Sociology, Economics). In that case they are required to take a course (at any level) in Political Theory. They are also required to take one-quarter of their Political Science credits (i.e., 9 credits) at the 400 level or higher, including at least one 500- or 600-level Seminar. Students can satisfy the one-quarter rule by taking one 500- and one 600-level course.

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.30.

**HONOURS STANDARDS**

To enter, remain and graduate in Honours, students must achieve/maintain a B+ average in their political science courses and more than half of the political science grades must be at the B+ level or higher. To be awarded First Class Honours at graduation, in addition to a 3.50 CGPA, students must achieve an A-average in their political science courses and more than half of political science grades must be at the A-level or higher. All political science courses taken at McGill are counted in determining a student’s standing. (The specific criteria are given in the brochure “Programs in Political Science”, which may also be found on the Department webpage.) To be awarded Honours at graduation, students must be registered in the Honours program in their final year. At graduation, students’ Honours standing will be determined by their overall record in the Honours program.

Further information may be obtained from the Head of the Honours program.

**12.43 Psychology (PSYC)**

Stewart Biological Sciences Building, Room W8/1
1205 Docteur Penfield Avenue
Montreal, QC H3A1B1
Telephone: (514) 398-6100
Fax: (514) 398-4896
E-mail: info@psyc.mcgill.ca
Website: www.psyc.mcgill.ca

The Psychology Department offers programs in both Arts and Science. For a list of teaching staff and an outline of the nature of Psychology refer to the Science entry “Psychology (PSYC)” on page 343. Programs which may be taken by Arts students are described in this section, those listed under the Faculty of Science may be taken by Science students only.

**Note:** The B.A. (or B.Sc.) with a Major Concentration or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology.

**INFORMATION MEETINGS FOR NEW STUDENTS**

All new students entering the Psychology undergraduate program are required to attend an Information Meeting prior to registration. Students planning to pursue a Bachelor of Arts with a Major Concentration in Psychology must attend a meeting at 14:30 on August 25, 2004, in the Stewart Biological Sciences Building, Room S1/4. At this meeting, Nicole Allard, the Academic Adviser, will explain the requirements of the Department’s programs. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. After this meeting, students in the Major Concentration in Psychology will make appointments for individual advising sessions and fill out their Study Plan form for registration.

Entering students must bring their letter of acceptance and a copy of their collegial transcript(s). They will also need this Calendar and a preliminary Class Schedule. Students will also find the Psychology Department Handbook helpful. The Handbook contains more detailed descriptions of Psychology courses, as well as providing guidelines for how students might pursue particular areas of interest. The Handbook is available on the Department Website: www.psych.mcgill.ca/ugrad/ugrad.htm.

Students entering the Psychology program in January are encouraged to call the Academic Adviser, Nicole Allard, in December to clarify their course selections.

**COURSE GROUPS: LIST A AND LIST B**

The study of psychology covers many fields. To develop a breadth of understanding in psychology, students are expected to obtain knowledge beyond the introductory level in two or more areas of psychology. To ensure this requirement is met, Psychology courses are divided into two lists. List A covers the areas of behavioural neuroscience, cognition and quantitative methods. List B covers social, health and developmental psychology.
### List A (Behavioural Neuroscience, Cognition and Quantitative Methods)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>PSYC301</td>
<td>(3) Learning</td>
</tr>
<tr>
<td>PSYC308</td>
<td>(3) Behavioural Neuroscience 1</td>
</tr>
<tr>
<td>PSYC310</td>
<td>(3) Human Intelligence</td>
</tr>
<tr>
<td>PSYC311</td>
<td>(3) Human Cognition and the Brain</td>
</tr>
<tr>
<td>PSYC317</td>
<td>(3) Genes and Behaviour</td>
</tr>
<tr>
<td>PSYC318</td>
<td>(3) Behavioural Neuroscience 2</td>
</tr>
<tr>
<td>PSYC334</td>
<td>(3) Computer Simulation - Psychological Processes</td>
</tr>
<tr>
<td>PSYC335</td>
<td>(3) Formal Models: Psychological Processes</td>
</tr>
<tr>
<td>PSYC336</td>
<td>(3) Measurement of Psychological Processes</td>
</tr>
<tr>
<td>PSYC340</td>
<td>(3) Psychology of Language</td>
</tr>
<tr>
<td>PSYC341</td>
<td>(3) The Psychology of Bilingualism</td>
</tr>
<tr>
<td>PSYC342</td>
<td>(3) Hormones and Behaviour</td>
</tr>
<tr>
<td>PSYC352</td>
<td>(3) Laboratory in Cognitive Psychology</td>
</tr>
<tr>
<td>PSYC353</td>
<td>(3) Laboratory in Human Perception</td>
</tr>
<tr>
<td>PSYC403</td>
<td>(3) Modern Psychology in Historical Perspective</td>
</tr>
<tr>
<td>PSYC406</td>
<td>(3) Psychological Tests</td>
</tr>
<tr>
<td>PSYC410</td>
<td>(3) Special Topics in Neuropsychology</td>
</tr>
<tr>
<td>PSYC413</td>
<td>(3) Cognitive Development</td>
</tr>
<tr>
<td>PSYC427</td>
<td>(3) Sensorimotor Behaviour</td>
</tr>
<tr>
<td>PSYC451</td>
<td>(3) Human Factors Research and Techniques</td>
</tr>
<tr>
<td>PSYC470</td>
<td>(3) Memory and Brain</td>
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<tr>
<td>PSYC472</td>
<td>(3) Scientific Thinking and Reasoning</td>
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<tr>
<td>PSYC503</td>
<td>(3) Computational Psychology</td>
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<tr>
<td>PSYC505</td>
<td>(3) The Psychology of Pain</td>
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<tr>
<td>PSYC510</td>
<td>(3) Statistical Analysis of Tests</td>
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<tr>
<td>PSYC522</td>
<td>(3) Neurochemistry and Behaviour</td>
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<tr>
<td>PSYC526</td>
<td>(3) Advances in Visual Perception</td>
</tr>
<tr>
<td>PSYC529</td>
<td>(3) Music Cognition</td>
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<tr>
<td>PSYC531</td>
<td>(3) Structural Equation Models</td>
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<tr>
<td>PSYC532</td>
<td>(3) Cognitive Science</td>
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<tr>
<td>PSYC536</td>
<td>(3) Correlational Techniques</td>
</tr>
<tr>
<td>PSYC541</td>
<td>(3) Multilevel Modelling</td>
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### List B (Social, Health and Developmental Psychology)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>PSYC304</td>
<td>(3) Child Development</td>
</tr>
<tr>
<td>PSYC316</td>
<td>(3) Psychology of Deafness</td>
</tr>
<tr>
<td>PSYC331</td>
<td>(3) Inter-Group Relations</td>
</tr>
<tr>
<td>PSYC332</td>
<td>(3) Introduction to Personality</td>
</tr>
<tr>
<td>PSYC333</td>
<td>(3) Personality and Social Psychology</td>
</tr>
<tr>
<td>PSYC337</td>
<td>(3) Introduction: Abnormal Psychology 1</td>
</tr>
<tr>
<td>PSYC338</td>
<td>(3) Introduction: Abnormal Psychology 2</td>
</tr>
<tr>
<td>PSYC343</td>
<td>(3) Language Acquisition in Children</td>
</tr>
<tr>
<td>PSYC351</td>
<td>(3) Research Methods in Social Psychology</td>
</tr>
<tr>
<td>PSYC408</td>
<td>(3) Principles of Cognitive Behaviour Therapy</td>
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<tr>
<td>PSYC412</td>
<td>(3) Deviations: Child Development</td>
</tr>
<tr>
<td>PSYC414</td>
<td>(3) Social Development</td>
</tr>
<tr>
<td>PSYC416</td>
<td>(3) Topics in Child Development</td>
</tr>
<tr>
<td>PSYC429</td>
<td>(3) Health Psychology</td>
</tr>
<tr>
<td>PSYC436</td>
<td>(3) Human Sexuality and its Problems</td>
</tr>
<tr>
<td>PSYC471</td>
<td>(3) Human Motivation</td>
</tr>
<tr>
<td>PSYC473</td>
<td>(3) Social Cognition and the Self</td>
</tr>
<tr>
<td>PSYC474</td>
<td>(3) Interpersonal Relationships</td>
</tr>
<tr>
<td>PSYC491D1</td>
<td>(3) Advanced Study: Behavioural Disorders</td>
</tr>
<tr>
<td>PSYC491D2</td>
<td>(3) Advanced Study: Behavioural Disorders</td>
</tr>
<tr>
<td>PSYC511</td>
<td>(3) Infant Competence</td>
</tr>
<tr>
<td>PSYC530</td>
<td>(3) Applied Topics in Deafness</td>
</tr>
<tr>
<td>PSYC533</td>
<td>(3) International Health Psychology</td>
</tr>
<tr>
<td>PSYC534</td>
<td>(3) Community Psychology</td>
</tr>
<tr>
<td>PSYC535</td>
<td>(3) Advanced Topics in Social Psychology</td>
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### Unclassified Courses

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<th>Course Code</th>
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<tbody>
<tr>
<td>PSYC395</td>
<td>(3) Psychology Research Project 1</td>
</tr>
<tr>
<td>PSYC450D1</td>
<td>(3) Research Project and Seminar</td>
</tr>
<tr>
<td>PSYC450D2</td>
<td>(3) Research Project and Seminar</td>
</tr>
<tr>
<td>PSYC492</td>
<td>(3) Special Topics Seminar 1</td>
</tr>
<tr>
<td>PSYC493</td>
<td>(3) Special Topics Seminar 2</td>
</tr>
<tr>
<td>PSYC494D1</td>
<td>(3) Psychology Research Project</td>
</tr>
</tbody>
</table>

### MINOR CONCENTRATION IN PSYCHOLOGY (18 credits)

- **Recommended background:** Students are advised to complete a course in Introductory Psychology at the collegial or freshman level. Students who have not previously completed CEGEP Psychology 350-101 or 350-102 or equivalent are required to complete PSYC100 during the first year of study at McGill.

### Complementary Courses (18 credits)

- **6 credits selected from:**
  - PSYC204 (3) Introduction to Psychological Statistics
  - PSYC211 (3) Intro Behavioral Neuroscience
  - PSYC212 (3) Perception
  - PSYC213 (3) Cognition
  - PSYC215 (3) Social Psychology

- **12 credits in Psychology at the 300 level or above.**

### MINOR CONCENTRATION IN BEHAVIOURAL SCIENCE (18 credits) (Non-expandable)

- **Recommended background:** Students who wish to go on to graduate training in Psychology, and those who may wish to apply for membership in the Ordre des Psychologues du Québec (once the additional graduate requirements of the Ordre have been completed), are advised to take the following supplementary Minor Concentration in Behavioural Science. Note that this counts as a second Minor Concentration, and is open only to students registered in the Major Concentration in Psychology. A first Minor Concentration must also be completed in a discipline other than Psychology.

### Complementary Courses (18 credits)

- **3 credits in Psychology from List A**
- **3 credits in Psychology from List B**
- **3 credits in Psychology at the 400 or 500 level**
- **9 credits at the 300 level or above in one of the following disciplines: Psychology (PSYC), Anthropology (ANTH), Linguistics (LING), or Sociology (SOCI)**

### MAJOR CONCENTRATION IN PSYCHOLOGY (36 credits)

- **Students with a Major Concentration in Psychology must obtain a minimum grade of C in all 36 credits of the program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a suplementary examination (if there is one).**

- **Recommended Background:** Students registered in a Bachelor of Arts degree with a Major Concentration or Honours program in Psychology, and those registered in a Bachelor of Arts and Science degree with a Major Concentration or Joint Honours Component in Psychology, are advised to complete courses in Introductory Psychology and Human Biology at the collegial level.

- **Students who have not previously completed Psychology 350-101 or 350-102 in CEGEP will be required to register for PSYC100 during their U1 year. Bachelor of Arts students who have not completed one Biology 101-301, 101-401, 101-911 or 101-921 in CEGEP will be required to complete BIOL115 (or if they prefer BIOL111 or BIOL112) during their U1 year. Bachelor of Arts and Science students who have not completed one course in General Biology (CEGEP objective OOUK, OOXU or equivalent) will be required to complete one of BIOL 111 or BIOL 112 during their U1 year.**

- **All students who have completed either Mathematics 201-307 or 201-337 or equivalent, or the combination of Quantitative Meth-
complete all honours program requirements.

A minimum GPA of 3.00 on each of the three Honours courses of which 9 out of 12 credits in Psychology, at least an A- grade. “Honours” is awarded to students with a minimum cumulative grade point average of 3.50 and a minimum program GPA of 3.50 (based on a 27-30 graded credit program over two terms). Students who have been exempted from PSYC204 are advised to complete PSYC305 in U1. All students must complete a minimum of 27 graded credits in U1 to be eligible for admission to the Honours Program.

B.A. HONOURS IN PSYCHOLOGY (54 credits)

Honours in Psychology prepares students for graduate study, and so emphasises practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of their U2 year, and the two-year sequence of Honours courses continues through U3.

Admission to Honours is selective. Students with a cumulative grade point average of 3.00 or better are eligible to apply; since enrolment is limited the usual GPA for admission to this program is 3.50 (based on a 27-30 graded credit program over two terms). Students must complete the following courses in their U1 year to be eligible to apply to the Honours Program: PSYC204, PSYC211, PSYC212, PSYC213, PSYC215. Students who have been exempted from PSYC204 are advised to complete PSYC305 in U1. All students must complete a minimum of 27 graded credits in U1 to be eligible for admission to the Honours Program.

Required Courses (18 credits)

PSYC204 (3) Introduction to Psychological Statistics
PSYC211 (3) Intro Behavioral Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC215 (3) Social Psychology
PSYC305 (3) Statistics for Experimental Design

Complementary Courses (18 credits)

3 credits in Psychology from List A
3 credits in Psychology from List B
12 credits in Psychology, at least 6 at the 400 or 500 level

Note: Students who wish to apply to the Honours Program in Psychology must complete the following courses in their U1 year to be eligible for admission: PSYC204, PSYC211, PSYC212, PSYC213, PSYC215. Students who have been exempted from PSYC204 are advised to complete PSYC305 in U1. All students must complete a minimum of 27 graded credits in U1 to be eligible for admission to the Honours Program.

U1 Required Courses (15 credits)

PSYC204 (3) Introduction to Psychological Statistics
PSYC211 (3) Intro Behavioral Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC215 (3) Social Psychology

Note: PSYC100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)

PSYC305 (3) Statistics for Experimental Design

U2 Required Courses (6 credits)

PSYC380D1 (3) Honours Research Project and Seminar
PSYC380D2 (3) Honours Research Project and Seminar

U3 Required Courses (6 credits)

PSYC482 (3) Advanced Honours Seminar 1
PSYC483 (3) Advanced Honours Seminar 2

Complementary Courses (24 credits)

6 credits to be selected from:

PSYC481D1 (3) Honours Thesis Research
PSYC481D2 (3) Honours Thesis Research
PSYC492 (3) Special Topics Seminar 1
PSYC493 (3) Special Topics Seminar 2
PSYC495 (3) Psychology Research Project 2
PSYC496 (3) Seniors Honours Research 1
PSYC497 (3) Seniors Honours Research 2
PSYC498D1 (3) Senior Honours Research
PSYC498D2 (3) Senior Honours Research

Any Psychology course at the 500 level.

6 credits in Psychology from List A
6 credits in Psychology from List B

6 credits at the 300 level or above in one of the following disciplines: Psychology (PSYC), Anthropology (ANTH), Linguistics (LING), or Sociology (SOCI)

A Joint Honours Component in Psychology is under consideration. If it is approved for implementation in September 2004 details will be available from the Department, or on-line in July at www.mcgill.ca (Course Calendars).

12.44 Quebec Studies/Études sur le Québec (QCST)

3644 Peel Street, Room 514
Montreal, Quebec H3A 1W9
Telephone: (514) 398-3960
Fax: (514) 398-3959
Website: www.arts.mcgill.ca/programs/qcst

Adviser —
Ines Scharnweber, Leacock 439
Telephone: (514)398-4804

Director — Catherine Desbarats (History)
Coordinator — Stéphan Gervais (Quebec Studies)
Program Committee Chair —
Michael Smith (Sociology)

Advisory Committee:
Michel Biron (French Language and Literature), Chantal Bouchard (French Language and Literature), Raphaelleacovino (Student Representative), Hélène Poulin-Minault (English and French Language Centre), Marie-Claude Prémont (Law), Lily-Pol Nepveu (Student Representative), JacquesRebuffot (Integrated Studies in Education), ChristineRoss (Art History), Jarrett Rudy (History)

Le Programme d'études sur le Québec veut favoriser la recherche et la formation multidisciplinaires en études québécoises.

Avec l’appui des départements, la concentration Mineur en Études sur le Québec sont offerts. Constitués l’un et l’autre d’une suite agencée de cours ayant pour but de fournir un enseignement interdisciplinaire aussi complet que
possible on the society québécoise à l'intérieur d'un cadre canadien et international.

Sauf les cours de Études sur le Québec (QCST300), Travaux dirigés (QCST472D1/QCST472D2) and the séminaire (QCST440), the courses comprise in the concentration Majeur ou la concentration Mineur ont la responsabilité des divers départements. Pour connaître the description of these courses et, le cas échéant, the conditions of admission, the étudiant(e) is donc invité(e) to report to the other sections of the Annuaire et, au besoin, to consult les Départements concernés, d'autant plus that tous les cours ne se donnent pas nécessairement at each year. Veuillez noter que les conseillers pédagogiques or the directeurs de programmes peuvent suggérer l'inscription a cours sans toutefois imposer this choice. La décision finale revient à l'étudiant(e) in ce qui concerne l'inscription a cours in autant que l'étudiant(e) répond aux conditions d'admission pour ces cours.

Le titre de chaque cours indique s'il est donné in français or en anglais, mais the travaux and examens can always be rédigés in the one or the other of these two languages (sauf at Département de langue et littérature françaises, où the français is de rigueur).

The Quebec Studies Program is intended to stimulate interdisciplinary studies and exchanges on Quebec society.

With departmental support, a Major Concentration and a Minor Concentration are offered, both of which consist of a coherent series of courses providing an interdisciplinary perspective on Quebec society in a Canadian and an international context.

Except for the general course (QCST300), the Tutorial (QCST472D1/QCST472D2) and the seminar (QCST440), courses included in the Major Concentration or Minor Concentration are the responsibility of the departments. To obtain a complete description of these courses and the admission requirements where applicable, students should read the relevant sections of the McGill Calendar, and if necessary, consult with the departments concerned, bearing in mind that not all courses are available in any given year. Please take note that an adviser or a director of a program can recommend registration in a course without imposing this choice. The final decision belongs to the student if the student has successfully completed the course prerequisites.

The title of each course indicates whether it is given in French or English, but term papers and exams can be written in either of these two languages (except in the French Language and Literature Department where French is the rule).

LA CONCENTRATION MINEUR EN ÉTUDES SUR LE QUÉBEC
MINOR CONCENTRATION IN QUEBEC STUDIES (18 credits)
(Expandable)

La concentration Mineur en Études sur le Québec a pour but de donner à l'étudiant(e) une connaissance générale of the société québécoise à la fois interdisciplinaire and complémentaire a sa propre discipline de spécialisation.

On peut s'inscrire à la concentration Mineur en U2 ou en U3.

The goal of this Concentration is to give the student a general knowledge of Quebec society that will be both interdisciplinary and complementary to the student's own Major Concentration or Honours Program.

Students can enrol in the Minor Concentration either in U2 or U3. They must obtain permission to do so either from their academic adviser or the director of their Department.

Cours Obligatoires/Required Courses (6 crédits/credits)
QCST300 (3) Études sur le Québec
QCST440 (3) Aspects du Québec contemporain/Aspects of Contemp. Quebec

Complémentaires/Complementary (12 crédits/credits)
12 crédits, dont au moins 3 doivent faire partie du tronc commun and the autres peuvent provenir de l'ensemble des cours. Le choix de ces cours se fera in consultation with the Directeur of the programme and variera selon the domaine of spécialisation de chaque étudiant(e).

12 credits, at least 3 of which must be from Core courses, chosen from the Complementary Course lists below.

The selection of courses will be made in consultation with the Program Director and will vary depending on the Major Concentration or Honours program of each student.

LA CONCENTRATION MAJEUR EN ÉTUDES SUR LE QUÉBEC
MAJOR CONCENTRATION IN QUEBEC STUDIES (36 credits)

La concentration Majeur en études sur le Québec s'adresse aussi bien aux étudiants(es) du Québec and du Canada qu'à ceux et celles of the étranger. Ce programme peut offrir a chaque étudiant(e) une connaissance du Québec à la fois large and approfondie, tout in lui permettant de recevoir une bonne formation interdisciplinaire.

The Major Concentration in Quebec Studies is intended for students from inside as well as outside Quebec and Canada. Its goal is to provide the student with a wide and thorough knowledge of Quebec, while allowing him/her to focus on several fields of study.

Cours Obligatoires/Required Courses (12 crédits/credits)
QCST300 (3) Études sur le Québec
QCST440 (3) Aspects du Québec contemporain/Aspects of Contemp. Quebec
QCST472D1 (3) Tutorial/Travaux dirigés
QCST472D2 (3) Tutor/Trouvaux dirigés

Complémentaires/Complementary (24 crédits/credits)
24 crédits, dont au moins 6 doivent faire partie du tronc commun and the autres peuvent provenir de l'ensemble des cours. Le choix de ces cours se fera in consultation with the Directeur of the programme and variera selon the domaine of spécialisation de chaque étudiant(e).

24 credits, at least 6 of which must be from Core courses, chosen from the Complementary Course lists below.

The selection of courses will be made in consultation with the Program Director and will vary depending on the Major Concentration or Honours program of each student.

Cours complémentaires/Complementary Course Lists

Cours inscrits au tronc commun, c'est-a-dire les cours portant plus spécifiquement sur le Québec sont marquées par un asterisque (*). Core courses, courses with a specific focus on Quebec, are indicated by an asterisk (*)

Anglais/English
ENGL228 Canadian Literature 1
ENGL229 Canadian Literature 2
ENGL327 Canadian Prose Fiction 1
ENGL328 Development of Canadian Poetry 1
ENGL335 The 20th Century Novel 1
ENGL336 The 20th Century Novel 2
ENGL361 Poetry of the 20th Century 1
ENGL362 Poetry of the 20th Century 2
ENGL393 Canadian Cinema 1
ENGL394 Canadian Cinema 2
ENGL409 Studies in a Canadian Author
ENGL410 Theme or Movement Canadian Literature
ENGL411 Studies in Canadian Fiction
ANTH306 Native Peoples’ History in Canada
ANTH336 Ethnohistory: North Eastern North America
ANTH338 Native Peoples of North America
ANTH436 North American Native Peoples

Architecture
ARCH372 History of Architecture in Canada
FRSL326 Découvrions le Québec en français
FRSL327 Discovering Quebec in French
SWRK352 Public Social Services in Canada
SWRK357 Legal Problems of the Poor
SWRK535 Women and Social Policy in Canada
Études sur le Canada/Canadian Studies
CANS200 Introduction to the Study of Canada
CANS300 Topics in Canadian Studies 1
CANS402 Canadian Studies Seminar 2

Études juives/Jewish Studies
JWST354 Interdisciplinary Lectures 2

Géographie/Geography (* Core Course)
GEOG311 Canada - A Geo-Economic Perspective
GEOG326* Geography of Québec
GEOG499* Subarctic Field Studies

Histoire/History (* Core Course)
HIST202 Survey: Canada to 1867
HIST203 Survey: Canada since 1867
HIST303* History of Québec
HIST332 Constitutional History: Canada - 1867
HIST333* History of New France: Part 1
HIST334* History of New France: Part 2
HIST342 Canada: External Relations since 1867
HIST343 Women in Post-Confederation Canada
HIST353 Canada: Work and Society, 1830-1919
HIST357 Religion and Canadian Society in Historical Perspective
HIST363 Canada 1870-1914
HIST364 Canada, 1914-1945
HIST367 Canada since 1945
HIST373 Canadian Labour History
HIST403* History of Quebec Institutions
HIST423 Topics: Migration and Ethnicity
HIST434* British North America 1760-1867
HIST462D1 Topics: Canadian Conservatism
HIST462D2 Topics: Canadian Conservatism
HIST463D1 Topics: History of Women in Canada
HIST463D2 Topics: History of Women in Canada
HIST465D1 Topics in Canadian Religious History
HIST467D1 Topics in Canadian Religious History
HIST469D2 Topics in Canadian Religious History
HIST471D1 Canadian Immigration History
HIST471D2 Canadian Immigration History
HIST472D1* Economics and Society/British North America 1760-1867
HIST472D2* Economics and Society/British North America 1760-1867
HIST483D1* History of Montreal
HIST483D2* History of Montreal
HIST493D1 Topics: Canadian Social History
HIST493D2 Topics: Canadian Social History

Histoire de l’art/Art History
ARTH301 Canadian Art 1914 - Present
ARTH302 Aspects of Canadian Art

Langue et littérature françaises/ French Language and Literature (* Core Course)
FREN207* French and Quebec Literature
FREN210* Francophonie 1
FREN228* Civilisation québécoise 1
FREN295* Histoire littéraire française et québécoise
FREN296 Travaux pratiques 2
FREN315* Le cinéma québécois
FREN329* Civilisation québécoise 2
FREN372* Le roman québécois 1
FREN375* Théâtre québécois
FREN382* Le roman québécois 2
FREN391* Histoire de la littérature française
FREN392 Travaux pratiques 1
FREN470* Poésie québécoise
FREN480 Le roman québécois 3
FREN487 L’essai québécois
FREN495* Séminaire de littérature québécoise 1

Science économique/Economics (* Core Course)
ECON211D1 Canadian Economic History
ECON211D2 Canadian Economic History
ECON219 Current Economic Problems: Topics
ECON303D1 Canadian Economic Policy
ECON303D2 Canadian Economic Policy
ECON305 Industrial Organization
ECON306D1 Labour Economics and Institutions
ECON306D2 Labour Economics and Institutions
ECON308 Governmental Policy Toward Business
ECON321* The Quebec Economy
ECON329 Economics of Confederation
ECON404 Transportation
ECON408D1 Public Sector Economics
ECON408D2 Public Sector Economics
ECON434 Current Economic Problems
ECON440 Health Economics

Science politique/Political Science (* Core Course)
POLI221 Government of Canada
POLI222 Political Process and Behaviour in Canada
POLI226* La vie politique québécoise
POLI320 Issues in Canadian Democracy
POLI321 Issues: Canadian Public Policy
POLI326 Provincial Politics
POLI336* Le Québec et le Canada
POLI337 Canadian Public Administration
POLI340* Canadian Foreign Policy
POLI370* Révolution tranquille/changements politiques/Québec de 1960
POLI371 Challenge of Canadian Federalism
POLI378 The Canadian Judicial Process
POLI410 Canadian Political Parties
POLI411 Immigration and Multiculturalism in Canada
POLI416 Political Economy of Canada
POLI421 Social Movements in Canada
POLI427 Selected Topics: Canadian politics
POLI446* Les politiques publiques au Québec
POLI469 Politics of Regulation
POLI478 The Canadian Constitution

Sociologie/Sociology (* Core Course)
SOCI210 Sociological Perspectives
SOCI211 Sociological Inquiry
SOCI215 Gender Family and Social Change
SOCI217 Canadian Mass Communications
SOCI220* Introduction to Québec Society
SOCI230 Sociology of Ethnic Relations
SOCI233 Canadian Society
SOCI235 Technology and Society
SOCI1318 Television in Society
SOCI320* The Minorities in Quebec
SOCI327 Jews in North America
SOCI333 Social Stratification
SOCI444 The Sociology of Labour Force
SOCI475 Canadian Ethnic Studies Seminar

12.45 Religious Studies (RELG)

William and Henry Birks Building
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Emeritus Professors
Gregory B. Baum; B.A. (McM.), M.A. (Queen’s)
Joseph C. McLelland; B.A., (McM.), M.A. (Tor.), B.D.(Knox, Tor.), B.Ed. (Edin.), D.D.(Mil. Dio. Coll.; Knox, Tor.)

Post-Retirement
Robert C. Culley; B.D.(Knox, Tor.), M.A., Ph.D.(Tor.)
Frederik Wisse; Ing. (Utrecht), B.A., B.D. (Calvin, Mich.), Ph.D. (Claremont)

Professors
Maurice Boutin; B.A., B.A. (Montr.), D.Th. (Munich)
(J.W McConnell Professor of Philosophy of Religion)
Avind Sharma; B.A. (Alld.), M.A. (Syr.), M.T.S., Ph.D. (Harv.)
(Henry Birs Professor of Comparative Religion)
Katherine Young; B.A. (Vt.), M.A. (Chic.), Ph.D. (McG.) (James McGill Professor)

Associate Professor
Douglas B. Farrow; B.R.E. (Providence), M.Div. (Grace), M.Th. (Regent), Ph.D. (Lond.)
Ian B. Henderson; B.A. (Man.), B.D. (St. And.), M.A. (McM.) D. Phil. (Oxon.)
G. Victor Hori; B.A. (York), M.A. (Tor.), Ph.D. (Stan.)
W.J. Torrance; B.A. (King's, Halifax), M.A., D. Phil. (Oxon.)
Patricia G. Kirkpatrick; B.A. (Dal.), M.T. (Lond.), D. Phil. (Oxon.)
G.S. Oegema; B.A., Th.D. (Free: Amsterdam), M.A., Ph.D. (Freie: Berlin), Dr. Theol. Habil (Tubingen)

Assistant Professor
Daniel A. Arnold; B.A. (Car.), M.A. (Columbia), M.A. (Illiiff), Ph.D. (Chicago)
Gaëlle Fiasse, B.A., M.A., Ph. D. (Louvain-le-Neuve) (Assistant Professor of Ethics and Religious Ethics) (Joint appointment with Department of Philosophy)
L. H. Sideris; B.A., M.A., Ph.D. (Indiana)
Devesh Soneji, B.A. (Manitoba), Ph.D. (McG.); (Assistant Professor of Hinduism)

Associate Member
Leigh Turner; B.A. (Winn.), M.A. (Manit.), M.A., Ph.D. (Southern Calif.)

Faculty Lecturers
Jim Kanaris; B.A. (C'dia), M.A., Ph.D. (McG.)

Course Lecturers
Barbara Galli; B.A. (Carlton), M.A. (Tor.), Dip.Ed., Ph.D. (McG.)
Lucille Marr; B.A., M.A., Ph. D. (Wat.)
Manuel M. Jinbachian, B.Litt. (Oxf.), Ph.D. (Strasbourg)
Mirela Saim; B.A., M.A. (Bucharest), Ph.D. (McG.); (Course Lecturer in Dialogues and Controversies)
John M. Simons; B.A. (Bishop's), S.T.B. (Trinity), Ph.D. (Georgetown) (PT)
John Vissers; B.A. (Tor.), M.Div. (Knox, Tor.), Th.M. (Princeton), Th.D. (Knox, Tor.) (PT)

Religious Studies Programs in Arts
Available within the Faculty of Arts are a Major Concentration and a Minor Concentration in World Religions, a Major Concentration in Scriptures and Interpretations, and a Minor Concentration in Scriptural Languages as well as an Honours and a Joint Honours Program with two options: Western Religions and Asian Religions. These programs are administered by the Faculty of Arts and the general rules, regulations and requirements of that Faculty apply to them.

Students interested in these programs can obtain information from the Faculty of Arts Website at www.mcgill.ca/arts and the Religious Studies Website or from a Religious Studies B.A. Adviser. For general information on Religious Studies programs, make an appointment to see an adviser by telephoning (514) 398-4121 or visiting the Reception office in the Birks Building.

Students in these programs must consult an Adviser prior to registration each year.

Admission to the B.A. program is granted according to criteria established by the Faculty of Arts.

Students interested in theology programs will find information about the Bachelor of Theology (B.Th.) on page 286 and the Master of Divinity (M.Div.) on page 285.

MINOR CONCENTRATION IN WORLD RELIGIONS (18 credits)
(Expandable to Major Concentration in World Religions)
The Minor concentration in World Religions introduces students to the major world religions and to the academic study of religion.

Complementary Courses (18 credits)
12 credits in Religious Traditions, chosen from the following:

Judaism and Christianity

RELG201 (3) Religions/Ancient Near East
RELG202 (3) Religion of Ancient Israel
RELG203 (3) Bible and Western Culture
RELG204 (3) Judaism, Christianity and Islam
RELG210 (3) Jesus of Nazareth
RELG302 (3) Old Testament Studies 1
RELG303 (3) Literature of Ancient Israel 2
RELG306 (3) Rabbinic Judaism
RELG311 (3) New Testament Studies 1
RELG312 (3) New Testament Studies 2
RELG320 (3) History of Christian Thought 1
RELG322 (3) The Church in History 1
RELG323 (3) The Church in History 2
RELG324 (3) Armenian Apostolic Tradition
RELG325 (3) Varieties Religious Experience in Christianity
RELG326 (3) Ancient Christian Church AD54 - AD604
RELG327 (3) History of Christian Thought 2
RELG330 (3) Reformed Theology
RELG331 (3) Contemporary Theological Issues
RELG332 (3) Women and the Christian Tradition
RELG339 (3) Christian Spirituality
RELG420 (3) Canadian Church History
RELG423 (3) Reformation Thought
RELG470 (3) Theological Ethics

Hinduism and Buddhism

RELG252 (3) Hinduism and Buddhism
RELG253 (3) Religions of East Asia
RELG337 (3) Themes in Buddhist Studies
RELG339 (3) Hindu and Buddhist Images of Feminine
RELG342 (3) Theravada Buddhist Literature
RELG344 (3) Mahayana Buddhism
RELG348 (3) Classical Hinduism
RELG350 (3) Bhakti Hinduism
RELG352 (3) Japanese Religions
RELG354 (3) Chinese Religions
RELG442 (3) Pure Land Buddhism
RELG451 (3) Zen: Maxims and Methods
RELG452 (3) East Asian Buddhism
RELG454 (3) Modern Hindu Thought
RELG546 (3) Indian Philosophy
RELG548 (3) Indian Buddhist Metaphysics
RELG549 (3) East Asian Buddhist Philosophy
RELG552 (3) Advaita Vedanta
RELG553 (3) Religions of South India 1
RELG554 (3) Religions of South India 2
RELG556 (3) Issues in Buddhist Studies
RELG557 (3) Asian Ethical Systems

6 credits in Comparative Studies, chosen from the following:

RELG207 (3) The Study of World Religions 1
RELG256 (3) Women in Judaism and Islam
RELG270 (3) Religious Ethics and the Environment
RELG271 (3) Sexual Ethics
RELG307 (3) Scriptural Interpretation
RELG315 (3) Special Topics in Religion
RELG316 (3) New Religious Movements
RELG341 (3) Introduction: Philosophy of Religion
RELG345 (3) Religion and the Arts
RELG361 (3) Religious Behaviour
RELG370 (3) Human Condition
RELG371 (3) Ethics of Violence/Non-Violence
RELG376 (3) Religious Ethics
RELG555 (3) Honours Seminar
RELG571 (3) Religion and Medicine

* No more than 12 credits of the Minor may be taken at the 200 level.

MINOR CONCENTRATION IN SCRIPTURAL LANGUAGES
(18 credits) (Non-expandable)

The Minor Concentration in Scriptural Languages is designed to provide students with the skills necessary to read Scriptural sources in their original languages. The Minor is recommended to be followed in conjunction with the Major Concentration in Scriptures and Interpretations.

Students will chose from one of two streams:

Stream I: Biblical Languages

Biblical Hebrew
RELG390D1* (3) Elementary Biblical Hebrew
RELG390D2* (3) Elementary Biblical Hebrew
RELG491 (3) Hebrew Texts
RELG492 (3) Hebrew Texts
JWST327 (3) A Book of the Bible
JWST328 (3) A Book of the Bible
JWST329 (3) A Book of the Bible
JWST330 (3) A Book of the Bible

Biblical Greek
RELG280 (6) Elementary New Testament Greek
RELG381 (3) Advanced New Testament Greek
RELG482 (3) Exegesis of Greek New Testament

* Students with advanced standing in Hebrew may take Aramaic as part of their program.

Minor Concentration in Scriptural Languages
Stream II: Indo-Tibetan Languages

Sanskrit is the language of classical Indian civilization and is recommended for students interested in gaining access to religious texts, philosophical works, academic treatises on all subjects and poetry written in classical and medieval India.

Classical Tibetan is one of the main scriptural languages of Buddhism. Many texts originally composed in Sanskrit are only extant in their Tibetan translations, and a vast body of philosophical, devotional, poetical and academic works composed in Classical Tibetan is only accessible to one who has a firm grasp of the language.

Complementary Courses (18 credits) chosen from among the following:

Sanskrit
RELG257D1 (3) Introductory Sanskrit
RELG257D2 (3) Introductory Sanskrit
RELG357D1 (3) Sanskrit 2
RELG357D2 (3) Sanskrit 2
RELG457D1 (3) Advanced Sanskrit
RELG457D2 (3) Advanced Sanskrit

Tibetan:
RELG264 (3) Introductory Tibetan 1
RELG265 (3) Introductory Tibetan 2
RELG364 (3) Intermediate Tibetan 1
RELG365 (3) Intermediate Tibetan 1
RELG464 (3) Advanced Tibetan 1
RELG465 (3) Advanced Tibetan 2

MAJOR CONCENTRATION IN WORLD RELIGIONS
(36 credits)

The Major Concentration in World Religions offers students a broad introduction to the study of the world's major religions, with the possibility for concentration in a student's specific areas of interest. Developing an understanding of methods and problems in comparative approaches to the academic study of religion will be encouraged.

Required Course (3 credits)
RELG456 (3) Theories of Religion

Complementary Courses (33 credits)
33 credits, no more than 12 of which may be taken at the 200 level.

24 credits in World Religions chosen from the following, according to the student's area of interest:

Judaism and Christianity
RELG201 (3) Religions/Ancient Near East
RELG202 (3) Religion of Ancient Israel
RELG203 (3) Bible and Western Culture
RELG204 (3) Judaism, Christianity and Islam
RELG210 (3) Jesus of Nazareth
RELG302 (3) Old Testament Studies 1
RELG303 (3) Literature of Ancient Israel 2
RELG306 (3) Rabbinic Judaism
RELG311 (3) New Testament Studies 1
RELG312 (3) New Testament Studies 2
RELG320 (3) History of Christian Thought 1
RELG322 (3) The Church in History 1
RELG323 (3) The Church in History 2
RELG324 (3) Armenian Apostolic Tradition
RELG325 (3) Varieties Religious Experience in Christianity
RELG326 (3) Ancient Christian Church ADS4 - AD604
RELG327 (3) History of Christian Thought 2
RELG336 (3) Contemporary Theological Issues
RELG338 (3) Women and the Christian Tradition
RELG399 (3) Christian Spirituality
RELG420 (3) Canadian Church History
RELG423 (3) Reformation Thought
RELG470 (3) Theological Ethics

Hinduism and Buddhism
RELG252 (3) Hinduism and Buddhism
RELG253 (3) Religions of East Asia
RELG337 (3) Themes in Buddhist Studies
RELG339 (3) Hindu and Buddhist Images of Feminine
RELG342 (3) Theravada Buddhist Literature
RELG344 (3) Maháyána Buddhism
RELG348 (3) Classical Hinduism
RELG350 (3) Bhakti Hinduism
RELG352 (3) Japanese Religions
RELG354 (3) Chinese Religions
RELG442 (3) Pure Land Buddhism
RELG451 (3) Zen: Maxims and Methods
RELG452 (3) East Asian Buddhism
RELG454 (3) Modern Hindu Thought
RELG456 (3) Indian Philosophy
RELG458 (3) Indian Buddhist Philosophy
RELG459 (3) East Asian Buddhist Philosophy
RELG552 (3) Advaita Vedanta
RELG553 (3) Religions of South India 1
RELG554 (3) Religions of South India 2
RELG556 (3) Issues in Buddhist Studies
RELG557 (3) Asian Ethical Systems

9 credits in Comparative Studies, chosen from the following according to the student's area of interest:

RELG207 (3) The Study of World Religions 1
RELG256 (3) Women in Judaism and Islam
RELG270 (3) Religious Ethics and the Environment
RELG271 (3) Sexual Ethics
RELG307 (3) Scriptural Interpretation
RELG315 (3) Special Topics in Religion
RELG316 (3) New Religious Movements
RELG341 (3) Introduction: Philosophy of Religion
MAJOR CONCENTRATION IN SCRIPTURES AND INTERPRETATIONS (36 credits)

The Major Concentration in Scriptures and Interpretations is designed for students interested in understanding scriptural literatures and their places in developing religious traditions. While students will be able to concentrate in the area of their choice (Jewish, Christian, or Hindu and Buddhist Scriptures and Interpretations), they will study scriptures of at least two religious traditions, either in English translation, or if their skills permit, in the original languages.

**Required Courses** (6 credits)
- RELG307 (3) Scriptural Interpretation
- RELG456 (3) Theories of Religion

**Complementary Courses** (30 credits)
30 credits, a minimum of 18 credits from one area of specialization and a minimum of 6 credits from a second area. No more than 12 credits of complementary courses may be taken at the 200-level.

(a) Jewish Scriptures and the History of Their Interpretation
- JWST310 (3) Believers, Heretics and Antiquity
- JWST324 (3) Biblical Interpretation - Antiquity
- JWST327 (3) A Book of the Bible
- JWST328 (3) A Book of the Bible
- JWST329 (3) A Book of the Bible
- JWST330 (3) A Book of the Bible
- JWST331 (3) Bible Interpretation/Medieval Ashkenaz
- JWST332 (3) Bible Interpretation/Sefardic Tradition
- JWST510 (3) Jewish Biblical Interpretation
- JWST511 (3) Jewish Biblical Interpretation
- RELG202 (3) Religion of Ancient Israel
- RELG203 (3) Bible and Western Culture
- RELG300 (3) Post-Biblical Jewish Tradition
- RELG302 (3) Old Testament Studies
- RELG303 (3) Literature of Ancient Israel
- RELG306 (3) Rabbinic Judaism
- RELG308 (3) Ancient Bible Translations
- RELG309D1 (3) Elementary Biblical Hebrew
- RELG309D2 (3) Elementary Biblical Hebrew
- RELG407 (3) The Writings
- RELG408 (3) The Prophets
- RELG491 (3) Hebrew Texts
- RELG492 (3) Hebrew Texts

(b) Christian Scriptures and the History of Their Interpretation
- RELG203 (3) Bible and Western Culture
- RELG210 (3) Jesus of Nazareth
- RELG280 (6) Elementary New Testament Greek
- RELG302 (3) Old Testament Studies
- RELG303 (3) Literature of Ancient Israel
- RELG308 (3) Ancient Bible Translations
- RELG311 (3) New Testament Studies
- RELG312 (3) New Testament Studies
- RELG381 (3) Advanced New Testament Greek
- RELG411 (3) New Testament Exegesis
- RELG482 (3) Exegesis of Greek New Testament

(c) Hindu and Buddhist Scriptures and the Histories of Their Interpretations
- RELG252 (3) Hinduism and Buddhism
- RELG253 (3) Religions of East Asia
- RELG254 (5) Introduction to Sikhism
- RELG257D1 (3) Introductory Sanskrit
- RELG257D2 (3) Introductory Sanskrit
- RELG264 (3) Introductory Tibetan
- RELG265 (3) Introductory Tibetan
- RELG337 (3) Themes in Tibetan Studies
- RELG342 (3) Theravada Buddhist Literature
- RELG344 (3) Mahāyāna Buddhism
- RELG348 (3) Classical Hinduism
- RELG350 (3) Bhakti Hinduism
- RELG352 (3) Japanese Religions
- RELG354 (3) Chinese Religions
- RELG357D1 (3) Sanskrit
- RELG357D2 (3) Sanskrit
- RELG364 (3) Intermediate Tibetan
- RELG365 (3) Intermediate Tibetan
- RELG442 (3) Pure Land Buddhism
- RELG443 (3) Japanese Esoteric Buddhism
- RELG451 (3) Zen: Maxims and Methods
- RELG452 (3) East Asian Buddhism
- RELG454 (3) Modern Hindu Thought
- RELG457D1 (3) Advanced Sanskrit
- RELG457D2 (3) Advanced Sanskrit
- RELG464 (3) Advanced Tibetan
- RELG465 (3) Advanced Tibetan
- RELG546 (3) Indian Philosophy
- RELG548 (3) Indian Buddhist Philosophy
- RELG552 (3) Advaita Vedanta
- RELG553 (3) Religions of South India
- RELG554 (3) Religions of South India

HONOURS IN RELIGIOUS STUDIES (60 credits)

The Honours program in Religious Studies offers a degree of analysis and concentration beyond that of the Major program through course work, intensive research and discussion with peer groups.

There are no prerequisites for entry to the program. Students must, however, maintain a program GPA and a CGPA of 3.00 (or 3.50 for First Class Honours).

While gaining general knowledge of the study of religion, students also develop more concentrated expertise in either Western religious traditions (Option 1) or Asian religious traditions (Option 2).

**Required Courses** (9 credits)
- RELG204 (3) Judaism, Christianity and Islam
- RELG456 (3) Theories of Religion
- RELG555 (3) Honours Seminar

**Complementary Courses** (51 credits)
3 credits, one of:
- RELG252 (3) Hinduism and Buddhism
- RELG253 (3) Religions of East Asia
6 credits of scriptural languages (Biblical Greek, Biblical Hebrew, Sanskrit, or Tibetan), related to the specialization option and chosen in consultation with the adviser.

9 credits, religion and culture, chosen from:
- RELG256 (3) Women in Judaism and Islam
- RELG270 (3) Religious Ethics and the Environment
- RELG271 (3) Sexual Ethics
- RELG338 (3) Women and the Christian Tradition
- RELG339 (3) Hindu and Buddhist Images of Feminine
- RELG340 (3) Religion and the Sciences
- RELG341 (3) Introduction: Philosophy of Religion
- RELG345 (3) Religion and the Arts
- RELG361 (3) Religious Behaviour
- RELG370 (3) Human Condition
- RELG371 (3) Ethics of Violence/Non-Violence
- RELG375 (3) Religion and Society
- RELG376 (3) Religious Ethics
- RELG377 (3) Religious Controversies
12 credits chosen from a list of approved courses in other departments in consultation with the adviser. At least 6 credits must be from the specialization option which was not selected.

21 credits chosen from either specialization, Option 1 or Option 2, at least 3 of these credits must be a 500-level research seminar.

**Option 1: Western Religions**

JWST510 (3) Jewish Bible Interpretation I
RELG201 (3) Religions/Ancient Near East
RELG202 (3) Religion of Ancient Israel
RELG203 (3) Bible and Western Culture
RELG204 (3) Judaism, Christianity and Islam
RELG210 (3) Jesus of Nazareth
RELG300 (3) Post-Biblical Jewish Tradition
RELG301 (3) Jewish Thought 200 B.C.E. - 200 C.E.
RELG306 (3) Rabbinic Judaism
RELG308 (3) Ancient Bible Translations
RELG311 (3) New Testament Studies 1
RELG312 (3) New Testament Studies 2
RELG322 (3) The Church in History 1
RELG323 (3) The Church in History 2
RELG326 (3) Ancient Christian Church AD54-AD604
RELG334 (3) The Christian Faith
RELG336 (3) Contemporary Theological Issues
RELG381 (3) Advanced New Testament Greek
RELG399 (3) Christian Spirituality
RELG423 (3) Reformation Thought
RELG438 (3) Topics in Jewish Theology
RELG482 (3) Exegesis of Greek New Testament
RELG491 (3) Hebrew Texts
RELG492 (3) Greek Texts
RELG532 (3) History of Christian Thought 1
RELG533 (3) History of Christian Thought 2

**Option 2: Asian Religions**

RELG337 (3) Themes in Buddhist Studies
RELG339 (3) Hindu and Buddhist Images of Feminine
RELG342 (3) Theravada Buddhist Literature
RELG344 (3) Maháyána Buddhism
RELG348 (3) Classical Hinduism
RELG350 (3) Bhakti Hinduism
RELG352 (3) Japanese Religions
RELG354 (3) Chinese Religions
RELG442 (3) Pure Land Buddhism
RELG451 (3) Zen: Maxims and Methods
RELG452 (3) East Asian Buddhism
RELG454 (3) Modern Hindu Thought
RELG456 (3) Indian Philosophy
RELG458 (3) Indonesian Buddhism
RELG459 (3) East Asian Buddhist Philosophy
RELG552 (3) Advaita Vedanta
RELG553 (3) Religions of South India 1
RELG554 (3) Religions of South India 2
RELG556 (3) Issues in Buddhist Studies
EAST354 (3) Taoist and Buddhist Apocalypses

**Required Courses** (6 credits)  

one course in Asian Religions:  
RELG252 (3) Hinduism and Buddhism  
or RELG253 (3) Religions of East Asia

one course in Methodology:  
RELG456 (3) Theories of Religion  
or RELG555 (3) Honours Seminar

**Complementary Courses** (30 credits)

9 credits selected from the following, with at least 3 credits from each group

Sources of Western Religious Traditions
RELG201 (3) Religions/Ancient Near East  
RELG202 (3) Religion of Ancient Israel  
RELG204 (3) Judaism, Christianity and Islam  
RELG311 (3) New Testament Studies 1  
RELG312 (3) New Testament Studies 2  

History and Theology of the Christian Tradition
RELG320 (3) History of Christian Thought 1  
RELG325 (3) Varieties Religions Experience in Christianity  
RELG326 (3) Ancient Christian Church AD54-AD604  
RELG327 (3) History of Christian Thought 2  
RELG338 (3) Women and the Christian Tradition

6 credits in Religion and Culture, selected from the following:

RELG256 (3) Women in Judaism and Islam  
RELG271 (3) Sexual Ethics
RELG340 (3) Religion and the Sciences  
RELG341 (3) Introduction: Philosophy of Religion
RELG345 (3) Religion and the Arts  
RELG361 (3) Religious Behaviour  
RELG370 (3) Human Condition  
RELG371 (3) Ethics of Violence/Non-Violence
RELG375 (3) Religion and Society  
RELG376 (3) Religious Ethics  
RELG377 (3) Religious Controversies

15 credits, selected in consultation with an adviser, from Religious Studies courses (or approved related courses in other departments) at the 300 level or above.

**APPROVED COURSES IN OTHER DEPARTMENTS**

In consultation with the Adviser, students may select courses in other departments to count towards Religious Studies programs. Generally no more than four such courses will be counted towards an Honours program; no more than two such courses towards a Joint Honours program; no more than two such courses towards a Minor program. Listed below are some of the courses that have been approved in the past for inclusion in Religious Studies programs.

This list is NOT comprehensive: Students may take approved related courses in other departments of the Faculty of Arts, such as Anthropology, Art History, Classics, English, History, Italian Studies, Philosophy, Sociology. Contact the Religious Studies Office at (514) 398-4121 to speak with an adviser.

Please note that some of these courses have prerequisites that are not approved for Religious Studies programs.

**Institute of Islamic Studies**

ISLA410 (3) History: Middle-East 1798-1918  
ISLA411 (3) History of the Middle East 1918-1945

ISLA505 (3) Major Themes of Islamic Religious Expression  
ISLA510D1 (3) History: Islamic Civilization - Classical  
ISLA510D2 (3) History: Islamic Civilization - Classical  
ISLA511D1 (3) History: Islamic Civilization - Medieval Era  
ISLA511D2 (3) History: Islamic Civilization - Medieval Era

ISLA531 (3) Survey of the Development of Islamic Thought

**Jewish Studies**

JWST211 (3) Jewish Studies 1: Biblical Period (students may not take both JWST211 and RELG202 for core credit)
JWST213 (3) Jewish Studies 3: The Medieval Period
JWST214 (3) Jewish Studies 4: The Modern Period
COURSES requiring reading knowledge of Hebrew:

JWST252 (3) Interdisciplinary Lectures (this course will be allowed only when the topic is appropriate)
JWST316 (3) Social and Ethical Issues in Jewish Law 1
JWST359 (3) Topics in Jewish Philosophy 2

RELIGIOUS STUDIES COURSES AVAILABLE TO ARTS AND SCIENCE STUDENTS:

RELG 201 Religions/Ancient Near East. (3) (Fall)
RELG 202 Religion of Ancient Israel. (3) (Winter)
RELG 203 Bible and Western Culture. (3) (Fall/Winter)
RELG 204 Judaism, Christianity and Islam. (3) (Winter)
RELG 207 The Study of World Religions 1. (3) (Winter)
RELG 210 Jesus of Nazareth. (3) (Fall)
RELG 232 Eastern Orthodox Mysticism and Contemporary Literature. (3) (Winter)
RELG 250D1 Introduction to Hindi. (3)
RELG 250D2 Introduction to Hindi. (3)
RELG 252 Hinduism and Buddhism. (3) (Fall)
RELG 253 Religions of East Asia. (3) (Winter)
RELG 254 Introduction to Sikhism. (3) (Winter)
RELG 256 Women in Judaism and Islam. (3) (Winter)
RELG 257D1 Introductory Sanskrit. (3)
RELG 257D2 Introductory Sanskrit. (3)
RELG 264 Introductory Tibetan 1. (3)
RELG 265 Introductory Tibetan 2. (3)
RELG 270 Religious Ethics and the Environment. (3) (Fall: Macdonald Campus. Winter: Downtown.)
RELG 280D1 Elementary New Testament Greek. (3)
RELG 280D2 Elementary New Testament Greek. (3)
RELG 285 The Gnostic Worldview. (3)
RELG 300 Post-Biblical Jewish Tradition. (3) (Fall)
RELG 301 Jewish Thought 200 B.C.E. - 200 C.E. (3)
RELG 302 Old Testament Studies 1. (3) (Fall)
RELG 303 Literature of Ancient Israel. (3) (Winter)
RELG 306 Rabbinic Judaism. (3) (Fall)
RELG 308 Ancient Bible Translations. (3)
RELG 307 Scriptural Interpretation. (3) (Winter)
RELG 311 New Testament Studies 1. (3) (Fall)
RELG 312 New Testament Studies 2. (3) (Winter)
RELG 314 Topics in Biblical Studies. (3) (Summer)
RELG 320 History of Christian Thought 1. (3) (Fall)
RELG 322 The Church in History 1. (3) (Fall)
RELG 323 The Church in History 2. (3) (Winter)
RELG 326 Ancient Christian Church AD54 - AD604. (3) (Fall)
RELG 327 History of Christian Thought 2. (3)
RELG 330 Reformed Theology. (3) (Fall)
RELG 333 Principles of Christian Theology 1. (3) (Winter)
RELG 334 The Christian Faith. (3)
RELG 336 Contemporary Theological Issues. (3) (Winter and Summer)
RELG 337 Themes in Buddhist Studies. (3) (Winter)
RELG 338 Women and the Christian Tradition. (3) (Fall)
RELG 339 Hindu and Buddhist Images of Feminine. (3) (Winter and Summer)
RELG 340 Religion and the Sciences. (3) (Winter and Summer)
RELG 341 Introduction: Philosophy of Religion. (3) (Fall)
RELG 342 Theravada Buddhist Literature. (3) (Fall)
RELG 344 Mahayana Buddhism. (3) (Fall)

12.46 Russian and Slavic Studies (RUSS)

688 Sherbrooke Street West, Suite 425
Montreal, QC H3A 3R1
Telephone: (514) 398-3639
Fax: (514) 398-1748
E-mail: russian.slavicstudies@mcgill.ca
Website: www.mcgill.ca/russian
Chair — Paul M. Austin
Many opportunities are open to students with qualifications in Russian and other Slavic studies. Students may be interested in the organization of human society, comparative literature, linguistics – Russian studies are highly relevant to all of these. In addition, because of similar problems in geography, climate, industrial and economic growth. Russian studies may have a particular fascination for the Canadian student. Besides being the language of the Russian Federation, Russian is still widely used in the countries of the former Soviet Union. Since most Eastern European countries have academic exchange programs with Canada, well-qualified students should encounter little difficulty in continuing their university studies in Russia or in Eastern Europe.

Advisers: Professor Austin, Room 335, (514) 398-4984
Professor Beraha, Room 341, (514) 398-2802
Professor Parts, Room 332, (514) 398-1719
Professor Patera, Room 333, (514) 398-3642

MINOR CONCENTRATION IN RUSSIAN (18 credits)
(Expandable)
The Minor Concentration in Russian includes complementary courses chosen from ONE of the following streams:

- Russian Language & Literature
- Russian Language & Culture
- Advanced Russian Literature
- Advanced Russian Language

Students who wish to follow the Advanced Russian Literature or Advanced Russian Language stream must receive Departmental approval; they are designed primarily for students also intending to complete a Major Concentration in Russian.

Enrolment in courses above the 200 level is by permission of the Department only.

Required Courses (12 credits*)
RUSS210 (3) Elementary Russian Language 1
RUSS211 (3) Elementary Russian Language 2
RUSS310 (3) Intermediate Russian Language 1
RUSS311 (3) Intermediate Russian Language 2

* The required courses are designed to give students a basic working knowledge of Russian. Students who can demonstrate to the Department that they have acquired the equivalent competence elsewhere will replace these credits with courses from the Complementary Course list.

Students must obtain Departmental approval to register for language courses and are strongly urged to consult with the Department for advice/approval of their program plans.

Complementary Courses (6 - 18 credits)
6 - 18 credits to be selected from one of the following streams:

Stream 1: Russian Language & Literature
RUSS217 (3) Russian’s Eternal Questions
RUSS330 (3) Introduction to Soviet Russian Literature before WWII
RUSS331 (3) Introduction to Soviet Russian Literature after WWII
RUSS400 (3) Advanced Russian Language 1
RUSS401 (3) Advanced Russian Language 2

Stream 2: Russian Language & Culture
RUSS199 (3) FYS: Patterns - Russian Culture
RUSS218 (3) Russian Literature in Revolution
RUSS219 (3) Russian Literature in Recovery
RUSS221 (3) Russian Prose: 1800s and 1900s
RUSS223 (3) Russian Writers - 19th Century
RUSS224 (3) From War to Revolution

Stream 3: Advanced Russian Literature*
RUSS327 (3) Outlines 19th Century Russian Literature: Romantic Period
RUSS328 (3) Outlines 19th Century Russian Literature: Russian Realism
RUSS330 (3) Introduction to Soviet Russian Literature before WWII
RUSS331 (3) Introduction to Soviet Russian Literature after WWII
RUSS410 (3) Drama in Russian Literature before 1850
RUSS411 (3) Drama in Russian Literature after 1850
RUSS450 (3) 20th-Century Russian Language and Literature before WWII
RUSS451 (3) 20th-Century Russian Language and Literature after WWII
RUSS458 (3) Development Russian Novel before Turgenev
RUSS459 (3) Russian Novel Pushkin - Gogol
RUSS460 (3) Russian Novel 1860-1900 1
RUSS461 (3) Russian Novel 1860-1900 2
RUSS462 (3) Soviet Literature: Thaw - Early 70s
RUSS463 (3) Soviet Literature: Early 70s - Perestroika
RUSS465 (3) Russian Modernism 1
RUSS466 (3) Russian Modernism 2
RUSS468 (3) Pushkin and Contemporaries 1
RUSS469 (3) Pushkin and Contemporaries 2
RUSS470 (3) Individual Reading Course
RUSS471 (3) Independent Research
RUSS510 (3) High Stalinist Culture

* By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

Stream 4: Advanced Russian Language*
RUSS415 (6) Advanced Russian Lang Intensive 1
RUSS416 (6) Advanced Russian Lang Intensive 2
RUSS450 (3) 20th-Century Russian Language and Literature before WWII
RUSS451 (3) 20th-Century Russian Language and Literature after WWII
RUSS452 (3) Advanced Russian Language and Syntax 1
RUSS453 (3) Advanced Russian Language and Syntax 2
RUSS455 (3) History of the Russian Language 1
RUSS456 (3) History of the Russian Language 2
RUSS470 (3) Individual Reading Course
RUSS471 (3) Independent Research

* By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

MINOR CONCENTRATION IN RUSSIAN CIVILIZATION
(Non-expandable) (18 credits)
The Minor Concentration in Russian Civilization is designed primarily as an adjunct to area studies and/or programs in the humanities or social sciences. As there are no Russian language requirements, this is a non-expandable program.

There are no prerequisites for Departmental courses. For pre/corequisites and availability of Economics, History, Jewish Studies and Political Science courses, students should refer to the departmental Calendar entry.

Required Courses (12 credits)
RUSS218 (3) Russian Literature in Revolution
RUSS219 (3) Russian Literature in Recovery
RUSS223 (3) Russian Writers - 19th Century
RUSS224 (3) From War to Revolution

Complementary Courses (6 credits)
6 credits to be selected from the following:
ECON331 (3) Economic Development: Russia and USSR
ECON340 (3) Ex-Socialist Economies
HIST216 (3) History of Russia to 1801
HIST226 (3) Eastern Europe in 20th Century
### RUSS465 (3) Russian Modernism 1
### RUSS463 (3) Soviet Literature: Early 70s - Perestroika
### RUSS462 (3) Soviet Literature: Thaw - Early 70s
### RUSS461 (3) Russian Novel 1860-1900 2
### RUSS460 (3) Russian Novel 1860-1900 1
### RUSS459 (3) Russian Novel Pushkin - Gogol
### RUSS458 (3) Development Russian Novel before Turgenev
### RUSS456 (3) History of the Russian Language 2
### RUSS455 (3) History of the Russian Language 1
### RUSS451 (3) 20th-Century Russian Language and Literature

6 credits to be selected from the following:

- **RUSS331 (3) Introduction to Soviet Russian Literature after WWII**
- **RUSS466 (3) Russian Modernism 2**
- **RUSS468 (3) Pushkin and Contemporaries 1**
- **RUSS469 (3) Pushkin and Contemporaries 2**
- **RUSS510 (3) High Stalinist Culture**

By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs.

### HONOURS IN RUSSIAN (60 credits)

The Department offers a full Honours Program in Russian for students intending to pursue graduate studies or advanced careers in the field. Students must complete 60 credits in the Program, as well as maintaining a CGPA in accordance with Faculty requirements. All students applying for an Honours in Russian must consult with an academic adviser in the Department for approval of their program. Normally, 200-level courses are taken in U1, 300 in U2 and 400 in U3. By arrangement with the Department and subject to University approval, transfer credits will be accepted from Department-approved exchange/immersion programs. Up to 9 credits, in total, can be taken toward a student’s Honours program from courses offered in other departments in the Faculty, listed at the end of this section. Students who have acquired competency elsewhere will replace lower-level courses with upper-level courses.

In addition to the completion of the Honours requirements, students must also complete at least one Minor Concentration (18 credits) in an academic unit other than the one in which the Honours requirements are satisfied.

Students wishing to enrol in Russian-language courses require Departmental approval.

#### U1 Required Courses (12 credits)

- **RUSS215 (6) Elementary Russian Language Intensive 1**
- **RUSS316 (6) Intermediate Russian Language Intensive 2**

#### U1 Complementary Courses (6 credits)

selected from:

- **RUSS199 (3) FYS: Patterns - Russian Culture**
- **RUSS218 (3) Russian Literature in Revolution**
- **RUSS219 (3) Russian Literature in Recovery**
- **RUSS223 (3) Russian Writers - 19th Century**
- **RUSS224 (3) From War to Revolution**
- **RUSS328 (3) Outlines 19th Century Russian Literature: Russian Realism**
- **RUSS330 (3) Introduction to Soviet Russian Literature before WWII**
- **RUSS415 (6) Advanced Russian Language Intensive 1**
- **RUSS416 (6) Advanced Russian Language Intensive 2**
- **RUSS417 (3) Russian Modernism 1**
- **RUSS468 (3) Pushkin and Contemporaries 1**
- **RUSS469 (3) Pushkin and Contemporaries 2**
- **RUSS510 (3) High Stalinist Culture**

#### U2 Required Courses (24 credits)

- **RUSS410 (3) Drama in Russian Literature before 1850**
- **RUSS411 (3) Drama in Russian Literature after 1850**
- **RUSS450 (3) 20th-Century Russian Language and Literature before WWII**
- **RUSS451 (3) 20th-Century Russian Language and Literature after WWII**
- **RUSS452 (3) Advanced Russian Language and Syntax 1**
- **RUSS453 (3) Advanced Russian Language and Syntax 2**
- **RUSS490 (3) Honours Seminar**
- **RUSS491 (3) Honours Seminar**

#### U3 Required Courses (12 credits)

#### Additional Complementary Courses (6 credits)

selected from:

- **RUSS217 (3) Russia’s Eternal Questions**
- **RUSS410 (3) Drama in Russian Literature before 1850**
- **RUSS411 (3) Drama in Russian Literature after 1850**
- **RUSS450 (3) 20th-Century Russian Language and Literature before WWII**
- **RUSS451 (3) 20th-Century Russian Language and Literature after WWII**
- **RUSS455 (3) History of the Russian Language 1**
- **RUSS456 (3) History of the Russian Language 2**
- **RUSS458 (3) Development Russian Novel before Turgenev**

- **RUSS467 (3) Soviet Modernism 1**

### MAJOR CONCENTRATION IN RUSSIAN (36 credits)

Enrolment in courses above the 200 level is by permission of the Department only.

#### Required Courses (18 credits)

- **RUSS210 (3) Elementary Russian Language 1**
- **RUSS211 (3) Elementary Russian Language 2**
- **RUSS310 (3) Intermediate Russian Language 1**
- **RUSS311 (3) Intermediate Russian Language 2**
- **RUSS400 (3) Advanced Russian Language 1**
- **RUSS401 (3) Advanced Russian Language 2**

* The required courses are designed to give students a basic working knowledge of Russian. Students who can demonstrate to the Department that they have acquired the equivalent competence elsewhere will replace these credits with courses from the Complementary Course list.

#### Complementary Courses (18 credits)

12 credits to be selected from the following:

- **RUSS199 (3) FYS: Patterns - Russian Culture**
- **RUSS217 (3) Russia’s Eternal Questions**
- **RUSS218 (3) Russian Literature in Revolution**
- **RUSS219 (3) Russian Literature in Recovery**
- **RUSS221 (3) Russian Prose: 1980s - 1990s**
- **RUSS223 (3) Russian Writers - 19th Century**
- **RUSS224 (3) From War to Revolution**
- **RUSS327 (3) Outlines 19th Century Russian Literature: Romantic Period**
- **RUSS328 (3) Outlines 19th Century Russian Literature: Russian Realism**
- **RUSS330 (3) Introduction to Soviet Russian Literature before WWII**
- **RUSS331 (3) Introduction to Soviet Russian Literature after WWII**

### Complementary Courses

6 credits to be selected from the following:

- **RUSS410 (3) Drama in Russian Literature before 1850**
- **RUSS411 (3) Drama in Russian Literature after 1850**
- **RUSS450 (3) 20th-Century Russian Language and Literature before WWII**
- **RUSS451 (3) 20th-Century Russian Language and Literature after WWII**
- **RUSS452 (3) History of the Russian Language 1**
- **RUSS453 (3) History of the Russian Language 2**
- **RUSS455 (3) Development Russian Novel before Turgenev**
- **RUSS456 (3) Russian Modernism 2**
- **RUSS468 (3) Pushkin and Contemporaries 1**
- **RUSS469 (3) Pushkin and Contemporaries 2**
- **RUSS510 (3) High Stalinist Culture**

### U1 Required Courses (12 credits)

- **RUSS215 (6) Elementary Russian Language Intensive 1**
- **RUSS316 (6) Intermediate Russian Language Intensive 2**

### U1 Complementary Courses (6 credits)

selected from:

- **RUSS199 (3) FYS: Patterns - Russian Culture**
- **RUSS218 (3) Russian Literature in Revolution**
- **RUSS219 (3) Russian Literature in Recovery**
- **RUSS221 (3) Russian Prose: 1980s and 1990s**
- **RUSS223 (3) Russian Writers - 19th Century**
- **RUSS224 (3) From War to Revolution**

### U2 Required Courses (24 credits)

- **RUSS415 (6) Advanced Russian Language Intensive 1**
- **RUSS416 (6) Advanced Russian Language Intensive 2**
- **RUSS417 (3) Russian Modernism 1**
- **RUSS467 (3) Soviet Modernism 1**
- **RUSS468 (3) Pushkin and Contemporaries 1**
- **RUSS469 (3) Pushkin and Contemporaries 2**
- **RUSS510 (3) High Stalinist Culture**

### U3 Required Courses (12 credits)

- **RUSS452 (3) Advanced Russian Language and Syntax 1**
- **RUSS453 (3) Advanced Russian Language and Syntax 2**

### Additional Complementary Courses (6 credits)

selected from:

- **RUSS217 (3) Russia’s Eternal Questions**
- **RUSS410 (3) Drama in Russian Literature before 1850**
- **RUSS411 (3) Drama in Russian Literature after 1850**
- **RUSS450 (3) 20th-Century Russian Language and Literature before WWII**
- **RUSS451 (3) 20th-Century Russian Language and Literature after WWII**
- **RUSS455 (3) History of the Russian Language 1**
- **RUSS456 (3) History of the Russian Language 2**
- **RUSS458 (3) Development Russian Novel before Turgenev**
RUSS459 (3) Russian Novel Pushkin - Gogol
RUSS460 (3) Russian Novel 1860-1900 1
RUSS461 (3) Russian Novel 1860-1900 2
RUSS462 (3) Soviet Literature: Thaw - Early 1970s
RUSS463 (3) Soviet Literature: Early 1970s - Perestroika
RUSS465 (3) Russian Modernism 1
RUSS466 (3) Russian Modernism 2
RUSS468 (3) Pushkin and Contemporaries 1
RUSS469 (3) Pushkin and Contemporaries 2
RUSS470 (3) Individual Reading Course
RUSS471 (3) Independent Research

Please contact the department(s) in question for pre/co-requisites and availability of the following courses:

ECON331 (3) Economic Development: Russia and USSR
ECON340 (3) Ex-Socialist Economies
HIST216 (3) History of Russia to 1801
HIST226 (3) Eastern Europe in 20th Century
HIST236 (3) Russia from 1801 to 1991
HIST306 (3) East Central Europe since 1944
HIST316 (3) Russia: Revolutions 1905 and 1917
HIST326 (3) Russia from 1905 to Present
HIST387 (3) The First World War
HIST398 (3) The Second World War
HIST406 (3) Petrine and Catherinian Russia
HIST436 (3) Topics: East European History
HIST446 (3) Russian Thought to 1825
HIST456 (3) Russian Intellectual History 1825-1917
JWST303 (3) The Soviet Jewish Experience
POLI329 (3) Russian and Soviet Politics

According to Faculty regulations, Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

JOINT HONOURS – RUSSIAN COMPONENT (36 credits)
Students must maintain a CGPA in accordance with Faculty requirements. 12 credits in Russian and 12 credits in the cooperating department are normally taken each year. For information telephone (514) 398-3639.

Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

According to Faculty regulations, Joint Honours students must maintain a minimum CGPA of 3.00 and maintain a minimum program GPA of 3.00.

12.47 Science for Arts Students
Director — Professor Louis Lefebvre (Biology) (514) 398-6457

The following courses offered by the Faculty of Science may be of interest to Arts students. Not all courses are available in any given year.

Atmospheric and Oceanic Sciences
ATOCC210 (3) Introduction to Atmospheric Science
ATOCC220 (3) Introduction to Oceanic Sciences

Biology
BIOL105 (3) Essential Biology
BIOL210 (3) Perspectives of Science
BIOL373 (3) Biometry

Chemistry
CHEM150 (3) World of Chemistry: Food
CHEM160 (3) World of Chemistry: Technology
CHEM170 (3) World of Chemistry: Drugs

Computer Science
COMP102 (3) Computers and Computing

Earth and Planetary Sciences
EPSC200 (3) The Terrestrial Planets
EPSC201 (3) Understanding Planet Earth
EPSC210 (3) Introductory Mineralogy
EPSC233 (3) Earth and Life History
EPSC243 (3) Environmental Geology
EPSC334 (3) Invertebrate Paleontology

Geography
GEOG203 (3) Environmental Systems
GEOG205 (3) Global Change: Past, Present and Future

Physics
PHYS208 (1) Introduction to Selected Topics in Physics
PHYS209 (1) Topics in Physics
PHYS224 (3) Physics and Psychophysics of Music
PHYS225 (3) Musical Acoustics

MINOR CONCENTRATION IN SCIENCE FOR ARTS STUDENTS (18 credits)
[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Freshman students interested in this Minor Concentration should seek advice at the earliest opportunity, either through the Freshman Advisers or by contacting the Program Director. In general, students should declare their intention to obtain this Minor Concentration during their U1 year and consult the Program Director regarding approval of courses to meet the requirements.

This Minor Concentration is administered by the Department of Biology. For more information contact Ms. Anne Comeau in the departmental Undergraduate Affairs Office, Room W6/10 Stewart Biological Sciences Building, (514) 398-4109; or the Program Director, Professor Louis Lefebvre, Room W6/10 Stewart Biological Sciences Building, (514) 398-6457.

Required Courses (6 credits)
BIOL210 (3) Perspectives of Science (in U1)
PSYC472 (3) Scientific Thinking and Reasoning (in U3)

Complementary Courses (12 credits)
12 Credits taken in one of the disciplinary areas given below. Where suggested courses have prerequisites at the 200 or 300 level associated with them, credit for the associated prerequisites may also be counted as part of the 12 credits.

Prerequisites at the 100 level cannot be counted towards the Minor Concentration.

With the prior written approval of the Program Director, an appropriate alternative set of courses may be substituted.

DISCIPLINARY AREAS
Atmospheric and Oceanic Sciences
Students should note that MATH133 (or its CEGEP equivalent) is not essential as a prerequisite for these courses.

ATOCC210 (3) Introduction to Atmospheric Science
ATOCC214 (3) Intro to the Physics of the Atmosphere
ATOCC215 (3) Oceans, Weather and Climate
ATOCC220 (3) Introduction to Oceanic Sciences

Biochemistry
Prerequisites which cannot be counted towards the Minor Concentration: BIOL111 and BIOL112 plus CHEM120 (or CHEM121) or their CEGEP equivalents.

12 credits taken from the following courses and their associated 200 or 300-level prerequisites:

ANAT262 (3) Introduction to Molecular and Cell Biology
BIOC212 (3) Molecular Mechanisms of Cell Function
(Preq: BIOL200)
BIOL200 (3) Molecular Biology
CHEM212 (4) Introductory Organic Chemistry 1
Students who have completed CHEM212 and CHEM222 or their CEGEP equivalents may take one or both of the following:

- BIOC311 (3) Metabolic Biochemistry (Prerequisite: BIOL200, BIOL201 or CHEM212, CHEM222)
- BIOC312 (3) Biochemistry of Macromolecules (Prerequisite: BIOC311, BIOL200, BIOL201 or BIOC212)

**Biology**

Students interested in Biology can choose between two streams. One is oriented towards cell and molecular biology and leads to upper level courses in developmental biology, human genetics, molecular biology, or allied fields. The other is oriented more to organismal biology and leads to upper level courses in biodiversity, ecology, sociobiology, neurobiology, behaviour, or conservation biology. See the departmental Undergraduate Secretary to arrange a session for counsel on choice of courses above the 200-level.

Prerequisites which cannot be counted towards the Minor Concentration: BIOL111 and BIOL112 plus CHEM120 (or CHEM121) or their CEGEP equivalents.

**Cell and Molecular Stream:**

Note: CHEM212 or its CEGEP equivalent is prerequisite to this stream.

- BIOL200 (3) Molecular Biology
- BIOL201 (3) Cell Biology and Metabolism (Prerequisite: BIOL200)
- BIOL202 (3) Basic Genetics (Prerequisite: BIOL200)
- BIOL300 (3) Molecular Biology of the Gene (Prerequisite: BIOL200, BIOL201)
- BIOL303 (3) Developmental Biology (Prerequisite: BIOL200, BIOL201)

**Organismal Stream:**

Students choosing this disciplinary area must obtain the permission of the instructors in BIOL205 and additionally sit in on the six lectures in neurobiology given in BIOL201, which are coordinated with those in BIOL205.

Note: CHEM212 or its CEGEP equivalent is prerequisite to this stream.

- BIOL205 (3) Biology of Organisms (Prerequisite: BIOL200, BIOL208)
- BIOL304 (3) Evolution (Prerequisite: BIOL205 or BIOL208 or ENVR202)
- BIOL305 (3) Animal Diversity (Prerequisite: BIOL200 or BIOL208 or ENVR202)
- BIOL306 (3) Neurobiology and Behaviour (Prerequisite: BIOL201, BIOL205)
- BIOL307 (3) Behavioural Ecology/Sociobiology (Prerequisite: BIOL205, BIOL208 or permission)
- BIOL485 (3) Conservation Biology

**Chemistry**

Prerequisites which cannot be counted towards the Minor Concentration: CHEM120 (or CHEM121) or their equivalents.

The Department also strongly encourages students to take one or more courses involving a laboratory because the science of chemistry is rooted in laboratory experience.

Note: CHEM212 or its CEGEP equivalent is prerequisite to all 200-level or higher courses.

- CHEM150 (3) World of Chemistry: Food or CHEM160 (3) World of Chemistry: Technology
- CHEM170 (3) World of Chemistry: Drugs
- CHEM180 (3) World of Chemistry: Environment
- CHEM201 (3) Modern Inorganic Chemistry 1
- CHEM201 or CHEM281 (3) Inorganic Chemistry 1
- CHEM203 (3) Survey of Physical Chemistry
- CHEM204 (3) Physical Chemistry/Biological Sciences 1

**Computer Science**

Students in any Minor or Major Concentration or Honours Program in Computer Science cannot choose this disciplinary area.

Prerequisites which cannot be counted towards the Minor Concentration: MATH139 or MATH140, MATH141, and MATH133 and COMP102 or their CEGEP equivalents.

A selection of courses should be taken from:

- COMP202 (3) Introduction to Computing 1
- COMP203 (3) Introduction to Computing 2 (Prerequisite: COMP202)
- COMP250 (3) Introduction to Computer Science (Major and Honours)
- COMP251 (3) Data Structures and Algorithms (Prerequisite: COMP250 or COMP203)

plus some of the following courses:

- COMP273 (3) Introduction to Computer Systems (Prerequisite: COMP202)
- COMP302 (3) Programming Languages and Paradigms (Prerequisite: COMP203 or COMP250)

**Earth and Planetary Sciences**

A combination of EPSC210, EPSC212, and one or more of EPSC200, EPSC201, and EPSC243 provides a grounding in these inter-related disciplines in preparation for more specialized courses which follow:

- EPSC200 (3) The Terrestrial Planets
- EPSC201 (3) Understanding Planet Earth
- EPSC203 (3) Structural Geology 1
- EPSC205 or EPSC210 (3) Astrobiology
- ANAT205 (3) Introductory Anatomy
- EPSC210 (3) Introductory Mineralogy
- EPSC212 (4) Introductory Petrology (Prerequisite: EPSC210)
- EPSC220 (3) Principles of Geochemistry (Prerequisite: EPSC201, EPSC210)
- EPSC231 (2) Field School 1 (Prerequisite: EPSC222)
- EPSC233 (3) Earth and Life History
- EPSC243 (3) Environmental Geology
- EPSC320 (3) Elementary Earth Physics (Prerequisite: EPSC222)
- EPSC334 (3) Invertebrate Paleontology
- EPSC425 (3) Sediments to Sequences (Prerequisite: EPSC210, EPSC212)

**Geography**

Students in any Minor or Major Concentration or Honours Program in Geography cannot choose this disciplinary area.

Geography advisers recommend including some preparation in chemistry, statistics and calculus for study in this area even if formal prerequisites are not in place. A selection of courses should be taken from:

- GEOG203 (3) Environmental Systems
- GEOG205 (3) Global Change: Past, Present and Future
- GEOG272 (3) Earth’s Changing Surface
ARTS – SOCIAL STUDIES OF MEDICINE

GEOG305 (3) Soils and Environment (Prerequisite: GEOG203)
GEOG321 (3) Climatic Environments (Prerequisite: GEOG203 or ATOC210 or permission.)
GEOG322 (3) Environmental Hydrology (Prerequisite: GEOG202 or equivalent)
GEOG350 (3) Ecological Biogeography (Prerequisite: GEOG302 or BIOL205)
GEOG372 (3) Running Water Environments (Prerequisite: GEOG203 and GEOG272 or ENVR200 and ENVR202.)

Mathematics and Statistics
[Students in any Minor or Major Concentration or Honours Program in Mathematics and Statistics cannot choose this disciplinary area.]
Suggested courses:
MATH133 (3) Vectors, Matrices and Geometry
MATH203 (3) Principles of Statistics 1
MATH204 (3) Principles of Statistics 2 (Prerequisite: MATH203 or equivalent)
MATH222 (3) Calculus 3
MATH338 (3) History and Philosophy of Mathematics

Microbiology and Immunology
Prerequisites which cannot be counted towards the Minor Concentration: BIOL111 and BIOL112, CHEM120 (CHEM121) or their CEGEP equivalents.

Suggested courses:
MIMM211 (3) Introductory Microbiology
MIMM314 (3) Immunology (Prerequisite: BIOL200 and BIOL201 or BIOL212)
MIMM323 (3) Microbial Physiology (Prerequisite: MIMM211)
MIMM324 (3) Fundamental Virology (Prerequisite: MIMM211, BIOL200, BIOL201 or BIOL212)

Pathology
Prerequisites which cannot be counted towards the Minor Concentration: BIOL111 and BIOL112 plus CHEM120 (or CHEM121) or their CEGEP equivalents.

Suggested courses:
PATH300 (3) Human Disease (Prerequisite: BIOL200, BIOL201 or BIOL212, PHGY209, Pre- or corequisite PHGY210)

Physics
Prerequisites which cannot be counted towards the Minor Concentration: Most of the courses listed require at least CEGEP-level prerequisites or their equivalent in both Mathematics and Physics.

Suggested courses:
PHYS200 (3) Space, Time and Matter
PHYS204 (3) Planets, Stars and Galaxies
or PHYS214 (3) Introductory Astrophysics
PHYS208 (1) Introduction to Selected Topics in Physics
PHYS224 (3) Physics and Psychophysics of Music
PHYS225 (3) Musical Acoustics (Prerequisite: PHYS224)
PHYS230 (3) Dynamics of Simple Systems
PHYS232 (2) Heat and Waves (Prerequisite: PHYS230)
PHYS241 (2) Signal Processing
PHYS242 (3) Electricity and Magnetism (Prerequisite: MATH222)
PHYS257 (3) Experimental Methods 1 (Prerequisite: PHYS230 or PHYS250)
PHYS258 (3) Experimental Methods 2 (Prerequisite: PHYS257)

Physiology
Prerequisites which cannot be counted towards the Minor Concentration: BIOL111 and BIOL112, CHEM110 (or CHEM111), PHYS101 (or PHYS131) and PHYS102 (or PHYS142), CHEM120 (or CHEM121) or their CEGEP equivalents.

Suggested courses:
PHGY201 (3) Human Physiology: Control Systems (Prerequisite: CHEM212)
and PHGY202 (3) Human Physiology: Body Functions (Prerequisite: CHEM212)
or PHGY209 (3) Mammalian Physiology 1 (Prerequisite: CHEM212, BIOL200, BIOL201 or BIOL212)
and PHGY210 (3) Mammalian Physiology 2 (Prerequisite: CHEM212, BIOL200, BIOL201 or BIOL212)

Psychology
[Students in any Minor or Major Concentration or Honours Program in Psychology cannot choose this disciplinary area.]

Suggested courses:
PSYC100 (3) Human Physiology: Control Systems (Prerequisite: CHEM212)
and PHGY203 (3) Human Physiology: Body Functions (Prerequisite: CHEM212)
or PHGY209 (3) Mammalian Physiology 1 (Prerequisite: CHEM212, BIOL200, BIOL201 or BIOL212)
and PHGY210 (3) Mammalian Physiology 2 (Prerequisite: CHEM212, BIOL200, BIOL201 or BIOL212)

12.48 Social Studies of Medicine (SSMD)
Department of Social Studies of Medicine
3647 Peel Street, 2nd floor
Montreal, QC H3A 1X1
Telephone: (514)398-6033
Fax: (514) 398-1498
E-mail: ssom@mcgill.ca

Chair — Allan Young

Professors
Margaret Lock; B.Sc. (Leeds), M.A., Ph.D. (Calif.) (Marjorie Bronfman Professor of Social Studies in Medicine)
George Weiss; M.A., Ph.D. (SUNY), Dr. 3rd Cy (Paris)/Cotton-Hannah Professor of the History of Medicine
Allan Young; M.A. (Wash.,) B.A., Ph.D. (Penn.)

Associate Professors
Alberto Cambrosio; M.A. (Sher.), Ph.D. (Montr.)
The Minor Concentration in Social Studies of Medicine is an interdisciplinary concentration of courses designed to address the needs of (1) undergraduates preparing for one of the health professions, and (2) social sciences and humanities undergraduates who wish to gain a broader interdisciplinary understanding of medicine and health issues.

The courses present medicine as a complex network of institutions, cultures and political relations embedded in the institutions, cultures and political relations of the larger society. Courses are divided into three groups: History of Medicine, Anthropology of Medicine, and Medical Humanities and Social Sciences.

The Minor consists of 18 credits. Students are required to take six credits from each of the three groups. Note: No overlap is permitted with courses counting towards the student’s Major Concentration. A maximum of 6 credits can be taken at another university; the approval of the student’s advisor is required.

MINOR CONCENTRATION IN SOCIAL STUDIES OF MEDICINE (18 credits)

[Additions to the Complementary Course lists are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Complementary Courses (18 credits)

6 credits from each of the following groups:

History of Medicine

HIST319 (3) The Scientific Revolution
HIST335 (3) Science from Greeks to Newton
HIST348 (3) China: Science-Medicine-Technology
HIST349 (3) Health and Healer in Western History
HIST356 (3) Medieval Science and Medicine
HIST381 (3) Colonial Africa: Health/Disease
HIST457 (3) Topics in Medical History
HIST458 (3) Modern Medicine: Seminar
HIST459 (3) Modern Medicine: Research
HIST466 (3) Seminar: Medieval Medicine
HIST496 (3) Research: Medieval Medicine

Anthropology of Medicine

ANTH227 (3) Medical Anthropology
ANTH314 (3) Psychological Anthropology
ANTH407 (3) Anthropology of the Body
ANTH438 (3) Topics in Medical Anthropology
ANTH439 (3) Theories of Development
ANTH443 (3) Medical Anthropological Theory
ANTH480, 481, 482, 483, 484, 485
Special Topics (3 credits each)

Medical Humanities and Social Sciences

BIOI570 (3) Advanced Seminar in Evolution
ECON440 (3) Health Economics
HSEL308 (3) Issues in Women’s Health
HSEL309 (3) Women’s Reproductive Health
PHIL343 (3) Biomedical Ethics
PHIL543 (3) Seminar: Medical Ethics
SOCI225 (3) Medicine and Health in Modern Society
SOCI309 (3) Health and Illness
SOCI310 (3) Sociology of Mental Disorder
SOCI338 (3) Introduction to Biomedical Knowledge
SOCI515 (3) Medicine and Society
SOCI538 (3) Selected Topics in Sociology of Biomedical Knowledge
SSMD199 (3) Mind-Body Medicine
WMST513 (3) Gender, Race and Science

12.49 Social Work (SWRK)

School of Social Work
Wilson Hall
3506 University Street
Montreal, QC H3A2A7
Telephone: (514) 398-7070
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E-mail: undergraduate.socialwork@mcgill.ca
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Acting Director — Estelle Hopmeyer
Emeritus Professor
David E. Woodsworth; B.A., Dipl.S.W.(Tor.), M.A.(Mich.), Ph.D.(Brandeis)

Professors
Peter Leonard; B.Sc., M.Sc., Dip. Mental Health (Lond.)
James Torczyner; B.H.L.(Yeshiva), M.S.W., D.S.W.(Calif.)

Associate Professors
Ben Zion Dalffen; B.A., M.S.W., Dipl.Adv.Soc.Wk.Pr.(McG)
Linda Davies; B.S.W., M.S.W.(McG.), Ph.D.(North Lond.Poly.)
Sydney Duder; B.Sc., M.S.W., Dipl. Adv.Soc.Wk.Pr., Ph.D.(McG)
Estelle Hopmeyer; B.A., M.S.W.(McG.)
Julia Krane; B.A.(Ott.), B.S.W.(McG.), M.S.W., Ph.D.(Tor.)
Carol Cumming Speirs; B.A.(Sir G.Wms.), M.S.W.(McG.)
Ingrid Thompson; B.A.(Sir G.Wms.), M.S.W.(McG.), Ph.D.(Can.)

Assistant Professors
Shari Brotman; B.S.W., M.S.W.(McG.), Ph.D.(Tor.)
Amanda Grenier; B.S.W.(Windsor), M.S.W., Ph.D.(McG.)
Lindsay John; B.A.(Guelph), M.S.W.(W. Laur.), M.Sc.(McM.), Ph.D.(Tor.)
Lucyna Lach; B.A., M.S.W., Ph.D.(Tor.)
Margaret-Ann Smith; B.A.(Mont.), M.S.W.(McG.)
Samantha Wehbi; B.A.(York); M.S.W.(Tor.); Ph.D.(McG.)
Robin Wright; B.A./B.S.W.(McM.), M.S.W., Ph.D.(Tor.)

Coordinator of Field Education — Francine Granner

The Faculty of Arts, through the School of Social Work, offers an undergraduate program of professional studies in Social Work, leading to the degree of Bachelor of Social Work (B.S.W.). The B.S.W. degree course has the following principal educational objectives:

1. To prepare students for professional practice in any one of a range of social service positions. (The B.S.W. degree represents the point of admission into the Ordre Professionnel des Travailleurs Sociaux du Quebecc and the Canadian Association of Social Workers.)

2. To prepare students for entry into more specialized professional studies at the graduate level.

*Quebec law requires that candidates seeking admission to the provincially-recognized regulatory bodies possess a working knowledge of the French language, i.e., be able to communicate verbally and in writing in that language. For further information, refer to “Language Requirements for Professions” on page 54.

As it is the policy of the School of Social Work to ensure that social workers are as diverse as the communities they serve, applications for the undergraduate B.S.W. program are encouraged from persons of varied backgrounds, including members of minority groups and persons of low income.

The B.S.W. degree is offered in two ways:

1. as a three-year undergraduate B.S.W. program, and
2. as a Special B.S.W. program for applicants who already have an undergraduate degree in another subject.

BACHELOR OF SOCIAL WORK (B.S.W.) — THREE-YEAR PROGRAM — ADMISSION

Three categories of applicants are eligible to apply for admission to the three-year Bachelor of Social Work:

1. As a three-year undergraduate B.S.W. program, and
2. As a Special B.S.W. program for applicants who already have an undergraduate degree in another subject.

3. As a one-year Certificate in Social Work (SOCW) program, where the Certificate is offered in two ways:
   1. As a completion program for students who have completed a degree program, and
   2. As a completion program for students who have completed a degree program with a concentration in social work.

Note: No overlap is permitted with courses counting towards the student’s Major Concentration. A maximum of 6 credits can be taken at another university; the approval of the student’s advisor is required.
1. Applicants who have completed a DEC from CEGEP or have completed equivalent studies will be considered for admission to a minimum 90-credit program.

2. Transfer Students
   Students who have begun undergraduate degree programs either at McGill or at other universities may apply to transfer to the School of Social Work. In order to qualify as a transfer student, applicants are expected to have a B average in their course work (minimum 3.00 CGPA). While previously taken credits may be accepted towards the B.S.W. program requirements, accepted applicants must be prepared to complete a minimum of five additional academic terms, three Fall terms and two Winter terms, in order to receive a B.S.W. degree (a minimum of 60 McGill credits is required in order to meet University degree requirements).

   Students wishing to transfer after their Freshman year must have completed the minimum 24 credits required for the Arts Freshman Program. Completion of these credits does not exempt students from any of the course requirements for the B.S.W. degree. Those who have taken more than 24 credits may, however, have their social science course requirements decreased.

   Students who hold a general B.A. degree (minimum 3.00 CGPA) but have not completed a DEC from CEGEP may also apply as a Transfer Student. Accepted applicants will be required to complete a minimum of 60 McGill credits over five academic terms (three Fall terms and two Winter terms).

3. Mature Students
   Residents of Canada who are 23 years of age or older, and who lack the academic background normally required for admission, may apply for entrance as mature students. To be considered for the B.S.W. program, applicants must have had significant paid or volunteer community work experience in related fields and be able to produce satisfactory recommendations from community social agencies with which they have been affiliated.

   Applicants must also have completed a minimum of two appropriate courses at the college or university level, each with a grade of B or better.

   Enrolment is limited. Candidates, whether entering or transfer students, are expected to have better than average grades. Within the group of applicants who meet the academic requirements, preference is given to those who have had social work-related experience, paid or volunteer, and also to those who demonstrate personal suitability for the social work profession.

   Please note that, although not a requirement for the 3-year B.S.W. program, a course in statistics is a prerequisite for admission into both the Special B.S.W. and M.S.W. programs at McGill. Students in the 3-year B.S.W. program who have not previously completed a course in statistics are considered for the B.S.W. program, applicants must have had significant paid or volunteer community work experience in related fields and be able to produce satisfactory recommendations from community social agencies with which they have been affiliated.

   More details on entrance requirements can be found on the Web at www.mcgill.ca/applying.

**BACHELOR OF SOCIAL WORK (B.S.W.)**

**THREE-YEAR PROGRAM – PLAN OF STUDY**

The B.S.W. degree is awarded upon successful completion of 90 credits of study; it consists of a combination of professional social work courses, supervised field practice and related courses drawn principally from the social sciences.

The 90 credits of study are made up as follows:

- a minimum of 48 credits (and a maximum of 60) must be social work courses.
- a minimum of 18 credits must be social science courses.
- any remaining credits may be taken according to the student's own individual interests. If credits in French language are required, they will be taken from among the credits available after satisfaction of the minimum requirements of social work (48) and social science (18) credits.

The mix of these possible types of credits will vary according to each student's needs.

The distribution of the 48-60 credits of Social Work content over the three years will be approximately as follows:

- U1 – 12 credits
- U2 – 15-24 credits
- U3 – 18-24 credits

**First-Year Required Courses** (12 credits)

- SWRK240 (3) Introduction to Social Work
- SWRK255 (3) Introduction to Practicum
- SWRK352 (3) Public Social Services in Canada
- SWRK357 (3) Legal Problems of the Poor

**First-Year Complementary Courses** (12 credits)

- 12 credits of approved courses in the social sciences

**First-Year Elective Courses** (6 credits)

**Second-Year Required Courses** (9 credits)

- SWRK344 (3) Anti-Oppression Social Work Practice
- SWRK355 (3) Field Practice 1
- SWRK356 (3) Field Practice 2

**Second-Year Complementary Courses** (6 credits)

- selected from:
  - SWRK341 (3) Introduction: Practice with Families
  - SWRK374 (3) Community Development/Social Action
  - SWRK376 (3) Social Work Practice with Groups

**Additional Second-Year Courses** (15 credits)

- 6 credits may be taken as complementary courses to complete the social science minimum; or all 15 credits may be taken as electives, with the limitation that no more than 9 credits may be Social Work.

**Third-Year Required Courses** (12 credits)

- SWRK401 (3) Social Work Research
- SWRK420 (3) Advanced Field Practice 1
- SWRK421 (3) Advanced Field Practice 2
- SWRK458 (3) Social Policy and Administration

**Third-Year Complementary Courses** (6 credits)

- 6 credits from the 400- or 500-level Social Work practice courses.

**Additional Third-Year Courses** (12 credits)

- 6 complementary credits of social science courses, unless completed in second year; the remaining credits may be taken as electives, with the limitation that no more than 6 credits may be from Social Work.

Subject to the following conditions, U3 students may be permitted to take 600-level courses:

- a minimum CGPA of 3.30;
- written approval from the professor of the course and from the program adviser supporting the request; and
- a maximum of six (6) credits towards the B.S.W. program.

(FORMS are available from the Social Work General Office.)

**Field Practicum**

Students in the 3-year B.S.W. program complete a field placement during their second and third years, 2 days per week, in different settings each year. Students must have completed a minimum of 24 credits of the 90 credits of study before commencing their second year placement, and 54 credits before commencing their third year placement.

**Grading Policy**

Students are required to obtain a grade of C or better in all of their Social Work courses (48-60 credits) and also in their 18 social science credits. If students receive a D in any of these courses, they must take additional courses to satisfy the program requirement. Only in an elective course will the grade of D be counted for credit.

**SPECIAL B.S.W. (BACHELOR OF SOCIAL WORK) – ADMISSION**

A number of students with Bachelor's degrees are admitted into a Special B.S.W. program consisting of 48 Social Work credits of study over a 14-month period. This program offers an excellent...
opportunity for students to consolidate past experience related to social work or, for some, to change career directions.

The minimum requirements for admission to the Special B.S.W. are as follows:

1. Bachelor’s degree with a high B average.
   A Bachelor’s degree is defined as being either a three-year degree following a CEGEP Diploma (or equivalent advanced standing) or a four-year degree following high school.
2. Completion of at least five courses (15 credits) in the social sciences.
3. An introductory course in statistics (either CEGEP or university level).
4. Paid and/or volunteer work experience.

Normally, candidates will not be considered unless their GPA is 3.00 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work-related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work.

While not a prerequisite for admission, possession of a working knowledge of the French language is important not only to candidates who intend to seek admission to the Quebec professional corporation after graduation but also to those who wish to maximize their field placement opportunities during their program. Students, however, have the option of completing their field requirements at an approved social service agency outside of Quebec once course work is completed.

The Special B.S.W. is usually a full-time program of study. Those wishing to pursue this program follow a prescribed pattern of study starting with the initial summer session in May-June (7 weeks), the academic session (September-April), and the second summer session (April-June of the following year). In some instances, part-time study can be arranged.

More details on entrance requirements are available on the Web, at www.mcgill.ca/applying. The application deadline is December 1.

**SPECIAL B.S.W. (BACHELOR OF SOCIAL WORK) – PLAN OF STUDY**

The Special B.S.W., for those holding an undergraduate degree, will be offered in three time blocks: a summer session of 7 weeks, May - June, one regular academic year, and a summer session of 12 weeks, April - June. Students in this program will take 48 Social Work credits, including courses in social work practice, field practice, and policy.

**Required Courses** (33 credits)

**Initial Summer Term**

- SWRK350 (3) Social Work Skills Laboratory
- SWRK353 (6) Introduction to Practice

**Fall and Winter Terms**

- SWRK344 (3) Anti-Oppression Social Work Practice
- SWRK352 (3) Public Social Services in Canada
- SWRK355 (3) Field Practice 1
- SWRK356 (3) Field Practice 2
- SWRK401* (3) Social Work Research

**Second Summer Term**

- SWRK420 (3) Advanced Field Practice 1
- SWRK421 (3) Advanced Field Practice 2
- SWRK458 (3) Social Policy and Administration

* Students who have successfully completed a research course during their undergraduate degree may be eligible for an exemption from this course. However, the 3 credits must be replaced by another Social Work course.

**Complementary Courses** (15 credits)

- a minimum of 6 credits selected from the 400- or 500-level practice courses
- 9 credits to be selected from other courses offered at the B.S.W. level

**Field Practicum**

Field Practice takes place in one field setting 2½ days per week, September - April, and 3½ days per week, April - June, to meet the 800-hour requirement.

**Grading Policy**

Students are required to obtain a grade of C or better in all of their courses. If students receive a D in any of these courses, they must take additional courses to satisfy the program requirement.

**12.50 Sociology (SOCI)**

Stephen Leacock Building, Room 712
855 Sherbrooke Street West
Montreal, QC H3A2T7

Undergraduate Program Information: (514) 398-6848
Fax: (514) 398-3403
E-mail: undergraduate.sociology@mcgill.ca
Website: www.mcgill.ca/sociology

**Chair — Suzanne Staggenborg**

**Director, Undergraduate Studies — Jack Sandberg**

**Director, Graduate Studies — TBA**

**Emeritus Professor**

Maurice Pinard, B.A., LL.L., M.A.(Montr.), Ph.D.(Johns H.), F.R.S.C.

**Professors**

John A. Hall; B.A.(Oxon.), M.A.(Penn.), Ph.D.(Lond. Sch. of Economics) *(James McGill Professor)*

Céline Le Bourdais; B.Sc.(Montr.), B.Sc.(Laval), M.Sc.(Montr.), Ph.D.(Brown)

Michael Smith; B.A.(Leic.), M.A., Ph.D.(Brown)

Suzanne Staggenborg; B.A.(Miami), M.A.(Wash.), Ph.D.(Northwestern) *(on leave 2004-05)*

**Associate Professors**

Lucia Benaquisto; B.A.(SUNY, Albany.), A.M., Ph.D.(Harv.)
Alberto Cambrosio; Diploma(Basel), M.A.(Sher.), Ph.D.(Montr.) *(Social Studies of Medicine) (on leave 2004-05)*

Ulli Locher; Ph.D.(Yale)

Anthony Masi; A.B.(Colgate), M.A., Ph.D.(Brown)

Steven L. Rytina; B.G.S., Ph.D.(Mich.)

Donald Von Eschen; A.B.(Beloit), M.A.(Chic.), Ph.D.(Johns H.)

**Assistant Professors**

Giovanni Burgos; B.A.(SUNY Albany), M.A., Ph.D.(Indiana)

Kathleen Fallon; B.A.(Calif.), M.A., Ph.D.(Indiana) *(on leave Winter 2004)*

Jennifer Fosket; B.A. (Mills), Ph.D. (California San Francisco)

Matthew Lange; B.A.(Car.), M.A., Ph.D.(Brown)

James Ron; B.A.(Stanford), M.A., Ph.D.(Berkeley) *(Canada Research Chair in Conflict and Human Rights)*

John Sandberg; B.A.(Hunter), Ph.D.(Michigan)

Elaine Weiner; B.A. (Grinnell), M.A. (Florida), Ph.D. (Michigan)

**Associate Members**

David Aberbach *(Jewish Studies)*

Gregory Baum *(Religious Studies)*

**Adjunct Professors**

Catherine Montgomery, B.A.(Carleton), M.Sc., Ph.D.(Montr.)

Rodney Nelson, B.A.(Regina), M.A.(Wash.), Ph.D.(Tor.)

Sociology is commonly defined as the scientific study of society. It offers the student an educational experience which is both intellectually rewarding and practically useful as a preparation for future career opportunities. It provides the student with the theoretical and analytical tools to better understand the complex social forces which affect our lives, contributing in this way to personal enrichment and more effective citizenship. It is also valuable preparation for advanced study in the social sciences, as well as for careers in
the professions, management, education, law, medicine and health-related areas, social work, and communications in both the public sector and private industry.

The Department offers a Minor Concentration, a Major Concentration, and an Honours Program in Sociology. Although students from outside the Department may take courses in the Department without having had SOCI 210 Sociological Perspectives (except where noted otherwise), nevertheless the course is recommended. The purpose of the Minor Concentration is to give the student a basic understanding of the field of Sociology, while the Major Concentration will provide a more comprehensive coverage of the field. The purpose of the Honours Program is to permit a student to study the field in depth, and to do an Honours Project – a research paper under the supervision of a faculty member, the topic and supervisor chosen by mutual agreement between the student and the professor.

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General Program Inquiries:
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Orientation Session for New Students
The Sociology Department Orientation Session will be held on Wednesday, August 25, 2004 from 15:00 to 17:00 in Leacock 738 (7th floor of the Stephen Leacock Building, directly opposite the elevators).

SUBSTANTIVE AREAS OF STUDY
The Department offers four substantive areas of study:
• Institutions, Deviance, and Culture
• Politics and Social Change
• Social Stratification: Class, Ethnicity, and Gender
• Work, Organizations, and the Economy

The following lists indicate the courses which are included within each Substantive Area:

Institutions, Deviance, and Culture
SOCI126 (3) Social Psychology
SOCI127 (3) Canadian Mass Communications
SOCI128 (3) Psychological Sociology
SOCI129 (3) Sociology of Culture
SOCI225 (3) Medicine and Health in Modern Society
SOCI247 (3) Family and Modern Society
SOCI250 (3) Social Problems
SOCI305 (3) Socialization
SOCI309 (3) Health and Illness
SOCI310 (3) Sociology of Mental Disorder
SOCI315 (3) Sociology of Religion
SOCI318 (3) Television in Society
SOCI323 (3) Introduction to Biomedical Knowledge
SOCI377 (3) Deviance
SOCI388 (3) Crime
SOCI435 (3) Popular Culture
SOCI460 (3) Responses to Social Problems
SOCI477 (3) Reactions to Deviance
SOCI488 (3) Punishment and Prisons
SOCI489 (3) Gender, Deviance and Social Control
SOCI495 (3) Social Problems and Conflicts
SOCI515 (3) Medicine and Society
SOCI516 (3) Advanced Psychological Sociology
SOCI535 (3) Sociology of the Family
SOCI538 (3) Selected Topics in Sociology of Biomedical Knowledge

Politics and Social Change
SOCI121 (3) Society/Politics: United States
SOCI122 (3) Urban Sociology
SOCI123 (3) Population and Society
SOCI125 (3) Development and Underdevelopment
SOCI126 (3) War, States and Social Change
SOCI126 (3) Political Sociology
SOCI128 (3) Environmental Sociology
SOCI135 (3) Sociology of State Repression
SOCI145 (3) Selected Topics
SOCI154 (3) Dynamics of Industrial Societies
SOCI166 (3) Social Change in the Caribbean
SOCI170 (3) Sociology: Gender and Development
SOCI186 (3) Contemporary Social Movements
SOCI190 (3) Gender and Health
SOCI244 (3) Networks and Social Structures
SOCI155 (3) Post-Socialist Societies
SOCI184 (3) Emerging Democratic States
SOCI195 (3) Social Problems and Conflicts
SOCI111 (3) Movements/Collective Action
SOCI129 (3) Social Inequality and Public Policy
SOCI145 (3) Sociology of Population
SOCI150 (3) Developing Societies
SOCI165 (3) Social Change in Panama
SOCI190 (3) Conflict and State Breakdown

Social Stratification: Class, Ethnicity and Gender
SOCI122 (3) Introduction to Quebec Society
SOCI123 (3) Sociology of Ethnic Relations
SOCI123 (3) Canadian Society
SOCI270 (3) Gender, Family and Social Change
SOCI320 (3) The Minorities in Quebec
SOCI327 (3) Jews in North America
SOCI333 (3) Social Stratification
SOCI353 (3) Inequality and Social Conflict
SOCI475 (3) Canadian Ethnic Studies Seminar
SOCI150 (3) Seminar in Social Stratification
SOCI151 (3) Sociology of Ethnic Conflict
SOCI1520 (3) Migration and Immigrant Groups
SOCI1530 (3) Sex and Gender

Work, Organizations, and the Economy
SOCI125 (3) Technology and Society
SOCI132 (3) Industrial Sociology
SOCI131 (3) Women and Work
SOCI140 (3) Organizations
SOCI142 (3) Health Care Providers
SOCI144 (3) The Sociology of Labour Force
SOCI1470 (3) Topics in Economic Sociology
SOCI185 (3) Society, Economy and Polity in Italy
SOCI160 (3) Gender and Organization

MINOR CONCENTRATION IN SOCIOLOGY (18 credits)
(Expandable)
The purpose of the Minor Concentration is to give the student a basic understanding of the field of sociology.

U1 Required Courses (6 credits)
SOCI120 (3) Sociological Perspectives
SOCI121 (3) Sociological Inquiry

Complementary Courses (12 credits)
3 credits, one of the following courses to be taken in the second year.
SOCI130 (3) Classical Sociological Theory
SOCI150 (3) Statistics in Social Research
9 credits, 3 courses, to be chosen from any ONE of the four Substantive Areas. At least 3 credits, 1 course, must be taken at the 300-level or above.
500-level seminars are open to Honours students and social science Major Concentration students in their final year, and Minor Concentration students only with permission of the instructor.

MAJOR CONCENTRATION IN SOCIOLOGY (36 credits)
The purpose of the Major Concentration is to give the student a comprehensive understanding of the field of sociology.

U1 Required Courses (6 credits)
- SOCI210 (3) Sociological Perspectives
- SOCI211 (3) Sociological Inquiry

U2 Required Courses (6 credits)
- SOCI330 (3) Classical Sociological Theory
- SOCI350 (3) Statistics in Social Research

Complementary Courses (24 credits*)
12 credits, 4 courses from one of the four Substantive Areas.  
6 credits, 2 courses from a second Substantive Area.  
6 credits, 2 courses from a third Substantive Area.  
*At least 12 credits, 4 courses, must be taken at the 300-level or above. A student taking the Major Concentration may take no more than 6 credits throughout the three-year program from the following: SOCI340/SOCI341, SOCI342/SOCI343, SOCI440/SOCI441, SOCI442/SOCI443.

Seminars at the 500-level are open to Honours students and social science Major Concentration students in their final year, and Minor Concentration students only with permission of the instructor.

Graduate Seminars listed below are open to final-year Honours students with adequate preparation:
- SOCI612 Industrial Sociology
- SOCI627 Political Sociology
- SOCI629 Ethnicity and Public Policy
- SOCI652 Current Sociological Theory
- SOCI661 Seminar: Sociology of Knowledge.

HONOURS IN SOCIOLOGY (51 credits)
Students may register for the Honours Program at the beginning of their second year (U2).

To remain in the Honours Program and receive an Honours degree, students must maintain a cumulative grade point average (CGPA) of 3.00, as well as a program GPA of 3.30. For more information see section 3.5 “Program Requirements”. A Minor Concentration outside Sociology may be taken.

Required Courses (18 credits)
- SOCI210 (3) Sociological Perspectives
- SOCI211 (3) Sociological Inquiry
- SOCI330 (3) Classical Sociological Theory
- SOCI350 (3) Statistics in Social Research
- SOCI461 (3) Quantitative Data Analysis
- SOCI480 (3) Honours Project

Complementary Courses (33 credits*)
12 credits from one of the four Substantive Areas.  
12 credits from a second Substantive Area.  
9 credits from the remaining two Substantive Areas, a minimum of 3 credits from each.  
*At least 15 of the credits in Sociology must be taken at the 300-level or above, and 24 credits must be taken at the 400-level or above (for a total of at least 39 credits at or above the 300-level).

JOINT HONOURS – SOCIOLOGY COMPONENT (36 credits)
Students who wish to study at the Honours level in two Arts disciplines can combine Joint Honours program components from any two Arts disciplines, see section 11.4 “Joint Honours Programs” for a list of available programs.

Students may register for the Joint Honours program at the beginning of their second year (U2). Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

Joint Honours students must maintain a minimum CGPA of 3.00 as well as a minimum GPA of 3.30 in this component.

Required Courses (18 credits)
- SOCI210 (3) Sociological Perspectives
- SOCI211 (3) Sociological Inquiry
- SOCI330 (3) Classical Sociological Theory
- SOCI350 (3) Statistics in Social Research
- SOCI461 (3) Quantitative Data Analysis
- SOCI480 (3) Honours Project

Complementary Courses (18 credits)
18 credits of Sociology courses approved by the Departmental Honours Advisor.

12.51 Women’s Studies (WMST)
McGill Centre for Research and Teaching on Women (MCRTW)
3487 Peel Street, Second Floor
Montreal, QC H3A 1W7
Telephone: (514) 398-3911
Website: www.mcgill.ca/mcrtw

Chair, Women’s Studies Advisory Committee — Professor Elizabeth Elbourne (on leave Fall 2004; Acting Chair - TBA)
Telephone: (514) 398-3911 ext. 4 / (514) 398-4856

Minor Program Adviser — Monica Hotter
(514) 398-3911 ext. 3

Major/Honours/ Joint Honours Adviser — Professor Elizabeth Elbourne

Women’s Studies Advisory Committee (WSAC) 2004-2005

Chair — Professor Elizabeth Elbourne (History)

Minor Program Adviser/Secretary — Monica Hotter

Faculty of Arts Representatives
- Professor Sajida Alvi (Islamic Studies)
- Professor Trudis Goldsmith-Reber (German Studies)
- Professor Michelle Hartman (Islamic Studies)
- Professor Hamid Kassam (Islamic Studies)
- Professor Sam Namoff (Political Science)
- Professor Eliane Weiner (Sociology)
- Professor Elizabeth Elbourne (History)
- Professor Trudis Goldsmith-Reber (Islamic Studies)
- Professor Michelle Hartman (Islamic Studies)
- Professor Susan Minkler (Religious Studies)
- Professor Patricia G. Kirkpatrick (Religious Studies)
- Student Representatives 2004-2005
- T.B.A.
- Ex-officio

Professor Shree Mulay (Director, MCRTW)

Women’s Studies is a multidisciplinary program that offers courses in a wide range of subject areas, all of which have as their focus the study of critical and historical issues concerning women and gender relations. The program provides students with the opportunity to discover and examine the many different ways in which the intersections of gender with race, ethnicity, sexuality, religion, class, and culture all shape and define the individual’s sense of reality. In addition, students are encouraged to explore feminist theoretical and empirical scholarship for understanding major social and intellectual issues, both past and present, and throughout the world.

The course distribution in three components aims at achieving intellectual breadth and coherence while recognizing the diversity of cultures and histories in Women’s Studies, the significant contributions of women in literature and the arts, and the important roles that women play in science, technology, and society.

Students must see an adviser in Women’s Studies upon registering in WMST and prior to selecting courses for their final year of study.

For further information concerning courses, please consult the Women’s Studies handbook available from Monica Hotter at the MCRTW or online at www.mcgill.ca/mcrtw.
MINOR CONCENTRATION IN WOMEN’S STUDIES (18 credits)
(Expandable)
Adviser: Monica Hottet

Required Courses (6 credits)
WMST200 (3) Introduction to Women’s Studies
WMST303 (3) Feminist Theory and Research

Complementary Courses (12 credits)
12 credits from the three Women’s Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Studies.

By arrangement with the Chair of the Women’s Studies Advisory Committee and subject to University approval, transfer credits will be accepted from approved exchange programs for a total of no more than 6 credits.

MAJOR CONCENTRATION IN WOMEN’S STUDIES (36 credits)
Adviser: Chair, Women’s Studies Advisory Committee

Required Courses (6 credits)
WMST200 (3) Introduction to Women’s Studies
WMST303 (3) Feminist Theory and Research

Complementary Courses (30 credits)
30 credits from the three Women’s Studies Complementary Course Groups: Historical and Non-European; Literature and the Arts; Science and Social Studies.

At least 6 of the 30 credits must be at the 400 or 500 level.

12 credits to be chosen from one group,
12 credits to be chosen from a second group,
6 credits to be chosen from the remaining group.

By arrangement with the Chair of the Women’s Studies Advisory Committee and subject to University approval, transfer credits will be accepted from approved exchange programs for a total of no more than 12 credits.

HONOURS IN WOMEN’S STUDIES (57 credits)
[Program revisions - including a reduction in credit weight for the Honours Thesis - are under consideration for September 2004. Consult the Honours Adviser or go to www.mcgill.ca (Course Calendars) in July for details.]
Adviser: Chair, Women’s Studies Advisory Committee

Honours students are encouraged to take at least one course in a non-European tradition. Honours students must maintain a program GPA of 3.30 and a CGPA of 3.00.

Honours students must write a thesis, to be developed within the framework of the Honours/Joint Honours Colloquium. The thesis will be supervised by an appropriate faculty member with the approval of the Women’s Studies Honours Thesis Committee; students should secure the approval of a potential adviser during the year before undertaking the thesis. Three credits will be accorded to the thesis (to be graded by the supervisor), and 3 credits to work undertaken in the Colloquium, which requires supplemental reading and writing assignments, participation in seminars by visiting speakers, training in research and thesis writing methods, presentation to the group of theses in progress, and response to the work of others.

Joint Honours students must maintain a program GPA of 3.30 and a CGPA of 3.00. Joint Honours students must write a thesis, to be developed within the framework of the Honours/Joint Honours Colloquium. The thesis will be supervised by an appropriate faculty member with the approval of the Women’s Studies Honours Thesis Committee; students should secure the approval of a potential adviser during the year before undertaking the thesis. Three credits will be accorded to the thesis (to be graded by the supervisor), and 3 credits to work undertaken in the Colloquium, which requires supplemental reading and writing assignments, participation in seminars by visiting speakers, training in research and thesis writing methods, presentation to the group of theses in progress, and response to the work of others.

COMPLEMENTARY COURSE LISTS
[Additions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Notes:
Courses that appear in more than one component may not be double counted.
* indicates courses that are acceptable ONLY when the topic is appropriate for Women’s Studies.

(1) Historical and Non-European Group

Anthropology
ANTH341 Women in Cross-Cultural Perspective

East Asian Studies
EAST351 Women in Chinese Literature
EAST466 Feminism and Japan

History
HIST199 FYS: Medieval Women and Men
HIST343 Women in Post-Confederation Canada
HIST412 Women and Gender in Modern Britain
HIST439 History of Women in China
HIST555D1 Women in the Western World Since 1860
HIST555D2 Women in the Western World Since 1860

Religious Studies
RELG256 Women in Judaism and Islam
RELG339 Hindu and Buddhist Images of Feminine

(2) Literature and the Arts Group

Art History and Communication Studies
ARTH352 Feminism in Art and Art History

Classics
CLAS370 Women in Greek Drama

East Asian Studies
EAST351 Women in Chinese Literature

English
ENGL345* The 20th Century Novel
ENGL345* Literature and Society
Additional Women's Studies Courses
(The component of the program into which these courses fall is dependent upon the topic and content of the course when offered):

WMST301 Women's Studies Current Topics 1
WMST302 Women's Studies Current Topics 2
WMST401 Women's Studies Special Topics 1
WMST402 Women's Studies Special Topics 2
WMST461 Tutorial in Women's Studies 1
WMST462 Tutorial in Women's Studies 2
WMST498 Seminar on Women's Studies 1
WMST499 Seminar on Women's Studies 2
WMST501 Advanced Topics 1

(3) Science and Social Studies Group

Anthropology
ANTH341 Women in Cross-Cultural Perspective
ANTH342 Gender Inequality and the State
ANTH413 Gender in Archaeology
Art History and Communication Studies
ENGC613 Gender and Technology
Integrated Studies in Education
EDER409 Women and Education
EDER410 Women in Higher Education
EDER643 Women, Education and Development

Educational and Counselling Psychology
EDPE515 Gender Identity Development

German Studies
GERM364 German Culture: Gender and Society

Law
CMPL504 Feminist Legal Theory

Management
ORGB435 Women as Global Leaders and Managers

Nursing
HSEL308 Issues in Women's Health
HSEL309 Women's Reproductive Health

Psychology
PSYC436 Human Sexuality and Its Problems

Philosophy
PHIL242 Introduction to Feminist Theory
PHIL422 Topics in Feminist Theory
PHIL544* Political Theory

Political Science
POLI459 Topics in Political Theory

Religious Studies
RELG271 Sexual Ethics
RELG338 Women and the Christian Tradition

Social Work
SWRK377 Women's Issues in Practice

Sociology
SOCI215* Gender Family and Social Change
SOCI247 Family and Modern Society
SOCI270 Gender, Family, and Social Change
SOCI281 Women and Work

Psychology
PSYC436 Human Sexuality and Its Problems

Philosophy
PHIL242 Introduction to Feminist Theory
PHIL422 Topics in Feminist Theory
PHIL544* Political Theory

Political Science
POLI459 Topics in Political Theory

Religious Studies
RELG271 Sexual Ethics
RELG338 Women and the Christian Tradition

Social Work
SWRK377 Women's Issues in Practice

Sociology
SOCI215* Gender Family and Social Change
SOCI247 Family and Modern Society
SOCI270 Gender, Family, and Social Change
SOCI281 Women and Work
SOCI489 Gender, Deviance and Social Control
SOCI530 Sex and Gender
SOCI535 Sociology of the Family
SOCI560 Gender and Organization

Women's Studies
WMST502 Advanced Topics 2
WMST613 Gender, Race and Science
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12.7 Earth, Atmosphere and Ocean Sciences
12.8 Geography (GEOG)
12.9 Physics (PHYS)

1 The Faculties

1.1 Location

853 Sherbrooke Street West
Montreal, QC H3A 2T6
Canada
Telephone: (514) 398-4210
Faculty Websites: www.mcgill.ca/arts and
www.mcgill.ca/science
Degree Website: www.mcgill.ca/artscisao/basc

Student Affairs Office
Website: www.mcgill.ca/artscisao
The Student Affairs Office of the Faculties of Arts and of Science and the Office of the Associate Dean (Student Affairs) of the Faculty of Science are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both Arts and Science.

1.2 Administrative Officers

For a listing of administrative officers in the Faculty of Arts, refer to “Administrative Officers” on page 67, and for those in the Faculty of Science, refer to “Faculty Administrative Officers” on page 291. Note that the Associate Dean (Student Affairs) of Science is responsible for students pursuing a B.A. & Sc.

The B.A. & Sc. Program Administration Committee (PAC), which oversees the curriculum and regulations for the degree, consists of the following members:

- Bruce Arndtson, B.A.(Car.), Ph.D.(Stan.)
- André Costopoulos, B.A.(McG.), M.A.(Montr.), Ph.D.(Oulu)
- Morton J. Mendelson, B.Sc.(McG.), A.M., Ph.D.(Harv.)
- Gregory Mikkelsen, M.S., Ph.D.(Chic.)
- Timothy R. Moore, B.Sc.(Swansea), Ph.D.(Aberd.)
- Enrica Quaroni, B.A., Ph.D.(McG.)

1.3 Programs and Teaching in Arts and in Science

Programs and teaching in Arts are described in section 1.3 “Programs and Teaching in Arts” on page 68. Those in Science are described in section 1.3 “Programs and Teaching in Science” on page 291. The two faculties jointly offer the B.A. & Sc., so students pursuing that degree are at home in both Arts and in Science.

1.4 Student Affairs Office

The Student Affairs Office, located in Dawson Hall, provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and programs, degree requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.
Special requests can be made, in writing, to the Associate Dean (Student Affairs) of Science, who is responsible for students pursuing a B.A. & Sc.

The Committee on Student Standing (CSS) of the Faculty of Science will consider appeals of the Associate Dean’s decisions. For information about CSS, see the Associate Dean’s secretary. For more information, please refer to our Website at www.mcgill.ca/artscisao.

2 Degree Admission Requirements

For information about admission requirements to the B.A. & Sc., please refer to “Admission Requirements” on page 26.

For information about inter-faculty or inter-degree transfers, please refer to “Inter-Faculty Transfer” on page 44 as well as to the relevant information posted on the Students Affairs Office Website at www.mcgill.ca/artscisao and in the Student Affairs Office, Dawson Hall, Room 110.

3 Degree Requirements

Each student pursuing a B.A. & Sc. must be aware of the regulations as stated in this section of the Calendar.

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

To be eligible for a B.A. & Sc., students must fulfill all Faculty degree and program requirements as indicated below:

- Minimum Credit Requirement, see section 3.1
- Residency, see section 3.2
- Cumulative Grade Point Average (CGPA), see section 3.3
- Time Limit for Completion of the Degree, see section 3.4
- Program Requirements, see section 3.5
- Course Requirements, see section 3.6

3.1 Minimum Credit Requirement

Students must complete the minimum credit requirement for the degree as specified in the 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 to students who obtain satisfactory results in the Diploma of Collegial Studies, International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests.

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new GPA will be calculated. The Associate Dean (Student Affairs) of Science, in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

Students who are readmitted after a period of absence are normally subject to the program and degree requirements in effect at the time of re-admission.

3.2 Residency

To obtain a B.A. & Sc., students must satisfy the following residency requirements: a minimum of 60 credits of courses used to satisfy the B.A. & Sc. requirements must be taken and passed at McGill, exclusive of any courses completed as part of the basic science requirements defined below. At least two-thirds of all departmental program requirements (Multi-track, Honours, Faculty) must normally be completed at McGill. However, students in Major Concentrations or Faculty or Honours Programs who pursue an approved Study Away or Exchange Program may, with departmental approval, be exempted from the two-thirds rule. In addition, some departments may require that their students complete specific components of their program at McGill.

3.3 Cumulative Grade Point Average (CGPA)

Each candidate for a B.A. & Sc. must achieve a minimum cumulative grade point average (CGPA) of 2.00.

3.4 Time Limit for Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their program in no more than eight terms after their initial registration for the degree. Students in the Freshman Program become subject to these regulations one year after their initial registration. Students who exceed these limits must receive permission from the Associate Dean (Student Affairs) of Science to continue their studies. Permission for exceeding the time limits will normally be granted only for valid academic reasons, such as a change of program (subject to departmental approval) and part-time status.

3.5 Program Requirements

3.5.1 Freshman Program

Students who need to complete 97-120 credits to fulfill their degree requirements must, within their first year at McGill, complete 21 credits of basic Science courses: 7 credits in Mathematics (MATH 139 or 140 or 150 and MATH 141 or 151) and 14 credits in at least two departments from Biology (BIOL 111 and/or 112), Chemistry (CHEM 110 and/or 120), and Physics (PHYS 101 or 131 and possibly PHYS 102 and 142). They should choose the remainder of their first-year courses, keeping in mind the requirement that they take 21 credits of Arts electives over their 120-credit degree.

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, mathematics and statistics, and physics as well as exemption from all or part of the 21-credit requirement of Arts electives over their degree. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits.

For further details, refer to information about the B.A. & Sc. Freshman Program on the Web at www.mcgill.ca/artscisao.

3.5.2 Departmental Programs

Students pursuing a B.A. & Sc., other than those registered in the Freshman Program, are required to have an approved program (Multi-track, Honours, Faculty), and to select their courses in each term with a view to timely completion of their degree and program requirements. Students must complete one of the program streams described below.

In all cases, the degree also includes a required integrative course (BASC 201; 3 credits), a complementary integrative course (3 credits) within or outside a student’s programs selected from the complementary list in section 11.6 “Integrative Courses”, plus electives (12-15 credits).

3.5.3 Multi-Track System

To recognize the diversity of student backgrounds and interests and the multiple routes to understanding provided by a modern university, the Faculties of Arts and of Science offer a 90-credit multi-track system that includes a Major Concentration in one faculty complemented by either a Major Concentration or two Minors/Minor Concentrations in the other faculty and that may be completed in one of the following ways:
Options
1) Arts Major Concentration (36) + Science Major Concentration (36-38) (see section 11 "Programs in the B.A. & Sc."); for a list of programs open to students in the B.A. & Sc.)
2) Major Concentration in Arts or Science (36-38) + two Minors/Minor Concentrations in the other faculty (2 x 18 = 36)

Regulations
- Programs offered by Computer Science, Mathematics and Statistics, and Psychology are considered Science programs for the purpose of the B.A. & Sc.
- Within both options, all Concentrations must be in different academic units. Thus, students may take a Geography program either in Arts or in Science, but not in both.
- Students will include within the 36 or 18 credits of their Major Concentrations or Minors or Minor Concentrations any university-level (200- or above) prerequisites to required courses within their programs.
- No course may fulfill the requirements for more than one program.

Definitions
Units: academic departments or administrative equivalents.
Programs: lists of required and complementary courses (including prerequisites for required courses) prepared and maintained by units.
Major Concentration: 36-38 credits taken from a unit’s Major program.
Minor Concentration: 18 credits taken from a unit’s Minor program. Expandable Minor Concentrations are those that can, on the completion of 18 additional approved credits, be expanded into a Major Concentration within the appropriate unit.

HONOURS PROGRAM
Honours programs demand a high degree of specialisation, and require students to satisfy specific departmental and Faculty Honours requirements while maintaining a good academic standing. They are designed to prepare students for graduate study.

At the time of publishing this Calendar, no honours programs had yet been approved for the B.A. & Sc. However, students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

JOINT HONOURS PROGRAM
Students who wish to study at the Honours level in two disciplines can combine a Joint Honours Program Component from an Arts discipline with one from a Science discipline; see “Joint Honours Programs” on page75 for a list of available programs. Each Joint Honours component consists of a maximum of 36-38 required and complementary credits (not including program prerequisites). In cases where a minimum of 24 credits are in courses normally restricted to Honours students, the total of required and complementary credits may be as few as 30.

To complete a Joint Honours degree, a student must achieve a minimum CGPA of 3.00. The program GPA (the GPA of all required and complementary courses taken at McGill that constitute the Joint Honours program) must be a minimum of 3.00, although academic units may set higher requirements for their component of the program GPA.

At the time of publishing this Calendar, only one Science Joint Honours Component (Mathematics) had been approved for the B.A. & Sc., although another (Psychology) was pending approval. Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

FACULTY PROGRAM
A Faculty program is an approved selection of courses constituting a concentration in an intellectually coherent and inter-faculty field of studies. These courses must include approved selections from the Faculties of Arts and of Science and possibly other faculties. Students in the B.A. & Sc. who complete a Faculty program must also complete a Minor Concentration or a Minor.

At the time of publishing this Calendar, a Faculty program in Cognitive Science was pending approval. Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

3.6 Course Requirements
All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do additional work for a supplemental grade, if these options are available, or repeat the course. Course substitution will be allowed only in special cases; students should consult their academic adviser.

Normally, students are permitted to repeat a failed course only once. (Failure is considered to be a grade of less than C or the administrative failures of J and KF.) If a required course is failed a second time, a student may appeal to the Associate Dean (Student Affairs) of Science for permission to take the course a third time. If permission is denied by the Associate Dean and/or by the Committee on Student Standing of the Faculty of Science, on appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs as well as the locations of departmental advisory offices, program directors, and telephone numbers for further information are available as follows:
For descriptions of B.A. & Sc. programs that are available to Arts students, see “Academic Programs” on page76.
For descriptions of B.A. & Sc. Science programs that are available to Science students, see “Academic Programs” on page302.
For descriptions of B.A. & Sc. Science programs that are not available to Arts or Science students, see the unit’s section below.
For descriptions of B.A. & Sc. Science programs offered by the McGill School of Environment, see “Programs Offered” on page379. (At the time of publishing this Calendar, no MSE programs had yet been approved for the B.A. & Sc., but students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.)

3.6.1 Course Overlap
Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, CEGEP, at another university, or Advanced Placement exams. Advanced Level results, International Baccalaureate Diploma, or French Baccalauréat. It is the student’s responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

Sometimes two different departments offer the same course. Such courses are called “double-prefix” courses. When such courses are offered simultaneously, students should take the course offered by the department in which they are obtaining their degree. For example, in the case of double-prefix courses CHEM XYZ and PHYS XYZ, Chemistry students would take CHEM XYZ and Physics students would take PHYS XYZ. If different departments offer a double-prefix course in alternate years, students could take whatever course best fits their schedule.

Credit for statistics courses will be given with the stipulations specified in section 3.6.1 “Course Overlap” on page294.
Credit for computer courses will be subject to the following restrictions:
1) credit for courses offered by the School of Computer Science is governed by rules specified as “Notes” in the School’s entry in the Faculty of Science section of the Calendar.
2) credit for computer courses offered by faculties other than Arts or Science requires the permission of the Associate Dean (Student Affairs) of Science.
3.6.2 Courses outside the Faculties of Arts and of Science

The following regulations apply to students in the B.A. & Sc. who wish to take courses outside the Faculties of Arts and of Science:

• Regardless of their minimum credit requirement towards their B.A. & Sc., students are allowed a maximum of 12 credits in ELECTIVE and/or COMPLEMENTARY courses taken in faculties other than the Faculties of Arts and of Science.

• Students in certain designated programs that include a number of REQUIRED and COMPLEMENTARY courses in other faculties are permitted a maximum of 30 credits outside the Faculties of Arts and of Science. These programs are the Faculty Programs in Environment (not yet approved), the Minor Concentration in Environment (not yet approved), and the Major Concentration in Geography (Urban Systems).

• Any courses taught at McGill University may be used towards the maximum allowed except for courses in Continuing Education for which students receive credit only in Continuing Education.

• For the purpose of this policy, courses taught in other faculties and specifically listed in the Arts or Science section of the printed Calendar are considered as courses taught in the Faculties of Arts and of Science.

• The maximum number of credits allowed will be strictly enforced.

3.6.3 Courses Taken under the Satisfactory/Unsatisfactory Option

Students may take one elective course per term that is graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of their credits taken at McGill to fulfill their degree requirements. The decision to have an elective course graded as Satisfactory/Unsatisfactory must be made by students before the end of the Drop/Add period. For more information and restrictions, please see “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option” on page 42.

3.6.4 Courses in English as a Second Language

ESL courses are only open to students whose primary language is not English and who have studied for fewer than five years in English-language secondary institutions. Students in the B.A. & Sc. may take a maximum of 12 credits, including academic writing courses for non-anglophones.

3.6.5 Auditing of Courses

No auditing of courses is allowed at McGill University.

4 Advising

Fall term advising for newly admitted students takes place during the week prior to the beginning of classes. Students newly admitted to the Winter term should consult the Calendar of Dates for exact advising dates.

Students who need 96 or fewer credits to complete their degree requirements must consult an academic adviser in their proposed department of study to obtain advice and approval of their course selection. To facilitate program planning, they must present their transcripts and letters of admission. Such students who have not fulfilled the 21-credit basic science requirement of the B.A. & Sc. should also seek advice from an adviser in the Student Affairs Office. For a detailed description of advising and registration procedures, students should refer to Welcome to McGill, which they receive upon acceptance from the Admissions, Recruitment and Registrar’s Office, as well as the Student Affairs Website, www.mcgill.ca/artsci.

Advising for all returning students takes place in March for the coming academic year. For more information, students should refer to the Student Affairs Website, www.mcgill.ca/artsci.

Advising is also available by e-mail: advisor.artsci@mcgill.ca.

5 Registration

All students register by Minerva, McGill’s Web-based registration system.

New students register in August prior to the first day of classes. For detailed information about registration, please see “Registration” on page 41, Welcome to McGill, the Student Affairs Website www.mcgill.ca/artsci, and the Minerva Website www.mcgill.ca/minerva.

Returning students register at the end of April and in May for the coming academic year. For detailed information about registration, please see “Registration” on page 41, the information at www.mcgill.ca/artsci and the Minerva Website, www.mcgill.ca/minerva.

Students who fall into unsatisfactory standing at the end of the academic year will have their registration cancelled. They may register in June for the Fall term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but who subsequently take summer courses without paying the fees, will have their registration cancelled. Registration will be denied until these debts are paid in full. Students must pay all debts before the end of the registration period to be permitted to register. Students with financial problems should consult the Student Aid Office, Brown Student Services Building.

Students who decide not to return to McGill after initiating registration must withdraw from all of their courses on Minerva or inform the Student Affairs Office in writing. The deadline for withdrawal from the University is the same deadline as for a course withdrawal; see the Calendar of Dates. After the deadline, students may, under exceptional circumstances, be granted permission to withdraw from the University. Such students should contact the Student Affairs Office in Dawson Hall for further information.

5.1 Program Registration

Students should refer to Welcome to McGill or to the Arts and Science Registration information on how to register for programs on the Student Affairs Website www.mcgill.ca/artsci and the Minerva Website www.mcgill.ca/minerva. For a list of programs that can be taken by students pursuing a B.A. & Sc. see Section 11 on page 168.

5.2 Course Registration

All courses have limited enrolment. Students pursuing a B.A. & Sc. may register for, and take for credit, any course, unless otherwise indicated, in the sections of the Calendar applicable to the Faculties of Arts and of Science, subject to the course restrictions listed in this section.

Since the registration system is unable to verify whether or not degree regulations are respected, it is technically possible to register for courses that may not be credited towards the B.A. & Sc. When students’ records are manually verified, however, any courses taken that violate the degree regulations will be flagged after the end of course change period as “not for credit towards the
B.A. & Sc. "; As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and/or the Class Schedule well in advance of the course change, (drop/add) period to determine if permission is required of the instructor, the department, or the Faculty for any course they wish to take.

Students who believe they have valid reasons to take a course that may not be credited towards the B.A. & Sc. must obtain the permission of the Associate Dean (Student Affairs) of Science.

5.2.1 Registration for First-Year Seminars
Registration for First-Year Seminars is limited to students in their first year of study at McGill, i.e., newly admitted students in U0 or U1. These courses are designed to provide a closer interaction with professors and better working relations with peers than is available in large introductory courses. These seminars endeavour to teach the latest scholarly developments and expose participants to advanced research methods. Registration is on a first-come, first-served basis. The maximum number of students in any seminar is 25, although some are limited to even fewer than that.

Students may take only one First-Year Seminar during their first year at McGill. Students who register for more than one will be obliged to withdraw from all but one of them.

5.2.2 Registration in Multi-Term Courses
Students who select a multi-term course are making a commitment to that course for its entirety. Students MUST register in the same section in all terms of a multi-term course. Credit will be jeopardized if students deliberately register in different sections of a multi-term course. In exceptional cases, when circumstances are beyond the student’s control, the Student Affairs Office may grant permission to change section mid-way through a multi-term course. Students must make their request in writing to the Associate Dean (Student Affairs) of Science citing their reason for the request. The request must also have the written support of the instructors of the sections involved and of the coordinator of the course (if applicable).

5.2.3 Registration for Graduation
Students in their final year must indicate the expected date of graduation on Minerva and verify this date on verification forms and unofficial transcripts. When final-year students change the expected date of graduation, they must notify the Student Affairs Office immediately. Failure to do so may postpone graduation.

Students who complete their degree requirements at any time during the final year at McGill. Students who register for more than one will be obliged to withdraw from all but one of them.

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

• whether there will be a final examination in the course;
• how term work will affect the final mark in the course;
• how term work will be distributed through the term;
• whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses normally have supplemental examinations, and courses with formal final examinations must have supplemental examinations);
• whether students with marks of D, F, J, or U will have the option of submitting additional work, and, if so, how the supplemental mark will be calculated with the extra work.

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

• students graduating in June:
  - fall courses, winter courses, and courses spanning fall/winter: April 30
• non-graduating students:
  - fall courses: July 30
  - winter courses, and courses spanning fall/winter: July 30

Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time.

It is important to note that instructors may impose earlier deadlines than those listed.

If marks to clear K’s have not been submitted to the Student Affairs Office by April 30 for fall courses, or July 30 for winter courses and courses spanning fall/winter, 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) of Science. Please see “Grading and Grade Point Averages (GPA)” on page 48 for more information.

7 Examinations
Students should see “Examinations” on page 51 for information about final examinations and deferred examinations.

The exam schedules are posted on the McGill Website, www.mcgill.ca, and in the Student Affairs Office, Dawson Hall, Room 110, normally one month after the start of classes for tentative Exam Schedule, and two months after the start of classes for final Examination Schedule. Students should also refer to the Student Affairs Website at www.mcgill.ca/artscisao for more information.

8 Supplemental Assessments
8.1 Supplemental Examinations
Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• students must avail themselves of this privilege at the time of the next supplemental examination period;
• special permission from the Associate Dean (Student Affairs) of Science is required if students wish to write supplemental exams totaling more than 8 credits in any supplemental exam period;
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the drop/add period;
• the format of the supplemental examination (e.g., multiple-choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;
• supplemental examinations in courses outside the Faculties of Arts or Science are subject to the deadlines, rules, and regulations of the relevant faculty;
• no supplemental examinations are available for students who fail to achieve satisfactory grades in a course with a deferred examination.

For courses in the Faculties of Arts and of Science, the supplemental examination period for fall courses is during the months of April and May, and for winter courses and courses spanning fall/winter during the last week of August. Supplemental applications are available at www.mcgill.ca/arts cisao. The deadline for submission of applications is March 1 for fall courses and July 15 for winter courses and courses spanning fall/winter. A non-refundable fee is payable for each course at the time of application. Students should consult the Student Affairs Office for further information.

8.2 Additional Work

Instructors of courses that include graded written work may choose to provide the option of additional work to eligible students. The following conditions apply:
• if there is an option for additional work, it must be announced in the course outline at the beginning of the course;
• additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;
• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• the mark resulting from the revised or additional work will be recorded as a supplemental mark;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental mark will count in calculating the CGPA;
• the weight of the additional work, in calculating the supplemental mark, will be equal to the weight given the work revised or replaced when the original mark was submitted;
• in courses in which both a supplemental examination and additional work are available, students may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;
• additional work in courses outside the Faculties of Arts and of Science is subject to the deadlines, rules, and regulations of the relevant faculty.

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

8.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner.

The Faculties of Arts and of Science recognize two types of reassessments or rereads:
• reassessment of course work (term papers, mid-terms, assignments, quizzes, etc.);
• reread of a final exam.

Reassessments and rereads for Arts courses are subject to the deadlines, rules, and regulations outlined in section 8.3 "Reassessments and Rereads" on page 73. Reassessments and rereads for Science courses are subject to the deadlines, rules, and regulations outlined in section 8.3 "Reassessments and Rereads" on page 297. Reassessments and rereads in courses not in the Faculties of Arts and of Science are subject to the deadlines, rules, and regulations of the relevant faculty.

9 Academic Standing

Academic standing is based primarily on students' cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the fall term, in May for the winter term, and in September for the summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students' fall TGPA. Therefore, academic standings for the fall term that are designated as "interim" should be interpreted as advisory. Note that interim standing will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

9.1 Satisfactory/Interim Satisfactory Standing

• Students in satisfactory standing may continue in their program.
• New students are admitted to satisfactory standing.
• Students with a CGPA of 2.00 or greater are in satisfactory standing.

9.2 Probationary/Interim Probationary Standing

Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

• Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
• Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the summer term.
• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
• Students who were previously in unsatisfactory reread standing will be placed in probationary standing for the Fall or Winter term if their CGPA is less than 2.00, but they satisfy relevant conditions specified in their letter of readmission.

9.3 Unsatisfactory Readmitted Standing

Students who were previously in unsatisfactory standing and who were readmitted to the B.A. & Sc. by the Associate Dean (Student Affairs) of Science or the Committee on Student Standing of the
Faculty of Science will have their standing changed to unsatisfactory readmitted standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

9.4 Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult an academic adviser, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the faculties. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Student Affairs) of Science no later than July 15 for readmission to the fall term and November 15 for the winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean (Student Affairs) of Science for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

• Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.

• Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing (fall or winter term) if their TGPA falls below 2.50 and their CGPA is below 2.00.

• Students who were previously in unsatisfactory standing and who were readmitted to the B.A. & Sc. by the Associate Dean (Student Affairs) of Science or the Committee on Student Standing of the Faculty of Science and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

9.5 Incomplete Standings

Standing awaits deferred exam. Must clear K’s, L’s or Supplementals.

Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean (Student Affairs) of Science as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances affecting academic performance can be provided (e.g., medical or other documentation). Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

At the end of the winter term, students with a mark of K or L will be placed in the appropriate standing in June, if the outstanding mark in the course will not affect their result. Otherwise the standing decision will only be made once their incomplete marks have been cleared. For more information about incomplete grades please refer to “Incomplete Grades” on page 52.

10 Awards and Honourary Designations

10.1 Honours and First-Class Honours

Departments may recommend to the Faculties of Arts and of Science that graduating students registered in an Honours program be awarded Honours or First-Class Honours under the following conditions:

• students must complete all requirements imposed by the department;

• for Honours, the CGPA at graduation must be at least 3.00;

• for First-Class Honours, the CGPA at graduation must be at least 3.50 or better;

• some departments have additional requirements that must be met before students are recommended for Honours or First-Class Honours (see the departmental entries).

Students in an Honours program whose program GPA or CGPA is below 3.00 or who did not satisfy certain additional program requirements must consult their adviser to determine if they are eligible to graduate in a program other than Honours.

10.2 Distinction and Great Distinction

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

• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;

• for Distinction, the CGPA at graduation must be 3.30 to 3.49;

• for Great Distinction, the CGPA at graduation must be at least 3.50;

• these designations may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the B.A. & Sc.

10.3 Dean’s Honour List

At the time of printing this Calendar, the following regulations had yet to be approved by the Faculties of Arts and of Science. Consult www.mcgill.ca/artscisao/basc for possible revisions to the regulations.

The designation Dean’s Honour List may be awarded to a graduating student under the following conditions:

• students must have completed a minimum of 60 McGill credits towards the same degree to be considered;

• students must be among the top 10% of the graduating class of B.A. & Sc. students; this calculation is based on the CGPA;

• this designation may be withdrawn, in the case of transfer students, if their CGPA in another degree program or at another university was not comparable to the CGPA earned in the B.A. & Sc.

• the designation Dean’s Honour List may be awarded at the end of each academic year to continuing students under the following conditions:

• students must have completed at least 27 graded credits during the academic year to be considered;

• students must be among the top 10% of students in the B.A. & Sc. This calculation is based on the sessional GPA (i.e., combined GPA for the fall and winter terms).

10.4 Medals and Prizes

Various medals, scholarships, and prizes are open to continuing and graduating students. Full details of these are set out in the Undergraduate Scholarships and Awards Calendar, available from the Admissions, Recruitment and Registrar’s Office or on the Web at www.mcgill.ca. No application is required except in the case of the Moyse Travelling Scholarships.
11 Programs in the B.A. & Sc.

11.1 Major Concentrations

11.1.1 Arts
The Arts Major Concentrations available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

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

11.1.2 Science
The Science Major Concentrations available to B.A. & Sc. students are listed here and are described in detail either below in the Arts & Science (AS) section or in the McGill School of Environment (E) section of the Calendar as indicated.

- Biology - Organismal Option (AS)
- Biology - Cell/Molecular Option (AS)
- Biomedical Sciences (AS)
- Chemistry (AS)
- Computing, Foundations of (A)
- Earth, Atmosphere and Ocean Sciences (AS)
- Geography - Physical Option (AS)
- Mathematics (A)
- Physics (AS)
- Psychology (A)

11.2 Faculty Programs
The Faculty Programs available to B.A. & Sc. students are listed here and are described in detail either below in the Arts & Science (AS) section or in the McGill School of Environment (E) section of the Calendar as indicated.

11.3 Honours Programs
There are currently no Honours programs approved for B.A. & Sc. students. Students interested in an Honours degree should consider the Joint Honours Programs in the next section.

11.4 Joint Honours Programs
Joint Honours programs in the B.A. & Sc. are created by combining a Joint Honours Program component from an Arts discipline with one from a Science discipline. Students must register for both Joint Honour Program components. Joint Honours students should consult an adviser in each department to discuss their course selection and their interdisciplinary research project (if applicable).

11.4.1 Arts
The Arts Joint Honours components available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

11.4.2 Science
There are currently only two Science Joint Honours components available to B.A. & Sc. students, which are listed here and are described in detail in the Faculty of Arts section of the Calendar.

11.5 Minor Concentrations or Minors

11.5.1 Arts
The Arts Minor Concentrations available to B.A. & Sc. students are listed here and are described in detail in the Faculty of Arts section of the Calendar.

- African Studies
- Socio-Cultural Anthropology - see Anthropology
- Anthropological Archaeology - see Anthropology
- Art History
- Canadian Ethnic Studies
- Canadian Studies
- Catholic Studies
11.6 Integrative Courses

11.6.1 Required Integrative Course

All students pursuing a B.A. & Sc. must take BASC 201, normally in U1.

11.6.2 Complementary Integrative Course

Students in the B.A. & Sc. are required to complete at least one other integrative course (at least 3 credits), possibly within one of their programs, chosen from the following:

- ANTH 201 Prehistoric Archaeology
- ANTH 203 Human Evolution
- ANTH 227 Medical Anthropology
- ANTH 312 Zooloarchaeology
- ATOC/EPSC 250 Natural Disasters
- ECON 347 Economics of Climate Change
- ENG 200 Communications - Pre-Electronic Age
- ENG 210 History of Communication - Electronic Age
- ENV 200 The Global Environment
- ENV 201 Society and Environment
- ENV 202 The Evolving Earth
- ENV 203 Knowledge, Ethics, and Environment
- GEOG 200 Geographical Perspectives: World Environmental Problems
- GEOG 203 Environmental Systems
- GEOG 302 Environmental Management 1
- GEOG 350 Ecological Biogeography
- LING 390 Neuroscience of Language
- LING 555 Language Acquisition 2
- MATH 328 Computability and Mathematical Linguistics
- MATH 330 Mathematical Finance
- MATH 338 History and Philosophy of Mathematics
- PHIL 220 Introduction to History and Philosophy of Science 1
- PHIL 221 Introduction to History and Philosophy of Science 2
- PHIL 341 Philosophy of Science 1
- PHIL 350 History and Philosophy of Ancient Science
- PHIL 411 Topics in Philosophy of Logic and Mathematics
- PHIL 441 Philosophy of Science 2
- SOCI 225 Medicine & Health in Modern Society
- SOCI 234 Population and Society
- SOCI 235 Technology and Society
- SOCI 338 Intro to Biomedical Knowledge

As a substitute, students can fulfill the requirement for a complementary integrative course by conducting library or empirical research that integrates the components of their program as a 3- or 6-credit independent study course, thesis course, or research course.

12 Academic Programs

12.1 Required Integrative Course for B.A. & Sc.

BASC 201 (Arts & Science Integrative Topics) is a required course in the B.A. & Sc., normally taken in U1. It introduces students to a variety of interdisciplinary topics that exemplify the benefits of applying scholarship from Arts and Science to a problem. It also provides students in the degree with a common experience and a reference group. For details, see the Course section of the Faculty of Science.

12.2 Programs in Arts or in Science

All B.A. & Sc. Arts programs are described in detail in the Faculty of Arts section of the Calendar. B.A. & Sc. Science programs that are open to B.A. students (i.e., programs in Computer Science, Mathematics and Statistics, and Psychology as well as some in Geography) are described in the Faculty of Arts section. Science Minors that are open to B.A. & Sc. students are described in the Faculty of Science section. B.A. & Sc. Science programs that are open only to B.A. & Sc. students are described below.
For information about where each B.A. & Sc. program is listed, see section 11 “Programs in the B.A. & Sc.”.

12.3 Biology (BIOL)

The Department of Biology, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION (36 credits)

The Major Concentration in Biology, Cell/Molecular Option, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in cell/molecular biology.

Required Courses* (29 credits)

BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOL 202 (3) Basic Genetics
BIOL 205 (3) Biology of Organisms
BIOL 215 (3) Introduction to Ecology and Evolution
BIOL 300 (3) Molecular Biology of the Gene
BIOL 301 (4) Cell and Molecular Laboratory
BIOL 303 (3) Developmental Biology
CHEM 212 (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by 3-credit courses from the Complementary Course List. Regardless of the substitution, students must take at least 36 credits in this program.

Complementary Courses (7 credits minimum) at least 7 credits selected from:

BIOL 306 (3) Neurobiology and Behaviour
BIOL 313 (3) Eukaryotic Cell Biology
BIOL 314 (3) Molecular Biology of Oncogenes
BIOL 370 (3) Human Genetics Applied
BIOL 373 (3) Biometry
BIOL 413 (1) Reading Project
BIOL 468 (3) Topics on the Human Genome
BIOL 475 (3) Human Biochemical Genetics

or other appropriate course at the 300-level or higher with permission of an advisor.

MAJOR CONCENTRATION IN BIOLOGY - ORGANISMAL OPTION (37 credits)

The Major Concentration in Biology, Organismal Option, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in organismal biology.

Required Courses* (28 credits)

BIOL 200 (3) Molecular Biology
BIOL 201 (3) Cell Biology and Metabolism
BIOL 202 (3) Basic Genetics
BIOL 205 (3) Biology of Organisms
BIOL 206 (3) Methods in Biology of Organisms
BIOL 215 (3) Introduction to Ecology and Evolution
BIOL 304 (3) Evolution
BIOL 308 (3) Ecological Dynamics
CHEM 212 (4) Organic Chemistry 1

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by 3-credit courses from the Complementary Course List. Regardless of the substitution, students must take at least 36 credits in this program.

Complementary Courses (9 credits)

9 credits selected from:

BIOL 303 (3) Developmental Biology
BIOL 305 (3) Animal Diversity
BIOL 306 (3) Neurobiology and Behaviour
BIOL 307 (3) Behavioural Ecology/Sociobiology

BIOL 327 (3) Herpetology
BIOL 331 (3) Ecology/Behaviour Field Course
BIOL 341 (3) History of Life
BIOL 350 (3) Insect Biology and Control
BIOL 351 (3) The Biology of Invertebrates
BIOL 352 (3) Vertebrate Evolution
BIOL 358 (3) Canadian Flora
BIOL 373 (3) Biometry
BIOL 435 (3) Natural Selection
BIOL 441 (3) Biological Oceanography
BIOL 442 (3) Marine Biology
BIOL 465 (3) Conservation Biology

or other appropriate course at the 300-level or higher with permission of an advisor.

12.4 Biomedical Sciences

Major Concentration in Biomedical Sciences - Program Advisors:

Professor Ellis Cooper, Department of Physiology
McIntyre Medical Sciences Building, Room 1127
E-mail: eliis.cooper@mcgill.ca
Telephone: (514) 398-4334

Professor Teresa Trippenbach, Department of Physiology
McIntyre Medical Sciences Building, Room 1116
E-mail: teresa.trippenbach@mcgill.ca
Telephone: (514) 398-4331

Professor Ann Wechsler, Department of Physiology
McIntyre Medical Sciences Building, Room 1135
E-mail: ann.wechsler@mcgill.ca
Telephone: (514) 398-4341

The following departments jointly offer this B.A. & Sc. program:

Anatomy and Cell Biology (ANAT)
Biochemistry (BIOC)
Microbiology and Immunology (MIMM)
Pharmacology (PHAR)
Physiology (PHGY)

The individual departments, their disciplines, and specific courses offered by them are described in their respective entries in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN BIOMEDICAL SCIENCES (36 credits)

The Major Concentration in Biomedical Sciences, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit students to survey the various biomedical sciences and acquire some additional in-depth exposure to one of them.

Required Courses (18 credits)

BIOC 212 (3) Molecular Mechanisms of Cell Function
BIOL 200 (3) Molecular Biology
BIOL 202 (3) Basic Genetics
MIMM 211 (3) Introductory Microbiology
PHGY 209 (3) Mammalian Physiology 1
PHGY 210 (3) Mammalian Physiology 2

Complementary Courses (18 credits)

4 credits selected from:

ANAT 214 (3) Systemic Human Anatomy
ANAT 262 (3) Introductory Molecular and Cell Biology

2 credits selected from:

MIMM 212 (2) Laboratory in Microbiology
PHGY 212D1 (1) Introductory Physiology Laboratory
PHGY 212D2 (1) Introductory Physiology Laboratory

Or equivalent (with approval of Adviser)

9 credits, one of the following disciplinary specializations:

1.4.1 Molecular and Cell Biology

1.4.2 Anatomy and Cell Biology

1.4.3 Physiology

1.4.4 Pharmacology

1.4.5 Microbiology and Immunology
Biomedical Sciences Disciplinary Specializations:

ANATOMY and CELL BIOLOGY
6 credits selected from:
- ANAT 321 (3) Circuitry of the Human Brain
- ANAT 322 (3) Neuroendocrinology
- ANAT 365 (3) Cell Biology: Secretory Process
- ANAT 381 (3) Basis of Embryology
- PATH 300 (3) Human Disease
3 credits selected from:
- ANAT 458 (3) Membranes and Cellular Signalling
- ANAT 541 (3) Cell and Molecular Biology of Aging

BIOCHEMISTRY
5 credits:
- BIOC 311 (3) Metabolic Biochemistry
- BIOC 312 (3) Biochemistry of Macromolecules
3 credits selected from:
- BIOC 450 (3) Protein Structure and Function
- BIOC 454 (3) Nucleic Acids
- BIOC 455 (3) Neurochemistry
- BIOC 458 (3) Membranes and Cellular Signalling

MICROBIOLOGY AND IMMUNOLOGY
6 credits selected from:
- MIMM 314 (3) Immunology
- MIMM 323 (3) Microbial Physiology
- MIMM 324 (3) Fundamental Virology
- MIMM 387 (3) Applied Microbiology and Immunology
3 credits from 400- or 500-level MIMM courses

PHARMACOLOGY AND THERAPEUTICS
6 credits selected from:
- PHAR 300 (3) Drug Action
- PHAR 301 (3) Drugs and Disease
- PHAR 303 (3) Principles of Toxicology
3 credits from 500-level PHAR courses

PHYSIOLOGY
6 credits selected from:
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 312 (3) Intermediate Physiology 2
- PHGY 313 (3) Intermediate Physiology 3
- PHGY 314 (3) Integrative Neuroscience
3 credits from 400- or 500-level PHGY courses

NEUROPHYSIOLOGY
6 credits:
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 314 (3) Integrative Neuroscience
3 credits selected from:
- PHGY 451 (3) Advanced Neurophysiology
- PHGY 556 (3) Topics in System Neuroscience

12.5 Chemistry (CHEM)

The Department of Chemistry, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN CHEMISTRY (36 credits)
The Major Concentration in Chemistry, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in this discipline.

Required Courses* (18 credits)
- CHEM 203 (3) Survey of Physical Chemistry
- CHEM 212 (4) Introductory Organic Chemistry 1
- CHEM 222 (4) Introductory Organic Chemistry 2
- CHEM 257D1 (2) Introductory Analytical Chemistry
- CHEM 257D2 (2) Introductory Analytical Chemistry
- CHEM 281 (3) Inorganic Chemistry 1

12.6 Cognitive Science

Cognitive Science is the multi-disciplinary study of cognition in humans and machines. The goal is to understand the principles of intelligence with the hope that this will lead to better comprehension of the mind and of learning and to the development of intelligent devices that constructively extend human abilities.

A Faculty Program in Cognitive Science (54 credits) is under development by the following departments, which are described fully in the Faculty of Arts or Faculty of Science section of the Calendar:

- Computer Science (COMP) (Science)
- Linguistics (LING) (Arts)
- Philosophy (PHIL) (Arts)
- Psychology (PSYC) (Science)

This 54-credit program, restricted to students in the B.A. & Sc., will be offered jointly by the four departments. It will be a planned sequence of courses designed to permit students to focus on at least two relevant areas of study.

Students should consult www.mcgill.ca/artscisao/basc for an up-to-date list of B.A. & Sc. programs.

12.7 Earth, Atmosphere and Ocean Sciences

The following departments jointly offer a B.A. & Sc. program:
- Atmospheric and Oceanic Sciences (ATOC)
- Earth and Planetary Sciences (EPSC)

The departments, the disciplines, and specific courses are described in their respective entries in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN EARTH, ATMOSPHERE AND OCEAN SCIENCES (36 credits)
The Major Concentration in Earth, Atmosphere and Ocean Sciences, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in these disciplines.

Required Courses* (25 credits)
- ATOC 214 (3) Introduction: Physics of the Atmosphere
- ATOC 215 (3) Oceans, Weather and Climate
- ATOC 220 (3) Introduction to Oceanic Sciences
- ATOC 315 (3) Water in the Atmosphere
- EPSC 210 (3) Introductory Mineralogy
- EPSC 212 (4) Introductory Petrology
- EPSC 233 (3) Earth and Life History
- EPSC 243 (3) Environmental Geology
Complementary Courses (11 credits minimum)
a minimum of 11 credits, at least 6 of which must be at the 300-level or higher, distributed as follows:
at least 5 credits selected from:
EPSC 203 (3) Structural Geology 1
EPSC 220 (3) Principles of Geochemistry
EPSC 231 (2) Field School 1
EPSC 250 or (3) Natural Disasters
ATOC 250
EPSC 320 (3) Elementary Earth Physics
EPSC 331 (3) Field School 2
EPSC 341 (3) Field School 3
EPSC 425 (3) Sediments to Sequences
EPSC 455 (3) Sedimentary Geology
EPSC 542 (3) Chemical Oceanography
6 credits selected from:
ATOC 219 (3) Introduction to Atmospheric Chemistry
ATOC 250 or (3) Natural Disasters
EPSC 250
ATOC 308 or (3) Principles of Remote Sensing
GEOG 308
ATOC 310 (3) Physical Oceanography
ATOC 402 (3) Atmosphere-Ocean Transports

12.8 Geography (GEOG)
The Department of Geography, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

Note that students may take a Geography program either in Arts or in Science, but not in both.
The following are considered Arts programs in the B.A. & Sc. and are described in the Faculty of Arts section of the Calendar:
Major Concentration in Geography
Major Concentration in Geography (Urban Systems)
Minor Concentration in Geography
Minor Concentration in Geography (Urban Systems)
The following are considered Science programs in the B.A. & Sc. and are described either below (Major Concentration) or in the Faculty of Science section (Minors) of the Calendar:
Major Concentration in Geography (Physical Geography)
Minor in Geographical Information Systems
Minor in Geography

MAJOR CONCENTRATION IN GEOGRAPHY - PHYSICAL GEOGRAPHY OPTION (36 credits)
The Major Concentration in Geography, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in this discipline.

Required Courses (12 credits)
GEOG 201 (3) Introductory Geo-Information Science
GEOG 202 (3) Statistics and Spatial Analysis
GEOG 203 (3) Environmental Systems
GEOG 272 (3) Earth’s Changing Surface

Complementary Courses (24 credits)
6 credits of analytical techniques selected from:
GEOG 306 (3) Raster Geo-Information Science
GEOG 308 or (3) Principles of Remote Sensing
ATOC 308
GEOG 351 (3) Quantitative Methods
3 credits of field courses selected from:
GEOG 495 (3) Field Studies - Physical Geography
GEOG 496 (3) Geographical Excursion
GEOG 497 (3) Ecology of Coastal Waters
GEOG 499 (3) Subarctic Field Studies
9 - 15 credits in systematic physical geography selected from:
GEOG 305 (3) Soils and Environment
GEOG 321 (3) Climatic Environments
GEOG 322 (3) Environmental Hydrology

12.9 Physics (PHYS)
The Department of Physics, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

MAJOR CONCENTRATION IN PHYSICS (36 credits)
The Major Concentration in Physics, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit a degree of specialization in this discipline.

Required Courses* (30 credits)
MATH 222 (3) Calculus 3
MATH 223 (3) Linear Algebra
MATH 314 (3) Advanced Calculus
MATH 315 (3) Ordinary Differential Equations
PHYS 230 (3) Dynamics of Simple Systems
PHYS 232 (3) Heat and Waves
PHYS 257 (3) Experimental Methods 1
PHYS 333 (3) Thermal and Statistical Physics
PHYS 340 (3) Electricity and Magnetism
PHYS 446 (3) Quantum Physics

* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. must be replaced by courses from the Complementary Course List.

Complementary Courses (24 credits)
6 credits selected from:
PHYS 214 (3) Introductory Astrophysics
PHYS 225 (3) Musical Acoustics
PHYS 241 (3) Signal Processing
PHYS 258 (3) Experimental Methods 2
PHYS 334 (3) Advanced Materials
PHYS 534 (3) Nanoscience and Nanotechnology
or any 300- or 400-level course approved by an advisor
1. The Faculty

1.1 Location

3700 McTavish Street
Montreal, QC H3A 1Y2
Canada

Telephone: (514) 398-7042
Fax: (514) 398-4679
Website: www.education.mcgill.ca

1.2 Administrative Officers

Roger Slee; B.A. (Queensland, Australia).
Grad.Dip.Ed. (State College of Victoria, Rusden),
Grad.Dip.Sp.Ed. (Melbourne College of Advanced
Education, Australia), M.Ed., Ph.D. (La Trobe, Australia)

Mary H. Maguire; B.A., B.Ed., M.A. (Montr.), M.Ed.,
Cert.Reading (McG.), Ph.D. (Arizona)

Glenn F. Cartwright; B.A. (Sir G. Wms.), M.A. (McG.),
Ph.D. (Alta.), F.A.A.S.P., F.C.C.T.

Spencer Boudreau; B.A. (Don Bosco) B.A., M.A. (Sherb.),
Ph.D. (C'dia.)


Chair, Department of Integrated Studies in Education

Hélène Perrault; B.Sc. (C'dia.), M.Sc., Ph.D. (Montr.)

Chair, Department of Kinesiology and Physical Education

Susanne P. Lajoie; B.A., M.A. (McG.), Ph.D. (Stan.)

Chair, Department of Educational and Counselling Psychology

Cheryl Shinfield Karasick

Assistant to the Dean (acting)

Christine Zilberman

Faculty Administrator

1.3 The Faculty Then and Now

The Faculty of Education traces its beginnings back to 1857
when the McGill Normal School was established at McGill by
agreement between the University and the Government of
Quebec. In 1907, it was renamed the School for Teachers
and moved to Sainte-Anne-de-Bellevue where it became
part of Macdonald College. At this time also, the Macdonald
Chair of Education was endowed at McGill University and a
Department of Education was created in the Faculty of Arts
and Science for the purpose of preparing candidates for the
High School Diploma. The first graduate program was inaugu-
rated in 1930, and in 1953 the University established the
B.Ed. degree.

In 1955 the School for Teachers and the Department of
Education were combined to become, within the Faculty of
Arts and Science, the Institute of Education. To these was
joined, in 1957, the McGill School of Physical Education
(founded in 1912).

The Institute was reconstituted as the Faculty of Education in
1965 and the work continued both on the McGill and the
Macdonald Campus. The St. Joseph Teachers College and the Faculty of Education were amalgamated in 1970 and relocated in a new building on the McGill Campus. In 1996, the Graduate School of Library and Information Studies became affiliated with the Faculty.

The Faculty serves approximately 2,000 students enrolled in undergraduate, graduate and professional development programs. The Faculty is organized into three departments and the Graduate School of Library and Information Studies. In addition, the Faculty has a number of research and service centres, several of an interdisciplinary nature.

Like other faculties of education in Quebec and Canada, the Faculty has had a traditional role in the initial training of teachers and leaders in education-allied occupations. It is also concerned with constructing knowledge through research and scholarship and with providing professional development services to the wider educational community.

In recent years a number of links have been established with counterparts in other countries for teaching, research and development purposes. Current active projects, some of which involve students as well as staff, include those in Japan, Indonesia, South Africa and Mexico.

1.4 Faculty Facilities

Centre for Educational Leadership (CEL)

CEL, a unit of the Department of Integrated Studies in Education, is committed to the idea that professional development is integrally related to teacher preparation, graduate studies and research. The Centre seeks to promote dialogue, partnerships and projects among teachers, policy makers and other educational leaders in the local community and beyond. The current focus is on providing professional development in leadership for credit in graduate studies.

Director: Dr. Lynn Butler-Kisber
CEL is located in the Faculty of Education (Room 439).
Telephone: (514) 398-1591 Fax: (514) 398-7436
Website: www.mcgill.ca/edu-integrated

Centre for University Teaching and Learning (CUTL)

The Centre is a University unit dedicated to the study and improvement of learning and teaching in higher education. Its academic staff is cross-appointed in the Faculty of Education. The Centre accommodates graduate students interested in research in higher and adult/professional education, instructional development, evaluation and educational innovation.

Director: Professor Lynn McApline
Office: Education Building, Room 544E
Telephone: (514) 398-6648 Fax: (514) 398-6968

Education Library and Curriculum Laboratory

The Education Library and Curriculum Lab are located on the first floor of the Faculty of Education Building. The collection consists of over 100,000 monograph volumes, more than 500 periodical titles, microforms, government documents, non-print materials, and CD-ROMs. The focus of the collection is on the teaching and research concentrations of the Faculty.

The Curriculum Lab adjoining the Library houses a collection of elementary and secondary school textbooks, teachers’ resource guides, video and audio-cassettes, CD-ROMs, games, kits, big books and equipment for viewing and listening. The CDC Children’s Literature Collection of fiction, non-fiction, poetry, folklore, and biography is also located in the Lab.

Tours and instructional workshops are held at the beginning of each term to introduce students to MUSE (the on-line catalogue), the various education full-text electronic resources, and databases such as ERIC, PsycINFO, Education Abstracts Fulltext and CBCA Full Text Education. The schedule is available at the Library Reference Desk and on the Education Library website.

Computers in the Library provide access to MUSE, electronic databases, full-text electronic journals and e-books, the Internet and Microsoft Office. Designated study carrels are wired for students to connect their laptops to the McGill Network and the Web using VPN. The library area is also a “wireless zone” where laptops with wireless network interface cards can be used.

Visit the Education Library Website at www.education.mcgill.ca/edlibrary for more information about library hours and loan policies, reserve reading, curriculum guides, links to other important education sites and much more.

Telephone: (514) 398-8109

Education Undergraduate Society

The Society is the students’ voice of undergraduates within the Faculty and its primary purpose is to serve and to inform the students. It also attempts to unify students through sponsorship of activities such as conference participation, career placement, student orientation, participation in teachers’ conventions, library donations, Career Day, and raising funds for the Foundation of Research into Children’s Diseases. Other activities include the assignment of lockers for students, selling merchandise, and the coordination of the Graduation Ball. Students are encouraged to participate and to make their opinions known. The Society Office is located in the Lobby of the Education Building.

Telephone: (514) 398-7048

Media Services

Media Services, located in Room 219 of the Education Building, provides traditional and computer-based audiovisual and multimedia support services to students and teaching staff in the Faculty of Education. Access to equipment and facilities is provided free of charge for all course-related work.

The equipment loan inventory includes multimedia projectors available with and without computers (PC and Mac), digital video and digital still cameras, video playback equipment, audiocassette kits for recording interviews or lectures, and CD/tape boomboxes for in-class audio playback. A small inventory of media-related consumables is available for sale over the counter.

The small high-end multimedia lab gives students access to several workstations equipped for a range of multimedia production tasks including digital video and audio editing for creation as stand-alone projects or as clips to be included in PowerPoint presentations or on Web pages. Projects completed in the lab can be saved to a variety of media including CD, CD-ROM, ZIP, videotape and audiocassette.

Instructional functions comprise small group workshops and media services facilities orientation tours (both by appointment only), individual equipment operation instruction and troubleshooting, and technical support to courses.

Media Services manages and maintains the Faculty Web server and Website, and provides production services for the Faculty newsletter available on that site at www.education.mcgill.ca/newsletter. In addition, technical support is provided for all Faculty of Education classroom activities including maintenance of the Jack Cram Memorial Auditorium multimedia presentation facilities.

Closed Saturdays, Sundays and holidays, service hours are:

- September through mid-April: Monday to Thursday 08:15 – 20:45
- Mid-April through July: Monday to Friday 08:15 – 16:45
- August: TBA

Microcomputer Facilities

The Faculty has a large microcomputer complex located in Room 328 of the Education Building. It houses a lab with IBM computers, a second lab with Apple Macintosh computers, and a smaller work area with additional computers. Laser printing and scanning facilities are available. The computers are supported by an extensive educational software collection and consultants are available for help. This facility is available for courses, workshops and individual use by students and University staff.

Closed Sundays, holidays and during August.

Hours for the fall and winter terms are:
- Monday to Thursday: 09:00 – 21:00
- Friday: 09:00 – 17:00
Saturday 11:00 – 17:00
Up-to-date information is posted on our Website: www.education.mcgill.ca/complab.

McGill Career and Placement Service (CAPS)
Refer to the General University Information section for further information on this service.

McGill Journal of Education
The McGill Journal of Education is published three times a year: Winter, Spring, and Fall. It includes work in English and French from local, national and international sources. The Journal publishes peer-reviewed research articles, essays, reports from the field, and book reviews. It is concerned with major issues in education from a variety of perspectives, practical and theoretical, personal and collective. Its policy is to bring new ideas and research into a context open to teacher educators and scholars, as well as to parents, teachers, and administrators.

For annual subscriptions, contact:
Faculty of Education
McGill Journal of Education
3700 McTavish Street, Room 345
Montreal, Quebec, H3A 1Y2
Telephone: (514) 398-4246
E-mail: ann.keenan@mcgill.ca

Current rates (applicable taxes are extra):
$25.00 for Faculty of Education student subscriptions;
$37.50 for Canadian subscriptions; and
$55.00 for International subscriptions (airmail).

Office of First Nations and Inuit Education (OFNIE)
The Office of First Nations and Inuit Education coordinates the work which the Faculty of Education carries out in partnership with various Aboriginal communities and institutions. All courses are normally given off campus. In collaboration with the Nunavut Teacher Education Program, the Kativik School Board, the Cree School Board, the Kahnawake Education Centre, and various other Aboriginal communities in Quebec, OFNIE delivers community-based teacher education programs leading to initial teacher certification and to the B.Ed.Cert.Teach. degree. OFNIE also works with departments to meet other educational needs of Aboriginal peoples.

Director: Professor Valentina de Krom
Office: Education Building, Room 614
Telephone: (514) 398-4533
Fax: (514) 398-2553
E-mail: valentina.dekrom@mcgill.ca

The A.S. Lamb Learning Centre
The A.S. Lamb Learning Centre integrated by the Reading Room and the Computer Laboratory is located on the second floor of the Sir Arthur Currie Memorial Gymnasium. It houses 20 P4 computers with CDRW drives and 1 Apple iMac with DVD-R drive for video editing. Laser printing as well as scanning facilities are also available. This facility will be used for courses, workshops, and individually by students and staff. Users will also be able to access the McGill wireless network using their notebook or laptop computer equipped with a wireless Network Interface Card (NIC).

Website: www.education.mcgill.ca/phys_ed/complab

Evolution Education Research Centre (EERC)
Opened in 2000, the EERC is an academic body with a mission to advance the teaching and learning of biological evolution at all educational levels through research. The Centre’s international team currently consists of four research professors from McGill and four from Harvard, who have combined expertise in anthropology, biological evolution, educational psychology, geology, molecular biology, paleontology, philosophy of science, philosophy of education, and science education.

Director: Professor Brian Alters
Office: Education Building, Room 355
Telephone: (514) 398-5151

Centre for the Study and Teaching of Writing
The Centre for the Study and Teaching of Writing serves the University, the larger educational community, business and the professions by offering a wide variety of writing courses, developing curriculum, providing consultation and workshops, and conducting research, especially in writing development and writing in academic and professional settings.

The Centre is located in the Education Building, Room 244.
Telephone: (514) 398-6960

Seagram Sport Science Centre
The Seagram Sport Science Centre, opened in 1993, houses five laboratories for faculty and graduate students in the Department of Kinesiology and Physical Education. The laboratories for adapted physical activity, exercise physiology, biomechanics, psychology and the Cleghorn Hyperbaric Laboratory are supported by a full-time technician. The activities of the Centre include ongoing research programs of staff, performance testing of elite athletes, joint research activities with other departments within McGill and industry.

Co-Directors:
Dr. David Montgomery, Faculty of Education
Dr. Eric Lenczer, Faculty of Medicine

Telephone: (514) 398-4184 ext. 0558

Office of Student Teaching (OST)
The Office of Student Teaching is responsible for the planning and implementation of field experiences and arranging with school boards and schools for the placement of student teachers in the Bachelor of Education programs. The Office coordinates student teaching among Departments within the Faculty, and develops partnerships with the education community.

Office Hours: Monday to Friday 08:30 - 17:00
Acting Director: Prof. Jane Wardle
Office: Education Building, Room 430
Telephone: (514) 398-7046 Fax: (514) 398-3179
E-mail: jane.wardle@mcgill.ca

Student Affairs Office (SAO)
The Student Affairs Office is responsible for student records and registration as well as general academic information and advice on undergraduate program and degree requirements, course change, withdrawal, supplemental and deferred exams, rereads, academic standing, inter-faculty transfer, readmission, study away, scholarships and awards, graduation and teacher certification.

Special requests can be made, in writing, to the Associate Dean, Student Affairs.
Office: Education Building, Room 243
Telephone: (514) 398-7042 Fax: (514) 398-4679
E-mail: sao.education@mcgill.ca
Website: www.mcgill.ca/edu-sao

2 Faculty Programs
The Faculty of Education offers three different kinds of programs.

Undergraduate Programs
For those wishing to become teachers, the Faculty offers programs leading to the Bachelor of Education (B.Ed.) degree. For those already holding a university degree, advanced standing may be given in the B.Ed. programs. A B.Sc. (Kinesiology) is also offered by the Department of Kinesiology and Physical Education.
Programs of Professional Development
For qualified teachers wishing to enhance their knowledge and skills, the Faculty offers a wide range of programs of professional development leading to specialized Certificates and Diplomas. Most courses that are required to complete these programs are offered in the evenings and in the summer.

Graduate Programs
The Faculty offers graduate programs for those already holding a university degree who wish to pursue advanced study and research leading to masters and doctoral degrees in various fields of education and psychology, and library and information studies. Undergraduate Programs of initial teacher education are described in this Calendar; programs of professional development are described in the 2004–05 Centre for Continuing Education Calendar, and graduate programs are described in the 2004–05 Graduate and Postdoctoral Studies Calendar.

2.1 Undergraduate Education Programs

Code of Professional Conduct
Faculty of Education programs have professional components and field placements. In all aspects of any program, on campus and off, students are expected to demonstrate ethical, responsible, and professional behaviour in the performance of their duties, to conduct themselves in accordance with the law (e.g., Youth Protection), and to meet the expectations of schools, boards and other host institutions receiving them for field placements. This applies to all aspects of professional conduct, including but not limited to respect for persons, property and confidentiality, appropriate dress and punctuality. Failure to meet these expectations, regardless of performance in courses or other formal program requirements, will be taken into account in the assessment of the students’ overall academic standing in the program and, in the most serious instance, may result in a requirement to withdraw from the program.

Note: Faculty of Education Students

English Language Requirement
The Quebec Ministry of Education and the Faculty of Education require that all students in teacher education programs demonstrate their proficiency in the language of instruction. To fulfill this obligation all students must successfully pass an English Language Proficiency Test which will be administered in the December examination period of their first term. Students who fail the Test the first time and who wish to remain in the program will have adequate opportunities to improve the quality of their English language skills. All students who were unsuccessful in their first Test will be required to take the Test a second time the following December. Students who fail the second Test will be placed in unsatisfactory standing and must withdraw from the program.

Note: This requirement does not apply to the Certificate in Education for First Nations and Inuit program offered by OFNIE.

Language Requirement for Applicants to B.Ed. TESL, TFSL Programs
Applicants to the B.Ed. TESL or TFSL programs are required to pass written and oral language tests in order to fulfill the admission requirements of these two programs.

2.1.1 Undergraduate Programs
The Faculty of Education offers the following Undergraduate programs. Details of each program may be found in this Calendar under the headings of the appropriate department. The credit weights given are for students who have graduated from appropriate Quebec CEGEP programs; out-of-province students are normally required to complete an additional 30 credits.

Normally, Bachelor of Education programs may only be followed on a full-time day basis.

Admission is competitive and it may not be possible to accept all applicants who meet the minimum requirements.

- Bachelor of Education Secondary Program, see section 5.1.1. A 120-credit program offered by the Department of Integrated Studies in Education.
- Bachelor of Education Kindergarten and Elementary Program, see section 5.1.4. A 120-credit program, offered by the Department of Integrated Studies in Education.
- Bachelor of Education Kindergarten and Elementary Program (JewishStudies Option), see section 5.1.6. Students taking this option, take 126 credits, offered by the Department of Integrated Studies in Education.
- Baccalauréat en enseignement du français langue seconde, see section 5.1.7. A 120-credit program, offered by the Department of Integrated Studies in Education.
- Bachelor of Education in Teaching English as a Second Language, see section 5.1.8. A 120-credit program offered by the Department of Integrated Studies in Education.
- Bachelor of Education Physical Education, see section 6.1.1. A 120-credit program offered by the Department of Kinesiology and Physical Education.

Note: No new students will be admitted to this program.
- Bachelor of Education Physical and Health Education, see section 6.1.2. A 120-credit program offered by the Department of Kinesiology and Physical Education.
- Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) Program, see section 6.1.2. A 143/144-credit program offered jointly by the Department of Integrated Studies in Education and the Faculty of Music, see B.Mus./B.Ed. Bachelor of Music and Bachelor of Education Concurrent Program on page 280.
- Concurrent Bachelor of Science (Major or Major Concentration with a Minor for Teachers) and Bachelor of Education Secondary Program, see section 5.1.3. Offered jointly by the Department of Integrated Studies in Education and the Faculty of Science.

A student who successfully completes any of the above programs, and meets other requirements set out by the MEQ (Ministère de l’Éducation du Québec) is recommended for certification as a teacher in the province of Quebec; see section 2.1.2 “Quebec Teacher Certification”.

- Bachelor of Education Kinesiology, see section 6.1.3. A 90-credit program offered by the Department of Kinesiology and Physical Education.

Note: No new students will be admitted to this program.
- Bachelor of Science (Kinesiology), see section 6.2. A 90-credit (120 credits for out-of-province students) program offered by the Department of Kinesiology and Physical Education. The program entails a comprehensive understanding of human movement. Kinesiology is a multidisciplinary field viewing human movement from social, historical, psychological, or biological perspectives. The program provides students with a breadth of theoretical knowledge as well as an opportunity to explore related areas in greater depth, including minor programs available elsewhere within the University. Students may opt for either General or Applied emphasis, with an Honours program available for particularly strong students.

2.1.2 Quebec Teacher Certification
Please note that graduates of teacher education programs are recommended by the University for Quebec Certification to the Quebec Ministry of Education (Ministère de l’Éducation du Québec) (MEQ). Teacher Certification in Quebec is the responsibility of the MEQ. Students who complete requirements for the Bachelor of Education degree and who meet the MEQ requirements (specified below) are recommended for certification.
All graduates of the 120-credit Bachelor of Education programs may apply for a permanent Teaching Diploma (Brevet) immediately upon graduation.

In order to be eligible for a “Permit to Teach” or a permanent Quebec Diploma, candidates must be either Canadian citizens or Permanent Residents.

In addition to meeting these requirements, candidates for Teacher certification must be recommended by McGill University in a series of core professional competencies specified in “Teacher Training Orientations – Professional Competencies” (MEQ 69-2099A).

Holders of a temporary Permit or of a permanent Diploma wishing to teach in another province or in another country must apply directly to the Teacher Certification Agency in the relevant province or country. Similarly, teachers from other provinces or countries who wish to teach in Quebec must apply to the:

Ministère de l’Éducation
600 Fullum, 2e étage
Montréal, QC H2K 4L1
Telephone: (514) 873-8208

It is recommended that applicants intending to teach in other provinces obtain information beforehand concerning the requirements for certification in the appropriate province.

Fluency (oral and written) in English is a requirement for all those seeking certification as a teacher in the province of Quebec. Students who cannot demonstrate such fluency will be required to withdraw from the Faculty.

For students in the B.Ed. Teaching French as a Second Language (TFSL) and the Baccalauréat en enseignement du français langue seconde, fluency (oral and written) in French is also required for those seeking certification as a teacher in the province of Quebec and those who cannot demonstrate such fluency will be required to withdraw from the Faculty.

2.1.3 General Admission Requirements – Undergraduate Programs

Except for the Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) program for which application should be made to the Faculty of Music (refer to section 2.1.4 “Additional Admission Requirements” and to section 5.1.2 “Concurrent Bachelor of Education in Music and Bachelor of Music (Music Education) Program”), application for all Bachelor of Education programs should be made to:

Admissions, Recruitment and Registrar’s Office
McGill University
845 Sherbrooke Street West
Montreal, QC H3A 2T5
Telephone: (514) 398-3910  Fax: (514) 398-4193
Website: www.mcgill.ca/applying

For application procedures and admission requirements for the Bachelor of Education and Bachelor of Science (Kinesiology) programs, please refer to “Admission Requirements” on page 26 or to the Website: www.mcgill.ca/applying.

The Faculty of Education endorses the philosophy that teachers with diverse backgrounds should be available to the community and that faculty programs be equally open to male and female applicants.

If credits towards a degree were taken more than five years ago, the Faculty of Education reserves the right to require, where appropriate, that students demonstrate updated knowledge or take additional courses. Decisions are made on an individual basis. Notwithstanding the above, the Faculty of Education encourages students with relevant work, family or community experience to apply for admission.

Residents of Canada 23 years of age or older who lack the academic qualifications required for admission may apply for entry as mature students. Please refer to “Admission Requirements” on page 26 or at the Website: www.mcgill.ca/applying.

2.1.4 Additional Admission Requirements

Applicants to the B.Ed. programs in Teaching French as a Second Language, Teaching English as a Second Language, Baccalauréat en enseignement du français langue seconde, and the PIF option are required to pass written and oral language tests set by the Department of Integrated Studies in Education. Please call (514) 398-4527 for an appointment.

Although no additional prerequisite courses are required, the Faculty recommends that applicants to the B.Ed. Secondary, Science & Technology, and B.Ed. Physical & Health Education programs have appropriate background science and math courses, i.e. biology, chemistry, physics and mathematics.

Students having other backgrounds will be considered for admission but will be required to complete prerequisite courses in mathematics and science that may increase the number of credits required for the degree.

2.1.5 Intra-faculty Transfers

Students wishing to transfer programs within the Faculty of Education must see an advisor in the new program to obtain approval and a study plan. Normally, students who are registered for their first term of university studies in the fall term cannot apply for a transfer in January.

Deadlines for application:

June 1: For the Fall Term. Early applications are strongly encouraged since most programs have limited enrolment.

2.1.6 Inter-faculty Transfers

Students wishing to transfer to the Faculty of Education may apply to the Office of the Associate Dean (Student Affairs and Physical Resources). Normally, students who are registered for their first term of university studies in the fall term cannot apply for a transfer in January.

Transfer applicants will be considered on the basis of both university work and previous studies. A minimum CGPA of 3.0 (B) is required for admission as a transfer student.

Deadlines for application:

June 1: For the fall term. Early applications are strongly encouraged since most programs have limited enrolment.

2.1.7 Advanced Standing/Transfer Credits

Advanced standing credit will be granted on an individual basis depending upon the student’s academic background. A minimum of 60 credits must be completed at McGill in order to obtain a McGill Degree. Please note that transfer credit evaluation can only be determined after the formal application and all necessary supporting documents have been received by the Admissions, Recruitment and Registrar’s Office. For more details, please refer to “Admission Requirements” on page 26.

Once enrolled in the B.Ed. program, students may not normally apply retroactively for credit obtained in other programs.

2.1.8 Readmission

Requests for readmission must be submitted to the Associate Dean, Student Affairs, Faculty of Education. Students should request a Readmission Application package from the Associate Dean, Student Affairs Office. Information is also available on the Website www.mcgill.ca/edu-sao. The application and all supporting documents must be received by the Associate Dean’s office no later than May 1 for September admission. Readmission for the Winter term is normally not permitted.

Students who are readmitted are subject to the program and degree requirements in effect at the time of readmission. Normally, in order to be considered for credit or exemption, pedagogical courses must have been completed within the last five years. The Associate Dean, in consultation with the appropriate department, will review special cases.
2.2 Programs of Professional Development

The Faculty of Education offers programs of professional development in several fields. All such programs are 30 credits, unless otherwise indicated, and may be completed through part-time study. They are intended to provide an opportunity for teachers and other educators to enhance their existing knowledge and skills or to develop new ones, and thus are normally available only to those who are already certified as teachers.

Detailed information regarding general regulations, admission requirements and program profiles for the following certificates and diplomas may be found in the 2004-05 Centre for Continuing Education Calendar. Additional information about these programs may be obtained from the offering departments.

Faculty of Education
Office of Continuing Education
3700 McTavish Street, Room 243
Montreal, QC H3A 1Y2
Telephone: (514) 398-7043 Fax: (514) 398-4679
Website: www.education.mcgill.ca/conted

2.2.1 Certificate Programs

The Faculty of Education currently offers, through the Centre for Continuing Education or Distance Education, 30-credit certificate programs to university graduates. Certificate programs are available in the following fields:

Department of Educational and Counselling Psychology
Certificate in Educational Technology
Admission to this Certificate is temporarily suspended. For current students only, courses will be available through Continuing Education and/or Distance Education.
Further information is available from the Program Secretary at (514) 398-4248.
Certificate in Inclusive Education
Program Secretary (514) 398-4248

Department of Integrated Studies in Education
This program will not accept students in 2004-05.
Certificate in Teaching English as a Second Language (TESL)
Office of First Nations and Inuit Education (OFNIE)
Certificate in Aboriginal Education for Certified Teachers
For information see section 2.3 “Programs for First Nations and Inuit”.

2.2.2 Diploma Programs

The Faculty of Education currently offers, through the Centre for Continuing Education, 30-credit Diploma programs to university graduates. Diploma programs are available in the following fields:

Department of Educational and Counselling Psychology
Diploma in Human Relations and Family Life Education
Further information is available from the Program Secretary at (514) 398-4248.
Diploma in Psychology and Education of the Gifted
Admission to this Diploma is temporarily suspended. Interested students are referred to the M.Ed. (Educational Psychology) Concentration in the Education of the Gifted. Please consult the 2004-05 Graduate and Postdoctoral Studies Calendar.

2.3 Programs for First Nations and Inuit

The following programs are offered for Aboriginal teachers by the Faculty of Education through the Centre for Continuing Education. Information can be obtained by contacting:

Office of First Nations and Inuit Education (OFNIE)
3700 McTavish Street, Room 614
Montreal, Quebec, H3A 1Y2
Telephone: (514) 398-4533 Fax: (514) 398-2553
Website: www.education.mcgill.ca/ofnie

Detailed information about the following programs may be found in section 5.2 “Programs for First Nations and Inuit”.
B.Ed. for Certified Teachers (Elementary Education)
Certificate in Aboriginal Literacy Education
Certificate in Education for First Nations and Inuit
(This program replaces the former Certificate in Native and Northern Education.)
Certificate in First Nations and Inuit Student Personnel Services
(This program is offered by the Department of Educational Psychology and Counselling through the Office of First Nations and Inuit Education. Restrictions apply to enrolment.)
Certificate in Middle School Education in Aboriginal Communities
Certificate in First Nations and Inuit Educational Leadership

3 Faculty Regulations
Undergraduate Programs

Please consult the General University Information section for regulations and procedures regarding registration, fees, course load, course change (drop/add), withdrawal, verification, examinations, inter-university transfer, and graduation. In addition, the following section provides regulations specific to Faculty of Education students.

Note: Each student in the Faculty of Education must be aware of and comply with the Faculty regulations as stated in this Calendar. While departmental and Faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for complete and correct course selection and registration, for compliance with and completion of program and degree requirements, and for the observance of regulations and deadlines, and for academic records, rests with the student. It is the student’s responsibility to seek guidance. Misunderstanding will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

Note: Faculty of Education Students

English Language Requirement
The Quebec Ministry of Education and the Faculty of Education require that all students in teacher education programs demonstrate their proficiency in the language of instruction. To fulfill this obligation all students must successfully pass an English Language Proficiency Test which will be administered in the December examination period of their first term.
Students who fail the Test the first time and who wish to remain in the program will have adequate opportunities to improve the quality of their English language skills. All students who were unsuccessful in their first Test will be required to take the Test a second time the following December. Students who fail the second Test will be placed in unsatisfactory standing and must withdraw from the program.

Language Requirement for Applicants to B.Ed., TESL, TFSL Programs
Applicants to the B.Ed. TESL or TFSL programs are required to pass written and oral language tests in order to fulfill the admission requirements of these two programs.

Advising
Students must consult an academic adviser to obtain advice and approval of their course selection. Students accepted with advanced standing must present their transcripts and letters of admission at the Advising session. For a detailed description of advising and registration procedures, students should refer to two booklets which will be sent to them upon their acceptance.
Welcome to McGill sent by the Admissions, Recruitment and Registrar’s Office, and the “Undergraduate Handbook for New Students”, sent by the Faculty. (This document is also available on the website www.mcgill.ca/edu-sao.)
Advising for returning students takes place in March for the coming academic year. Students should refer to the department handbooks for returning students, available in early March.

Note: Students are reminded that advisors are available to assist them with program planning; however, students are ultimately responsible for their academic record.

3.1 Course Information

Course Load

Undergraduate Education programs leading to certification can only be followed on a full-time basis and part-time study is not normally permitted. Students must take a minimum of twelve (12) credits per term unless the Associate Dean (Student Affairs and Physical Resources) gives them special permission. Special permission must be requested prior to the end of Course Add/Drop period.

Any absence or reduction in course load that may impact the regular progression of a student's program must have written approval by the Associate Dean (Student Affairs and Physical Resources).

For Bachelor of Education students, the normal course load per term is 15 credits. Students whose GPA is above 3.00 may take up to 18 credits per term. Overloads are not allowed in major field experience terms.

Time Limit for Completion of Degrees

Students are expected to complete their program no more than five (5) years after their initial registration for the degree. Students who enter in a freshman year become subject to these regulations one year after their initial registration. Students who exceed these limits must apply to the Faculty for permission to continue.

Course Requirements

All required and complementary courses used to fulfill program requirements must be completed with a grade of C or better. A failure (F, J, KF, WF) in any level of student teaching/field experience places a student in unsatisfactory standing requiring withdrawal from the University. Further details on requirements for student teaching/field experience are listed in section 3.3 "Student Teaching/Field Experience".

Course Registration

Students must register on-line using Minerva, McGill’s Web-based information system. The registration system is unable to verify whether or not Faculty regulations are respected; therefore, if in doubt, students must meet with their adviser within the course change deadlines.

Note: Students must register for both Fall and Winter terms at the same time. Students are required to be registered for Field Experience courses at least two months prior to commencement of the term. Students who are not officially registered by this date risk the possibility of not being placed for their Field Experience assignment. First-year students must be registered for their first-year Field Experience course by the end of August.

Courses offered through Continuing Education and Summer Studies

A wide range of courses, enabling students either to acquire pre-requisite credits or to earn credit towards their degree, is offered through Continuing Education and Summer Studies. For information on course registration, please contact:

Faculty of Education
Office of Continuing Education
3700 McTavish Street, Room 243
Montreal, QC H3A 1Y2
Telephone: (514) 398-7043
Fax: (514) 398-4679
Website: www.mcgill.ca/summer

Courses Taken as Transfer Credit

Students may, with the approval of their advisor and the Student Affairs Office, elect to register at another university for three (3) credits, or in exceptional cases, six (6) credits per term towards their degree. This privilege will be granted if there are valid academic reasons. Only grades of C or better are accepted for transfer credit. Grades of C-, P, S are not acceptable for transfer credit. Please refer to section 5.5 “Transfer Credits”, for further information on Examinations. Students are not permitted to take transfer courses during their graduating term.

Courses taken under Satisfactory/Unsatisfactory Option

Required or Complementary courses cannot be taken under this option. Please consult “Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option” on page 42.

Course Equivalencies

For the Bachelor of Education programs, the following 3-credit courses are considered equivalent:
- EDEC410 Multicultural/Multi-racial Class
- EDER464 Intercultural Education
- EDEE441 First Nations and Inuit Education

(Only one of these courses may be taken for credit.)

Also for the Bachelor of Education programs, the following 3-credit courses are considered equivalent:
- EDE201 Effective Written Communication
- EDEC202 Effective Communication
- EDEC203 Communication in Education

(Only one of these courses may be taken for credit.)

Credit for Elementary Computing ACOM 150, offered by the Faculty of Arts, will not be given if taken concurrently with or after EDPT 200.

Dress Regulations

All students enrolled in teacher certification programs are advised that school boards and individual schools may have regulations concerning acceptable attire. Students are advised to adhere to any such regulations.

Students in Kinesiology and Physical Education programs are required to wear appropriate clothing for activity courses as approved by the instructor(s). Students may also be responsible for providing some items of personal equipment.

3.2 Attendance

The pattern of attendance necessary to satisfy the requirements of course work will vary according to the nature of different subjects and the professors’ approaches to them. A course constitutes a contractual, professional, academic and social obligation between the professor and the student. It is, therefore, the responsibility of the professor to make students aware of the unique requirements of a course and the manner in which they may be fulfilled, and the responsibility of the student to meet these requirements.

Please note that specific attendance policies apply for student teaching/field experience courses offered by the Office of Student Teaching as well as for skill and technique courses offered by the Department of Kinesiology and Physical Education.

Students enrolled in Teacher Education Programs should be aware that Field Experiences will not be interrupted during the University-scheduled Study Break. Refer to the Calendar of Dates.

Students will not be allowed into intensive (6 to 7-week blocked) Education courses after the first 6 hours of class time.

3.3 Student Teaching/Field Experience

Code of Ethics for Student Teachers

A. PREAMBLE - A STUDENT CENTRED PERSPECTIVE

Mandate:

A joint subcommittee consisting of members from two standing committees of the Faculty of Education (Faculty of Education Ethical Review Board and Student Standing) was created to develop
a Code of Ethics for Student Teachers and to examine the ways in which this Code will be communicated to students, faculty members and educational partners.

Goals and Rationale:
The interests of the two Standing Committees of the Faculty of Education in promoting appropriate ethical and professional conduct have led us to develop the following Code of Ethics for Student Teachers. This code seeks to respond to and address the following needs:

- The Code addresses the interdependent duties, rights and responsibilities of student teachers, faculty members and educational partners.
- By addressing common issues and needs, the Code seeks to articulate and make explicit ethical principles that transcend disciplinary boundaries. These principles reflect the fundamental values that are expressed in the duties, rights and responsibilities of all involved in Teacher Education.
- The Code requires a reasonable flexibility in the implementation of common principles. It is designed to help those involved in Teacher Education, as a matter of sound ethical reasoning, to understand and respect the contexts in which they work and accommodate the needs of others.
- The Code seeks to encourage continued reflection and thoughtful response to ethical issues. It does not seek definitive answers to all ethical questions or situations. Rather, it seeks to outline the guiding principles to ethical conduct and to identify major issues which are essential to the development and implementation of this Code.

Context of an Ethics Framework for Student Teachers
The principles and norms guiding ethical conduct are developed within an ever-evolving complex societal context, elements of which include the need for reflective action and ethical principles. Education is premised on a fundamental moral commitment to advance and construct knowledge and to ensure human understanding and respect for individual and collective well being and integrity.

The moral imperative of respect translates into the following ethical principles that assume a student-centred perspective as articulated in the Quebec Curriculum Reform and Competencies outlined for Teacher Education.

B. ACADEMIC FREEDOM AND RESPONSIBILITIES
Teachers enjoy, and should continue to enjoy important freedoms and privileges. However, with freedoms come responsibilities and ethical challenges. This Code of Ethics is in keeping with the philosophy and spirit of the New Directions that are embedded in the document Teacher Training: Orientations, Professional Competencies (Ministère de l’Education 2001) and the reflective practice literature.

The role of the teacher and the contexts of teaching have changed. Thus, new resources (knowledge, skills, attitudes) are required to practice the profession and meet the challenges of teaching and learning in whatever contexts student teachers may find themselves and to engage in professional development individually and with others.

C. ETHICS AND LAW
"Teaching is governed by a legal and regulatory framework" (MEQ p. 120). The law affects and regulates the standards and norms of teaching behaviours in a variety of ways such as respecting privacy, confidentiality, intellectual property, competence. Human rights legislation prohibits discrimination and recognizes equal treatment as fundamental to human dignity and well being. Teachers should respect the spirit of the Canadian Charter of Rights and Freedoms particularly the sections dealing with life, liberty and the security of the person as well as those involving equality and discrimination and the Education Act that sets out the obligations and rights of teachers.

D. GUIDING ETHICAL PRINCIPLES
Ethical Student Teachers should respect the following guiding ethical principles:

1. Respect for Human Dignity
- Speaks and acts towards all students with respect and dignity; and deals judiciously with them at all times, always mindful of their individual rights and personal sensibilities.
- Respects the dignity and responsibilities of cooperating teachers, peers, principals, parents and other professionals or para-professionals within the school, school board and community.

2. Respect for Vulnerable Persons
- Respects and recognizes ethical obligations towards vulnerable persons. This principle recognizes that students are in a vulnerable position and that student teachers are in a privileged relationship with students and their families and will always refrain from exploiting that relationship in any form or manner.

3. Respect for Confidentiality and Privacy
- Respects the confidential nature of all information related to students and their families and will share such information in an appropriate manner only with those directly concerned with their welfare.
- Respects the confidential nature of all information related to all school personnel and will share such information in an appropriate manner.

4. Respect for Justice
- Respects and recognizes the right of individuals to be treated with fairness and equity and the importance of avoiding conflicts of interest.

5. Respect for Safety of Students
- Respects the right of individuals to expect that student teachers will engage in practices that aim to ensure the physical, psychological and emotional safety of students.

6. Respect for Existing Ethical Codes and Professional Standards
- Respects the authority, roles and responsibilities of the cooperating teacher and agrees to adhere to the responsibilities and obligations for teachers as outlined in the Education Act, Faculty and University handbooks as well as all local agreements by host school boards and schools.

7. Balancing Harm and Benefits
- Acknowledges that any potentially harmful practices (e.g., Science Labs and Physical Education Activities) must be balanced with anticipated benefits and conducted in a prudent informed manner.

E. PUTTING PRINCIPLES INTO PRACTICE: VENUES FOR COMMUNICATION
More than one principle may apply to a given case or situation. For meaningful and effective implementation of these principles, they must be widely communicated and applied in appropriate contexts.

The Code of Ethics will be published on the Faculty of Education Web site with links from department Web pages to the Code. The following venues will be used for communicating the Code of Ethics to Students, Faculty and the Educational community:

- A mini course pack will be developed that can be used within courses in the students’ program. This course pack will include examples of ethical moments, dilemmas, challenges and ethical conduct.
- A pamphlet will be created that can be distributed through the Student Affairs Office, course materials and student teaching packages. It can also be distributed at Discover McGill in late August of every year to new students and used by Admissions on various caravan missions and other recruitment purposes.
- Student Teaching Handbook will include the Code of Ethics for Student Teachers.
- Undergraduate Student Handbook will include the Code of Ethics for Student Teachers.
• Education Undergraduate Student Society will participate in communicating the Code of Ethics for Student Teachers to all undergraduate students.
• Orientation Sessions and Discover McGill offer ideal venues for wide distribution of information about the Code of Ethics. Students must be in satisfactory academic standing in order to do any level field experience course. Before students can be placed for their third- and fourth-year field experiences, they must have completed all required courses for these field experiences. Field experience courses can only be done in sequence.

Students are required to be registered on Minerva for Field Experience courses at least two months prior to commencement of the term. Students who are not officially registered by this date risk the possibility of not being placed for their Field Experience assignment. First-year students must be registered for their first-year Field Experience course by the end of August.

Normally, all field experiences must be done in the province of Quebec in English schools. Students in the B.Ed. TESL programs are normally placed in French schools in the province of Quebec. Failure (F, J, KF, WF) in any field experience places a student in unsatisfactory standing, requiring withdrawal from the teacher education program. Therefore, students who fail their field experience will be required to withdraw from the program, as well as from the related professional courses at the time of failure. Students may be allowed to continue with the remaining components of their program until the end of the academic year.

The Director of the Office of Student Teaching has the authority to grant special permission for a student to repeat a field experience. This permission is granted for a student who experiences serious difficulties in a field experience but who has demonstrated some potential to successfully reach the required standard. In such cases the student will be granted a “D” grade and will be given the opportunity to register for the course during the next regularly scheduled session. This privilege will only be granted once in a student’s program. The Director also has the authority to terminate a placement and assign a failing grade. A student may appeal this decision by making a formal application.

Students who transfer from the B.Ed. Kindergarten/Elementary to the B.Ed. Secondary program, or vice-versa, will not be required to repeat the first-year professional seminar or field experience. Normally, all professional seminar and field experience courses will be taken in sequence. Exceptions must be approved by the Associate Dean (Student Affairs and Physical Resources).

Students with teaching experience acquired before entering the Bachelor of Education programs may, under certain circumstances, be granted exemption for the first-year professional seminar and field experience. Requests must be submitted with supporting documentation to the Director of the Office of Student Teaching upon admission to the program.

Students are expected to attend school regularly all day and to be on time every day of the field experience. If, for any reason, students are unable to attend their school, they must immediately notify the Office of Student Teaching at (514) 398-7046 and the cooperating teacher in the school to which they are assigned. Students will be required to make up for absences.

A conscious effort is made to place students within reasonable traveling distance, but this cannot be guaranteed. Therefore, each student must budget a sum of money to travel to and from a school each day of the field experience.

The Office of Student Teaching has sole responsibility for Student Teaching placements. Final decisions regarding field placements are the responsibility of the Director of Student Teaching. Students should be aware that field experiences continue during the University-scheduled Study Break. Refer to the Calendar of Dates. In addition, attendance at scheduled University courses is required regardless of any school breaks during the field experience.

3.4 Grading and Examination

Method of Evaluation
Every instructor shall provide with every course outline a description of the means of evaluation to be used in the course. This includes:
- whether there will be a final examination in the course
- how term work will affect the final mark in the course
- how term work will be distributed through the term
- whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade.

Academic Integrity

The Code of Student Conduct and Disciplinary Procedures includes sections on plagiarism and cheating. The Code is included in the Student Rights and Responsibilities Handbook. Please refer to General Policies and Information, “Academic Integrity” on page 39, for further information.

Incomplete Grades

Instructors may grant an extension for the submission of required term work, if they feel the student’s request is reasonable. In such cases the student is responsible for submitting an application for an extension (forms are available from the Student Affairs Office), along with supporting documents for the instructor’s approval, before the end of the course. The deadline date for which the work is to be completed must be included. In such cases, the instructor will submit a grade of “K” (incomplete). The maximum extension for the submission of grades to the Student Affairs Office is as follows:

Fall Term Courses - April 30
Winter Term Courses - July 30
Summer Term Courses - October 30

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

No additional extensions may be granted without the approval of the Associate Dean, Student Affairs.

Evaluation of Student Teachers – Field Experience Courses

Students are responsible for familiarizing themselves with the objectives, evaluation criteria and forms for each level of Field Experience. Detailed information is included in the Student Teaching Handbook, available on the Web site www.mcgill.ca/ost/handbooks. A Failure in any field experience places a student in unsatisfactory standing, requiring withdrawal from the teacher education program. Students with a grade of D who wish to remain in the program will be required to repeat the Field Experience course during the next normally scheduled session. Students will only be permitted to repeat a Field Experience course once during their program.

Evaluation of Language Proficiency

All students in the Faculty of Education programs must successfully pass an English Language Proficiency Test which will be administered in the December examination period of their first term. Students who fail the Test the first time and who wish to remain in the program will have appropriate opportunities to improve the quality of their English language skills. All students who were unsuccessful in their first Test, will be required to take the Test a second time the following December. Students who fail the second Test will be placed in unsatisfactory standing and must withdraw from the program.

Note: This requirement does not apply to students in the B.Ed. TESL or Certificate in Education for First Nations and Inuit programs.
Supplemental Examinations
Students may apply for permission to write a supplemental examination for certain courses that have formal examinations. The following conditions apply:
• students must be in satisfactory or probationary standing;
• students must have received a final grade of D, J, F, or U in the course;
• students must avail themselves of this privilege at the time of the next supplemental examination period;
• students must have submitted an application to write a supplemental examination before the first Friday in March for Fall courses, and before the second Friday in July for Winter courses and courses that span Fall/Winter.

Students should be aware of the following:
• special permission is required to write supplemental exams totalling more than 7 credits;
• only one supplemental examination is allowed in a course;
• the supplemental result may or may not include the same proportion of class work as did the original grade. Students should consult with the instructor;
• the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA. Supplemental applications are available at the Student Affairs Office. A non-refundable fee for each supplemental paper is payable at the time of application. Students must confirm supplemental examination dates with the faculty offering the course. The deadline to apply for supplemental examinations is March 1 for fall courses and July 15 for winter courses and courses spanning fall/winter.

Reassessment and Rereads
In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. If, after such discussion, students want to have a formal final examination or major paper reread, they must apply in writing to the Student Affairs Office.

Application for rereads must be made by March 31 for courses ending in the Fall term and by September 30 for courses ending in the Winter term. Students are assessed a fee for formal rereads of a final examination or major paper, which will be refunded only if the reread results in an increased letter grade. Requests for rereads in more than one course per term will not be permitted. Grades may be raised, lowered or unchanged as the result of a reread.

Application for rereads in courses in the Faculty of Education are subject to the deadlines, rules and regulations of the relevant faculty.

Any request to have term work re-evaluated must first be made directly to the instructor concerned.

Examinations
Formal final examinations are held during an examination period following the term in which the course is given (fall and winter terms only). The dates of the examination periods are listed in the Calendar of Dates. Students must not make travel arrangements to leave Montreal prior to the scheduled end of any examination period. Not all courses have final examinations; standing in these courses is determined on the basis of term work and class tests. Students should refer to the Examinations section of the Calendar, and the Web site www.mcgill.ca/student-records/exam for information about examinations.

3.5 Academic Standing
Academic standing is based primarily on students’ cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing, which is assessed after the end of term, determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration. Information about academic standing appears on records that are internal to McGill for the information of students and others, such as academic advisers.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students’ fall TGPA. Therefore, academic standings for the fall term are designated as "interim" and should be interpreted as advisory. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing
Students in satisfactory standing may continue in their program.
• New students are admitted to satisfactory standing.
• Students with a CGPA of 2.00 or greater and with a Pass grade in Field Experience courses are in satisfactory standing.

Probationary/Interim Probationary Standing
Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection. Students in probationary standing are not permitted to take any level student teaching/field experience course during that academic year.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.
• Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
• Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher. Although the TGPA requirement will not apply to the summer term.
• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing will be placed in probationary standing if their CGPA is less than 2.00, but if they satisfy relevant conditions specified in their letter of readmission.
• Students who receive a grade of D for any level Field Experience course will be placed in probationary standing.

Readmitted Unsatisfactory Standing
Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing will have their standing changed to readmitted unsatisfactory standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing
Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty, so they may not continue in their program.
Normally supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

- Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.
- Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing if their CGPA falls below 2.50 and their CGPA is below 2.00.
- Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.
- Students who receive a failure (F, J, KF, WF) in any level of student teaching/field experience course are automatically placed in unsatisfactory standing and must withdraw from the program.
- Students in Teacher Education Programs who receive a failure in the English Language Requirement Test for the second time are automatically placed in unsatisfactory standing and are required to withdraw from the program.

Students in either the Concurrent B.Sc./B.Ed. or B.Mus./B.Ed. program who receive an F or J in any Education Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent program. They may, however, contact the Faculties of Science or Music regarding application to their general degrees.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean no later than May 1 for readmission to the fall term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently. Students who were placed in unsatisfactory standing due to a failure in student teaching/field experience course are automatically placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the program.

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

### Incomplete Standings

Standing awaits deferred or supplemental exams. Must clear K's, L's or Supplementals. Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course change period for that term; students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program.

Students whose standing changes to unsatisfactory standing may not continue in the program.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean of Student Affairs as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). (Please see section 2.1.8 “Readmission”.)

Students whose standing is still incomplete by the end of the course change period should immediately consult with the Student Affairs Office.

### 3.6 Graduation Requirements

To be eligible for a B.Ed. or the B.Sc. (Kinesiology) degree, students must fulfill all Faculty and program requirements. This includes completing the minimum credit requirements for the degree as stipulated in the letter of acceptance; obtaining a grade of C or better in all courses except electives; and achieving a minimum cumulative grade point average (CGPA) of 2.00. Students must satisfy the following requirements:

- Students must satisfactorily complete a minimum of 60 credits at McGill University towards the fulfillment of the degree requirements. In addition, students must complete specific components of their program at McGill.

- Students enrolled in Kinesiology and Physical Education programs are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

- Students must complete the degree requirements within five (5) years of admission to a program of 90 credits or more, and within four (4) years of admission to a program of 60 credits. Students in the part-time B.Ed. for Certified Teachers and B.Ed. (Vocational) programs are allowed a maximum of 12 years to complete the requirements for the degree.

**It is the student’s responsibility to ensure that all Faculty requirements are met before graduation.**

Early in their graduating year all students should check with their advisor to make sure that they will meet all program requirements in time for graduation. It is essential that students in their final year indicate the expected date of graduation on Minerva and verify this date on Minerva and on the verification forms. When a final year student changes the expected date of graduation, the student must notify the Student Affairs Office immediately. It is also the student’s responsibility to complete the required waiver forms for teacher certification, and to check that his/her name appears on the graduation list. For further information, contact the Student Affairs Office at (514) 398-7042.

Students are not permitted to take courses outside McGill University during the last term prior to graduation. Students who fail to graduate as expected and who do not re-register must apply to the Associate Dean (Student Affairs and Physical Resources) to graduate. Application to graduate must be made sufficiently in advance of the expected graduation date to allow the Faculty to verify the student’s record.

Information pertaining to the Convocation Ceremonies can be obtained on the McGill Website, www.mcgill.ca/secretariat/convocations.

### 3.7 Undergraduate Program Awards

#### Dean’s Honour List Designation for Graduating Students

The designation Dean’s Honour List may be awarded to graduating students under the following conditions:

- students must be among the top 10% of the Faculty’s graduating students;
- students must have completed a minimum of 60 McGill credits to be considered;
- the designation is based on the cumulative academic record (CGPA).

#### Dean’s Honour List Designation for In-course Students

The designation Dean’s Honour List may be awarded to in-course students under the following conditions:

- students must be among the top 10% of the Faculty’s students;
- students must have completed at least 27 graded credits during the academic year;
- the designation is based on the sessional GPA.

#### Scholarships and Awards

Various scholarships and awards are open to both graduating and in-course students. Full details may be found in the Undergraduate Scholarships and Awards Calendar available on the Web at www.mcgill.ca/courses.
4 Department of Educational and Counselling Psychology

Faculty of Education
3700 McTavish Street, Room 513
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Telephone: (514) 398-4248
Fax: (514) 398-6968
Website: www.education.mcgill.ca/ecp

Chair — Susanne P. Lajoie
Emeritus Professors
Eugéni Pedersen; B.A.(Sir G. Wms.), M.A.(McG.), Ed.D.(Harv.)
Howard A. Stutt; B.A.(Queen’s), B.Ed., M.Ed.(Montr.), F.C.C.T.

Professors
Mark W. Aulls; B.S.(Ball St.), M.Ed.(Ind.), Ed.D.(Georgia)
Jacob A. Burack; B.A.(Col.), M.S., M.Phi., Ph.D.(Yale)
Glen F. Cartwright; B.A.(Sir G. Wms.), M.A.(McG.), Ph.D.(Alta.), F.A.A.S.P., F.C.C.T.
Jeffrey L. Derevensky; B.A.(W. Post), M.A., Ph.D.(McG.)
Janet E. Sladeck; B.A., M.A.(W. Ont.), Ph.D.(Tor.) (joint appoint. with the Centre for University Teaching and Learning)
Carl H. Frederiksen; B.A.(Harv.), M.A., Ph.D.(Ill.)
Susanne P. Lajoie; B.A., M.A.(McG.), Ph.D.(Stan.)
Lynn McAlpine; B.A.(McG.), M.A.(C’dia), Ph.D.(Tor.) (joint appoint. with Centre for University Teaching and Learning)
Bruce M. Shore; B.Sc., M.A.(McG.), Ph.D.(Cal.)
Cynthia B. Weston; B.A. (Georgetown), M.L.S.(S. U.N.Y.), D.Ed.(Wash.) (joint appoint. with Centre for University Teaching and Learning)

Associate Professors
Robert J. Bracewell; B.Sc., M.A.(McM.), Ph.D.(Tor.)
F. Gillian Bramwell; B.A., M.A.(Sask.), Ph.D.(C’dia)
Alain Breuleux; B.Sc., M.Sc., Ph.D.(Montr.)
Kim Cornish; B.Sc., Ph.D.(Lond.)
Janet Donin; B.A.(Tor.), M.A.(III.), Ph.D.(Cal.) (joint appoint. with Integrated Studies in Education)

James P. Hanrahan; B.A., B.Ed.(St. F. X.), M.A.(McG.), Ph.D.(Lond.)
Nancy L. Heath; B.A.(McG.), M.Ed.(Ott.), Ph.D.(Tor.) (Frank Dawson Fellow)
Michael L. Hoover; B.S.(Tulane), M.A., M.Phi., Ph.D.(Col.)
Robert A. Lavers; B.A.(Bishop’s), M.Sc., Ph.D.(McG.)
Evelyn Lusthaus; B.S., M.S., Ph.D.(S. U.N.Y. Buffalo)

David D. McWethy; B.S., M.A.(Mich. St.), Ph.D.(Iowa St.) (joint appoint. with Integrated Studies In Education)
Alonshu Saroyan; B.A.(Pahlavi), M.Ed.(Loy. U. Chic.), Ph.D.(McG.) (joint appoint. with Centre for University Teaching and Learning)

Adina L. Sinacore; B.A.(Montclair St.), M.A., M.Ed., Ph.D.(Col.)
Ingrid E. Sladeczek; B.A., M.S., Ph.D.(Ariz.), A.A.(Maryland)
Renée Stevens; B.A.(U.C.A.L.A.), M.A., Ph.D.(McG.) (PT)
Barbara Wainrib; B.A.(Brooklyn Coll.), M.Sc.(McG.), D.Ed.(Mass.)) (PT)

Assistant Professors
Martin Drapeau; B.A.(UdeM), B.A. Ps.(UQTR), M.Ps.(Laval), Ph.D.(UdeM)
Marjory Fitzpatrick; B.A.(Tor.), M.Ed., Ph.D.(McG.)
Jeeseon Park; B.A., M.A.(Yonsei), Ph.D.(Penn State)
Robert Savage; B.A.(Oxford), M.Sc.(Cambridge), M.Sc., Ph.D.(Lond.)

Ronald Stringer; B.Sc., M.A., Ph.D.(Tor.)

Adjunct Professors
Annie Alaku; B.Ed.(McG.) (Kativik School Board)

H. Don Allen; B.Sc.(McG.), M.S.T.M.(Santa Clara), Ed.M., Ed.D.(Rutgers)
Joyce F. Benenson; B.Sc.(Duke), Ph.D.(Harv.)
Bertha Dangaw; B.A.(Sir G. Wms.), M.Ed.(McG.)
Marcia A. Delcourt; M.A.B., B.Sc.(Bloomus), M.A., Ph.D.(Conn.) (Western Connecticut)
Michael J. Dixon; B.A., B.Sc.(Trent), M.A., Ph.D.(C’dia) (Douglas Hospital)

Peter J. Doehring; B.A.(McG.), M.A., Ph. D. (C’dia) (Douglas Hospital)

Mary Elijjasiapik; B.Ed.(McG.), (Kativik School Board)

Micki Lane; A.B.(U.C. Berkeley), M.A., Ph.D.(U.C.L.A.) (MVM Communications)

Elsa Lo; B.A.(Queen’s), B.A.(Dalhousie), M.A., Ph.D.(McG.)
Henry Markovits; B.Sc.(McG.), M.Sc.(Sussex), Ph.D.(Montr.)
Judith A. MacArthur; B.A. (Sir G. Wms.), M.Ed.(McG.) (Kativik School Board)

Margaret O’Byrne; B.A.(C’dia), M.Ed.(McG.), Ph.D.(Montr.)

Leonard Shenker; B.Sc.(C.N.Y.), Ph.D.(McG.)

Michael Thomas; B.A.(Univ. Coll. Wales), M.A.(Montr.)

Vicki Zack; B.A., M.A., Ph.D. (McG.). (St. George’s School)

Laura Winer, B.A., M.A., Ph.D.(C’dia)

Associate Members
Terry Gandell; B.A, M.Ed., Ph.D.(McG.)
Mary H. Maguire; B.A., B.Ed., M.A.(Montr.), M.Ed.(McG.),
C.J.(Reading)(McG.), Ph.D.(Ariz.)

Joseph Rochford; B.A.(McG.), M.A.(Queen’s), Ph.D.(C’dia)

Latif K. Srivastava; B.Sc., M.Sc.(U of Allahabad, India),

Ph.D.(Jawaharlal U., New Delhi)

Claire-Dominique Walker; B.Sc.(College Calvin, Geneva),

Ph.D.(Salk Institute and U. of Geneva)

Part-time Instructors

Maureen Baron, Dianne Bateman, PennyBlobb, Sam Bruzzese, MikeChicelle, Andrew Chiarella, PhilClavel, ScottConrad,

DawnCruchet, Karen Gazith-Cohen, AndrewHum,

JudyMcBride, SharonMiller, JudithNorton, RosemaryReilly,

Lisa Reisinger, Andre Renaud, Kieron Rogan, Tina Roth,

ChristinaRudd, JoanStafford, Diana Tabatabai, ScottWaugh,

Caroline Zanni-Dansereau

Educational Psychology encompasses a) the theoretical and applied study of learning, cognition, and instruction in a variety of educational settings across ages and domains; b) instructional technology and computers as cognitive tools in learning; c) cognitive and social processes in learning; d) evaluation and enhancement of learning and teaching; e) education of learners with special needs or difficulties; f) relationships of these or related phenomena to issues in human development, especially for children and adolescents; and g) the impact of family and community on children’s learning and development.

At the undergraduate level, the Department of Educational and Counselling Psychology is responsible for the B.A. Educational Psychology Minor Concentration, see page 93, under the Faculty of Arts, and for a variety of undergraduate courses in the areas of learning, cognition and development, inclusive education, gifted education, educational media and computers, and educational measurement and evaluation.

In professional development, the Department offers diploma or certificate programs in Human Relations and Family Life Education, Educational Technology, Inclusive Education, the Psychology and Education of the Gifted, and First Nations and Inuit Student Personnel Services. For further information, refer to the 2004-05 Centre for Continuing Education Calendar.

At the graduate level, it offers a Graduate Certificate in Counselling Applied to Teaching. In addition, there are graduate programs leading to Ph.D., M.A. (thesis and non-thesis) and M.Ed. degrees in instructional psychology, applied cognitive psychology, special populations of learners (special needs and gifted education), counselling psychology, school/applied child psychology, family life education, computer applications in education, adult professional education, and the psychology of gender. For further
information, consult the 2004-05 Graduate and Postdoctoral Studies Calendar.

Special services offered by the Department include a project in gambling and treatment; the McGill-EMSB Gifted Summer School (Explorations); Distance Education courses in Educational Technology, Inclusive Education, and other subjects; the Summer Institutes in Integrated Education and Technology and Education; and the Psychoeducational and Counselling Clinic.

4.1 Programs of Professional Development

The Department of Educational and Counselling Psychology offers programs of professional development in several fields. All such programs are of 30 credits, unless otherwise indicated, and may be completed through part-time study. They are intended to provide an opportunity for teachers and other educators to enhance their existing knowledge and skills or to develop new ones, and thus are normally available only to those who are already certified as teachers.

Detailed information regarding general regulations, admission requirements and program profiles on the following certificates and diplomas may be found in the 2004-05 Centre for Continuing Education Calendar. Further information about these programs may also be obtained from the Department at (514) 398-4248 or from:

Faculty of Education
Office of Continuing Education
3700 McTavish Street, Room 243
Montreal, QC H3A 1Y2
Telephone: (514) 398-7043 Fax: (514) 398-2182
Website: www.education.mcgill.ca/conted

CERTIFICATE PROGRAMS
The Department of Educational and Counselling Psychology currently offers, through the Office of Continuing Education or the Office of Distance Education, 30-credit programs leading to McGill Certificates in the following fields:

Inclusive Education
Educational Technology
Admission to this Certificate is temporarily suspended. Interested students are referred to the M.Ed. (Educational Psychology) Concentration in Computer Applications. Please consult the 2004-05 Graduate and Postdoctoral Studies Calendar. Further information is available from the Program Secretary at (514) 398-4244.

First Nations and Inuit Student Personnel Services
This program is offered by the Department of Educational and Counselling Psychology through the Office of First Nations and Inuit Education. For detailed information about this program, please refer to section 5.2 "Programs for First Nations and Inuit".

DIPLOMA PROGRAMS
The Faculty of Education offers, through the Office of Continuing Education, 30-credit Diploma programs to university graduates. Diploma programs are available in the following fields:

Human Relations and Family Life Education
Further information is available from the Program Secretary at (514) 398-4248.

Psychology and Education of the Gifted
Admission to this Diploma is temporarily suspended. Interested students are referred to the M.Ed. (Educational Psychology) Concentration in the Education of the Gifted.

OTHER PROGRAMS
For the 15-credit Graduate Certificate in Counselling Applied to Teaching and all M.Ed., M.A., and Ph.D. degrees, please consult the 2004-05 Graduate and Postdoctoral Studies Calendar.

5 Department of Integrated Studies in Education

Faculty of Education
3700 McTavish Street, Room 244
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Telephone: (514) 398-4525
Website: www.mcgill.ca/edu-integrated

Undergraduate Programs:
Graduate Programs:
Telephone: (514) 398-4527 Telephone: (514) 398-4531
Fax: (514) 398-4529 Fax: (514) 398-7436

Chair — Anthony Paré
Director of Undergraduate Programs — Jon G. Bradley
Director of Graduate Programs — Steven Jordan and Roy Lyster
Director of Music Education — Joan Russell

Emeritus Professors
Patrick X. Dias; B.A., M.A.(Karachi), B.Ed., Ph.D.(Montr.)
Margaret Gillett; B.A., Dip. Ed.(Syd.), M.A.(Russel Sage), Ed.D.(Col.) (William C. Macdonald Emeritus Professor of Education)
Wayne C. Hall; B.A., M.A.(Bishop’s) (William C. Macdonald Emeritus Professor of Education)
Norman Henchey; B.A., B.ped., Lic.Ped.(Montr.), Ph.D.(McG.)
Jacques J. Rebuffot; B.ès L., L.ès L., D.E.S.(Aix-Marseille), Dip.I.E.P., Dr. 3rd Cy.(Strasbourg)
David G. Smith; B.Ed., M.A.(McG.), Ph.D.(Lon.), F.C.C.T., F.R.S.A.

Professors
David Dillon; B.A.(St. Columban’s), M.S.(W. Texas St. Univ.), Ph.D.(U. of Texas, Austin)
Ratna Ghosh; C.M., B.A.(Calcutta), M.A., Ph.D.(Cal.) F.R.S.C., (William C. Macdonald Professor of Education) (James McGill Chair)
Claudia A. Mitchell; B.A.(Brandon), M.A.(Mt. St. Vincent), Ph.D.(Alta.)
Bernard Shapiro; B.A.(McG.), M.A.T., Ed.D.(Harv.)

Associate Professors
Brian J. Alters; B.Sc., Ph.D.(USC) (William Dawson Scholar)
Helen Amorgi; B.Sc., M.A.(Rhode Island), Ed.D.(Boston)
Ann J. Beer; B.A.(Oxon.), M.A.(Tor.), D.Phil.(Oxon.)
Jan G. Bradley; B.A., M.A.(Sir G.Wms.)
Lynn Butler-Kisber; B.Ed., M.Ed.(McG.), Ed.D.(Harv.)
Janet Donin; B.A.(Tor.), M.A.(Ill.), Ph.D.(Cal.) (joint appoint. with Educational and Counselling Psychology)

Winston G. Emery; B.Ed., M.A.(McG.), Ph.D.(Montr.)
Steven Jordan; B.A.(Kent), M.Sc.(London), Ph.D.(McG.)
Charles Le Maistre; B.Sc., Dip.Ed.(Exeter), M.Ed., Ph.D.(McG.)
Denise Lussier; B.A.(Coll. Jesus Marie de Sillery), M.Ed.(Boston), M.A., Ph.D.(Laval)
Charles S. Lusthaus; B.S., M.S.(Canisius), Ph.D.(S.U.N.Y.)
Roy Lyster; B.A.(Regina), M.A.(Paris VII), B.Ed., Ed.D., Ph.D.(Tor.)
Kevin McDonough; B.A., B.Ed., M.Ed.(Alta.), Ph.D.(III.)
Christopher S. Milligan; B.A,(Sir G.Wms.), M.Ed.(McG.), Ed.D.(Tor.)
Ronald Morris; B.Ed., M.A., Ph.D.(McG.)

Professor
Anthony Paré; B.Ed, M.Ed., Ph.D.(McG.)
Howard N. Riggs; B.Ed.(Alta.), M.A., Ph.D.(Minn.)
Phyllis Shapiro; Dip.Ed.(McG.), B.A.(C’dia), M.Ed., D.Ed.(Boston)
Carolyn E. Turner; B.A.(Ariz.), M.Ed., Ph.D.(McG.)
Saa Pitsiulak; B.Ed.(McG.)
J. Kenneth Robertson; B.Ed., M.A.(McG.), Ph.D.(Alta.)
Patrick J. Ryan; B.Sc.(Loyola), B.A.(C'dia), M.Ed.(McG.)
Howard Simpkin; B.Sc., Dip.Ed.(McG.), M.Sc.Ed.(SUNY)
Harold H. Smithman; B.A.(C'dia), M.A.(McG.), Ed.D.(UCLA)
Clarence Tomatuluk; M.Ed.(McG.)
Gilbert Whiteduck; B.Ed.(Québec), M.Ed.(Carl.)
Doris Winkler; B.A.(Sir G.Wms.), M.Ed.(Harv.)

The Department of Integrated Studies in Education, created September 2001, incorporates the programs and staff previously associated with the Departments of Culture and Values in Education, Educational Studies, and Second Language Education.

The Department offers four-year programs for CEGEP graduates and five-year programs for out-of-province students leading to a B.Ed. Degree. The following programs are offered:

**Bachelor of Education: Secondary Program (120 credits)**
The aim of the B.Ed. Secondary is to prepare strong beginning teachers for the secondary school level. This integrated 120-credit program (150 credits for out-of-province students) consists of academic studies to provide background depth in subjects taught in the secondary school, professional studies centred on school-based practicum, supported by studies in pedagogy, curriculum and educational foundations. Students choose their teaching profiles from: English, Mathematics, Science and Technology, Social Sciences (History and Citizenship, and one of: Geography, Catholic Education, Protestant Education, or Moral Education).

**Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) program (143/144 credits)**
This program provides students with the opportunity to obtain a Bachelor of Music degree and a Bachelor of Education degree concurrently. The two degrees are awarded during the same consecutive period.

**Concurrent Bachelor of Science / Bachelor of Education (General Secondary) (135 credits)**
This program provides students with the opportunity to attain a Bachelor of Science degree and a Bachelor of Education degree concurrently. The two degrees are awarded during the same consecutive period.

**Bachelor of Education (Kindergarten and Elementary) (120 credits)**
This program applies to students admitted in September 2003. This program leads to certification to teach children between the ages of 5 and 11 years. It consists of four years of full-time study requiring the completion of 120 credits (150 credits or five years for out-of-province students), of academic and professional courses and practice.

Options within the B.Ed. (Kindergarten and Elementary) program are:

- Jewish Studies
- Programme intensif de français *

**Bachelor of Education In Teaching French as a Second Language (120 credits)**
This program applies to students admitted prior to September 2003. The four-year B.Ed. in Teaching French as a Second Language prepares specialist teachers to teach French as a second language in regular and immersion programs, at both the elementary and the secondary levels. This integrated 120-credit program (150 credits for out-of-province students) consists of academic and professional components. The academic components provide students with opportunities to study language and language learning from linguistic, social, cultural and psychological perspectives and to concentrate on one subject area taught at the secondary level or to familiarize them with at least two subjects taught at the elementary level. The professional components revolve around
school-based field experiences which are supported by studies in pedagogy and educational foundations.

**Baccalauréat en enseignement du français langue seconde (120 credits)**

This four-year program prepares specialist teachers to teach French as a second language, in Core French programs, immersion programs, intensive programs and class d'accueil, at both the elementary and the secondary levels. Offered by the Department of Integrated Studies in Education jointly with the Université de Montréal.

**Bachelor of Education in Teaching English as a Second Language (120/121 credits)**

This program prepares specialist teachers to teach English as a second language at both the elementary level (including regular and intensive ESL) and the secondary level (including regular ESL and ESLA – English Second Language Arts). This integrated 120-credit program (150 credits for out-of-province students) consists of academic and professional components. The academic components provide students with opportunities to develop a broad liberal education and to study language and language learning from linguistic, social, cultural and psychological perspectives. The professional components revolve around school-based field experiences which are supported by studies in pedagogy and educational foundations.

**GRADUATE PROGRAMS**

At the Graduate level, the Department offers M.A. programs with thesis and non-thesis options in the following areas: Culture and Values in Education, Educational Studies (Curriculum), Educational Studies (Leadership), and Second Language Education.

**IN-SERVICE PROGRAMS**

The Department of Integrated Studies in Education offers three in-service programs:

- A 90-credit Bachelor of Education (Vocational) program offered through the Centre for Continuing Education for practising vocational teachers possessing a provisional teaching authorization in a vocational area. (This program will not accept students in 2004-2005.)

- A 30-credit Certificate in Second Language Teaching (TESL) normally offered through Distance Education. (This program will not accept students in 2004-05.)

- A Certificate in Aboriginal Education for Certified Teachers through the Office of First Nations and Inuit Education.

The Office of First Nations and Inuit Education also offers a Certificate in Education for First Nations and Inuit, a Certificate in Aboriginal Literacy Education, and a Certificate in Middle School Education in Aboriginal Communities.

The Department is also involved in a variety of in-service activities with administrators, teachers, consultants and other educational leaders through the Centre for Educational Leadership (CEL).

### 5.1 Bachelor of Education Programs

#### 5.1.1 Bachelor of Education Secondary Program

<table>
<thead>
<tr>
<th>ACADEMIC COMPONENTS</th>
<th>54</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sequence of courses normally to be taken in the Faculties of Arts, Science and Education showing a sequence of levels and totalling 54 credits, including required and complementary courses, and at least 36 credits in one “teachable” academic subject.</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>PROFESSIONAL COMPONENTS</th>
<th>60</th>
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<tbody>
<tr>
<td>PROFESSIONAL SEMINARS</td>
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</table>

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>EDEC201</td>
<td>First Year Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EDEC306</td>
<td>Third Year Professional Seminar</td>
<td>3</td>
</tr>
<tr>
<td>EDEC404</td>
<td>Fourth Year Professional Seminar</td>
<td>3</td>
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</table>

#### FIELD EXPERIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EDFE200</td>
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<td>EDFE254</td>
<td>Second Year Field Experience</td>
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<td>EDFE351</td>
<td>Third Year Field Experience</td>
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<td>EDFE451</td>
<td>Fourth Year Field Experience</td>
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**FOUNDATION COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDEC215</td>
<td>English Language Requirement</td>
<td>0</td>
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<tr>
<td>EDEC247</td>
<td>Policy Issues in Quebec Education</td>
<td>3</td>
</tr>
<tr>
<td>EDP300</td>
<td>Educational Psychology</td>
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</table>

**Complementary Course**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDER400</td>
<td>Philosophical Foundations of Education</td>
<td>3</td>
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<tr>
<td>EDER398</td>
<td>Philosophy of Catholic Education</td>
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#### PEDAGOGY COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>EDP1309</td>
<td>Exceptional Students</td>
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<td>EDP1341</td>
<td>Instruction in Inclusive Schools</td>
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**Required Courses**

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDEC247</td>
<td>English Language Requirement</td>
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<tr>
<td>EDEC334</td>
<td>Teaching Secondary Social Studies</td>
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<tr>
<td>EDEC335</td>
<td>Teaching Secondary Science</td>
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<tr>
<td>EDEC338</td>
<td>Secondary School - Mathematics</td>
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<tr>
<td>EDER340</td>
<td>Moral Education Curriculum and Instruction</td>
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</tr>
<tr>
<td>EDER372</td>
<td>Human and Religious Values in Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>EDER392</td>
<td>Guiding Religious Response - Secondary</td>
<td>3</td>
</tr>
<tr>
<td>EDES353</td>
<td>Secondary School Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>EDES361</td>
<td>Secondary School English</td>
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<tr>
<td>EDES370</td>
<td>Teaching General Science</td>
<td>3</td>
</tr>
<tr>
<td>EDES389</td>
<td>Issues in Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>EDES461</td>
<td>Secondary School English</td>
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**PEDAGOGICAL SUPPORT COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC201</td>
<td>First Year Professional Seminar</td>
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<td>EDEC204</td>
<td>Fourth Year Professional Seminar</td>
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#### PEDAGOGICAL SUPPORT COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDEC201</td>
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<tr>
<td>EDEC204</td>
<td>Fourth Year Professional Seminar</td>
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<tr>
<td>EDEC306</td>
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</tr>
<tr>
<td>EDEC404</td>
<td>Fourth Year Professional Seminar</td>
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</tbody>
</table>

**TOTAL CREDITS**

120
Application to the Bachelor of Education in Music may be for advanced standing in the Bachelor of Education in Music program. Those who have completed a Bachelor of Music degree may apply for advanced standing in the Concurrent program. Students who have partially completed a Bachelor of Music program are eligible to apply for transfer into the Concurrent program. Students who have already enrolled at McGill in the Bachelor of Music may apply for a transfer into the Concurrent program. Students who opt for the Bachelor of Education in Music would be required to complete 61music credits, 6 elective credits, and 53/54 professional credits from the program given below, with the following notes:

1. These credits are required for the Bachelor of Music only.
2. These credits are required for the Bachelor of Music, complementing the Bachelor of Education in Music.

For prerequisite requirements for the Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) program see section 7.1 of the Faculty of Music announcement in this calendar.

Admissions, Recruitment and Registrar’s Office
McGill University
845 Sherbrooke Street West
Montreal, QC H3A 2T5
Telephone: (514) 398-3910 Fax: (514) 398-4193

Program details are available from:
Professor Joan Russell, Program Director
Department of Integrated Studies in Education
Telephone: (514) 398-2447.

The components of the 143/144-credit Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) are as follows:

- 53/54 professional credits,
- 78 music credits,
- 12 elective credits.

Students who wish to complete only the Bachelor of Education in Music have the option of doing so after the successful completion of the first two years of the concurrent program and MUIN 321 concentration exam or equivalent. Students who decide to complete only a Bachelor of Music may transfer at any time into the Bachelor of Music, Faculty Program.

Students who opt for the Bachelor of Education in Music would be required to complete 61 music credits, 6 elective credits, and 53/54 professional credits from the program given below, with the following notes:

1. These credits are required for the Bachelor of Music only.
2. These credits are required for the Bachelor of Music, complementing the Bachelor of Education in Music.

For prerequisite requirements for the Concurrent Bachelor of Education in Music/Bachelor of Music (Music Education) program see section 7.1 of the Faculty of Music announcement in this calendar.

ACADEMIC COMPONENTS

<table>
<thead>
<tr>
<th>Credits</th>
<th>THEORY COURSES (REQUIRED)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MUTH210</td>
</tr>
<tr>
<td></td>
<td>MUTH211</td>
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<tr>
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<td>MUTH310</td>
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<td></td>
<td>MUTH311</td>
</tr>
<tr>
<td></td>
<td>MUTH461</td>
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</table>

MUSICIANSHIP COURSES (REQUIRED)

<table>
<thead>
<tr>
<th>Credits</th>
<th>MUSP229</th>
<th>Musicianship 3</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>MUSP31</td>
<td>Musicianship 4</td>
</tr>
<tr>
<td></td>
<td>MUSP329</td>
<td>Musicianship 5</td>
</tr>
<tr>
<td></td>
<td>MUSP331</td>
<td>Musicianship 6</td>
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PERFORMANCE COURSES (REQUIRED)

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<thead>
<tr>
<th>Credits</th>
<th>Practical Concentration</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Basic Ensemble Training</td>
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</table>

COMPLEMENTARY MUSIC HISTORY COURSES

<table>
<thead>
<tr>
<th>Credits</th>
<th>MUHL389</th>
<th>Orchestral Literature</th>
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<tbody>
<tr>
<td></td>
<td>MUHL397</td>
<td>Choral Literature after 1750</td>
</tr>
<tr>
<td></td>
<td>MUHL398</td>
<td>Wind Ensemble Literature after 1750</td>
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MUSIC EDUCATION COURSES (REQUIRED)

<table>
<thead>
<tr>
<th>Credits</th>
<th>MUIT202</th>
<th>Woodwind Techniques</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>MUIT203</td>
<td>Brass Techniques</td>
</tr>
<tr>
<td></td>
<td>MUIT204</td>
<td>Percussion Techniques</td>
</tr>
<tr>
<td></td>
<td>MUCT235</td>
<td>Vocal Techniques</td>
</tr>
<tr>
<td></td>
<td>MUGT215</td>
<td>Basic Conducting Techniques</td>
</tr>
<tr>
<td></td>
<td>MUGT356</td>
<td>Music for Children 1: Philosophy and Techniques</td>
</tr>
<tr>
<td></td>
<td>MUGT357</td>
<td>Music for Children 2: Philosophy and Techniques (see Note 2 above)</td>
</tr>
</tbody>
</table>

Note 1 above)

Note 2 above)
This program has been designed to provide students with the opportunity to attain a Bachelor of Science degree and a Bachelor of Education degree after 135 credits of study (165 credits for students who have not completed the basic sciences, see Note below).

To be admitted to the Concurrent program, students must satisfy the regular admission requirements of the Faculties of Science and Education. Normally, students will be admitted to both components of the Concurrent program simultaneously; however, it is possible for students in a B.Sc. or B.Ed. program to transfer into the Concurrent program at any time. Students in the Concurrent program may change to either a B.Sc. or a B.Ed., but may not subsequently switch back to the Concurrent program.

Note: Science 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 to students who obtain satisfactory results in International Baccalaureate, French Baccalaureate, Advanced Levels, Advanced Placement tests, or the Diploma of Collegial Studies (DCS). Quebec students with a DCS in Science are granted 30 credits advanced standing and will have normally completed the equivalent of, and are therefore exempt from, the basic science courses in biology, chemistry, mathematics, and physics. Students with satisfactory results in International Baccalaureate, French Baccalaureate and Advanced Levels, and Advanced Placement tests may be exempt from some or all of the basic science courses.

Students in the Concurrent B.Sc./B.Ed. who receive an F or J in any Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program. However, they may apply to transfer to the conventional B.Sc. program as outlined in Faculty of Science, “Science for Teachers” on page 347.

The two degrees are awarded during the same convocation period.

The two components of the Concurrent Program are the B.Ed. Secondary Program and one of the B.Sc. programs described in the Faculty of Science, “Science for Teachers” on page 347:

- biology, with chemistry
- biology, with physics
- chemistry, with biology
- chemistry, with physics
- physics, with biology
- physics, with chemistry
- mathematics

The requirements for the B.Ed. component are as described in the “Bachelor of Education Secondary Program” on page 187, with the following exceptions:

A. Students in the Concurrent B.Sc./B.Ed. program must choose their 54 academic credits from the lists of required and complementary courses in their respective B.Sc. Major or Major Concentration with a Minor.

B. Students in the Concurrent B.Sc./B.Ed. program must take EDEC402 Media, Technology and Education.

### 5.1.4 Bachelor of Education Kindergarten and Elementary Program

The four-year program begins with the foundation courses in the first term and has a higher concentration of academic courses in the first two years. The professional courses and practicum have a heavier weight in the final two years. The practicum consists of school-based experiences and a series of professional seminars that provide an opportunity for students to reflect on that experience in a systematic way and with the guidance of a tutor.

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC COMPONENT</td>
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</tbody>
</table>

### 5.1.3 Concurrent Bachelor of Science (Major or Major Concentration with a Minor for Teachers) and Bachelor of Education Secondary Program

Coordinator, Faculty of Education — Professor Marc Schwartz
Coordinator, Faculty of Science — Professor Richard Harris

Students entering the Concurrent B.Sc./B.Ed. Program in September 2004 will follow the program described below. Students registered in the Concurrent B.Sc./B.Ed. Program before September 2004 should refer to the program described in the 2003-04 Undergraduate Programs Calendar.
### Required Courses
- EDEC203 Communication in Education 3
- EDEE230 Elementary School Mathematics 3
- EDEE270 Elementary School Science 3
- EDEE280 Geography, History and Citizenship Education 3

### Complementary Courses
- a) one of:
  - EDER209 Search for Authenticity
  - EDER309 The Religious Quest
  - EDER394 Philosophy of God
  - EDER395 Moral Values and Human Action
  - EDER473 Living with Insight
  - EDER494 Ethics in Practice
- b) 18 credits from one of these areas:
  - 9 credits, 3 credits from each of any three areas not chosen in b) above.

### Professional Component
- 72 credits
  - **PRACTICUM**: 24 credits
    - Field Experiences
      - EDFE200 First Year Field Experience 2
      - EDFE253 Second Field Experience (K/Elem) 4
      - EDFE303 Third Field Experience (K/Elem) 7
      - EDFE406 Fourth Field Experience (K/Elem) 7
  - **Professional Seminars**
    - EDEC201 First Year Professional Seminar 1
    - EDEC405 Fourth Year Professional Seminar (K/Elem) 3
  - **Foundations**: 15 credits
    - Required Courses
      - EDEC215 English Language Requirement 0
      - EDEC247 Policy Issues in Quebec Education 3
      - EDPI309 Exceptional Students 3
      - EDPI341 Instruction in Inclusive Schools 3
      - EDPE300 Educational Psychology 3
    - Complementary Courses
      - one of:
        - EDER398 Philosophy of Catholic Education
        - EDER400 Philosophical Foundations of Education
  - **Pedagogy**: 22 credits
    - Required Courses
      - EDEE223 Language Arts Part 1 3
      - EDEE250 The Kindergarten Classroom 2
      - EDEE275 Science Teaching 2
      - EDEE282 Teaching Social Sciences 2
      - EDEE332 Teaching Mathematics 1
      - EDEE350 Integrating the Curriculum 2
    - Complementary Courses
      - one of:
        - EDER360 MRE in the K/Elem. Curriculum
        - EDER375 Catholic Religious Education (K/Elem)
      - 6 additional credits of methodology courses chosen from Plastic Arts, Drama, Music, Physical Education, L2 teaching, at least one course must be from Plastic Arts, Drama, Music
  - **Pedagogical Support**: 11 credits
    - Required Courses
      - EDEE352 Classroom Practices 2
      - EDEE355 Classroom-based Evaluation 3
    - Complementary Courses
      - EDEC402 Media, Technology and Education 3

For students with a background in computers or other media applications in education, the following courses may substitute for the above:
- EDPT341 Instructional Programming 1
- EDPT420 Media Literacy for Education 1
- one 3-credit course in Multicultural Education from the following list:
  - EDER464 Intercultural Education
  - EDEE441 First Nations and Inuit Education
  - EDEC410 Multi-cultural/Multi-racial Class

### Elective Courses
- 6 credits

### Total Credits
- 120

---

**B.Ed. Kindergarten and Elementary Program – Four-Year Program Overview**

<table>
<thead>
<tr>
<th>Year 1 – Fall Term</th>
<th>Year 1 – Winter Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC201 First Year Professional Seminar 1</td>
<td>EDEC280 Geography, History and Citizenship Education 3</td>
</tr>
<tr>
<td>EDEC203 Communication in Education 3</td>
<td>Academics 12</td>
</tr>
<tr>
<td>EDEC215 English Language Requirement 0</td>
<td></td>
</tr>
<tr>
<td>EDEC247 Policy Issues in Quebec Education 3</td>
<td></td>
</tr>
<tr>
<td>EDEE223 Language Arts Part 1 3</td>
<td></td>
</tr>
<tr>
<td>EDEE250 The Kindergarten Classroom 2</td>
<td></td>
</tr>
<tr>
<td>EDEE275 Science Teaching 2</td>
<td></td>
</tr>
<tr>
<td>EDEE332 Teaching Mathematics 1</td>
<td></td>
</tr>
<tr>
<td>EDEE350 Integrating the Curriculum 2</td>
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</tr>
<tr>
<td>EDEE352 Classroom Practices 2</td>
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</tr>
<tr>
<td>EDEE355 Classroom-based Evaluation 3</td>
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</tr>
<tr>
<td>EDEE360 MRE in the K/Elem. Curriculum 1</td>
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</tr>
<tr>
<td>EDEE375 Catholic Religious Education (K/Elem) 1</td>
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</tr>
<tr>
<td>6 additional credits of methodology courses chosen from Plastic Arts, Drama, Music, Physical Education, L2 teaching, at least one course must be from Plastic Arts, Drama, Music</td>
<td></td>
</tr>
<tr>
<td>EDEC402 Media, Technology and Education 3</td>
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<td>EDEC410 Multi-cultural/Multi-racial Class 3</td>
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<td>EDER464 Intercultural Education 3</td>
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<td>EDEE441 First Nations and Inuit Education 3</td>
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<td>EDEC410 Multi-cultural/Multi-racial Class 3</td>
<td></td>
</tr>
<tr>
<td>EDEE441 First Nations and Inuit Education 3</td>
<td></td>
</tr>
<tr>
<td>EDEC410 Multi-cultural/Multi-racial Class 3</td>
<td></td>
</tr>
</tbody>
</table>

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**Year 2 – Fall Term**
- EDEE230 Elementary School Mathematics 3
- EDEE270 Elementary School Science 3
- EDEE275 Science Teaching 2
- Academics 6

**Year 2 – Winter Term**
- EDEC201 First Year Professional Seminar 1
- EDEC203 Communication in Education 3
- EDEC215 English Language Requirement 0
- EDEC247 Policy Issues in Quebec Education 3
- EDEE223 Language Arts Part 1 3
- EDEE250 The Kindergarten Classroom 2
- EDEE282 Teaching Social Sciences 2
- EDEE332 Teaching Mathematics 1 3
- EDEE350 Integrating the Curriculum 2
- EDEE352 Classroom Practices 2
- EDEE355 Classroom-based Evaluation 3
- EDEE360 MRE in the K/Elem. Curriculum 1
- EDEE375 Catholic Religious Education (K/Elem) 1
- 6 additional credits of methodology courses chosen from Plastic Arts, Drama, Music, Physical Education, L2 teaching, at least one course must be from Plastic Arts, Drama, Music
- EDEC402 Media, Technology and Education 3
- Academics 12

**Year 3 – Fall Term**
- EDEC350 Integrating the Curriculum 2
- EDEC352 Classroom Practices 2
- EDEC355 Classroom-based Evaluation 3
- EDEE303 Third Field Experience (K/Elem) 7
- ELECTIVE COURSES 6

**Year 3 – Winter Term**
- EDEC402 Media, Technology and Education 3
- Academics 12

**Year 4 – Fall Term**
- EDEC247 Policy Issues in Quebec Education 3
- EDP1341 Instruction in Inclusive Schools 3
- Methodology - first course 3
- Electives 6

**Year 4 – Winter Term**
- EDEC405 Fourth Year Professional Seminar 3
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDER360 MRE in the K/Elem. Curriculum</td>
<td>2</td>
</tr>
<tr>
<td>or EDER375 Catholic Religious Education (K/Elem)</td>
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</tr>
<tr>
<td>EDFE406 Fourth Field Experience (K/Elem)</td>
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</tr>
<tr>
<td>Methodology - second course</td>
<td>3</td>
</tr>
</tbody>
</table>

5.1.5 Programme intensif de français Elementary Option

This option is currently under revision. Admission is suspended for 2004-05.

5.1.6 Bachelor of Education Kindergarten and Elementary Program (Jewish/Studies Option)

Students who have already been accepted into the B.Ed. (Kindergarten/Elementary) program may apply for the Jewish Studies Option. This Option allows qualified candidates an opportunity to select specific Jewish Studies courses in place of selected education electives and academic courses. Additionally, students will have an opportunity to have one of their major field placements in a Jewish school environment. Students are encouraged to acquire a strong general background in Bible, Jewish prayer, Jewish Holidays and Jewish history prior to registering in the program.

Students who wish to follow this option should contact:
Professor Eric Caplan
Department of Integrated Studies in Education
Faculty of Education
Telephone: (514) 398-6544
E-mail: eric.caplan@mcgill.ca

5.1.7 Baccalauréat en enseignement du français langue seconde

This program is offered jointly by the University of Montreal and McGill University. Students will be admitted into, and registered at, one of the two as their “home” university. Courses will be offered at the University of Montreal during the Fall Term and at McGill during the Winter Term.

The Baccalauréat en enseignement du français langue seconde (B.Ed. in Teaching French as a Second Language) is a four-year program. It prepares specialist teachers to teach French as a second language, in Core French programs, immersion programs, intensive programs and classes d’accueil, at both the elementary and the secondary levels.

This integrated 120-credit program (150 credits for out-of-province students) includes studies in language and language learning from linguistic, literary, cultural and psychological perspectives accompanied by field experiences. The academic components aim to increase students’ general competence mostly in literature, linguistics. In addition complementary courses combine academic content with methodology. The professional components allow students to learn how to teach subjects taught at the elementary or secondary levels, how to teach the different programs offered in FSL and how to intervene with the various clientele. They revolve around school-based field experiences which are supported by studies in pedagogy and educational foundations.

<table>
<thead>
<tr>
<th>ACADEMIC COMPONENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>51</td>
</tr>
<tr>
<td>EDSL264 Phonetique et phonologie</td>
<td>3</td>
</tr>
<tr>
<td>EDSL265 Acquisition-apprentissage-langues secondes</td>
<td>3</td>
</tr>
<tr>
<td>EDSL266 Mathématiques au primaire</td>
<td>3</td>
</tr>
<tr>
<td>EDSL267 Didactique des arts plastiques 1</td>
<td>3</td>
</tr>
<tr>
<td>EDSL270 Morphologie et syntaxe</td>
<td>3</td>
</tr>
<tr>
<td>EDSL271 Lexique et sémantique</td>
<td>3</td>
</tr>
<tr>
<td>EDSL341 Littérature jeunesse en FLS</td>
<td>3</td>
</tr>
<tr>
<td>EDSL491 Didactique des mathématiques en langues secondes</td>
<td>3</td>
</tr>
<tr>
<td>EDSL492 Didactique des sciences-technologies</td>
<td>3</td>
</tr>
<tr>
<td>FREN251 Littérature française depuis 1800</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses

3 credits, one of:

EDER464 Intercultural Education

LING350 Linguistic Aspects of Bilingualism

3 credits, one of:

FREN362 La littérature du 17e siècle 1
FREN382 Le roman québécois 2
FREN487 L’essai québécois

9 credits to increase the student’s proficiency level in the teaching of French, the following courses (or equivalent courses if not available):

FREN239 Stylistique comparée
FREN245 Grammaire avancée
FREN334 Méthodes d’analyse des textes littéraires

6 credits of study of a second or third language, to be chosen from university offerings, so that students experience the learning processes that take place in the learning of a language.

ACADEMIC OR PROFESSIONAL COMPONENT

<table>
<thead>
<tr>
<th>Complementary Course</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSL493 Sciences humaines au primaire (Academic Component)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL494 Didactique de l’univers social et TIC (Academic Component)</td>
<td>3</td>
</tr>
<tr>
<td>EDSL495 Recherche-résolution de problèmes (Professional Component: Pedagogical Support)</td>
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</tr>
<tr>
<td>EDSL485 Laboratoire de formation professionelle (Professional Component: Pedagogical Support)</td>
<td>1</td>
</tr>
<tr>
<td>EDSL497 Problématique en éducation préscolaire (Professional Component: Foundation)</td>
<td>1</td>
</tr>
</tbody>
</table>

PROFESSIONAL COMPONENTS

<table>
<thead>
<tr>
<th>FOUNDATION COURSES</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>EDSL262 Système éducatif - profession enseignante</td>
<td>3</td>
</tr>
<tr>
<td>EDSL269 École et environnement social</td>
<td>3</td>
</tr>
<tr>
<td>EDSL393 Adolescent et expérience scolaire</td>
<td>3</td>
</tr>
<tr>
<td>Complementary Course</td>
<td>3</td>
</tr>
<tr>
<td>one of: EDER398 Philosophy of Catholic Education</td>
<td>3</td>
</tr>
<tr>
<td>EDER400 Philosophical Foundations of Education</td>
<td>12</td>
</tr>
</tbody>
</table>

Required Courses

| EDSL402 Evaluation en français langue seconde                          | 3 |
| EDSL444 Laboratoire d’enseignement en français langue seconde         | 3 |
| Complementary Courses                                                | 3 |
| one of: EDSL391 Didactique du français en accueil                      | 3 |
| EDSL472 Enseignement du français langue secondaire                     | 3 |

McGill University, Undergraduate Programs 2004-2005 191
EDSL345  Enseignement du FLS-immersion
EDSL498  Didactique du français en accueil 2

**PEDAGOGICAL SUPPORT COURSES**

**Required Courses** 15
EDPI309  Exceptional Students 3
EDSL263  Apprentissage et développement 3
EDSL268  Intégration des TIC 3
EDSL301  Étude de la langue 3
EDSL392  Gestion de classe en langues secondes 3

**ELECTIVES** 3

**TOTAL CREDITS** 120

**5.1.8 Bachelor of Education in Teaching English as a Second Language**

The B.Ed. in Teaching English as a Second Language (TESL) program prepares specialists to teach English as a second language (ESL) at both the elementary school and secondary school levels.

This integrated 120/121-credit program (150/151 credits for out-of-province students) includes studies in language and language learning from linguistic, literary, social, cultural, and psychological perspectives, accompanied by field experiences. The academic components aim to increase students’ academic knowledge, with emphasis on language, linguistics and literature. Complementary courses address both academic and professional concerns. The professional components revolve around school-based field experiences which are supported by studies in pedagogy and educational foundations. These prepare students to teach ESL at both the elementary school level (including regular and intensive ESL) and the secondary school level (including regular ESL and ESLA - English Second Language Arts), and provide a base for adult and other ESL teaching.

**ACADEMIC COMPONENTS**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>EDSL300  Foundations of L2 Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSL304  Sociolinguistics and L2 Education</td>
<td>3</td>
</tr>
<tr>
<td>EDSL305  L2 Learning: Classroom Settings</td>
<td>3</td>
</tr>
<tr>
<td>EDSL350  Essentials of English Grammar</td>
<td>3</td>
</tr>
<tr>
<td>LING200  Introduction to the Study of Language</td>
<td>3</td>
</tr>
<tr>
<td>LING350  Linguistic Aspects of Bilingualism</td>
<td>3</td>
</tr>
</tbody>
</table>

3 credits, one of:
EDEE325  Children's Literature
EDES366  Literature for Young Adults

6 - 12 credits from courses with the prefix ENGL:
3 credits, one of:
Department of English
12 - 18 credits must be taken from the following areas:
Foreign Languages (0-12 credits)
Academic courses (0-18 credits)

**PROFESSIONAL COMPONENTS**

<table>
<thead>
<tr>
<th>Professional Seminars</th>
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</tr>
</thead>
<tbody>
<tr>
<td>EDSL210  First Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EDSL255  Second Professional Seminar</td>
<td>2</td>
</tr>
<tr>
<td>EDSL310  Third Professional Seminar</td>
<td>3</td>
</tr>
<tr>
<td>EDSL415  Fourth Professional Seminar</td>
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**FIELD EXPERIENCES**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
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<tr>
<td>EDFE209  First Year Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>EDFE259  Second Year Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>EDFE359  Third Year Field Experience (ESL/FSL)</td>
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<tr>
<td>EDFE459  Fourth Year Field Experience (ESL/FSL)</td>
<td>7</td>
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**FOUNDATION COURSES**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
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<tbody>
<tr>
<td>EDEC207  Policy Issues in Quebec Education</td>
<td>3</td>
</tr>
<tr>
<td>EDPE300  Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Course**

one of:
EDER398  Philosophy of Catholic Education
EDER400  Philosophical Foundations of Education

**PEDAGOGY COURSES**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSL330  L2 Literacy Development</td>
<td>3</td>
</tr>
<tr>
<td>EDSL412  Measurement and Evaluation in TESL</td>
<td>3</td>
</tr>
<tr>
<td>EDSL447  Third-Year Methods in TESL</td>
<td>3</td>
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<tr>
<td>EDSL458  Fourth-Year Methods in TESL</td>
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</table>

**PEDAGOGICAL SUPPORT COURSES** 20-21

<table>
<thead>
<tr>
<th>Required Course</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDSL311  Pedagogical Grammar</td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDITS** 120 - 121

**5.2 Programs for First Nations and Inuit**

The following programs are offered in Aboriginal communities for Aboriginal teachers through the:

Faculty of Education
Office of First Nations and Inuit Education (OFNIE)
3700 McTavish Street, Room 614
Montreal, Quebec H3A 1Y2

Telephone: (514) 398-4533  Fax: (514) 398-2553
Website: www.education.mcgill.ca/ofnie

**5.2.1 Certificate in Education for First Nations and Inuit**

(This program replaces the former Certificate in Native and Northern Education.)

This 60-credit program provides an opportunity for Algonquin, Cree, Inuit, Mi’kmaq and Mohawk people to become qualified as teachers. It is offered on a part-time basis in Aboriginal communities throughout Quebec in collaboration with the Cree School Board, the Kativik School Board, and various Mi’kmaq, Mohawk and Algonquin education authorities. A full-time and part-time program is also available to Inuit in Nunavut, in collaboration with the Nunavut Teacher Education Program of Nunavut Arctic College, Iqaluit, NU.

Quebec Graduates of this program receive Ministry (MEQ) certification to teach at the elementary level in Aboriginal schools.

**Admission to the Certificate in Education for First Nations and Inuit**

An applicant will normally be employed as a teacher or as a classroom assistant, have a valid teaching authorization from the appropriate teaching authority or a community education committee, be recommended by the school principal and an officer of the education authority, be recommended by a local community education committee, and be at least 21 years of age. Younger applicants will be considered for admission if they hold a Grade 12 High
School Diploma or a Diploma of Collegial Studies. The right of final
decision for acceptance of candidates rests with McGill.

Those intending to complete the programs offered in coopera-
tion with the Kattivik School Board or the Nunavut Teacher Educa-
tion Program must be fluent and literate in Inuktitut/Inuinnaqtun.
Fluency in Algonquin, Cree, Mi’kmaq or Mohawk is not a condition
for acceptance for applicants from these communities, but is con-
sidered an asset. Courses are available in all four of these lan-
guages for those teaching in immersion classes and other
teaching situations where a knowledge of the Aboriginal language
is essential.

Time Limit

The time limit for completion of the 60-credit Certificate in First
Nations and Inuit Education is 12 years. The University reserves
the right to request that a student retake a course or courses after
a 10-year period if it is felt that too long a break has occurred in the
ongoing nature of the training.

PROGRAM PROFILE – CERTIFICATE IN EDUCATION FOR
FIRST NATIONS AND INUIT (60 credits)  

a) THE ABORIGINAL SCHOOL AND CLASSROOM

Required Courses
EDEM202 Educational and Administrative Institutions 3
EDEE245 Orientation to Education 3

b) LANGUAGE

FOR INUIT STUDENTS

Required Courses
EDEE249 Inuktitut Orthography and Grammar (The

term “Inuktitut” in all course descriptions
includes “Inuitut” and “Inuinnaqtun.”)

Complementary Courses
One 3-credit course from Language complementary

course list

FOR ALGONQUIN, CREE, MI’KMAQ AND MOHAWK

STUDENTS

Required Courses
Two of the following according to language group and

fluency:
EDEE293 (3) Algonquin Second Language 1
EDEC234 (3) Algonquin Second Language 2
EDEE294 (3) Algonquin Language 1
EDEE295 (3) Algonquin Language 2
EDEE241 (3) Cree Language 1
EDEE242 (3) Cree Language 2
EDEE237 (3) Mi’kmaq Second Language 1
EDEE238 (3) Mi’kmaq Second Language 2
EDEE239 (3) Mi’kmaq Language 1
EDEE240 (3) Mi’kmaq Language 2
EDEE296 (3) Mohawk Second Language 1
EDEE297 (3) Mohawk Second Language 2
EDEE297 (3) Mohawk Language 1
EDEE298 (3) Mohawk Language 2

c) CONTENT AND TEACHING METHODS

(at least 18 credits)

Required Courses
EDEA242 Cultural Skills 3

Complementary Courses
At least five 3-credit courses from Content and
Teaching Methods complementary course list.
At least three of these five courses should be in
different subject content areas.

For trainees specializing in Physical Education:

Required Courses
EDKP241 Aboriginal Physical Activities (replaces

EDEA242 Cultural Skills)
EDKP342 Physical Education Methods 3
EDKP493 Administration 3

(EDKP241 and EDKP493 replace any two of the
Content and Teaching Methods courses.)

Complementary Courses
At least three 3-credit courses from Content and
Teaching Methods complementary course list.

d) PSYCHOLOGICAL, SOCIAL AND PHYSICAL
DEVELOPMENT OF THE CHILD

Required Courses
EDPI121 Social and Emotional Development 3
EDPI122 Perceptual Motor Development 3
EDPI341 Instruction in Inclusive Schools 3
EDEE246 Cultivating Language and Thought 3

e) PRACTICUM

FOR ALL STUDENTS EXCEPT NUNAVUT TEACHER
EDUCATION PROGRAM STUDENTS

Required Courses
EDFE444 Field Experience – Elementary School
The purpose of this practicum, which occurs fairly early
in the program, is to determine the student’s suitability
for teaching.

EDFE394 Field Experience Elementary and
Secondary
The purpose of this practicum is to give exposure at
the elementary and secondary levels, where available.

EDFE422 Aboriginal Education Practicum 1 3
EDFE423 Aboriginal Education Practicum 2 3

(Students in the physical education concentration will
do 6 of their total practicum credits in physical
education settings.)

FOR NUNAVUT TEACHER EDUCATION PROGRAM
STUDENTS:

Required Courses
EDFE444 Field Experience – Elementary School
The purpose of this practicum, which occurs fairly early
in the program is to determine the student’s suitability
for teaching.

EDFE422 Aboriginal Education Practicum 1 3
EDFE423 Aboriginal Education Practicum 2 3

(EDFE394 is an option for students enrolled in the
Nunavut Teacher Education Program. These students
can take another complementary course in lieu of
EDFE394.)

f) ELECTIVE COURSES (not more than 6 credits)

Students make up the total of 60 credits from courses
listed below, or any other suitable courses approved by the
Director of the Office of First Nations and Inuit
Education.

EDEA241 (3) Basic Art Media for Classroom
EDEC200 (3) Introduction to Inuit Studies
EDEC220 (3) Curriculum Development
EDEC243 (3) Teaching: Multigrade Classrooms
EDEC244 (3) Issues in Aboriginal Education
EDEC403 (3) The Dialects of Inuktitut
EDEE240 (3) Use and Adaptation of Curricula
EDEE247 (6) Individualized Instruction
EDEE290 (3) Cooperative Learning
EDEE291 (3) Cultural Values and Socialization
EDEE292 (3) Using Instructional Resources
EDEE340 (3) Special Topics: Cultural Issues
EDEE342 (3) Intermediate Inuktitut/Amerindian
Language
EDEE344 (3) Advanced Inuktitut/Amerindian Language
EDEE345 (3) Literature and Creative Writing 1
EDEE346 (3) Literature and Creative Writing 2
EDEC441 (3) First Nations and Inuit Education
EDEC444 (3) First Nations and Inuit Curriculum
EDKP204 (3) Health Education
EDKP224 (3) Foundations of Movement Education
DEPE377 (3) Adolescence and Education
EDPT200 (3) Applications Software
EDSL247 (3) Second Language Education in Aboriginal
Communities
PROGRAM PROFILE – CERTIFICATE IN ABORIGINAL LITERACY EDUCATION (30 credits)  

**Required Courses**  
12 credits  
- A beginning course in the Aboriginal language as a first language (e.g., EDEC241 Cree Language 1)  
- A second-level course in the same language (e.g., EDEC242 Cree Language 2)  
- EDEE342 Intermediate Inuktitut/Amerindian Language  
- EDEE344 Advanced Inuktitut/Amerindian Language  

**Complementary Courses**  
12 credits  
Four courses to be chosen from the following list:  
- EDEA242 (3) Cultural Skills  
- EDEC220 (3) Curriculum Development  
- EDEC403 (3) The Dialects of Inuktitut  
- EDEE223 (3) Language Arts Part 1  
- EDEE224 (3) Language Arts Part 2  
- EDEE240 (3) Use and Adaptation of Curricula  
- EDEE243 (3) Reading Methods in Inuktitut/Cree  
- EDEE247 (6) Individualized Instruction  
- EDEE248 (3) Reading and Writing Inuktitut/Cree  
- EDEE345 (3) Literature and Creative Writing 1  
- EDEE346 (3) Literature and Creative Writing 2  
- EDES365 (3) Experiences in Communications  
- EDPE304 (3) Measurement and Evaluation  

**Elective Courses**  
6 credits  
Two suitable 3-credit courses approved by the Director of the Office of First Nations and Inuit Education  

**Total Credits**  
30 credits  

5.2.3 Certificate in Middle School Education in Aboriginal Communities  

This 30-credit program is designed for Algonquin, Cree, Inuit, Mi'kmaw and Mohawk people who wish to gain a deeper understanding of their Aboriginal language, especially in its written form. It is aimed mainly at those who will be teaching their Aboriginal language and is only available through partnerships with the communities concerned.  

Admission to the Certificate in Middle School Education in Aboriginal Communities  

Applicants will normally have completed or be completing their B.Ed. for Certified Teachers. It is strongly recommended that they have some competence in their Aboriginal language as indicated by successful completion of at least two language courses. For those applying with degrees from other universities, additional courses may be required to match the McGill B.Ed. for Certified Teachers profile. As the program and courses will be delivered in partnership communities, applicants must be recommended by their school boards or teaching authorities.  

**PROGRAM PROFILE – CERTIFICATE IN MIDDLE SCHOOL EDUCATION IN ABORIGINAL COMMUNITIES (30 credits)**  

**Required Courses**  
27 credits  
- EDEC245 Middle School Teaching  
- EDEC246 Middle School Curriculum  
- EDEC302 Language and Learning - Curriculum (for teachers of first language students)  
- EDSL305 L2 Learning: Classroom Settings (for teachers of second language students)  
- EDPE210 Middle School Practicum  
- EDPE377 Adolescence and Education  
- Two 3-credit courses in the major subject area of the B.Ed. for Certified Teachers.
Two 3-credit courses in the minor subject area of the 6 B.Ed. for Certified Teachers.

Elective Course 3
one chosen from:
EDEA241 (3) Basic Art Media for Classroom
EDEC220 (3) Curriculum Development
EDEC243 (3) Teaching: Multigrade Classrooms
EDEE291 (3) Cultural Values and Socialization
EDEE444 (3) First Nations and Inuit Curriculum
EKP241 (3) Aboriginal Physical Activities
EDPT200 (3) Applications Software
EDSL247 (3) Second Language Education in Aboriginal Communities
EDSL305 (3) L2 Learning: Classroom Settings
or other courses which may be approved by the Director of the Office of First Nations and Inuit Education

TOTAL CREDITS 30
This certificate may be taken concurrently and completed within the Bachelor of Education for Certified Teachers (Elementary Education), see section 5.2.5, if the required B.Ed. profile is fulfilled.

5.2.4 Certificate in First Nations and Inuit Educational Leadership
This 30-credit program is designed for First Nations and Inuit educational administrators who will develop their role as leaders within the educational community. The program will focus on: developing the core competencies of educational leaders, e.g., decision making and problem solving; fostering a self-reflective leader able to partner with parents to create community outreach; cultivating awareness of the holistic learning and developmental cycles of a child and the role of the educational leader in enhancing that development; maintaining the continuity of community and cultural values and aspirations within the structure of the administration of the school and other educational milieu; and understanding and supporting the pedagogical objectives and the administrative framework of the educational system.

Admission to the Certificate in First Nations and Inuit Educational Leadership
Students admitted to this program will be recommended by their communities (as is presently the case with the Certificate in Education for First Nations and Inuit). As with the Certificate in Education for First Nations and Inuit, they must be mature students (21 years of age), or hold a Secondary V diploma or equivalent. Students must speak, read, and write fluently the language of instruction as agreed upon between the Office and the contracting School Board or Education Centre. For Nunavik applicants, students must have experience in a Nunavik educational or community organization. The right of final decision for acceptance of candidates rests with McGill.

PROGRAM PROFILE – CERTIFICATE IN FIRST NATIONS AND INUIT EDUCATIONAL LEADERSHIP (30 credits)

Required Courses 15
EDEC221 Leadership and Group Skills 3
EDEC222 Personnel Management and Support 3
EDEC311 Resource Management 3
EDEC312 Practicum in Educational Leadership 3
EDEE441 First Nations and Inuit Education 3

Complementary Courses 15
Five of the following:
EDEC220 (3) Curriculum Development
EDEC244 (3) Issues in Aboriginal Education
EDEE240 (3) Use and Adaptation of Curricula
EDEE245 (3) Orientation to Education
EDEE340 (3) Special Topics: Cultural Issues
EDM202 (3) Educational and Administrative Institutions
EDES365 (3) Experiences in Communications
EDPI341 (3) Instruction in Inclusive Schools
or any other course by the Director of the Office of First Nations and Inuit Education

TOTAL CREDITS 30
This certificate may be taken concurrently and completed within the Bachelor of Education for Certified Teachers (Elementary Education), see section 5.2.5, if the required B.Ed. profile is fulfilled.

It may also be followed concurrently with the Certificate in Education for First Nations and Inuit, see section 5.2.1.

5.2.5 Bachelor of Education for Certified Teachers (Elementary Education)
The Faculty of Education offers a 90-credit program for teachers who are already certified to teach in elementary schools and who wish to upgrade to first degree status. Normally, a minimum of 60 credits must be taken in the program, and no more than 30 credits may be transferred from other institutions.Credits may be transferred from programs leading to the Certificates in Educational Technology, Second Language Teaching, Inclusive Education, or Aboriginal Literacy Education taken concurrently. Credit may be also transferred from the Certificate in Education for First Nations and Inuit which is normally completed before the B.Ed.

Students completing the Bachelor of Education for Certified Teachers following the Certificate in Education for First Nations and Inuit will have accumulated a total of 120 credits, 60 for the Certificate and a further 60 for the B.Ed.

Admission Requirements for the B.Ed. for Certified Teachers
Applicants apply on the basis of having completed the Certificate in Education for First Nations and Inuit or equivalent and must have the continued support of their education authority to attend community-based courses.

PROGRAM PROFILE – B.ED. FOR CERTIFIED TEACHERS (90 credits)
Candidates enrolled in the program must complete course work within the following general pattern:

CREDITS

COMPLEMENTARY COURSES

Academic Concentration 30
In five (5) subject areas relevant to elementary education in a 12-9-3-3-3 pattern (i.e. 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas), or 30 academic credits in three subject areas in a 15-9-6 pattern.

Note: Subject areas relevant to elementary education, in broad terms are the Arts (Art, Music and Drama), English, French, Science, Mathematics, Physical Education, Moral and Religious Education, Social Studies, Educational Technology, or an Aboriginal language.

Cultural Development 15
Chosen from courses which will enhance the candidate’s cultural development. These are to be chosen in consultation with the Director of the Office of First Nations and Inuit Education.

ELECTIVE COURSES 15
Courses selected by the candidate after consultation with the Director of the Office of First Nations and Inuit Education.

EDUCATION CONCENTRATION 30
Normally the Education concentration is completed within the Certificate in Education for First Nations and Inuit.

TOTAL CREDITS 90
Students having completed the Certificate in Education for First Nations and Inuit following the Bachelor of Education for Certified Teachers will have accumulated a total of 120 credits, 60 for the Certificate and a further 60 for the B.Ed.

The Certificate in Aboriginal Literacy Education, the Certificate in Middle School Education in Aboriginal Communities, or the Certificate in First Nations and Inuit Educational Leadership may be...
5.2.6 Certificate in Aboriginal Education for Certified Teachers

This 30-credit professional development program provides training to assist mainstream teachers in becoming more effective teachers in First Nations and Inuit communities. It is designed to address subjects of particular interest and need in First Nations and Inuit schools, such as cultural socialization, cooperative learning, second language teaching, and curriculum development.

Admission to the Certificate in Aboriginal Education for Certified Teachers

Applicants must provide the following:
- a Diploma of Collegial Studies (DEC) or its equivalent;
- evidence of having completed teacher training at an approved institution;
- a letter of recommendation from a competent authority.

All courses (except EDEE441) are normally given off-campus and are normally limited to students enrolled in off-campus programs delivered through the Office of First Nations and Inuit Education.

PROGRAM PROFILE – CERTIFICATE IN ABORIGINAL EDUCATION FOR CERTIFIED TEACHERS (30 credits)

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC220</td>
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<tr>
<td>EDEE240</td>
<td>3</td>
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<tr>
<td>EDEE291</td>
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<tr>
<td>EDEE441</td>
<td>3</td>
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<td>EDEE444</td>
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<tr>
<td>EDSL247</td>
<td>3</td>
</tr>
<tr>
<td>EDEE291</td>
<td>3</td>
</tr>
</tbody>
</table>

Introduction course in the language of the community, e.g. EDEE341 Inuktitut for Beginners.

Complementary Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEA242</td>
<td>3</td>
</tr>
<tr>
<td>EDEE200</td>
<td>3</td>
</tr>
<tr>
<td>EDEE247</td>
<td>3</td>
</tr>
<tr>
<td>EDEE290</td>
<td>3</td>
</tr>
<tr>
<td>EDEM202</td>
<td>3</td>
</tr>
<tr>
<td>EDSL200</td>
<td>3</td>
</tr>
</tbody>
</table>

Selected from:

Nine credits from the following:
- EDEM202 (3) Educational and Administrative Institutions
- EDK204 (3) Health Education
- EDPC206 (3) Group Leadership Skills
- EDP207 (3) Aboriginal Adolescent Development
- EDP211 (3) Special Topics in Student Personnel Services
- EDPI211 (3) Social and Emotional Development

TOTAL CREDITS 30

5.2.7 Certificate in First Nations and Inuit Student Personnel Services

This program is offered by the Department of Educational and Counselling Psychology through the Office of First Nations and Inuit Education.

This program is designed to provide Aboriginal school personnel advisors with a training program which will enable them to learn about the principles and practice of personnel services as generally applied in educational settings, to help Aboriginal student personnel advisors develop their personal skills, and to modify or adapt their services and the content to best suit the cultural and educational needs of Aboriginal students; to encourage Aboriginal student personnel advisors to take leadership in developing educational programs which address the social needs of their communities, to up-grade their academic qualifications and professional development; and to develop and make available, in English and the languages of instruction, collections of professional and scholarly knowledge about students’ needs, and services in First Nations and Inuit communities.

Bearers of this Certificate will be qualified to work as Educational and School Personnel Advisors within the employ of an Aboriginal educational authority.

Admission Requirements

1. Speak, read, and write fluently the language of instruction as agreed upon between the Department and the contracting school board.
2. Hold a student advisor position in an Aboriginal community. This may be a new appointment concurrent with registration in the program. The position must be sufficient to meet the practical requirements of the program.
3. Be recommended by the local education authority.
4. Be at least 23 years of age (except for special permission). By this means students will qualify for admission as Mature Students under McGill regulations, and thereby not be required to have a Diploma of Collegial Studies (DEC).
5. Be recommended and selected by the school administration in collaboration with McGill personnel.

PROGRAM PROFILE – CERTIFICATE IN FIRST NATIONS AND INUIT STUDENT PERSONNEL SERVICES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDPC201</td>
<td>3</td>
</tr>
<tr>
<td>EDPC202</td>
<td>3</td>
</tr>
<tr>
<td>EDPC203</td>
<td>3</td>
</tr>
<tr>
<td>EDPC205</td>
<td>3</td>
</tr>
<tr>
<td>EDPC208</td>
<td>3</td>
</tr>
<tr>
<td>EDPC209</td>
<td>3</td>
</tr>
<tr>
<td>EDPC210</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 30

Registration in EDEM202, EDK204 or any other courses offered by departments other than Educational and Counselling Psychology; or in other programs of this Department is dependent on availability (e.g., through a concurrently offered program) or on an arrangement made with that department or program. The Program Coordinator will attempt to make these contacts whenever required.

6 Department of Kinesiology and Physical Education

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475 Pine Avenue West
Montreal, QC H2W 1S4
Telephone: (514) 398-4184
Fax: (514) 398-4186
Website: www.education.mcgill.ca/physed

Chair — Hélène Perrault
Director of Undergraduate Programs — Greg Reid
Director of Graduate Programs — René A. Turcotte

Professors
David Montgomery; B.Sc.(Guelph), M.Sc., Ph.D.(Purdue)
Hélène Perrault; B.Sc.(C'dia), M.Sc., Ph.D.(Montr.)
Greg Reid; B.Ed.(P.E.) (McG.), M.S.(Calif.), Ph.D.(Penn. State)

Associate Professors
Margaret J. Downey, B.Ed., M.A., Ph.D.(McG)
David J. Pearsall; B.A., BPHE, M.Sc., Ph.D.(Queen’s)
6.1 Bachelor of Education Programs

6.1.1 Bachelor of Education Physical Education

This program is exclusive to students previously registered in the program. New students in September 2004 are required to follow the B.Ed. Physical and Health Education program.

This four-year, 120-credit (150-credits for out-of-province students) specialist program prepares students to teach physical education at the elementary and secondary levels.

Please note:
1. As of September 2002, the Ministry of Education will no longer be certifying students in the P.E. with a minor option.
2. Students who were registered in the Major in Physical Education with a minor may choose to opt for this revised program or be certifying students in the P.E. with a minor option.

Graduation Requirement
All students in Physical Education programs are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

PROGRAM PROFILE – B.ED. PHYSICAL EDUCATION (120 credits)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>33</td>
</tr>
<tr>
<td>EDKP205 Structural Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>EDKP206 Biomechanics of Human Movement</td>
<td>3</td>
</tr>
<tr>
<td>EDKP207 Evaluation of Human Performance</td>
<td>3</td>
</tr>
<tr>
<td>EDKP261 Motor Development</td>
<td>3</td>
</tr>
<tr>
<td>EDKP292 Nutrition and Wellness (formerly EDKP392)</td>
<td>3</td>
</tr>
<tr>
<td>EDKP330 Physical Activity and Health</td>
<td>3</td>
</tr>
<tr>
<td>EDKP331 Homeostatic Physiology</td>
<td>3</td>
</tr>
<tr>
<td>EDKP391 Ergo-physiology</td>
<td>3</td>
</tr>
<tr>
<td>EDKP492 Psychology of Motor Performance</td>
<td>3</td>
</tr>
<tr>
<td>EDKP496 Adapted Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>EDPK498 Social Psychology of Sport</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIRED COURSES</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP202 Rhythmic Activities</td>
<td>1</td>
</tr>
<tr>
<td>EDKP210 Educational Gymnastics</td>
<td>1</td>
</tr>
<tr>
<td>EDKP213 Aquatics 1</td>
<td>1</td>
</tr>
<tr>
<td>EDKP214 Basketball 1</td>
<td>1</td>
</tr>
<tr>
<td>EDKP216 Gymnastics 1</td>
<td>1</td>
</tr>
<tr>
<td>EDKP217 Track and Field</td>
<td>1</td>
</tr>
<tr>
<td>EDKP218 Volleyball 1</td>
<td>1</td>
</tr>
<tr>
<td>EDKP223 Basic Games</td>
<td>1</td>
</tr>
<tr>
<td>EDKP226 Badminton</td>
<td>1</td>
</tr>
<tr>
<td>EDKP236 Softball</td>
<td>1</td>
</tr>
<tr>
<td>EDKP243 Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Complementary Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>7</td>
</tr>
<tr>
<td>EDKP233 Soccer</td>
<td>1</td>
</tr>
<tr>
<td>EDKP238 Field Hockey 1</td>
<td>1</td>
</tr>
</tbody>
</table>

and six Skill and Technique courses offered by the Department of Kinesiology and Physical Education

FIELD EXPERIENCES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDFE246 First Year Field Experience (Elem.)</td>
<td>3</td>
</tr>
<tr>
<td>EDFE373 Second Year Field Experience Physical Education (Sec)</td>
<td>3</td>
</tr>
<tr>
<td>EDFE348 Third Year Field Experience Physical Education</td>
<td>6</td>
</tr>
<tr>
<td>EDFE479 Fourth Year Field Experience Physical Education</td>
<td>6</td>
</tr>
</tbody>
</table>

FOUNDATION COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDER400 Philosophical Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>EDER398 Philosophy of Catholic Education</td>
<td>3</td>
</tr>
</tbody>
</table>

PEDAGOGY COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP342 Physical Education Methods</td>
<td>3</td>
</tr>
<tr>
<td>EDKP442 Physical Education Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td>EDPK494 Physical Education Curriculum Development</td>
<td>3</td>
</tr>
</tbody>
</table>

PEDAGOGICAL SUPPORT COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDPT341 Instructional Programming</td>
<td>1</td>
</tr>
<tr>
<td>EDPT420 Media Literacy for Education</td>
<td>1</td>
</tr>
</tbody>
</table>

For students with a background in computers or other media applications in education, the following courses may be substituted for the above:

ELECTIVE COURSES

Students are encouraged to select courses that will contribute to their academic proficiency and professional preparation.

TOTAL CREDITS 120

6.1.2 Bachelor of Education Physical and Health Education

Effective September 2003 students are required to complete the following program.

This four-year, 120-credit (150-credits for out-of-province students) specialist program prepares students to teach physical and health education at the elementary and secondary levels. This program interweaves academic studies, professional course work, and teaching practices in mutually beneficial ways throughout the four years.
Graduation Requirement
All students in Physical Education programs are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

PROGRAM PROFILE – B.ED. PHYSICAL AND HEALTH EDUCATION (120 credits)

<table>
<thead>
<tr>
<th>ACADEMIC COMPONENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>36</td>
</tr>
<tr>
<td>EDKP204</td>
<td>Health Education 3</td>
</tr>
<tr>
<td>EDKP206</td>
<td>Biomechanics of Human Movement 3</td>
</tr>
<tr>
<td>EDKP261</td>
<td>Motor Development 3</td>
</tr>
<tr>
<td>EDKP292</td>
<td>Nutrition and Wellness 3</td>
</tr>
<tr>
<td>EDKP293</td>
<td>Anatomy and Physiology 3</td>
</tr>
<tr>
<td>EDKP307</td>
<td>Evaluation in Physical Education 3</td>
</tr>
<tr>
<td>EDKP330</td>
<td>Physical Activity and Health 3</td>
</tr>
<tr>
<td>EDKP391</td>
<td>Ergo-physiology 3</td>
</tr>
<tr>
<td>EDKP393</td>
<td>Skill Learning and Expertise 3</td>
</tr>
<tr>
<td>EDKP394</td>
<td>Historical Perspectives 3</td>
</tr>
<tr>
<td>EDKP396</td>
<td>Adapted Physical Activity 3</td>
</tr>
<tr>
<td>EDKP498</td>
<td>Sport Psychology 3</td>
</tr>
</tbody>
</table>

PROFESSIONAL COMPONENTS (66 CREDITS)

PHYSICAL ACTIVITY COURSES (19 CREDITS)

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP213</td>
</tr>
<tr>
<td>EDKP214</td>
</tr>
<tr>
<td>EDKP217</td>
</tr>
<tr>
<td>EDKP218</td>
</tr>
<tr>
<td>EDKP223</td>
</tr>
<tr>
<td>EDKP233</td>
</tr>
<tr>
<td>EDKP252</td>
</tr>
<tr>
<td>EDKP253</td>
</tr>
<tr>
<td>EDKP254</td>
</tr>
</tbody>
</table>

Complementary Courses (5 CREDITS)

Five physical activity credits offered by the Department of Kinesiology and Physical Education

FIELD EXPERIENCES (20 CREDITS)

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDFE246</td>
</tr>
<tr>
<td>EDFE373</td>
</tr>
<tr>
<td>EDFE380</td>
</tr>
<tr>
<td>EDFE480</td>
</tr>
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</table>

FOUNDATION COURSES (12 CREDITS)

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC215</td>
</tr>
<tr>
<td>EDEC247</td>
</tr>
<tr>
<td>EDER400</td>
</tr>
<tr>
<td>EDPE208</td>
</tr>
<tr>
<td>EDPE300</td>
</tr>
</tbody>
</table>

PEDAGOGY COURSES (9 CREDITS)

<table>
<thead>
<tr>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP342</td>
</tr>
<tr>
<td>EDKP442</td>
</tr>
<tr>
<td>EDKP494</td>
</tr>
</tbody>
</table>

PEDAGOGICAL SUPPORT COURSES (6 CREDITS)

<table>
<thead>
<tr>
<th>Complementary Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 3-credit course in Multicultural Education from the following list 3</td>
</tr>
<tr>
<td>EDER464</td>
</tr>
<tr>
<td>EDEE441</td>
</tr>
<tr>
<td>EDEC410</td>
</tr>
</tbody>
</table>

A 3-credit course in Media, Technology, Computers and Education from the following list:

| EDPE310          | Educational Computer Applications 3 |
| EDPT200          | Applications Software |

EDPT204       Educational Media 1
EDEC402       Media, Technology and Education
For students with a background in computers or other media applications in education, the following courses may be substituted for the above:

| EDPT341       | Instructional Programming 1 |
| EDPT420       | Media Literacy for Education |

ELECTIVE COURSES (18 CREDITS)

18 credits chosen from any of the University’s offerings to contribute to the student’s academic proficiency and professional preparation.

TOTAL CREDITS (120 CREDITS)

6.1.3 Bachelor of Education Kinesiology
This program is exclusive to students previously registered in the program.

The focus of the 90-credit (120-credit for out-of-province students) Bachelor of Education Kinesiology three-year program is to provide a scientific and professional study of the assessment, maintenance and enhancement of human health and well-being. Students will gain experience for careers in health instruction, fitness consulting and administration, exercise and sport leadership, as well as preparation for further study in other allied health fields and graduate research. Within this program, students may seek professional certification in one or more of the careers defined above, but excluding teacher certification.

Graduation Requirement
All students in this program are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalencies.

PROGRAM PROFILE – B.ED. KINESIOLOGY (120 CREDITS)

<table>
<thead>
<tr>
<th>KINESIOLOGY THEORY (45 CREDITS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
</tr>
<tr>
<td>PSYC215</td>
</tr>
<tr>
<td>EDKP205</td>
</tr>
<tr>
<td>EDKP206</td>
</tr>
<tr>
<td>EDKP261</td>
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<tr>
<td>EDKP292</td>
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<tr>
<td>EDKP311</td>
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<tr>
<td>EDKP330</td>
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<tr>
<td>EDKP331</td>
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<tr>
<td>EDKP391</td>
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<tr>
<td>EDKP485</td>
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<tr>
<td>EDKP492*</td>
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<tr>
<td>EDKP493</td>
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<tr>
<td>EDKP495</td>
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<tr>
<td>EDKP496</td>
</tr>
<tr>
<td>EDKP498</td>
</tr>
</tbody>
</table>

* number has changed, consult the Department.

KINESIOLOGY PROFESSIONAL COMPONENT (9 CREDITS)

<table>
<thead>
<tr>
<th>Required Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP201</td>
</tr>
</tbody>
</table>

Required Courses (6 CREDITS)

<table>
<thead>
<tr>
<th>Complementary Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH203</td>
</tr>
<tr>
<td>or PSYC305</td>
</tr>
<tr>
<td>or COMP102</td>
</tr>
</tbody>
</table>

OPTION COMPONENT (9 CREDITS)

Nine credits from one of the following Options (see lists given below):

A. Social perspective of Health
B. Management and Administration
C. Certified Fitness Appraiser
D. Personal Trainer
E. Sciences

SKILL AND TECHNIQUE COURSES (6 CREDITS)
Courses from one of the following areas:

Students with the appropriate prerequisites may select three E. Science Option (*required)

EDPC504 (3) Practicum: Interviewing Skills
EDPC501 (3) Helping Relationships
EDKP451* (3) Personal Trainer Practicum

any of four international agencies certifying personal trainers. This option prepares candidates to take the certification exam of D. Personal Trainer Certification Option (*required)

EDKP502* (3) Fitness & Lifestyle Consulting
EDPC504 (3) Practicum: Interviewing Skills
EDPC501 (3) Helping Relationships

Appraiser by the Canadian Society of Exercise Physiology.

MGCR352 (3) Marketing Management 1
MGCR331 (3) Information Systems
MGCR222 (3) Introduction to Organizational Behavior
MGCR211 (3) Introduction to Financial Accounting
MRKT452 (3) Consumer Behavior
EDPC501 (3) Helping Relationships
EDPE377 (3) Adolescence and Education

B. Management and Administration Option

EDKP451 Personal Trainer Practicum
EDKP452 Fitness & Lifestyle Consulting
EDKP453 Research Practicum in Kinesiology

Students are encouraged to select courses that will contribute to their academic proficiency and professional preparation.

TOTAL CREDITS 90

B.ED. KINESIOLOGY OPTIONS

A. Social Perspective of Health Option
SOC1210 (3) Sociological Perspectives
SOC1225 (3) Medicine and Health in Modern Society
SOC1305 (3) Socialization
SOC1422 (3) Health Care Providers
PSYC331 (3) Inter-Group Relations (prerequisite: PSYC215)
PSYC333 (3) Personality and Social Psychology
SWRK463 (3) Practice with the Elderly
EDPC501 (3) Helping Relationships
EDPE377 (3) Adolescence and Education

B. Management and Administration Option

ORGB420 (3) Managing Organizational Teams (prerequisite: MGCR222)
ORGB435 (3) Women as Global Leaders and Managers
MRKT351 (3) Marketing and Society (prerequisite: MGCR352)
MRKT452 (3) Consumer Behavior
MGCR211 (3) Introduction to Financial Accounting
MGCR222 (3) Introduction to Organizational Behavior
MGCR331 (3) Information Systems
MGCR352 (3) Marketing Management 1
EDC202 (3) Effective Communication

C. Certified Fitness Appraiser (CFA) Option
This option leads directly to certification as a Certified Fitness Appraiser by the Canadian Society of Exercise Physiology.
EDPC501 (3) Helping Relationships
EDPC504 (3) Practicum: Interviewing Skills
EDKP553* (3) Physiological Assessment: Sport
EDKP452 (3) Fitness & Lifestyle Consulting (*required)

D. Personal Trainer Certification Option
This option prepares candidates to take the certification exam of any of four international agencies certifying personal trainers.

EDKP451* (3) Personal Trainer Practicum
EDPC501 (3) Helping Relationships
EDPS504 (3) Practicum: Interviewing Skills (*required)

E. Science Option
Students with the appropriate prerequisites may select three courses from one of the following areas:

Biology
BIOL200 (3) Molecular Biology
BIOL201 (3) Cell Biology and Metabolism
BIOL202 (3) Basic Genetics
BIOL205 (3) Biology of Organisms
BIOL206 (3) Methods in Biology of Organisms
BIOL208 (3) Introduction to Ecology

Chemistry
CHEM150 (3) World of Chemistry: Food
CHEM160 (3) World of Chemistry: Technology
CHEM201 (3) Modern Inorganic Chemistry 1
CHEM203 (3) Survey of Physical Chemistry
CHEM212 (4) Organic Chemistry 1
CHEM213 (3) Introductory Physical Chemistry
CHEM257D1 (2) Introductory Analytical Chemistry
CHEM257D2 (2) Introductory Analytical Chemistry
CHEM307 (3) Analytical Chemistry of Pollutants

Mathematics
MATH221 (3) Practical Methods of Mathematics
MATH223 (3) Linear Algebra
MATH235 (3) Basic Algebra
MATH318 (3) Mathematical Logic
MATH323 (3) Probability Theory
MATH324 (3) Statistics
MATH338 (3) History and Philosophy of Mathematics

Physics
PHYS230 (3) Dynamics of Simple Systems
PHYS323 (3) Heat and Waves
PHYS341 (3) Signal Processing
PHYS353 (3) Thermal Physics
PHYS331 (3) Topics in Classical Mechanics
PHYS333 (3) Thermal and Statistical Physics
PHYS340 (3) Electricity and Magnetism

Psychology
PSYC211 (3) Introductory Behavioural Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC337 (3) Introduction: Abnormal Psychology 1
PSYC354 (3) Interpersonal Relationships

6.2 Bachelor of Science (Kinesiology)

The focus of the 90-credit (120-credit for out-of-province students) Bachelor of Science (Kinesiology) is a comprehensive understanding of human movement. Kinesiology is a multidisciplinary field viewing human movement from social, historical, psychological, or biological perspectives. The program provides students with a breadth of theoretical knowledge as well as an opportunity to explore related areas in greater depth, including Minor programs available elsewhere within the University.

Students may opt for either General or Applied emphasis, with an Honours program available for particularly strong students. Students must obtain a CGPA of 3.3 after two years in Kinesiology to qualify for the Honours Program, and must retain this CGPA until graduation.

Students admitted into 120-credit B.Sc.(Kinesiology) must register and successfully complete the Science Freshman Program, which is designed to provide the basic science foundation for the subsequent three-year Major program. The Science requirements are as follows: two terms each of calculus, general physics, biology, and general chemistry, and one term of organic chemistry. For a more detailed description of the Science Freshman Program, students should consult the B.Sc.(Kinesiology) Freshmen Student information available on the Department Website, www.education.mcgill.ca/phys_ed/Undergrad.htm.

Students in the B.Sc. (Kinesiology) Major are encouraged to select a Minor program in a given discipline or interdisciplinary area. A maximum of 6 credits of overlap is allowed between the Minor and the primary program. Science Minors consist of up to 24 credits. Arts Minor Concentrations consist of 18 credits. A minimum of 18 new credits must be completed in the Minor or Minor...
Concentration. For list of approved Minors and Minor Concentrations, please refer to the Faculty of Science, “Minor Programs” on page 300 and “Faculty of Arts Major and Minor Concentration Programs Available to Science Students” on page 301.

Graduation Requirement
Students are required, before graduation, to show proof of certification in Standard Level Safety Oriented First Aid, and Level C in Cardiopulmonary Resuscitation, or equivalences.

B.SC. (KINESIOLOGY) – MAJOR IN APPLIED KINESIOLOGY
(90 credits)

<table>
<thead>
<tr>
<th>Required Courses (36 credits)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EDKP206 (3) Biomechanics of Human Movement</td>
<td></td>
</tr>
<tr>
<td>EDKP261 (3) Motor Development</td>
<td></td>
</tr>
<tr>
<td>EDKP292 (3) Nutrition and Wellness</td>
<td></td>
</tr>
<tr>
<td>EDKP330 (3) Physical Activity and Health</td>
<td></td>
</tr>
<tr>
<td>EDKP391 (3) Ergo-Physiology</td>
<td></td>
</tr>
<tr>
<td>EDKP393 (3) Skill Learning and Expertise</td>
<td></td>
</tr>
<tr>
<td>EDKP394 (3) Historical Perspectives</td>
<td></td>
</tr>
<tr>
<td>EDKP396 (3) Adapted Physical Activity</td>
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<tr>
<td>EDKP443 (3) Research Methods</td>
<td></td>
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<tr>
<td>EDKP485 (3) Exercise Pathophysiology 1</td>
<td></td>
</tr>
<tr>
<td>EDKP495 (3) Scientific Principles of Training</td>
<td></td>
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<tr>
<td>EDKP498 (3) Sport Psychology</td>
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<table>
<thead>
<tr>
<th>Complementary Courses (33 credits)</th>
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<tbody>
<tr>
<td>ANAT214 (3) Systemic Human Anatomy</td>
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<tr>
<td>or equivalent</td>
<td></td>
</tr>
<tr>
<td>3 credits, one of the following courses:</td>
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<tr>
<td>ANAT315 (4) Anatomy/Limbs and Back</td>
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<tr>
<td>EDKP205 (3) Structural Anatomy</td>
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<tr>
<td>6 credits, one of the following course sets:</td>
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</tr>
<tr>
<td>PHGY 201 (3) Human Physiology: Control Systems</td>
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<tr>
<td>and PHGY202 (3) Human Physiology: Body Functions</td>
<td></td>
</tr>
<tr>
<td>or PHGY 209 (3) Mammalian Physiology 1</td>
<td></td>
</tr>
<tr>
<td>and PHGY210 (3) Mammalian Physiology 2</td>
<td></td>
</tr>
<tr>
<td>3 credits, one of the following courses:</td>
<td></td>
</tr>
<tr>
<td>BIOL373 (3) Biometry</td>
<td></td>
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<tr>
<td>MATH203 (3) Principles of Statistics 1</td>
<td></td>
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<tr>
<td>MGCR271 (3) Statistics 1</td>
<td></td>
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<tr>
<td>PSYC204 (3) Introduction to Psychological Statistics</td>
<td></td>
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<tr>
<td>SOCI350 (3) Statistics in Social Research</td>
<td></td>
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<td>18 credits chosen from the following courses:</td>
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<tr>
<td>EDKP200 (1) Weight Training</td>
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<tr>
<td>EDKP201 (3) Physical Activity Leadership</td>
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<td>EDKP249 (1) Physical Activity Appraisal</td>
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<tr>
<td>EDKP250 (3) Practicum 1</td>
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<tr>
<td>EDKP252 (2) Racquet Sports</td>
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<tr>
<td>EDKP254 (2) Principles of Dance</td>
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<tr>
<td>EDKP311 (3) Athletic Injuries</td>
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<tr>
<td>EDKP350 (3) Practicum 2</td>
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<tr>
<td>EDKP450 (3) Practicum 3</td>
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<tr>
<td>EDKP451 (3) Personal Trainer Practicum</td>
<td></td>
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<tr>
<td>EDKP452 (3) Fitness &amp; Lifestyle Consulting</td>
<td></td>
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<tr>
<td>EDKP553 (3) Physiological Assessment: Sport</td>
<td></td>
</tr>
<tr>
<td>9 credits chosen from the following courses:</td>
<td></td>
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<tr>
<td>EDKP200 (1) Weight Training</td>
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<tr>
<td>EDKP201 (3) Physical Activity Leadership</td>
<td></td>
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<tr>
<td>EDKP249 (1) Physical Activity Appraisal</td>
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<tr>
<td>EDKP250 (3) Practicum 1</td>
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<tr>
<td>EDKP303 (3) Advanced Biomechanics</td>
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<tr>
<td>EDKP311 (3) Athletic Injuries</td>
<td></td>
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<tr>
<td>EDKP350 (3) Practicum 2</td>
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<tr>
<td>EDKP444 (3) Ergonomics</td>
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<tr>
<td>EDKP445 (3) Exercise Metabolism</td>
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<tr>
<td>EDKP446 (3) Physical Activity and Ageing</td>
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<tr>
<td>EDKP447 (3) Motor Development 2</td>
<td></td>
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<tr>
<td>EDKP448 (3) Exercise and Health Psychology</td>
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</tr>
<tr>
<td>EDKP449 (3) Exercise Pathophysiology 2</td>
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<tr>
<td>EDKP450 (3) Practicum 3</td>
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<td>EDKP553 (3) Physiological Assessment: Sport</td>
<td></td>
</tr>
<tr>
<td>EDKP566 (3) Biomechanical Assessment</td>
<td></td>
</tr>
<tr>
<td>EDKP568 (3) Biomechanics Instrumentation</td>
<td></td>
</tr>
</tbody>
</table>

Elective Courses (21 credits)
Students are encouraged to obtain all, or part, of their remaining program credits by completing one of the Minor/Minor Concentration (18 - 24 credits) available in the Faculties of Arts and of Science.

B.SC. (KINESIOLOGY) – MAJOR IN GENERAL KINESIOLOGY
(90 credits)

<table>
<thead>
<tr>
<th>Required Courses (36 credits)</th>
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<tbody>
<tr>
<td>EDKP206 (3) Biomechanics of Human Movement</td>
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<td>EDKP261 (3) Motor Development</td>
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<tr>
<td>EDKP292 (3) Nutrition and Wellness</td>
<td></td>
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<tr>
<td>EDKP330 (3) Physical Activity and Health</td>
<td></td>
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<tr>
<td>EDKP391 (3) Ergo-Physiology</td>
<td></td>
</tr>
<tr>
<td>EDKP393 (3) Skill Learning and Expertise</td>
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</tr>
<tr>
<td>EDKP394 (3) Historical Perspectives</td>
<td></td>
</tr>
<tr>
<td>EDKP395 (3) Adapted Physical Activity</td>
<td></td>
</tr>
<tr>
<td>EDKP443 (3) Research Methods</td>
<td></td>
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<tr>
<td>EDKP485 (3) Exercise Pathophysiology 1</td>
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<td>EDKP498 (3) Sport Psychology</td>
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</table>

<table>
<thead>
<tr>
<th>Complementary Courses (33 credits)</th>
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<tbody>
<tr>
<td>ANAT214 (3) Systemic Human Anatomy</td>
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<td>or equivalent</td>
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<td>3 credits, one of the following courses:</td>
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</tr>
<tr>
<td>ANAT315 (4) Anatomy/Limbs and Back</td>
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<tr>
<td>EDKP205 (3) Structural Anatomy</td>
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<tr>
<td>6 credits, one of the following course sets:</td>
<td></td>
</tr>
<tr>
<td>PHGY 201 (3) Human Physiology: Control Systems</td>
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<tr>
<td>and PHGY202 (3) Human Physiology: Body Functions</td>
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<tr>
<td>or PHGY 209 (3) Mammalian Physiology 1</td>
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</tr>
<tr>
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<td></td>
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<tr>
<td>3 credits, one of the following courses:</td>
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<tr>
<td>BIOL373 (3) Biometry</td>
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<td>MATH203 (3) Principles of Statistics 1</td>
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<td>MGCR271 (3) Statistics 1</td>
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<td>PSYC204 (3) Introduction to Psychological Statistics</td>
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<td></td>
</tr>
<tr>
<td>9 credits chosen from the following courses:</td>
<td></td>
</tr>
<tr>
<td>EDKP200 (1) Weight Training</td>
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<tr>
<td>EDKP201 (3) Physical Activity Leadership</td>
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<tr>
<td>EDKP566 (3) Biomechanical Assessment</td>
<td></td>
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<tr>
<td>EDKP568 (3) Biomechanics Instrumentation</td>
<td></td>
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</tbody>
</table>

Elective Courses (30 credits)
Students are encouraged to obtain some of their remaining program credits by completing one of the Minor/Minor Concentration (18 - 24 credits) available in the Faculties of Arts and of Science.

B.SC. (KINESIOLOGY) – HONOURS IN KINESIOLOGY
(90 credits)
Students must obtain a CGPA of 3.3 after two years in Kinesiology to qualify for the Honours Program, and must retain this CGPA until graduation.

<table>
<thead>
<tr>
<th>Required Courses (36 credits)</th>
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</thead>
<tbody>
<tr>
<td>EDKP206 (3) Biomechanics of Human Movement</td>
<td></td>
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<td>EDKP261 (3) Motor Development</td>
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<tr>
<td>EDKP292 (3) Nutrition and Wellness</td>
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<td></td>
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<tr>
<td>EDKP485 (3) Exercise Pathophysiology 1</td>
<td></td>
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<tr>
<td>EDKP495 (3) Scientific Principles of Training</td>
<td></td>
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<tr>
<td>EDKP498 (3) Sport Psychology</td>
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<td>Credits</td>
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<td>EDKP453</td>
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<td>EDKP495</td>
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<tr>
<td>EDKP498</td>
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**Complementary Courses** (33 credits)

<table>
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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Title</th>
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<tbody>
<tr>
<td>ANAT214</td>
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<td>Systemic Human Anatomy</td>
</tr>
<tr>
<td>ANAT315</td>
<td>4</td>
<td>Anatomy/Limbs and Back</td>
</tr>
<tr>
<td>EDKP205</td>
<td>3</td>
<td>Structural Anatomy</td>
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</tbody>
</table>

**EDKP485 (3) Exercise Pathophysiology 1**

3 credits, one of the following courses:
- ANAT214
- ANAT315
- EDKP205

6 credits, one of the following course sets:
- PHGY 201 (3) Human Physiology: Control Systems
- PHGY 202 (3) Human Physiology: Body Functions
- PHGY 209 (3) Mammalian Physiology 1
- PHGY 210 (3) Mammalian Physiology 2

3 credits, one of the following courses:
- BIOL373 (3) Biometry
- MATH203 (3) Principles of Statistics 1
- MGR271 (3) Statistics 1
- PSYC204 (3) Introduction to Psychological Statistics
- SOCI350 (3) Statistics in Social Research

12 credits chosen from the following courses:
- EDKP303 (3) Advanced Biomechanics
- EDKP444 (3) Ergonomics
- EDKP445 (3) Exercise Metabolism
- EDKP446 (3) Physical Activity and Ageing
- EDKP447 (3) Motor Development 2
- EDKP448 (3) Exercise and Health Psychology
- EDKP449 (3) Exercise Pathophysiology 2
- EDKP505 (3) Sport in Society
- EDKP566 (3) Biomechanical Assessment
- EDKP568 (3) Biomechanics Instrumentation

**7 Graduate School of Library and Information Studies**

The Graduate School of Library and Information Studies focuses upon the knowledge and skills necessary to identify, acquire, organize, retrieve and disseminate information so as to meet people’s varied information needs.

The Graduate School of Library and Information Studies offers four programs at the graduate level. Its 48-credit Master of Library and Information Studies (MLIS), accredited by the American Library Association, prepares professionals to manage information resources and services in libraries and the wider information industries. Its 30-credit Graduate Diploma in Library and Information Studies, and 15-credit Graduate Certificate in Library and Information Studies, are designed to provide a formal environment in which information professionals can update, specialize, and redirect their careers for advanced responsibilities. Its Ph.D. (Ad Hoc) Program provides an opportunity to undertake research at the doctoral level in library and information studies within an interdisciplinary context.

For further information concerning programs, requirements, and courses, consult the Graduate School of Library and Information Studies section of the 2004-05 Graduate and Postdoctoral Studies Calendar or the Website.
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    3.5.1 Letter Grades
    3.5.2 Incomplete Course Deadlines
    3.5.3 Satisfactory/Unsatisfactory Option
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  5.5 Construction Engineering and Management Minor
  5.6 Economics Minor
  5.7 Environmental Engineering Minor
  5.8 Minor in Environment
  5.9 Management Courses and Minor Program
  5.10 Materials Engineering Minor
  5.11 Mathematics Minor
  5.12 Physics Minor
  5.13 Technological Entrepreneurship Minor
  5.14 Software Engineering Minor

1 The Faculty

1.1 Location
Macdonald Engineering Building
817 Sherbrooke Street West
Montreal, QC H3A 2K6
Canada
Website: www.mcgill.ca/engineering
Faculty of Engineering Student Affairs Office:
Macdonald Engineering Building, Room 378
Telephone: (514)398-7257

1.2 Administrative Officers
John E. Gruzesk!; B.Sc., M.Sc.(Queen’s), Ph.D.(Tor.), Eng.
Dean
Jim Nicell; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P. Eng.
Associate Dean (Student Affairs)
David L. Frost; B.A.Sc.(U.B.C.), M.S., Ph.D.(Caltech),
P.Eng.
Associate Dean (Academic)
Juan H. Vera; B.Mat.(Chile), Ing.Quim.(U.T.E.), M.S.
(Chicago), Dr.Ing.(Santa Maria), Ing.
Associate Dean (Research)
David Covo; B.Sc.(Arch.), B.Arch.(McG.), M.R.A.I.C.,
O.A.Q.
Director, School of Architecture
David F. Brown; B.A.(Bishop’s), M.U.P.(McG.), Ph.D.
(Sheffield)
Director, School of Urban Planning
Richard J. Munz; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(McG.),
Eng.
Chair, Department of Chemical Engineering
Denis Mitchell; B.A.Sc., M.A.Sc., Ph.D.(Tor.), F.A.C.I., Eng.
Chair, Department of Civil Engineering and AppliedMechanics
David A. Lowther; B.Sc.(London), Ph.D.(C.N.A.A.), P.Eng.
Chair, Department of Electrical and ComputerEngineering
Arun K. Misra; B.Tech.(I.I.T., Kharagpur), Ph.D.(U.B.C.),
P. Eng.
Chair, Department of Mechanical Engineering
Robin A.L. Drew; B.Tech.(Bradford), Ph.D.(Newcastle)
Chair, Department of Mining, Metals and MaterialsEngineering
Jonathan Rousham
BuildingAdministrator
Steve Yue; B.Sc., Ph.D.(Leeds)
Secretary of Faculty
Ida Godefroy
Assistant to the Dean
Judy Pharo
Faculty Student Advisor
Nancy Czemmel
Records Student Affairs Officer
Debbie Morzajew
Manager, EMF
Susie Vodopivec
Banner SIS Trainer

1.3 Historical Note
The Faculty of Engineering began in 1871 as the Department of Practical and Applied Science in the Faculty of Arts with degree programs in Civil Engineering and Surveying, Mining Engineering and Assaying, and Practical Chemistry. Diploma courses had been offered from 1859, and by 1871 the staff and enrolments had increased sufficiently to justify
1.4 The Faculty Today

The Faculty currently includes five engineering departments and two schools:

**The Departments**
- Chemical Engineering
- Civil Engineering and Applied Mechanics
- Electrical and Computer Engineering
- Mechanical Engineering
- Mining, Metals and Materials Engineering

**The Schools**
- Architecture
- Urban Planning

The Faculty serves approximately 2,300 undergraduate students and 700 graduate students in a wide variety of academic programs.

Undergraduate programs leading to professional bachelor degrees are offered in all Engineering Departments. These programs are designed to qualify the graduates for immediate employment in a wide range of industries and for membership in the appropriate professional bodies. Additionally, a non-professional undergraduate degree is offered in the School of Architecture for those who plan to work in related fields not requiring professional qualification. The curricula are structured to provide suitable preparation for those who plan to continue their education in postgraduate studies either at McGill or elsewhere. The professional degrees in Architecture and Urban Planning are offered at the Master’s level and are described in the *Graduate and Postdoctoral Studies Calendar*.

The academic programs are divided into required and complementary sections. The required courses emphasize those basic principles which permit graduates to keep abreast of progress in technology throughout their careers. Exposure to current technology is provided by the wide variety of complementary courses which allow students to pursue in depth a particular interest. For program details refer to section 4 “Academic Programs”.

An internship program involving a paid 8- to 16-month industrial work experience is available to Engineering and Science graduates. Generally, students will enter the internship program before starting their final year of undergraduate studies. Details can be found in section 2.9 “IYES: Internship Year for Engineering and Science”. In addition, CO-OP programs are offered in Mining Engineering and in Metals and Materials Engineering.

Postgraduate programs leading to Master’s and doctoral degrees are offered in all sectors of the Faculty. Numerous areas of specialization are available in each of the departments and schools. All postgraduate programs including the professional degree programs in Architecture and in Urban Planning are described in the *Graduate and Postdoctoral Studies Calendar*.

1.5 Special Facilities and Related Programs

1.5.1 Engineering Microcomputing Facility

In addition to the services provided by the Computing Centre, the Faculty, in conjunction with its departments and schools, maintains specialized computing and information resources in support of teaching and research. These vary from desktop PCs distributed throughout the Engineering complex to very high performance scientific workstations found in the research laboratories. Each unit organizes and maintains facilities that are designed around specific roles, e.g., CAD/CAM, microelectronic design, software engineering, circuit simulation, process control, polymers, structural mechanics, metal processing, etc., in addition to systems dedicated to administrative support.

The role of the Faculty is to provide access to computing resources on a 24-hour basis and to provide services that are not covered by individual units. The Faculty works in close cooperation with the McGill Computing Centre, which provides remote access to the Faculty network.

1.5.2 Bioresource Engineering

The Faculty of Engineering cooperates with the Faculty of Agricultural and Environmental Sciences in providing courses of instruction for a curriculum in agricultural and biosystems engineering to meet requirements for a professional degree awarded in the Faculty of Agricultural and Environmental Sciences. The second term of the penultimate year of the program is given by the Faculty of Engineering on the downtown campus. Details of the curriculum can be found under the Department of Bioresource Engineering, see page 360.

Some of the courses offered by the Department of Bioresource Engineering (Subject Code ABEN) may be of interest to students in the Faculty of Engineering.

1.5.3 Department of Biomedical Engineering

Lyman Duff Medical Sciences Building
3775 University Street
Montreal, QC H3A 2B4
Telephone: (514) 398-8278

Engineering undergraduates who are interested in the biomedical applications of engineering techniques should contact the Chair of their department or the graduate Chair of Biomedical Engineering. Some of the courses offered by the Department (Subject Code BMDE) may be of interest to Engineering students, and may be approved as complementary courses. For more information, students should consult section “Course Information and Regulations” on page 402.

1.6 Library Facilities


2 General Information

2.1 Admission Requirements

The Faculty of Engineering offers programs leading to the degrees of B.Eng. and B.Sc.(Arch.). Enrolment in some programs is limited.

Specific information on admissions requirements for Quebec students, students from provinces of Canada other than Quebec, and applicants from outside of Canada can be found in “Admission Requirements” on page 26.

2.2 Exchange Programs

The Faculty of Engineering participates in a number of bilateral exchange programs that provide undergraduates with an opportunity to study in Australia, Austria, Canada, Denmark, France, Germany, Hong Kong, Mexico, New Zealand, Singapore, Sweden, United Kingdom, and US. Applicants must have completed at least one year of study and have maintained an average of 3.00 or better. Further information may be obtained from the Faculty of Engineering Student Affairs Office, or the Exchange Officer, Admissions, Recruitment and Registrar’s Office.
2.3 Transfer Credits

In certain cases, credit may be granted for courses passed with a grade of C or better at other universities, up to a maximum of 45 credits for Engineering and 42 credits for Architecture. For further information, please see “Transfer Credits” on page 49.

2.4 Advanced Credit Examinations

Prior to their first registration, the Faculty of Engineering offers the opportunity for students entering from a Québec CEGEP program to receive advanced credit in MATH262 Intermediate Calculus upon successful completion of the Advanced Credit Examination. The examination covers material that has a similarity to the syllabus of the CEGEP Calculus III course. For specific date(s) and time(s) of the examination, please refer to the Faculty of Engineering Website at www.mcgill.ca/engineering/new students.

In all engineering programs, students who are successful in the MATH262 Intermediate Calculus examination will automatically have the number of credits required for the completion of their program reduced by three.

2.5 Registration

Students who are currently registered and intend to return to the same degree program in the following academic session are required to register following procedures outlined in this Calendar, see “Registration” on page 41. It is mandatory for all returning students to see a Departmental Academic Advisor in their department for course confirmation during the first two weeks of the fall term and, if changes are being made, during the first two weeks of the winter term.

Information regarding course registration is sent to new students at the time of admission. All new students must see a Departmental Academic Advisor during the advising period.

2.5.1 Registration for Continuing Education Courses

Students may register for Continuing Education courses through Minerva. Students must refer to the Centre for Continuing Education Calendar and Schedule for course information and deadlines. Language courses given through Continuing Education will not count for credits. For further information, contact the Student Affairs Office.

2.5.2 Course Withdrawal

Students may withdraw from a course without academic penalty provided they do so within the appropriate deadlines of the term. Beyond this time their names will appear on the mark reports and, in the event that they do not take the examination, they will be given a J grade.

2.6 Advising

All students are required to seek academic advising about their programs from the department in which they study. Additional information may be obtained by calling:

- General Information: (514) 398-7257
- Architecture: (514) 398-6702
- Chemical Engineering: (514) 398-4494
- Civil Engineering: (514) 398-6860
- Electrical and Computer Engineering: (514) 398-7344
- Mechanical Engineering: (514) 398-8070
- Metals and Materials Engineering: (514) 398-4755 ext. 4365
- Mining Engineering: (514) 398-4755 ext. 0573
- Urban Planning: (514) 398-4075

2.7 Student Activities

The campus offers a wide variety of extracurricular activities for students. All are encouraged to participate. Many of these are organized within the Faculty under the auspices of the Engineering Undergraduate Society (EUS), or the Architectural Student Association (ASA). Both of these organizations publish handbooks describing their operations and the activities of various Faculty clubs and societies. All undergraduate students automatically become members of the EUS or the ASA, as appropriate.

2.8 Scholarships and Bursaries

Scholarships, bursaries and loans are open to students in the Faculty of Engineering. Students should consult the Undergraduate Scholarships and Awards Calendar available on the Web at www.mcgill.ca or from the Admissions, Recruitment and Registrar's Office. Specific information concerning these awards may be obtained from the Faculty Student Advisor, Faculty of Engineering Student Affairs Office.

2.9 IYES: Internship Year for Engineering and Science

Employers value experience. The IYES Program allows students to gain professional work experience during the course of their undergraduate studies while at the same time earning a salary within the average range of those for entry-level professional positions. Other benefits include:

- improved chance of obtaining a job upon graduation and at a higher starting salary;
- the opportunity to test a choice of career and assess the pertinence of postgraduate study before making a long-term commitment;
- the opportunity to develop communication skills and to acquire a business perspective that cannot be learned in school and is unlikely to be gained from a summer job.

Employment through the IYES Program typically begins in January or May and continues for 8, 12 or 16 months, including a 4-month probationary training period. Employers choose the most suitable students for their organization through the application, interview and ranking process. While employed by the participating companies, students work on assignments related to their field of study. Students switch to the Internship Program from the regular program when they accept an Internship placement. Successful completion of an 8 to 16-month internship will qualify the student to graduate with the Internship Program designation, which will be noted on the student's permanent record.

STUDENT ELIGIBILITY

All students participating in this program must:

- have a good academic record (satisfactory standing),
- be registered full time in their program,
- have between 15 and 45 credits remaining to complete their undergraduate studies in the following areas of Engineering or Science:
  - Atmospheric Science
  - Biotechnology
  - Chemical Engineering
  - Chemistry
  - Civil Engineering
  - Computer Engineering
  - Environmental Studies
  - Mathematics and Statistics
  - Mechanical Engineering
  - Physics
- remain a degree candidate while on internship,
- return to complete studies at McGill (internship students will receive an automatic extension for the completion of their studies). Students are not allowed to complete their undergraduate degree during the internship period.

In addition, it is recommended that the student be able to demonstrate strong leadership and communication skills.

COST

- There is no application fee.
- Every student hired through the Program will be assessed a fee of $800. Students will be billed this amount approximately one month after starting their internship.
- Participating companies are invited to match the student's contribution in the form of a tax deductible donation to IYES.
Further information can be obtained from the website www.mecc.mcgill.ca or by sending an e-mail to info@mecc.mcgill.ca.

2.10 Calculators in Faculty Tests and Examinations
The use of calculators during tests and examinations is at the discretion of the course instructor. If a calculator is permitted in the examination, the Faculty requires that the students use a Faculty Standard Calculator, i.e., the CASIO fx-991 or the Sharp EL-546L, R, VI(B) and G only. These calculators are non-programmable, inexpensive, available through local dealers, e.g., EUS General Store in McConnell Engineering Building, and have many features of interest to Engineering students. Any model fx-991 or EL-546 is acceptable, regardless of the letter suffix which appears after the model number. All Engineering students are expected to own one of the two Faculty Standard Calculators.

3 Academic Requirements

3.1 Degree Requirements
In order to obtain a Bachelor’s degree, students must complete one of the departmental programs described in section 4 “Academic Programs”.

3.1.1 Entrance Requirements
The degree programs in the Faculty of Engineering are designed for students who have completed a general and basic science program. This basic science requirement consists of two terms of calculus, chemistry, physics, one term of vectors, matrices and analytical geometry and one term of humanities or social sciences.

Students entering the Faculty of Engineering from Quebec complete these courses at CEGEP and enter a seven-term program.

Students entering from outside Quebec with a high school diploma generally enter an eight-term program and complete the basic science requirements at McGill.

Students who have completed Advanced Placement Exams, Advanced Levels, the International Baccalaureate, the French Baccalaureate, or McGill placement and/or advanced credit examinations may receive exemptions and/or credits for all or part of the basic science requirements. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits. Please see www.mcgill.ca/engineering/new students for specific information on transfer credits.

3.1.2 Basic Science Requirements for Students Entering from Outside Quebec
Generally, students admitted to Engineering from outside Quebec are required to complete the basic science requirements outlined below, in addition to the departmental programs described in section 4 “Academic Programs”.

CHEM110 (4 credits) General Chemistry 1
CHEM120 (4 credits) General Chemistry 2
MATH140 (4 credits) Calculus 1
or MATH139 (4 credits) Calculus
or MATH150 (4 credits) Calculus A
MATH141 (4 credits) Calculus B
or MATH152 (4 credits) Calculus E
MATH133 (3 credits) Vectors, Matrices and Geometry
PHYS131 (4 credits) Mechanics and Waves
PHYS142 (4 credits) Electromagnetism and Optics
xxx xxx (3 credits) Humanities/Social Sciences course

Calculation courses MATH150/MATH152 are designed for students who have completed a course in high school calculus. Students who complete the Calculus sequence MATH150/MATH152 will receive exemption with credit from MATH262 (Intermediate Calculus), in the regular Engineering program.

In the event that the student has some prior calculus, but is not sufficiently confident to proceed with MATH150/MATH152, the appropriate sequence is MATH140/MATH141.

If a student has no previous calculus exposure, MATH150/ MATH152 may be completed with MATH139/MATH141.

Students who are uncertain as to which calculus course sequence is appropriate for them should contact Ms. Pharo, Faculty Student Advisor in the Faculty of Engineering Student Affairs Office (514)398-7256.

Students who successfully complete one, or more, McGill Placement Tests will obtain credit for the equivalent(s), i.e., CHEM110, CHEM120, MATH140, MATH141, MATH133, PHYS131, PHYS142. Details are provided on the Faculty Website at www.mcgill.ca/engineering.

Students entering with advanced standing credits (Advanced Placements, Advanced Levels, International Baccalaureate examinations, McGill Placement Tests) are required to meet with the Faculty Student Advisor, Faculty of Engineering Student Affairs Office, to finalize their program of studies. This must be done prior to meeting with the Departmental Advisor. An information session will be held prior to the advising sessions to process these advanced credits. Information is available on the Faculty Website at www.mcgill.ca/engineering.

3.1.3 Architecture – Basic Science Requirements for Students Entering from Outside Quebec
Generally, students admitted to Architecture from outside Quebec are required to complete the following courses:

CHEM110 (4 credits) General Chemistry 1
CHEM120 (4 credits) General Chemistry 2
MATH139 (4 credits) Calculus
or MATH140 (3 credits) Calculus 1
MATH141 (4 credits) Calculus 2
MATH133 (3 credits) Vectors, Matrices and Geometry
PHYS131 (4 credits) Mechanics and Waves
PHYS142 (4 credits) Electromagnetism and Optics

Students may write McGill Placement Tests to obtain credit for CHEM110, CHEM120, MATH140, MATH141, MATH133, PHYS131 and PHYS142, in the event that they have studied similar material previously. Details on the advanced placement examinations are provided in Welcome to McGill. Information is also available on the Faculty Website at www.mcgill.ca/engineering/new students.

3.2 Degrees and Requirements for Professional Registration

Non-Professional:
Bachelor of Science (Architecture)
The first professional degree in architecture is the Master of Architecture I. The description of the M.Arch. I program can be found in the Graduate and Postdoctoral Studies Calendar.

Professional:
Bachelor of Engineering
Bachelor of Engineering (Honours)
Bachelor of Software Engineering

The B.Eng. programs are accredited by the Accreditation Board of the Canadian Council of Professional Engineers and fulfill the academic requirements for admission to the provincial engineering professional organizations. All students are encouraged to seek professional registration after graduation. To become a Professional Engineer, a graduate must pass an examination on legal aspects as well as on the principles of professional practice, and acquire two to four years of engineering experience, depending on the province. Only persons duly registered may use the title of “engineer” and perform the professional activities reserved for engineers by the provincial laws and regulations.

Graduates of the Bachelor of Software Engineering program should be eligible for accreditation (once accreditation standards for Software Engineers have been adopted).

In Quebec, the professional engineering body is the Ordre des ingénieurs du Québec (OIQ). In order to better prepare new graduates for the practice of their profession, McGill organizes seminars in cooperation with the Ordre on various aspects of the
profession. The OIQ also has a student section. As soon as students have accumulated 60 credits in a B.Eng. program, they can join the Student Section of the OIQ. Registration is free.


### 3.3 Prerequisites and/or Corequisites

Prerequisites and/or corequisites must be completed prior to course registration, if applicable. If a student has registered for a course and did not satisfy the prerequisites and/or corequisites, the course may be dropped from his/her record automatically by Minerva.

Those students who have received advance credits/exemptions or passed a placement exam, and are blocked from registration into a course due to a prerequisite and/or corequisite block, must complete a Course Authorization Form and submit it to the Faculty of Engineering Student Affairs Office. A Departmental advisor must sign and make a notation on the Course Authorization Form indicating that the prerequisite and/or corequisite has been satisfied.

Further information may be obtained from the Faculty of Engineering Student Affairs Office, Macdonald Engineering Building, Room 378.

### 3.4 Complementary Studies

Engineering students must complete 6 credits of additional complementary courses as follows:

(i) One 3-credit course on the impact of technology on society.

(ii) One 3-credit course in the humanities and social sciences, administrative studies and law.

The three credits under (i) are to be chosen from the following list of courses which relate to the impact of technology on society.

- CHEE230 Environmental Aspects of Technology
- CHEE430 Technology Impact Assessment
- GIVE469 Infrastructure and Society
- ECON225 Economics of the Environment
- ENV201 Society and Environment
- GEOG200 Geographical Perspectives: World Environmental Problems
- GEOG203 Environmental Systems
- GEOG205 Global Change: Past, Present and Future
- GEOG302 Environmental Management I
- MME308 Social Impact of Technology
- PHIL343 Biomedical Ethics
- SOCI125 Technology and Society
- SOCI312 Industrial Sociology

The course(s) under (ii) are to be chosen from:

### A. Humanities and Social Sciences

Any course at the 200 level or above from the departments of:

- Anthropology (Subject Code ANTH)
- Economics (any 200 or 300 level course excluding ECON208, ECON217, ECON227, ECON259 and ECON337)
- History (Subject Code HIST)
- Philosophy (excluding PHIL210)
- Political Science (Subject Code POLI)
- Psychology (excluding PSYC204, PSYC305 and PSYC435 but including PSYC100)
- Religious Studies (Subject Code RELG)
- School of Social Work (Subject Code SWRK)
- Sociology (excluding SOC1350 or SOC2340 The Material Culture of Canada or ENV203 Knowledge, Ethics and Environment or ENV400 Environmental Thought or MATH338 History and Philosophy of Mathematics

### B. Administrative Studies and Law

Faculty of Engineering

FACC220 Law for Architects and Engineers

Faculty of Management

(Mangement courses have limited enrolment and registration dates, see Calendar of Dates.)

- BUSA465 Technological Entrepreneurship
- INDR294 Introduction to Labour-Management Relations
- MGCR222 Introduction to Organizational Behaviour
- MGCR320 Managing Human Resources
- MGCR352 Marketing Management 1
- MGCR360 Social Context of Business
- MRKT360 Marketing of Technology
- ORGB321 Leadership

### C. Language Courses

Any language course which is deemed by the academic advisor to have a sufficient cultural component or, in the case of a student who was not already proficient in a specific language, program credit will be given for the second of two successfully completed, academically approved 3-credit language courses.

### 3.5 Student Progress

The B.Eng. programs may be completed in seven terms. The B.Sc.(Arch.) program may be completed in six or eight terms, depending upon point of entry.

A student must successfully complete the B.Eng. or B.Sc.(Arch.) programs within six years of entry. Candidates admitted to a lengthened program, or to a shortened program because of advanced standing, or who are participating in the IYES program, will have a correspondingly greater or lesser period in which to complete their program. Extensions may be granted by the Committee on Standing in cases of serious medical problems or where other similarly uncontrollable factors have affected a student’s progress.

### 3.5.1 Letter Grades

In the Faculty of Engineering, letter grades are assigned according to the grading scheme adopted by the professor in charge of a particular course. They have the designations:

A, A- Very Good J Unexcused Absence
B+, B, B- Good K Incomplete
C+, C Satisfactory KF Incomplete Failed
D Conditional Pass L Deferred
F Failed T Credit by examination only

Grades A, B and C indicate satisfactory results. Grade D indicates marginal results which may be acceptable for peripheral courses but not for core courses required by the program. The classification of a course as core or peripheral depends on the individual student’s program and will be decided by the department concerned. Grade F is a permanent grade indicating unsatisfactory results. Grade J indicates an unexcused failure to submit assignments or an unexcused absence from an examination. It is equivalent to an F grade.

### 3.5.2 Incomplete Course Deadlines

Those students with a K grade (incomplete) MUST complete the course within three (3) months, after which the student will be given a grade of KF (incomplete/failed). The deadline for Fall Term courses is March 31 (January 15 for Winter graduation); for Winter Term courses it is August 15 (May 15 for Spring graduation) and for Summer Term courses it is December 1 (October 1 for Fall graduation).

If the student is unable to complete the course within the given deadlines, a request for an extension must be forwarded to the Associate Dean (Student Affairs). If an extension has already been permitted, the Faculty will make the necessary corrections.

### 3.5.3 Satisfactory/Unsatisfactory Option

The Satisfactory/Unsatisfactory Option (S/U) may be used for elective courses only.
Students must specify courses as S/U at the time of registration. The option will not be added manually to a student’s record after the Drop/Add deadline or once a mark has been submitted by the Faculty. Once a mark has been submitted, this option will not be reversed.

1. “Elective” refers to that category of the complementary studies component of the program involving a Social Science/Humanities course, or a course dealing with the impact of technology on society; or to elective courses taken outside the School of Architecture by architecture students. It does not apply to the “technical complementaries” or “architectural complementaries”, or to any other category of the Engineering or Architecture programs.

2. A C grade is considered a pass under the University Satisfactory/Unsatisfactory option. (Students should note that the Faculty of Engineering accepts a D grade as a pass when courses eligible for the S/U option are taken in the conventional manner.)

3. Only students in satisfactory standing will be permitted to take a course under the Satisfactory/Unsatisfactory option. Only one course (3 credits) per term, to a maximum of 10% of a student’s credits taken at McGill, may be taken this way. Grades will be reported in the normal fashion by the instructor and the grades of C and above will be converted to Satisfactory (S) and grades of D and F will be converted to Unsatisfactory (U).

4. The courses taken under this option will be excluded from the GPA, but will be included in the number of credits.

5. Note For Faculty of Engineering Students Only: If the S/U option is selected for a core course and not removed by the Course Change deadline, the Student Affairs Office will remove the option and notify the student of the change.

Note: To be considered for scholarships/renewal of awards, students must complete at least 27 credits in the regular academic session exclusive of courses completed under this option.

3.5.4 Course Credits
The credit assigned to a particular course reflects the amount of effort it demands of the student. One credit normally represents three hours total work per week. 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. As a guide, the average division of time for a course is indicated in hours in the course listing after the course credit. For example, (3)(3-0-6) indicates a three-credit course consisting of three lecture hours per week, no other contact hours and six hours of personal study per week.

3.5.5 Grade Point Averages and Extra Courses
The Faculty calculates a term grade point average (TGPA). Any courses taken which lie outside the program are classified as extra, are indicated by an “X” on transcript, and do not affect the grade point average. Students must receive departmental approval for such courses, and the course must be identified and recorded prior to writing the final examination. Students should consult the Faculty of Engineering Student Affairs Office for approval.

3.5.6 Academic Standing Decisions
In the Faculty of Engineering, a decision on the student’s academic standing is based on the CGPA (Cumulative Grade Point Average) according to the criteria listed below.

- Satisfactory standing - CGPA equal to 2.00 or greater.
- Probationary standing - CGPA less than or equal to 1.99 or equal to or greater than 1.20.
- Unsatisfactory standing - CGPA less than 1.20 (if this is the student’s first term, the student is normally readmitted to Probationary Standing by Faculty decision).

Note: The Faculty makes academic standing decisions after the completion of each term (Fall, Winter, Summer) based on academic results to date. Thus, if a student has been granted permission to defer one or more examinations, the standing decision will be made regardless of such deferrals.

Please see below for further information about academic standing decisions.

Satisfactory Standing
Students in satisfactory standing may proceed, with the following conditions:
- All core courses in which D or F grades were obtained must either be repeated successfully (grade C or better) or be replaced by an alternative approved course which is completed successfully.
- All other courses in which F grades were obtained must either be repeated successfully at some point before graduation or be replaced by some alternative approved course which is completed successfully before graduation.

Students in poor academic standing are strongly urged to contact the Student Affairs Office to discuss their situation. Office staff are available to help guide students and to provide useful advice to help students achieve their goals. Helpful workshops are provided by Student Services, e.g., study skills, stress management, test anxiety. Students who are experiencing difficulties are encouraged to explore these avenues.

Probationary Standing
Students placed on Probationary Standing may proceed with their studies under the following conditions.

- Students must reduce their credit load to a maximum of 13 credits per term and must achieve at the end of the term either a CGPA of 2.00 or better, or a term GPA (TGPA) of 2.50 or better in order to continue.
- A student whose TGPA is 2.50 or better, but whose CGPA is less than 2.00, may continue on with his/her studies but will remain on Probationary Standing.
- Failure to achieve either the TGPA or CGPA requirements noted above will result in the student being placed on “Unsatisfactory Standing” (see below). Students will remain on probationary standing until they achieve a CGPA equal to or exceeding 2.00, at which time their standing will be changed to “satisfactory”.

Students placed on Probationary Standing who need to reduce their credit load but are unable to drop course(s) must complete a Course Authorization Form and submit it to the Student Affairs Office. The course(s) will then be deleted manually from the student’s record.

Unsatisfactory Standing
Students who have been placed on Unsatisfactory Standing will be asked to withdraw from the Faculty of Engineering for a minimum of one term. Courses for which the student is currently registered will be deleted automatically from the student’s record by the Faculty.

After a minimum of one term away, the student can apply for readmission. A request for readmission must be made in writing in a letter addressed to the Associate Dean, Student Affairs in the Student Affairs Office. If readmitted, the student will be placed back on Probationary Standing. Students will remain on probationary standing until they achieve a CGPA greater than or equal to 2.00, at which time their standing will be changed to “satisfactory”.

While on probation during that term and subsequent terms, the student must reduce his/her credit load to a maximum of 13 credits per term, and must meet or exceed the minimum TGPA specified by the department or a CGPA greater than or equal to 2.00. The minimum TGPA requirement for each department is as follows:

- Department of Chemical Engineering: TGPA greater than or equal to 2.50
- Department of Civil Engineering and Applied Mechanics: TGPA greater than or equal to 2.50
- Department of Electrical and Computer Engineering: TGPA greater than or equal to 3.00
- Department of Mechanical Engineering: TGPA greater than or equal to 2.50
- Department of Mining, Metals and Materials Engineering: TGPA greater than or equal to 2.50
- School of Architecture: TGPA greater than or equal to 2.50

Students who fail to achieve the minimum TGPA required by their department will be required to permanently withdraw from the program with no chance of readmission. In addition, students who have returned to satisfactory standing, but whose CGPA falls below 2.00 in a subsequent term, will be required to permanently withdraw from the program with no chance of readmission.

### 3.5.7 Repeated Courses

Students who fail to achieve the required results in a course must either repeat it successfully or complete a substitute course approved by their department. For students who fail prerequisite courses which are offered only in the Fall or Winter, the department responsible may, in appropriate cases, arrange “reading courses” during the other term or during the Summer months. Such courses taken during a Fall or Winter term constitute a normal part of the candidate’s workload. If the student is on probation, these courses must be included in the workload reduction.

### 3.5.8 Reassessment and Reread of a Grade

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark and the right to discuss this submission with the examiner. If, after discussion with the instructor, a student decides to request a formal reread of a final exam, the student must apply in writing, complete the Reread form and submit it to the Faculty of Engineering Student Affairs Office.

The following conditions apply:
- requests for rereads in more than one course per term will not be accepted, unless permission is given by the Faculty of Engineering;
- grades may be either raised or lowered as the result of a reread;
- rereads in courses not in the Faculty of Engineering are subject to the deadlines, rules and regulations of the relevant faculty;
- any request to have term work re-evaluated must be made directly to the instructor concerned.

The deadlines to make an application for a formal reread of a final exam are:
- the last working day of March for fall courses,
- the last working day of July for winter courses, and
- the last working day of November for summer courses.

A $35 fee for each reread will be assessed directly to the student’s McGill account if the result remains the same or is lowered. If the grade is increased, no charge is made.

For further information, students may consult the Faculty of Engineering Student Affairs Office.

### 3.5.9 Examination Regulations

For information regarding examination regulations and procedures in the Faculty of Engineering, please refer to the Engineering Website at www.mcgill.ca/engineering.

### 3.5.10 Supplemental Examinations

Courses administered by the Faculty of Engineering do not have supplemental examinations; however, Engineering students may be eligible to write supplemental examinations in courses administered by the Faculties of Arts and Science (typically Humanities and Social Science courses and freshman (U0) courses.

The following conditions apply:
- students must be in satisfactory or probationary standing; those with an unsatisfactory standing are not permitted to write supplements;
- students are permitted to write a supplemental for courses in which they have received a mark of D, F, J or U;
- students must write the supplemental exam at the time of the next supplemental examination period;
- special permission of the Associate Dean (Student Affairs), Engineering, is required if a student wishes to write supplemental exams totaling more than seven (7) credits.
- only one supplemental examination is allowed in a course;
- the supplemental result may or may not include the same portion of class work as did the original grade. The instructor will announce the arrangements to be used for the course by the end of the course change period;
- the supplemental result will not erase the grade originally obtained; both the original mark and the supplemental result will be calculated in the CGPA;
- additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course.

The supplemental examination period for Fall courses is during the months of April and May, and for Winter courses and courses spanning Fall/Winter during the last week of August. It is the student’s responsibility to find out the date and time of the supplemental exam. Supplemental exam applications are available from the Faculty of Engineering Student Affairs Office. Alternately, students may print out the Supplemental Examination Request Form from the Faculty Website and return it by mail or submit it to the Student Affairs Office.

The deadline for submission of applications is March 1 for Fall courses and July 15 for Winter courses and courses spanning Fall/Winter terms.

There is a $35 non-refundable fee per each supplemental exam, which is charged directly to the student’s McGill student account.

Students should consult the Faculty of Engineering Student Affairs Office for more information.

### 3.5.11 Deferred Examinations

Students who have missed a final examination due to illness or family affliction must submit the following documentation to the Faculty of Engineering Student Affairs Office, Room 378, Macdonald Building:
- an original medical certificate or other documentation that covers the date of the missed examination, and the nature and duration of the illness;
- a completed Deferral Request Form;
- a detailed letter justifying the request for a deferral.

Students must also attest that they have completed all course work up to date, which will be verified with the instructor(s). The Student Affairs Office must be informed of the reasons for absences from final examination no later than one week after the date of the final examination that was missed.

A student’s signature on the Deferral Request Form will allow the Faculty to verify the authenticity of the medical certificate and the nature of the illness, or any other documentation provided. If the form is not signed, it will result in the assignment of a J grade in the course.

If a student becomes ill during a formal examination, he/she must inform the invigilator as soon as possible. If necessary, the student will be escorted to the Health Services. As stated above, the student must return to the Faculty of Engineering Student Affairs Office with medical certification within one week of the exam. IMPORTANT: If a student completes the exam in routine fashion, the grade received CANNOT be changed.

Students are advised that deferrals are granted ONLY for compelling reasons. If the request for deferral is denied by the Associate Dean (Student Affairs) the student will receive a “J” grade (absent) in the course. The purpose of calculating GPAs and CGPAs, the grade of “J” is treated as an “F” (failed, 0%). Students will be contacted regarding the approval of a deferral initially via e-mail approximately two weeks after the end of examination period. A formal letter will be mailed at a later date.
Students granted a deferral will be given an "L" grade which will be replaced by a "J" should the students miss the next deferred or regular examination in the course, whichever occurs first. Students are to ONLY write the final examination but NOT redo or resubmit course material. If they wish to resubmit assignments and/or rewrite quizzes, class tests and/or mid-terms, they must appeal to the Associate Dean, Student Affairs.

If a deferral is granted, the maximum number of courses that a student may register for will be limited to ensure that no more than 18 credits of course work are to be satisfied in a single term or no more than 6 exams are to be written, whichever is greater. This will provide a student with sufficient time during the term and the exam period to properly prepare for deferred examinations.

For Engineering and Management courses, students granted a deferral MUST write the final exam the NEXT time it is offered. Students should be aware that a deferred examination might not be available until the next time the course is given (one year or longer).

For Arts and Science courses, students MUST write the supplemental examination offered during either May (for Fall courses) or August (for Winter courses). Consult the Calendar of Dates for the dates set for supplemental exams, and the supplemental examination schedule posted on the Web for the exact date and time of a specific exam. Please note, deferrals are not permitted for summer courses. Students may be permitted to withdraw from a course without refund instead.

For Continuing Education courses, students granted a deferral should contact the Centre for Continuing Education directly for more information.

For further information, refer to "Deferred Examinations" on page 52.

4 Academic Programs

The curricula described in the following pages, and the courses listed under Faculty of Engineering, see page 484, have been approved for the 2004-05 session, but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

4.1 School of Architecture

Macdonald-Harrington Building, Room 201
815 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-6700
Fax: (514) 398-7372
Website: www.mcgill.ca/architecture

Director — David Covo

Emeritus Professors
Harold Spence-Sales; A.A.Dipl., M.R.T.P.I., F.C.I.P.
Radoslav Zuk; B.Arch.(McG.), M.Arch.(M.I.T.), D.Sc.

Professors
Bruce Anderson; B.Arch.(McG.), M.Arch.(Harv.), F.R.A.I.C., O.A.Q.
Derek Drummond; B.Arch.(McG.), F.R.A.I.C., O.A.A. (William C. Macdonald Professor of Architecture)
Avi Friedman; B.Arch.(Technion), M.Arch.(McG.), Ph.D.(Montr.), O.A.Q., I.A.A.
Albeto Pérez-Gómez; Dipl.Eng.(Nat.Pol.Inst.Mexico), M.A., Ph.D.(Essex) (Sadie Rosner Bronfman Professor of Architectural History)
Adrian Sheppard; B.Arch.(McG.), M.Arch.(Yale), F.R.A.I.C., O.A.Q., A.A.P.P.Q.

Associate Professors
Annmarie Adams; B.A.(McG.), M.Arch., Ph.D.(Berkeley), M.R.A.I.C. (William Dawson Scholar)

Martin Bressani; B.Sc.(Arch.), B.Arch.(McG.), M.Sc.Arch., Diplomes des études approfondies, Docteur de l’Université de Paris-Sorbonne (Paris IV)
Ricardo Castro; B.Arch.(Los Andes), M.Arch., M.A.(Art History)(Ore.) M.R.A.I.C.
David Covo; B.Sc.(Arch.), B.Arch.(McG.), F.R.A.I.C., O.A.Q.
Pieter Sipkse; B.Sc.(Arch.), B.Arch.(McG.).

Faculty Lecturer
Julia Bourke

Course Lecturers
Marin Asselin, Jean D’Aragon, Lisa Landrum, Nadia Meratla, Carlos Rueda Plata, David Theodore

Adjunct Professors

Research Associates
Jim Donaldson, Rafik Salama

Associate Members
Clarence Epstein, Tania Martin, Irena Murray, Howard Shubert

Visiting Critics and Lecturers
Each year visitors are involved in the teaching of certain courses as lecturers and critics. These visitors change from year to year; in 2003, they were:


ARCHITECTURAL CERTIFICATION IN CANADA

In Canada, all provincial associations recommend a degree from an accredited professional degree program as a prerequisite for licensure. The Canadian Architectural Certification Board (CABC), which is the sole agency authorized to accredit Canadian professional degree programs in architecture, recognizes two types of accredited degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance, with established educational standards.

Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Since all provincial associations in Canada recommend any applicant for licensure to have graduated from a CABC-accredited program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture. While graduation from a CABC-accredited program does not assure registration, the
McGill University, Undergraduate Programs 2004-2005

Engineering – Architecture

The accrediting process is intended to verify that each accredited program substantially meets those standards that, as a whole, comprise an appropriate education for an architect.

PROGRAMS OF STUDY
McGill's professional program in architecture is structured as a four and a half year, or nine-term, course of study divided into two parts.

The first part, for students entering with the Diploma of Collegial Studies in Pure and Applied Science or the equivalent, is a six-term design program leading to a non-professional degree, Bachelor of Science (Architecture). [Most students from outside Quebec are admitted to an eight-term B.Sc.(Arch.) program and enter a first year which includes courses outlined in section 3.1.3 “Architecture – Basic Science Requirements for Students Entering from Outside Quebec.”]

The second part, for students with the B.Sc.(Arch.) degree, is a one and a half year, or three-term, program leading to the professional Master of Architecture I degree. The professional M.Arch. I is accredited by the Canadian Architectural Certification Board (CACB), and is recognized as accredited by the National Council of Architectural Registration Boards (NCARB) in the USA.

Students in the B.Sc.(Arch.) program who intend to proceed to the professional degree must satisfy certain minimum requirements including:

1. complete the B.Sc.(Arch.) degree, including the series of required and complementary courses stipulated for professional studies, with a minimum CGPA of 3.00;
2. submit a portfolio of work executed in the sequence of six design studios, as well as samples of professional and personal work;
3. complete the minimum period of relevant work experience according to the current Work Experience Guidelines.

Further information on the professional M.Arch. I program is available on the Web at www.mcgill.ca/architecture.

Student Exchanges
A limited number of qualified students may participate in an exchange with Schools of Architecture at other universities which have agreements with the McGill School of Architecture, for a maximum of one term in the second year of the B.Sc.(Arch.) program. These include: Facultad de Arquitectura, Universidad de Los Andes, Bogotá, Colombia; Istituto Universitario di Architettura di Venezia, Venice, Italy; Fakultät für Raumplanung un Architektur, Technische Universität Wien, Vienna, Austria; The Technion - Israel Institute of Technology, Haifa, Israel; Institut Supérieur d'Architecture, Saint-Luc Bruxelles, Brussels, Belgium; École d'architecture de Grenoble, Grenoble, France; École d'architecture Clermont-Ferrand, Clermont-Ferrand, France; Facoltà di Architettura Civile Politecnico di Milano (Boviso); Virginia Polytechnic Institute and State University, Faculty of Architecture; Alexandria Centre for Architecture and Urban Studies (M.Arch. only), Universidad Nacional Autonoma de Mexico, Facultad de Arquitectura; Tecnologico de Monterrey (Campus Queretaro); Departamento de Arquitectura; University of Florida, School of Architecture.

ANCILLARY ACADEMIC FACILITIES

Laboratories and Workshops
Architectural Workshops – David Speller, Technician.

Communications Laboratory, including Photo Lab – Carrie Henzie, Media Technician.

Computers in Architecture Laboratory and the Apple Design and Modeling Centre – Professors Robert Mellin and Richard Russell.

Building Science Resource Centre – Dr. Avi Friedman.

Library

Collections
Visual Resources Collection, including slides, film, video and other materials – Dr. Annmarie Adams.

Canadian Architecture Collection, housed in the Blackader-Lauterman Library – Irena Murray.

Orson Wheeler Architectural Model Collection – Professor Pieter Sijpkes.

Materials Resource Centre – Dr. Avi Friedman.

CURRICULUM FOR THE B.Sc.(Arch.) DEGREE

REQUIRED COURSES

Non-Departmental Subjects

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tr>
<td>CIVE205</td>
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<tr>
<td>CIVE283</td>
<td>Strength of Materials</td>
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<tr>
<td>CIVE385*</td>
<td>Structural Steel and Timber Design</td>
<td>3</td>
</tr>
<tr>
<td>CIVE388*</td>
<td>Foundations and Concrete Design</td>
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<td>CIVE492*</td>
<td>Structures</td>
<td>2</td>
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<td>FACC220</td>
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Candidates intending not to proceed to the M.Arch. I degree may substitute other courses of equal total weight for any of these.

Architectural Subjects

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<th>Course Title</th>
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<td>ARCH201</td>
<td>Communication, Behaviour and Architecture</td>
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</tr>
<tr>
<td>ARCH202</td>
<td>Architectural Graphics and Design Elements</td>
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<td>ARCH218</td>
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<tr>
<td>ARCH240</td>
<td>Organization of Materials in Building</td>
<td>3</td>
</tr>
<tr>
<td>ARCH250</td>
<td>Architectural History</td>
<td>3</td>
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<tr>
<td>ARCH251</td>
<td>Architectural History</td>
<td>3</td>
</tr>
<tr>
<td>ARCH303</td>
<td>Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>ARCH304</td>
<td>Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>ARCH321</td>
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<tr>
<td>ARCH322</td>
<td>Freehand Drawing 4</td>
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<tr>
<td>ARCH324</td>
<td>Sketching School 1</td>
<td>1</td>
</tr>
<tr>
<td>ARCH354</td>
<td>Architectural History</td>
<td>3</td>
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<tr>
<td>ARCH355</td>
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</tr>
<tr>
<td>ARCH375</td>
<td>Landscape</td>
<td>3</td>
</tr>
</tbody>
</table>

* Students may substitute other courses of equal total weight for any of these.

COMPLEMENTARY COURSES

Students must complete 12 credits of architectural complements which must include at least one course from each of the areas of concentration listed below in order to qualify for the B.Sc.(Arch.) degree.

A. History  B. Theory  C. Environmental  D. Technics

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit</th>
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<td>ARCH528</td>
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</tr>
<tr>
<td>ARCH531</td>
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OUTSIDE ELECTIVES

3 credits must be completed outside the School of Architecture, subject to approval by the Student Advisor.

TOTAL CREDITS 97

Architectural Complements

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>Introduction to Architectural History</td>
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<td>ARCH253</td>
<td>Introduction to Architectural History</td>
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* Candidates intending not to proceed to the M.Arch. I degree may substitute other courses of equal total weight for any of these.

Architectural Subjects

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ARCH201</td>
<td>Communication, Behaviour and Architecture</td>
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<tr>
<td>ARCH202</td>
<td>Architectural Graphics and Design Elements</td>
<td>6</td>
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<td>ARCH217</td>
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<td>Freehand Drawing 2</td>
<td>1</td>
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<tr>
<td>ARCH240</td>
<td>Organization of Materials in Building</td>
<td>3</td>
</tr>
<tr>
<td>ARCH250</td>
<td>Architectural History</td>
<td>3</td>
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<tr>
<td>ARCH251</td>
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<td>Design and Construction</td>
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<td>Design and Construction</td>
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<td>ARCH322</td>
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<td>ARCH324</td>
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* Candidates intending not to proceed to the M.Arch. I degree may substitute other courses of equal total weight for any of these.

Architectural Subjects

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
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<td>ARCH202</td>
<td>Architectural Graphics and Design Elements</td>
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<td>ARCH218</td>
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<td>ARCH240</td>
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<td>ARCH250</td>
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<tr>
<td>ARCH375</td>
<td>Landscape</td>
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</tr>
</tbody>
</table>

* Candidates intending not to proceed to the M.Arch. I degree may substitute other courses of equal total weight for any of these.
The central purpose of engineering is to pursue solutions to technological problems in order to satisfy the needs and desires of society. Chemical engineers are trained to solve the kinds of problems that are typically found in the "chemical process industries", which include the chemical manufacturing, plastics, water treatment, pulp and paper, petroleum refining, ceramics, and paint industries as well as substantial portions of the food processing, textile, nuclear energy, biochemical and pharmaceutical industries. The technological problems and opportunities in these industries are often closely linked to social, economic and environmental concerns. For this reason, practitioners of chemical engineering often deal with these questions when they are working in management, pollution abatement, product development, marketing and equipment design.

The discipline of chemical engineering is distinctive in being based equally on physics, mathematics and chemistry. Application of these three fundamental sciences is basic to a quantitative understanding of the process industries. Those with an interest in the fourth major science, biology, will find several courses in the chemical engineering curriculum which integrate aspects of the biological sciences relevant to process industries such as food processing, fermentation and water pollution control. Courses on the technical operations and economics of the process industries are added to this foundation. The core curriculum concludes with process design courses taught by practicing design engineers.

The solution to many environmental problems requires an understanding of technological principles. A chemical engineering degree provides an ideal background. In addition to relevant material learned in the core program, a selection of environmental complementary courses and minor programs is available. The involvement of many chemical engineering staff members in environmental research provides the opportunity for undergraduate students to carry out research projects in this area.

The curriculum also provides the preparation necessary to undertake postgraduate studies leading to the M.Eng. or Ph.D. degrees in chemical engineering. Students completing this curriculum acquire a broad, balanced education in the natural sciences with the accent on application. Thus, for those who do not continue in chemical engineering, it provides an exceptionally balanced education in applied science. For others, it will form the basis of an educational program that may have a variety of studies such as business administration, medicine or law. Versatility is, then, one of the most valuable characteristics of the graduate of the chemical engineering program.

**ACADEMIC PROGRAM**

For those who have completed the Quebec CEGEP-level program in Pure and Applied Sciences, the Chemical Engineering Program comprises 111 credits as outlined below. Certain students who take advantage of summer session courses can complete the departmental programs in three calendar years. Students who have passed Chemistry 202 or 302 at the CEGEP level may be exempt from course CHEM212 or CHEM234, respectively (Intro-
uctory Organic Chemistry 1 and Selected Topics in Organic Chemistry), the corresponding courses are transferred from required courses to electives.

For appropriately qualified high school graduates from outside Quebec, an extended credit program is available, as described in section 3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”.

In some cases students from university science disciplines have sufficient credits to complete the requirements for the B.Eng. (Chemical) program in two years. Those concerned should discuss this with their advisor.

Students must obtain a C grade or better in all core courses. For the Department of Chemical Engineering, core courses include all required courses (departmental and non-departmental) as well as complementary courses (departmental). A grade of “D” is a passing grade in other complementary courses and in any elective courses taken.

**CURRICULUM FOR THE B.ENG. DEGREE IN CHEMICAL ENGINEERING**

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CHEM212 Introductory Organic Chemistry 1</td>
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<td>CHEM233 Topics in Physical Chemistry</td>
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</tr>
<tr>
<td>CHEM234 Topics in Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>COMP208 Computers in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MATH262 Intermediate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH264 Advanced Calculus</td>
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<tr>
<td>MIME221 Engineering Professional Practice</td>
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<tr>
<td>MIME310 Engineering Economy</td>
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Chemical Engineering Courses

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<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>CHEE200 Introduction to Chemical Engineering</td>
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<tr>
<td>CHEE204 Chemical Manufacturing Processes</td>
<td>3</td>
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<tr>
<td>CHEE220 Chemical EngineeringThermodynamics</td>
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<tr>
<td>CHEE291 Instrumental Measurements Laboratory</td>
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<tr>
<td>CHEE314 Fluid Mechanics</td>
<td>4</td>
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<td>CHEE315 Heat and Mass Transfer</td>
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<td>CHEE340 Process Modelling</td>
<td>3</td>
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<td>CHEE351 Separation Processes</td>
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<tr>
<td>CHEE360 Technical Paper 1</td>
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<td>CHEE370 Elements of Biotechnology</td>
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<td>CHEE380 Materials Science</td>
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<tr>
<td>CHEE392 Project Laboratory 1</td>
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<td>CHEE423 Chemical Reaction Engineering</td>
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<td>CHEE453 Process Design</td>
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<td>CHEE457 Project Design 2</td>
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<td>CHEE462 Technical Paper 2</td>
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<tr>
<td>CHEE474 Biochemical Engineering</td>
<td>3</td>
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<tr>
<td>CHEE484 Materials Engineering</td>
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</table>

COMPLEMENTARY COURSES

Courses to be selected from those approved by the Department (see list of technical complementaries below)

Two courses (6 credits), selected from an approved list:

- one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

**TOTAL**

111

For students starting their B.Eng. studies in September who have completed the Quebec Diploma of Collegial Studies, a program for students with an area of specialization within the broad field of chemical engineering. Alternatively, some students use the technical complementaries to increase the breadth of their chemical engineering training.

At least two (2) technical complementary courses are to be selected from those offered by the Department (list below). Permission is given to take the third complementary course from other suitable undergraduate courses in the Faculty of Engineering.

The Technical Complementary courses currently approved by the Department are as follows:

- BIOT505 Selected Topics in Biotechnology (Biotechnology Minor students only)
- CHEE363 Projects Chemical Engineering 1
- CHEE438 Engineering Principles in Pulp and Paper Processes
- CHEE452 Particulate Systems
- CHEE458 Computer Applications
- CHEE464 Projects in Chemical Engineering 2
- CHEE471 Industrial Water Pollution Control (or CIVE430)
- CHEE472 Industrial Air Pollution Control (or MECH534)
- CHEE481 Polymer Engineering
- CHEE487 Chemical Processing Electronics Industry
- CHEE489 Electrochemical Engineering
- CHEE494 Research Project and Seminar
- CHEE495 Research Project and Seminar
- CHEE571 Small Computer Applications: Chemical Engineering
- CHEE581 Polymer Composites Engineering

Courses CHEE481 and CHEE581 comprise a Polymeric Materials sequence. Additional courses in this area are available in the Chemistry Department (e.g., CHEM455) or at the graduate level (CHEE681 to CHEE684). The Department has considerable expertise in the polymer area.

Courses CHEE370 and CHEE474 make up a sequence in Biochemical Engineering-Biotechnology. Students interested in this area may take additional courses, particularly those offered by the Department of Food Science and Agricultural Chemistry, Faculty of Agricultural and Environmental Sciences, and courses in biochemistry and microbiology. The food, beverage and pharmaceutical industries are large industries in the Montreal area and these courses are relevant to these industries and to the new high technology applications of biotechnology.

The third area in which there is a sequence of courses is Pollution Control. The Department offers two courses in this area: CHEE471 and CHEE472. As some water pollution control problems are solved by microbial processes, course CHEE474 is also relevant to the pollution control area. Likewise as the solution to pollution problems frequently involves removal of particulate matter from gaseous or liquid streams, course CHEE452 is also rele-
vant. Additional courses in this area are listed under section 5.7 “Environmental Engineering Minor”.

A Minor in Biotechnology is also offered in the Faculties of Engineering and of Science with emphasis on Molecular Biology and Chemical Engineering Processes. A full description of the program appears in section 5.2 “Biotechnology Minor”.

Note that many of the technical complementaries are offered only in alternate years. Students should, therefore, plan their complementaries as far ahead as possible. With the approval of the instructor and academic advisor, students may also take graduate (CHEE500-level) courses as technical complementaries.

**ELECTIVE COURSES**

Students who have obtained exemptions for courses, i.e., for CEGEP courses equivalent to CHEM212 or CHEM234, or who take more than the minimum requirements for the degree, may choose university-level courses in any field. Approval of an elective course requires only that no timetable conflicts are created and that it not be a repetition of material already covered in the curriculum or already mastered by the student.

**CURRICULUM COMMITTEE**

The Curriculum Committee is composed of three students, elected by their classes, and two staff members. This Committee provides a forum for all matters involving undergraduate student/staff interactions. While the primary concern is with matters of curriculum and courses (their content, evaluation, scheduling, etc.), the Committee has also taken up a number of other matters in recent years, e.g., working space, facilities (equipment and libraries), etc.

**CANADIAN SOCIETY FOR CHEMICAL ENGINEERING**

The Chemical Engineering Student Society has for many years been affiliated both with the CSChE (Canadian Society for Chemical Engineering) and with the AIChe (American Institute of Chemical Engineers). For a nominal fee students receive Canadian Chemical News, a monthly publication, and the AIChe Student Members Bulletin as well as other privileges of student membership in the two societies. The student chapter also organizes a series of local social, educational and sporting events. For example, recent events have included student-professor banquet and Christmas parties, dances, speakers, broomball games and joint meetings with the Montreal Section of the CSChE. The latter gives students a chance to mix with practising chemical engineers.

### 4.3 Department of Civil Engineering and AppliedMechanics

Macdonald Engineering Building, Room 492
817 Sherbrooke Street West
Montreal, QC H3A 2K6

Telephone: (514) 386-6800
Fax: (514) 398-7361
Website: [www.mcgill.ca/civil](http://www.mcgill.ca/civil)

*Chair* — Dennis Mitchell

**Emeritus Professors**


Stuart B. Savage; B.Eng.(McG.), M.S.Eng.(Cal. Tech.), Ph.D.(McG.), F.R.S.C.

**Professors**

Vincent H. Chu; B.S.Eng.(Taiwan), M.A.Sc.(Tor.), Ph.D.(M.I.T.), Eng.


Suresh C. Shrivastava; B.Sc.(Eng.) (Vikram), M.C.E.(Del.), Sc.D.(Col.), Eng.

**Associate Professors**


Susan J. Gaskin; B.Sc.(Queen’s), Ph.D.(Canterbury)

Subhasis Ghoshal; B.C.E. (Jadavpur), M.S.(Missouri), Ph.D.(Carnegie Mellon)

Ronald Gehr; B.Sc.(Eng.)(Rand), M.A.Sc., Ph.D.(Tor.), P.Eng.


James Nicell; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P.Eng. (*William Dawson Scholar*)

Yixin Shao; B.S., M.S.(Tongji), Ph.D.(Northwestern)

**Assistant Professors**

Murtaza Haider; B.Sc.(Peshawar), M.A.Sc., Ph.D.(Tor.) (*joint appoint. with School of Urban Planning*)

Colin Rogers; B.A.Sc.(Waterloo), M.A.Sc., Ph.D.(Sydney), P.Eng.

**Adjunct Professors**


Civil engineers have traditionally applied scientific and engineering knowledge to the task of providing the built environment, from its conception and planning to its design, construction, maintenance and rehabilitation. Examples include buildings, bridges, roads, railways, dams, and facilities for water supply and treatment, and waste disposal. With the aging and deterioration of an already vast infrastructure, its maintenance and rehabilitation has become an increasingly important role of the civil engineering profession. Also, with worldwide concern about the detrimental impact of human activities on the environment, civil engineers are now in the forefront of developing and providing the means for both prevention and remediation of many aspects of environmental pollution. The program in Civil Engineering is comprehensive in providing the fundamentals in mechanics and engineering associated with the diverse fields of the profession, in offering choices of specialization, and in fully reflecting the advances in science, mathematics, engineering and computing that have transformed all fields of engineering in recent years. The resulting knowledge and training enables graduates to not only enter the profession thoroughly well prepared, but also to adapt to further change. The required courses ensure a sound scientific and analytical basis for professional studies through courses in solid mechanics, fluid mechanics, soil mechanics, environmental engineering, water resources management, structural analysis, systems analysis and mathematics. Fundamental concepts are applied to various fields of practice in both required and complementary courses. By a suitable choice of complementary courses, students can attain advanced levels of technical knowledge in the specialized areas mentioned above. Alternatively, students may choose to develop their interests in a more general way by combining complementary courses within the Department with several from other departments or faculties.

Students who wish to extend their knowledge in certain areas beyond the range that the program complementary courses allow, can also take a Minor program. Minors are available in fields such as Arts, Economics, Management, Environmental Engineering, and Construction Engineering and Management. These require additional credits to be taken from a specified list of topics relating to the chosen field. Further information on the various Minor programs may be found in section 5 Minor Programs and Choice of Electives or Complementary Courses*. Details of how the Minors can be accommodated within the Civil Engineering program will be made available at the time of preregistration counselling.
ACADEMIC PROGRAMS

Considerable freedom exists for students to influence the nature of the program of study which they follow in the Department of Civil Engineering and Applied Mechanics. A variety of advanced complementary courses is offered in five main groupings: Environmental Engineering, Geotechnical and Geoenvironmental Engineering, Water Resources and Hydraulic Engineering, Structural Engineering, and Transportation Engineering.

Guidance on the sequence in which required core courses should be taken is provided for students in the form of a sample program which covers the entire period of study. The technical complementary courses selected, usually in the last two terms of the program, will depend upon the student's interests. All students must meet with their advisor each term to confirm the courses for which they are registered.

Courses taken in Term 3 or later will depend on a student's interests and ability. Information and advice concerning different possibilities are made available in the Department prior to registration. All programs require the approval of a staff advisor. Programs for students transferring into the Department with advanced standing will be dependent upon the academic credit previously achieved, and such a program will be established only after consultation with a staff advisor.

CURRICULUM FOR THE B.ENG. DEGREE IN CIVIL ENGINEERING

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
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<tbody>
<tr>
<td>COMP208 Computers in Engineering</td>
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<tr>
<td>EDEC206 Communication in Engineering</td>
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</tr>
<tr>
<td>EPSC221 Geology</td>
<td>3</td>
</tr>
<tr>
<td>MATH252 Intermediate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH263 Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH264 Advanced Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MECH261 Measurement Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MECH290 Graphics 2</td>
<td>3</td>
</tr>
<tr>
<td>MIME221 Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>MIME310 Engineering Economy</td>
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TOTAL CREDITS 28

DEPARTMENTAL COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CIVE202 Construction Materials</td>
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<tr>
<td>CIVE205 Statics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE206 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE207 Solid Mechanics</td>
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</tr>
<tr>
<td>CIVE208 Civil Engineering Systems Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CIVE210 Surveying</td>
<td>2</td>
</tr>
<tr>
<td>CIVE225 Environmental Engineering</td>
<td>4</td>
</tr>
<tr>
<td>CIVE230 Thermodynamics and Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>CIVE302 Probabilistic Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIVE311 Geotechnical Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>CIVE320 Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td>CIVE321 Geotechnical Analysis</td>
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<tr>
<td>CIVE323 Hydrology and Water Resources</td>
<td>3</td>
</tr>
<tr>
<td>CIVE324 Construction Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CIVE327 Fluid Mechanics and Hydraulics 2</td>
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<tr>
<td>CIVE409 Design Project</td>
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<tr>
<td>CIVE432 Technical Paper</td>
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</tbody>
</table>

COMPLEMENTARY COURSES

A minimum of six credits to be selected from list (a) and the remaining nine credits to be selected from lists (a) or (b) or from other suitable undergraduate or 500-level courses.

(a) Design Technical Complementaries

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CIVE416 (3) Geotechnical Engineering</td>
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<td>CIVE421 (3) Municipal Systems</td>
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</tr>
<tr>
<td>CIVE428 (3) Water Resources and Hydraulic Engineering</td>
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</tr>
<tr>
<td>CIVE462 (3) Design of Steel Structures</td>
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<tr>
<td>CIVE463 (3) Design of Concrete Structures</td>
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(b) General Technical Complementaries

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<tr>
<td>CIVE430 (3) Water Treatment and Pollution Control</td>
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</tr>
<tr>
<td>CIVE433 (3) Urban Planning</td>
<td></td>
</tr>
<tr>
<td>CIVE440 (3) Traffic Engineering</td>
<td></td>
</tr>
<tr>
<td>CIVE446 (3) Construction Engineering</td>
<td></td>
</tr>
<tr>
<td>CIVE451 (3) Geoenvironmental Engineering</td>
<td></td>
</tr>
<tr>
<td>CIVE460 (3) Matrix Structural Analysis</td>
<td></td>
</tr>
<tr>
<td>CIVE470 (3) Research Project</td>
<td></td>
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<tr>
<td>CIVE512 (3) Advanced Civil Engineering Materials</td>
<td></td>
</tr>
<tr>
<td>CIVE514 (3) Structural Mechanics</td>
<td></td>
</tr>
<tr>
<td>CIVE526 (3) Solid Waste Management</td>
<td></td>
</tr>
<tr>
<td>CIVE527 (3) Renovation and Preservation: Infrastructure</td>
<td></td>
</tr>
<tr>
<td>CIVE540 (3) Urban Transportation Planning</td>
<td></td>
</tr>
<tr>
<td>CIVE541 (3) Rail Engineering</td>
<td></td>
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<tr>
<td>CIVE550 (3) Water Resources Management</td>
<td></td>
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<td>CIVE553 (3) Stream Pollution and Control</td>
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<tr>
<td>CIVE555 (3) Environmental Data Analysis</td>
<td></td>
</tr>
<tr>
<td>CIVE570 (3) Waves and Coastal Engineering</td>
<td></td>
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<tr>
<td>CIVE572 (3) Computational Hydraulics</td>
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<tr>
<td>CIVE573 (3) Hydraulic Structures</td>
<td></td>
</tr>
<tr>
<td>CIVE574 (3) Fluid Mechanics of Water Pollution</td>
<td></td>
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<tr>
<td>CIVE576 (3) Hydrodynamics</td>
<td></td>
</tr>
<tr>
<td>CIVE577 (3) River Engineering</td>
<td></td>
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<tr>
<td>CIVE579 (3) Water Power Engineering</td>
<td></td>
</tr>
<tr>
<td>CIVE585 (3) Groundwater Hydrology</td>
<td></td>
</tr>
<tr>
<td>CIVE586 (3) Earthwork Engineering</td>
<td></td>
</tr>
<tr>
<td>CIVE587 (3) Pavement Design</td>
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</table>

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 "Complementary Studies" for further information.

TOTAL CREDITS 109

4.4 Department of Electrical and Computer Engineering

Department of Electrical & Computer Engineering
Undergraduate Programs Office
Lorne Trotter Building, Room 2060
3630 University Street
Montreal, QC H3A 2B2
Telephone: (514) 398-3943
Fax: (514) 398-4653
Website: www.ece.mcgill.ca

Chair — David A. Lowther
Associate Chair, Graduate Affairs — Jonathan P. Webb
Associate Chair, Undergraduate Affairs — Benoit Champagne

Emeritus Professors

Eric L. Adler; B.Sc.(Lond.), M.A.Sc.(Tor.), Ph.D.(McG.), F.I.E.E.E., Eng.

Post-Retirement

Clifford H. Champie; M.Sc.(Lond.), Ph.D.(McG.)

Professors

Peter E. Caines; B.A.(Oxon.), D.I.C. Ph.D.(Lond.), F.R.S.C., F.I.E.E.E., F.C.I.A.R. (James McGill Professor) and (Macdonald Professor)
The Department of Electrical and Computer Engineering offers undergraduate degree programs in Electrical Engineering, Electrical Engineering (Honours), Computer Engineering, and Software Engineering. All programs provide students with a strong background in mathematics, physical science, engineering science, engineering design and complementary studies, in conformity with the requirements of the Canadian Engineering Accreditation Board (CEAB).

The program in Electrical Engineering gives students a broad understanding of the key principles that are responsible for the extraordinary advances in the technology of computers, microelectronics, automation and robotics, telecommunications and power systems. These areas are critical to the development of our industries and, more generally, to our economy. A graduate of this program is exposed to all basic elements of electrical engineering and can function in any of our client industries. This breadth is what distinguishes an electrical engineer, say, a computer scientist or physicist.

The program in Electrical Engineering (Honours) is designed for students who wish to pursue postgraduate work and look to a career in advanced research and development. The technical complementaries are selected from graduate courses, facilitating the transition to postgraduate studies. Students in this curriculum benefit from smaller classes and have more contact with professional staff and graduate students. However, the program is quite demanding. Students are expected to register for at least 14 credits per term; they may register for a smaller number only with the permission of the Chair of this Department. Students in the Honours program must maintain a minimum GPA of 3.00. Those who fail to maintain this standard are transferred to the regular program.

The program in Computer Engineering provides students with greater depth and breadth of knowledge in the hardware and software aspects of computers. Students are exposed to both theoretical and practical issues of both hardware and software in well-equipped laboratories. Although the program is designed to meet the growing demands by industry for engineers with a strong background in modern computer technology, it also provides the underlying depth for graduate studies in all fields of Computer Engineering.

The Department, jointly with the School of Computer Science, offers a Bachelor of Software Engineering program*. Graduates of this program should be eligible for accreditation (once accreditation standards for Software Engineers have been adopted). This program offers students the opportunity to focus their studies on the skills needed to design and develop complex software systems. This emerging field of engineering is a major component of the growing Information Technology (IT) sector of the economy, in which the demand for qualified personnel continues to outstrip supply. Graduates of this program will have a solid foundation for careers in the software industry. [The School of Computer Science offers a B.Sc. Major program in Software Engineering, which will lead to accreditation. For further information on the B.Sc. program see “Computer Science (COMP)” on page 317.]

In addition to technical complementary courses, students in all three programs take general complementary courses in social sciences, administrative studies and humanities. These courses allow students to develop specific interests in areas such as psychology, economics, management or political science.

Entry into the Honours Program

The Honours program is a limited enrolment program and entry is highly competitive. There is no direct entry to the Honours program in the first year. Students may enter the Honours program in the following ways:

- Students from CEGEP will be admitted, on the basis of their grades, at the start of the third term.
- Students from outside Quebec will be admitted, on the basis of their grades, at the start of the fifth term.
- Though not required to do so, students in the Honours program or wishing to enter the Honours program are encouraged to take the following advanced math and physics courses:
  - MATH232: Ordinary Differential Equations instead of MATH261
  - MATH247: Linear Algebra instead of MATH270
To remain in the Honours program and to be awarded the Honours degree, a student must have completed at least 14 credits in each term since entering Electrical and Computer Engineering, except for the final two terms of their degree, and maintained a CGPA of at least 3.00 since entering Electrical and Computer Engineering. In either of their final two full terms (i.e., Fall and Winter, or Winter and Fall) students may drop below 14 credits, provided the combined load for the two terms is at least 16 credits. For more information, please contact the Departmental office at (514)398-7344.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (HONOURS)

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
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<td>COMP202</td>
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<td>ECSE200</td>
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<td>ECSE221</td>
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<td>ECSE291</td>
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<td>ECSE303</td>
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<tr>
<td>ECSE304</td>
<td>3</td>
</tr>
<tr>
<td>ECSE305</td>
<td>3</td>
</tr>
<tr>
<td>ECSE322</td>
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<tr>
<td>ECSE323</td>
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<tr>
<td>ECSE330</td>
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<tr>
<td>ECSE334</td>
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<td>ECSE351</td>
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<td>ECSE352</td>
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<tr>
<td>ECSE361</td>
<td>3</td>
</tr>
<tr>
<td>ECSE498</td>
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Departmental Courses

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<thead>
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<tr>
<td>ECSE200</td>
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<td>ECSE210</td>
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<td>ECSE322</td>
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<tr>
<td>ECSE323</td>
<td>3</td>
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<tr>
<td>ECSE330</td>
<td>5</td>
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<td>ECSE334</td>
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<td>ECSE361</td>
<td>3</td>
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<tr>
<td>ECSE498</td>
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COMPLEMENTARY COURSES

Technical Complementaries

Five technical complementary courses (15 credits), which must be ECSE courses at the 500 level (or ECSE427, ECSE451). Students must choose their technical complementary courses so that they complete at least 9 credits in one of the following specializations. However, with Departmental approval, the Honours Thesis courses may count as 6 of the 9 credits. The remaining courses may be any at the 500 level offered by the Department. The choice is not restricted.

Computer Systems Technology

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>ECSE427</td>
<td>Operating Systems 3</td>
</tr>
<tr>
<td>ECSE525</td>
<td>Computer Architecture 3</td>
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<tr>
<td>ECSE532</td>
<td>Computer Graphics 3</td>
</tr>
<tr>
<td>ECSE548</td>
<td>Introduction to VLSI Systems 3</td>
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Control and Automation

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<tr>
<th>COURSE</th>
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<tr>
<td>ECSE501</td>
<td>Linear Systems 3</td>
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<td>ECSE502</td>
<td>Control Engineering 3</td>
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<tr>
<td>ECSE503</td>
<td>Linear Stochastic Systems 1</td>
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<td>ECSE504</td>
<td>Computer Control 3</td>
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<td>ECSE505</td>
<td>Nonlinear Control Systems 3</td>
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<td>ECSE507</td>
<td>Optimization and Optimal Control 3</td>
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<tr>
<td>ECSE509</td>
<td>Probability and Random Sig. 2</td>
</tr>
<tr>
<td>ECSE512</td>
<td>Digital Signal Processing 1</td>
</tr>
<tr>
<td>ECSE529</td>
<td>Image Processing and Communication 3</td>
</tr>
<tr>
<td>ECSE531</td>
<td>Real Time Systems 3</td>
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Integrated Circuits and Electronics

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<tr>
<td>ECSE522</td>
<td>Asynchronous Circuits and Systems 3</td>
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<tr>
<td>ECSE527</td>
<td>Optical Engineering 3</td>
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<tr>
<td>ECSE530</td>
<td>Logic Synthesis 3</td>
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<tr>
<td>ECSE533</td>
<td>Physical Basis of Semiconductor Devices 3</td>
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<td>ECSE534</td>
<td>Analog Microelectronics 3</td>
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<tr>
<td>ECSE545</td>
<td>Microelectronics Technology 3</td>
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<td>ECSE548</td>
<td>Introduction to VLSI Systems 3</td>
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<tr>
<td>ECSE571</td>
<td>Optoelectronic Devices 3</td>
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<tr>
<td>ECSE573</td>
<td>Microwave Electronics 3</td>
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Power Engineering

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<td>Control Engineering 3</td>
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<tr>
<td>ECSE549</td>
<td>Expert Systems in Electrical Design 3</td>
</tr>
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<td>ECSE559</td>
<td>Flexible AC Transmission Systems 3</td>
</tr>
<tr>
<td>ECSE560</td>
<td>Power Systems Analysis 2</td>
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<tr>
<td>ECSE563</td>
<td>Advanced Calculus 2</td>
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<td>ECSE565</td>
<td>Introduction to Power Electronics 3</td>
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Telecommunications

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<td>ECSE451</td>
<td>EM Transmission and Radiation 3</td>
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<td>ECSE509</td>
<td>Probability and Random Sig. 2</td>
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<td>Introduction to Digital Communication 3</td>
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<td>ECSE521</td>
<td>Digital Communications 1</td>
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<td>ECSE571</td>
<td>Optoelectronic Devices 3</td>
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<td>ECSE596</td>
<td>Optical Waveguides 3</td>
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Laboratory Complementaries

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<tr>
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<td>Microprocessor Systems 3</td>
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<tr>
<td>ECSE431</td>
<td>Introduction to VLSI CAD 3</td>
</tr>
<tr>
<td>ECSE435</td>
<td>Mixed-Signal Test Techniques 3</td>
</tr>
<tr>
<td>ECSE485</td>
<td>IC Fabrication Laboratory 3</td>
</tr>
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<td>Computer Architecture Laboratory 3</td>
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<td>Control and Robotics Laboratory 3</td>
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General Complementaries

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<td>MATH262</td>
<td>Intermediate Calculus 3</td>
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TOTAL CREDITS: 108

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (REGULAR)

REQUIRED COURSES

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<td>ECSE427</td>
<td>Operating Systems 3</td>
</tr>
<tr>
<td>ECSE525</td>
<td>Computer Architecture 3</td>
</tr>
<tr>
<td>ECSE532</td>
<td>Computer Graphics 3</td>
</tr>
<tr>
<td>ECSE548</td>
<td>Introduction to VLSI Systems 3</td>
</tr>
</tbody>
</table>
and any one of the following:
- ECSE411 Communications Systems 1
- ECSE412 Discrete Time Signal Processing
- ECSE413 Communications Systems 2
- ECSE423 Fundamentals of Photonics
- ECSE451 EM Transmission and Radiation

Laboratory Complementaries 4
- Two of the following eleven 400-level laboratory courses:
  - ECSE426 Microprocessor Systems
  - ECSE431 Introduction to VLSI CAD
  - ECSE435 Mixed-Signal Test Techniques
  - ECSE485 IC Fabrication Laboratory
  - ECSE486 Power Laboratory
  - ECSE487 Computer Architecture Laboratory
  - ECSE488 High Frequency Laboratory
  - ECSE489 Telecommunication Network Lab
  - ECSE490 Digital Signal Processing Laboratory
  - ECSE491 Communication Systems Laboratory
  - ECSE492 Optical Communications Laboratory
  - ECSE493 Control and Robotics Laboratory

General Complementaries 6
- Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 "Complementary Studies" for further information.

TOTAL CREDITS 108

* Enhanced Power Concentration
The Institute for Electrical Power Engineering was recently established as a province-wide centre for electrical power engineering education. It is funded by industry, mostly Hydro-Quebec, and provides a comprehensive program and state-of-the-art laboratory facilities, and a point of contact between industry and universities involved in power engineering.

This program is open to students in the regular Electrical Engineering program only.

The benefits of the Concentration are:
- a complete and up-to-date final year program in electrical power engineering, with industry-sponsored and supported courses;
- access to industry-sponsored projects, internships and new employment opportunities.

Eligibility criteria: to be considered in September 2004, the applicant must:
- be registered in the B.Eng. program (regular Electrical Engineering);
- have a cumulative GPA of at least 2.70;
- have completed or be registered in ECSE361 (Power Engineering);
- be able to complete the degree requirements by Spring 2005;
- agree to follow the curriculum requirements set out below.

Selection criteria: The number of students selected, expected to be between 5 and 10, will be the subject of a specific agreement between the University and the Institute. Selection criteria to the Institute will be based on CGPA and on the curriculum vitae. The selection process for the scholarship may involve an interview with the committee presided by Hydro-Quebec. There is a possibility of an internship with Hydro-Quebec.

Curriculum requirements for selected students: Generally, unless the University has authorized specific substitutions, students must complete the degree requirements set out in the 2004-05 Undergraduate Programs Calendar with the following specifications:

Technical Electives and Laboratories: All students must take (or have taken) the following courses (18 credits):
- ECSE404 Control Systems
- ECSE460 Appareil électrique (Electrical Power Equipment)
- ECSE462 Electromechanical Energy Conversion
- ECSE464 Power Systems Analysis 1
- ECSE465 Power Electronic Systems
- ECSE468 Electricité industrielle (Industrial Power Systems)
**Enhanced ITT Specialization in Telecommunications**

The International Institute of Telecommunications (ITT) was established in Montreal as a centre for telecommunications education. Funded by government and industry, it provides state-of-the-art laboratory facilities and a point of contact between local telecommunications industries and universities.

This program is open to students in the regular Electrical Engineering program only.

The benefits of the specialization are:
- a guaranteed project lab (ECSE494) in telecommunications, at IT or with an IT company; and
- permission to take ECSE496 at IT.

To complete the specialization, students must take six courses as technical complementsaries:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECSE411</td>
<td>Communications Systems 1</td>
<td>3</td>
</tr>
<tr>
<td>ECSE414</td>
<td>Introduction to Telecommunication Networks</td>
<td>3</td>
</tr>
<tr>
<td>ECSE496</td>
<td>Telecommunications Systems and Services</td>
<td>3</td>
</tr>
<tr>
<td>and any three courses selected from the following list:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECSE412</td>
<td>Discrete Time Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECSE413</td>
<td>Communications Systems 2</td>
<td>3</td>
</tr>
<tr>
<td>ECSE423</td>
<td>Fundamentals of Photonics</td>
<td>3</td>
</tr>
<tr>
<td>ECSE451</td>
<td>EM Transmission and Radiation</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, students must take ECSE491 (Communications Systems Lab) and complete ECSE494 (Electrical Engineering Design Project) in telecommunications, at IT or with an IT company.

There may be an enrollment limitation in this specialization in any given term.

**Curriculum for the B.Eng. Degree in Computer Engineering**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH262</td>
<td>Intermediate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH263</td>
<td>Ordinary Differential Equations and Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH264</td>
<td>Advanced Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH248*</td>
<td>Advanced Calculus 1 (3)</td>
<td>3</td>
</tr>
<tr>
<td>MATH270</td>
<td>Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH363</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH381</td>
<td>Complex Variables and Transforms</td>
<td>3</td>
</tr>
<tr>
<td>CIVE281</td>
<td>Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS251</td>
<td>Classical Mechanics 1 (3)</td>
<td>3</td>
</tr>
<tr>
<td>MIME221</td>
<td>Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>MIME310</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>COMP202</td>
<td>Introduction to Computing</td>
<td>3</td>
</tr>
<tr>
<td>COMP250</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>COMP302</td>
<td>Programming Languages and Paradigms</td>
<td>3</td>
</tr>
<tr>
<td>EDEC206</td>
<td>Communication in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>* CGPA of 3.30 is required to register for MATH247 and MATH248.</td>
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</table>

**Departmental Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECSE200</td>
<td>Fundamentals of Electrical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECSE210</td>
<td>Circuit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECSE221</td>
<td>Introduction to Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECSE291</td>
<td>Electrical Measurements Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>ECSE303</td>
<td>Signals and Systems 1</td>
<td>3</td>
</tr>
<tr>
<td>ECSE304</td>
<td>Signals and Systems 2</td>
<td>3</td>
</tr>
<tr>
<td>ECSE305</td>
<td>Probability and Random Sig. 1</td>
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<tr>
<td>ECSE312</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td>ECSE322</td>
<td>Computer Engineering</td>
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<tr>
<td>ECSE323</td>
<td>Digital System Design</td>
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<tr>
<td>ECSE330</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECSE334</td>
<td>Introduction to Microelectronics</td>
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<tr>
<td>ECSE353</td>
<td>Electromagnetic Fields and Waves</td>
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</tr>
<tr>
<td>ECSE425</td>
<td>Computer Organization and Architecture</td>
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</tr>
<tr>
<td>ECSE427</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECSE494</td>
<td>Electrical Engineering Design Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECSE404</td>
<td>Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECSE411</td>
<td>Communications Systems 1</td>
<td>3</td>
</tr>
<tr>
<td>ECSE412</td>
<td>Discrete Time Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECSE414</td>
<td>Introduction to Telecommunication Networks</td>
<td>3</td>
</tr>
<tr>
<td>or COMP353</td>
<td>Computer Networks 1</td>
<td>3</td>
</tr>
<tr>
<td>ECSE424</td>
<td>Human-Computer Interaction</td>
<td>3</td>
</tr>
<tr>
<td>ECSE426</td>
<td>Microprocessor Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECSE428</td>
<td>Software Engineering Practice</td>
<td>3</td>
</tr>
<tr>
<td>ECSE431</td>
<td>Introduction to VLSI CAD</td>
<td>3</td>
</tr>
<tr>
<td>ECSE530</td>
<td>Logic Synthesis</td>
<td>3</td>
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<tr>
<td>ECSE526</td>
<td>Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>ECSE531</td>
<td>Real Time Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECSE532</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ECSE548</td>
<td>Introduction to VLSI Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMP420</td>
<td>Files and Databases</td>
<td>3</td>
</tr>
<tr>
<td>COMP431</td>
<td>Algorithms for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>COMP575</td>
<td>Fundamentals of Distributed Algorithms</td>
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</table>

**Laboratory Complementsaries**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECSE490</td>
<td>Digital Signal Processing Laboratory</td>
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<tr>
<td>ECSE491</td>
<td>Communication Systems Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECSE493</td>
<td>Control and Robotics Laboratory</td>
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</table>

**General Complementsaries**

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

---

**Total Credits**

108

**Curriculum for the Bachelor of Software Engineering (B.S.E.)**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP202</td>
<td>Introduction to Computing</td>
<td>3</td>
</tr>
<tr>
<td>COMP206</td>
<td>Introduction to Software Systems</td>
<td>3</td>
</tr>
<tr>
<td>COMP250</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>COMP251</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>COMP302</td>
<td>Programming Languages and Paradigms</td>
<td>3</td>
</tr>
<tr>
<td>COMP330</td>
<td>Theoretical Aspects: Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>COMP360</td>
<td>Algorithm Design Techniques</td>
<td>3</td>
</tr>
<tr>
<td>COMP361</td>
<td>Systems Development Project</td>
<td>3</td>
</tr>
<tr>
<td>COMP420</td>
<td>Files and Databases</td>
<td>3</td>
</tr>
<tr>
<td>ECSE221</td>
<td>Introduction to Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECSE321</td>
<td>Introduction to Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECSE322</td>
<td>Computer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECSE427</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECSE428</td>
<td>Software Engineering Practice</td>
<td>3</td>
</tr>
<tr>
<td>ECSE429</td>
<td>Software Validation</td>
<td>3</td>
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<tr>
<td>ECSE495</td>
<td>Software Engineering Design Project</td>
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</tr>
<tr>
<td>MATH262</td>
<td>Intermediate Calculus</td>
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</tbody>
</table>
MATH263 Ordinary Differential Equations and Linear Algebra 3
MATH264 Advanced Calculus 3
MATH270 Applied Linear Algebra 3
MATH363 Discrete Mathematics 3
MATH381 Complex Variables and Transforms 3

Engineering Breadth Required Courses
ECSE200 Fundamentals of Electrical Engineering 3
ECSE210 Circuit Analysis 3
ECSE291 Electrical Measurements Laboratory 2
ECSE303 Signals and Systems 1 3
ECSE305 Probability and Random Sig. 1 3
ECSE330 Introduction to Electronics 3
EDEC206 Communication in Engineering 3
MIME310 Engineering Economy 3
MIME221 Engineering Professional Practice 2 25

Technical Complementaries

Students must take 11-12 credits of technical complementaries from the following list, of which at least 6 credits must be taken from list A and the remainder from list B.

Group A Technical Complementaries
COMP350 Numerical Computing 3
COMP409 Concurrent Programming 3
COMP424 Topics: Artificial Intelligence 1 3
COMP433 Personal Software Engineering 3
COMP524 Theoretical Foundations of Programming Languages 3
COMP575 Fundamentals of Distributed Algorithms 3

Group B Technical Complementaries
ECSE304 Signals and Systems 2 3
ECSE323 Digital Systems Design 3
ECSE404 Control Systems 3
ECSE411 Communications Systems 1 3
ECSE412 Discrete Time Signal Processing 3
ECSE413 Communications Systems 2 3
ECSE414 Introduction to Telecommunication Networks 3
or COMP535 Computer Networks 1 3
ECSE421 Embedded Systems 3
ECSE422 Fault Tolerant Computing 3
ECSE420 Parallel Computing 3
ECSE424 Human-Computer Interaction 3
ECSE425 Computer Organization and Architecture 3
ECSE426 Microprocessor Systems 3
or COMP573 Microprocessors 3
ECSE504 Computer Control 3
ECSE522 Asynchronous Circuits and Systems 3
ECSE526 Artificial Intelligence 3
ECSE529 Image Processing and Communication 3
ECSE530 Logic Synthesis 3
ECSE531 Real Time Systems 3
ECSE532 Computer Graphics 3
or COMP557 Fundamentals of Computer Graphics 3
COMP410 Mobile Computing 3
COMP412 Software for E-commerce 3
COMP505 Advanced Computer Architecture 3
COMP520 Compiler Design 3
COMP566 Discrete Optimization 1

General Complementaries

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

TOTAL CREDITS 108/109

4.5 Department of Mechanical Engineering

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817 Sherbrooke Street West
Montreal, QC H3A 2K6

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Fax: (514) 398-7365
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Chair — Arun K. Misra

Emeritus Professors
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F.C.A.E., (Thomas Workman Emeritus Professor of Mechanical Engineering)

Post-Retirement
Glen Bach; B.Sc.(Alta.), M.Sc.(Birm.), Ph.D.(McG.)

Professors
Abdul M. Ahmed; B.Sc.(Dhaka), M.Eng., Ph.D.(McG.), Eng. (Thomas Workman Professor of Mechanical Engineering)
Jorge Angeles; B.Eng., M.Eng.(UNAM Mexico), Ph.D.(Stanford),
Eng., F.A.S.M.E., F.C.S.M.E. (James McGill Professor),
F.R.S.C.
Bantwal R. Baliga; B.Tech.(I.I.T., Kanpur), M.Sc.(Case),
Ph.D.(Minnesota)

Wagdi Habashi; B. Eng., M. Eng.(McG.), Ph.D.(Cornell), P. Eng.,
F.A.S.M.E. (NSERC-Bombardier Industrial Research Chair)

John H.S. Lee; B.Eng.(McG.), M.Sc.(M.I.T.), Ph.D.(McG.), Eng.

Dan Mateescu; M.Eng.(Poli.Univ.Buch.), Ph.D.(Rom. Acad. Sci.),
Doctor Honoris Causa (Poliv Univ Buch.), F.C.A.I.S.,
A.F.A.I.A.A. (Aerospace Program Coordinator)

Martin Ostoj-Starzewski; Eng.(Krakow Tech.U.), M.Eng.,
Ph.D.(McG.), F.A.S.M.E. (Canada Research Chair)

Stuart J. Price; B.Sc., Ph.D.(Bristol), P.Eng.

Associate Professors
Martin Buehler; M.Sc., Ph.D.(Yale) (William Dawson Scholar)
Luca Corteleezi; M.Sc., Ph.D.(Caltech)
David L. Frost; B.A.Sc.(U.B.C.), M.S., Ph.D.(Caltech), P.Eng.
Tim Lee; M.S.(Portand State), Ph.D.(Idaho)
Larry B. Lessard; B.Eng.(McG.), M.Sc., Ph.D.(Stanford), P.Eng.

(M.Eng.(McG), Ph.D.(McG.), P.Eng. (Graduate Program Director)

James A. Nemes; B.Sc.(Maryland), M.S., D.Sc.(GWU) (William Dawson Scholar)
Peter Radziszewski; B.Sc.(U.B.C.), M.Sc., Ph.D.(Laval)
Inna Shart; B.A.Sc.(Tor.), Ph.D.(Tor.), P.Eng.
Vince Thomson; B.Sc.(Windsor), Ph.D.(McMaster) (Werner Graupe Professor of Manufacturing Automation)


(Assistant Program Director)

Jörgeslav Kóvecses; M.Sc. (U. Miskolc), Ph.D.(Hung. Acad. Sci.),
P.Eng.

Meyer Nahon; B.Sc.(Queen’s), M.Sc.(Tor.), Ph.D.(McG.), P.Eng. (Canada Research Chair)

(Graduate Program Director)

Inna Shart; B.A.Sc.(Tor.), Ph.D.(Tor.), P.Eng.

(Associate Professor)

Andrew J. Higgins; B.Sc.(Ill.), M.S., Ph.D.(Wash.)
Pascal Hubert; B.Eng., M.Sc.(École Polytechnique),
Ph.D.(U.B.C.), Eng. (Canada Research Chair)

(Assistant Professor)

József Kövecses; M.Sc. (U. Miskolc), Ph.D.(Hung. Acad. Sci.),
P.Eng.

Meyer Nahon; B.Sc.(Queen’s), M.Sc.(Tor.), Ph.D.(McG.), P.Eng. (Canada Research Chair)

(Laboratory Supervisor)

D. Chellan, G. Savard, G. Tewfik

220 2004-2005 Undergraduate Programs, McGill University
Mechanical engineers are traditionally concerned with the conception, design, implementation and operation of mechanical systems. Typical fields of work are aerospace, energy, manufacturing, machinery, and transportation. Because of the very broad nature of the discipline there is usually a high demand for mechanical engineers.

Many mechanical engineers follow other career paths. Graduate studies are useful for the specialists working in research establishments, consulting firms or in corporate research and development.

To prepare the mechanical engineer for a wide range of career possibilities, there is a heavy stress in our curriculum on the fundamental analytical disciplines. This is balanced by a sequence of experimental and design engineering courses which include practice in design, manufacture and experimentation. In these courses students learn how to apply their analytical groundwork to the solution of practical problems.

Specialist interests are satisfied by selecting appropriate complementary courses from among those offered with a specific subject concentration, such as management, industrial engineering, computer science, controls and robotics, bio-engineering, aeronautics, combustion, systems engineering, etc.

The Department offers an Honours Program which is particularly suitable for those with a high aptitude in mathematics and physics and which gives a thorough grounding in the basic engineering sciences. The complementary courses in this program can be utilized to take courses with applied engineering orientation, such as those offered in the regular program, or if preferred, to obtain an even more advanced education in engineering science.

Concentrations in Aeronautical Engineering, Mechatronics and Design are available for students in either the Regular or Honours programs who wish to specialize in these areas.

While the program is demanding, there is time for many extra-curricular activities. Students are active in such professional societies as CASI (Canadian Aeronautics and Space Institute), SAE (Society of Automotive Engineers), and ASME (American Society of Mechanical Engineers) and in various campus organizations.

Relations between faculty and students are extremely close. Social functions, at which students and professors meet to exchange views and get to know each other better, are organized frequently.

### CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT</th>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES</strong></td>
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</tr>
<tr>
<td>Non-Departmental Subjects</td>
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<tr>
<td>CIVE207 Solid Mechanics</td>
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<tr>
<td>COMP208 Computers in Engineering</td>
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<tr>
<td>ECSE461 Electric Machinery</td>
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<tr>
<td>EDEC206 Communication in Engineering</td>
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<tr>
<td>MATH262 Intermediate Calculus</td>
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</tr>
<tr>
<td>MATH263 Ordinary Differential Equations and Linear Algebra</td>
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<tr>
<td>MATH264 Advanced Calculus</td>
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<tr>
<td>MATH271 Linear Algebra and Partial Differential Equations</td>
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<tr>
<td>MIME221 Engineering Professional Practice</td>
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<tr>
<td>MIME260 Materials Science and Engineering</td>
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<tr>
<td>MIME310 Engineering Economy</td>
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<tr>
<td>Departmental Courses</td>
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<tr>
<td>MECH201 Introduction to Mechanical Engineering</td>
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<td>MECH210 Mechanics 1</td>
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<td>MECH220 Mechanics 2</td>
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<td>MECH240 Thermodynamics 1</td>
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<td>MECH260 Machine Tool Laboratory</td>
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<tr>
<td>MECH262 Statistics and Measurement Laboratory</td>
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<tr>
<td>MECH291 Graphics</td>
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<tr>
<td>MECH292 Design 1</td>
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<tr>
<td>MECH309 Numerical Methods in Mechanical Engineering</td>
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</tr>
<tr>
<td>MECH314 Dynamics of Mechanisms</td>
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<td>MECH315 Mechanics 3</td>
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<tr>
<td>MECH321 Mechanics of Deformable Solids</td>
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<td>MECH331 Fluid Mechanics 1</td>
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<td>MECH341 Thermodynamics 2</td>
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<tr>
<td>MECH346 Heat Transfer</td>
<td>3</td>
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<td>MECH362 Mechanical Laboratory 1</td>
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<tr>
<td>MECH383 Applied Electronics and Instrumentation</td>
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</tr>
<tr>
<td>MECH393 Design 2</td>
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</tr>
<tr>
<td>MECH412 Dynamics of Systems</td>
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<tr>
<td>MECH430 Fluid Mechanics 2</td>
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<tr>
<td>MECH437D1 Mechanical Engineering Project</td>
<td>3</td>
</tr>
<tr>
<td>MECH437D2 Mechanical Engineering Project</td>
<td>3</td>
</tr>
</tbody>
</table>

### COMPLEMENTARY COURSES 15

2 courses (6 credits) at the 300-level or higher to be selected from Mechanical Engineering. For students who entered in September 2004 or later, one of these two courses must be chosen from the following list:

- MECH413 Control Systems
- MECH495 Design 3
- MECH496 Design 4
- MECH497 Value Engineering
- MECH524 Computer Integrated Manufacturing
- MECH526 Manufacturing and the Environment
- MECH528 Product Design
- MECH541 Kinematic Synthesis
- MECH543 Design with Composite Materials
- MECH554 Microprocessors for Mechanical Systems
- MECH557 Mechatronic Design
- MECH565 Fluid Flow and Heat Transfer Equipment
- MECH573 Mechanics of Robotic Systems
- MECH577 Optimum Design

1 course (3 credits) at the 300-level or higher from the Faculty of Engineering or an approved course in the Faculty of Science, including Mathematics.

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

### TOTAL CREDITS 112

Students entering in September or January must plan their program of studies in accordance with the regulations posted on the Faculty Website at www.mcgill.ca/engineering. After registering, students must consult with their academic advisor.

Additional information can be found in section 3.1.2 “Basic Science Requirements for Students Entering from Outside Quebec”.

### CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (HONOURS)

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES</strong></td>
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<td>Non-Departmental Subjects</td>
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<tr>
<td>CIVE207 Solid Mechanics</td>
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<td>EDEC206 Communication in Engineering</td>
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<td>COMP208 Computers in Engineering</td>
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<tr>
<td>MATH262 Intermediate Calculus</td>
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<td>MATH263 Ordinary Differential Equations and Linear Algebra</td>
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<td>Departmental Courses</td>
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<tr>
<td>MECH201 Introduction to Mechanical Engineering</td>
<td>2</td>
</tr>
<tr>
<td>MECH210 Mechanics 1</td>
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<tr>
<td>MECH220 Mechanics 2</td>
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<tr>
<td>MECH240 Thermodynamics 1</td>
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<td>MECH260 Machine Tool Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MECH262 Statistics and Measurement Laboratory</td>
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</tr>
<tr>
<td>MECH291 Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MECH292 Design 1</td>
<td>3</td>
</tr>
<tr>
<td>MECH309 Numerical Methods in Mechanical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MECH314 Dynamics of Mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>MECH315 Mechanics 3</td>
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<tr>
<td>MECH321 Mechanics of Deformable Solids</td>
<td>3</td>
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<tr>
<td>MECH331 Fluid Mechanics 1</td>
<td>3</td>
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<td>MECH341 Thermodynamics 2</td>
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<td>MECH346 Heat Transfer</td>
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<tr>
<td>MECH362 Mechanical Laboratory 1</td>
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<td>MECH383 Applied Electronics and Instrumentation</td>
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</tr>
<tr>
<td>MECH393 Design 2</td>
<td>3</td>
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<td>MECH412 Dynamics of Systems</td>
<td>3</td>
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<tr>
<td>MECH430 Fluid Mechanics 2</td>
<td>3</td>
</tr>
<tr>
<td>MECH437D1 Mechanical Engineering Project</td>
<td>3</td>
</tr>
<tr>
<td>MECH437D2 Mechanical Engineering Project</td>
<td>3</td>
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</table>

### CREDIT

McGill University, Undergraduate Programs 2004-2005
MATH271 Linear Algebra and Partial Differential Equations 3
MIME221 Engineering Professional Practice 2
MIME310 Engineering Economy 3 27

Departmental Courses
MECH201 Introduction to Mechanical Engineering 2
MECH210 Mechanics 1 2
MECH220 Mechanics 2 4
MECH240 Thermodynamics 1 3
MECH260 Machine Tool Laboratory 2
MECH262 Statistics and Measurement Laboratory 3
MECH291 Graphics 3
MECH292 Design 1 3
MECH309 Numerical Methods in Mechanical Engineering 3
MECH321 Mechanics of Deformable Solids 3
MECH331 Fluid Mechanics 1 3
MECH341 Thermodynamics 2 3
MECH346 Heat Transfer 3
MECH362 Mechanical Laboratory 1 2
MECH383 Applied Electronics and Instrumentation 3
MECH403D1 Thesis (Honours) 3
MECH403D2 Thesis (Honours) 3
MECH404 Honours Thesis 2 3
MECH419 Advanced Mechanics of Systems 3
MECH430 Fluid Mechanics 2 3
MECH452 Mathematical Methods in Engineering 1 3
MECH494 Honours Design Project 3 64

COMPLEMENTARY COURSES 21
2 of the following three courses (6 credits):
MECH545 Advanced Stress Analysis 3
MECH562 Advanced Fluid Mechanics 3
MECH578 Advanced Thermodynamics 3
2 courses (6 credits) at the 300 level or higher to be selected from Mechanical Engineering. For students who entered in September 2004 or later, one of these two courses must be chosen from the following list:
MECH413 Control Systems
MECH495 Design 3
MECH496 Design 4
MECH497 Value Engineering
MECH524 Computer Integrated Manufacturing
MECH526 Manufacturing and the Environment
MECH528 Product Design
MECH529 Discrete Manufacturing Systems
MECH530 Mechanics of Composite Materials
MECH531 Aeroelasticity
MECH532 Aircraft Performance, Stability and Control
MECH533 Subsonic Aerodynamics
MECH534 Air Pollution Engineering
MECH537 High-Speed Aerodynamics
MECH538 Unsteady Aerodynamics
MECH539 Computational Aerodynamics
MECH540 Design: Modelling and Decision
MECH541 Kinematic Synthesis
MECH542 Spacecraft Dynamics
MECH543 Design with Composite Materials
MECH545 Advanced Stress Analysis
MECH552 Advanced Applied Mathematics
MECH554 Microprocessors for Mechanical Systems
MECH555 Applied Process Control
MECH557 Mechatronic Design
MECH561 Biomechanics of Musculoskeletal Systems
MECH562 Advanced Fluid Mechanics
MECH565 Fluid Flow and Heat Transfer Equipment
MECH572 Introduction to Robotics
MECH573 Mechanics of Robotic Systems
MECH576 Computer Graphics and Geometrical Modelling
MECH577 Optimum Design
MECH578 Advanced Thermodynamics
MECH581 Nonlinear Dynamics and Chaos

TYPICAL PROGRAM OF STUDIES FOR REGULAR OR HONOURS
For students starting their B.Eng. studies in September 2004 who have completed the Quebec Diploma of Collegial Studies, a program for the first two terms of study is given below. Students will be advised by the Department whether they should follow Stream A or Stream B.

STREAM A:
Term 1 (Fall)
COMP208 Computers in Engineering
MATH262 Intermediate Calculus
MECH201 Introduction to Mechanical Engineering
MECH210 Mechanics 1
MECH260 Machine Tool Laboratory
MIME221 Engineering Professional Practice

Term 2 (Winter)
MATH263 Differential Equations
MATH264 Advanced Calculus
MECH220 Mechanics 2
MECH262 Statistics and Measurement Laboratory
MECH291 Graphics
STREAM B:

**Term 1 (Fall)**
- COMP208 Computers in Engineering
- MATH262 Intermediate Calculus
- MECH201 Introduction to Mechanical Engineering
- MECH260 Machine Tool Laboratory
- MECH291 Graphics
- MIME221 Engineering Professional Practice

**Term 2 (Winter)**
- MATH263 Differential Equations
- MATH264 Advanced Calculus
- MECH210 Mechanics 1
- MECH262 Statistics and Measurement Laboratory
- MIME260 Materials Science and Engineering

**For all Minors and Concentrations, students should complete a special form available from the Undergraduate Program Secretary indicating their intention to take the Minor or the Concentration.**

**AERONAUTICAL ENGINEERING CONCENTRATION**

Students in this Concentration should take five courses in the area of Aeronautical Engineering.

**Required Courses** (6 credits):
- MECH532 (3) Aircraft Performance, Stability and Control
- MECH533 (3) Subsonic Aerodynamics

**Complementary Courses** (9 credits):
- at least one of the following two courses:
  - MECH432 (3) Aircraft Structures
  - MECH434 (3) Turbomachinery

  the remaining two courses may be chosen from the above or from the following courses:
- MECH531 (3) Aeroelasticity
- MECH537 (3) High-Speed Aerodynamics
- MECH538 (3) Unsteady Aerodynamics
- MECH539 (3) Computational Aerodynamics
- MECH565 (3) Fluid Flow and Heat Transfer Equipment

All courses must be passed at a level C or better.

Students should also discuss the matter with their advisor and complete a special form indicating their intention to take this Concentration.

**DESIGN CONCENTRATION**
The Design Concentration is comprised of six courses as follows:
- MECH495 Design 3
- MECH496 Design 4

Plus any four below:
- MECH497 Value Engineering
- MECH540 Design: Modelling and Decision
- MECH541 Kinematic Synthesis
- MECH543 Design with Composite Materials
- MECH557 Mechatronic Design
- MECH565 Fluid Flow and Heat Transfer Equipment
- MECH576 Computer Graphics and Geometrical Modelling
- MECH577 Optimum Design

**MECHATRONICS CONCENTRATION**

Students in this Concentration should take six courses in the area of Control, Robotics and/or CAD/CAM. They must take the following four required courses:
- MECH413 Control Systems
- MECH554 Microprocessors for Mechanical Systems
- MECH557 Mechatronic Design
- MECH572 Introduction to Robotics

and two of the following:
- MECH526 Product Design
- MECH541 Kinematic Synthesis
- MECH573 Mechanics of Robotic Systems
- MECH576 Computer Graphics and Geometrical Modelling
- ECSE502 Control Engineering

**4.6 Department of Mining, Metals and Materials Engineering**

**Wong Building, Room 2160**
3610 University Street
Montreal, QC H3A 2B2
Website: www.mcgill.ca/minmet

**Metals and Materials – Mining –**

**Telephone:** (514) 398-1040 **Fax:** (514) 398-4492

**Chair — Robin A.L. Drew**

**Emeritus Professors**
- William M. Williams; B.Sc., M.Sc.(Brist.), Ph.D.(Tor.), Eng. 
  (HenryBirks Emeritus Professor of Metallurgy)

**Professors**
- George P. Demopoulos; Dipl. Eng.(NTU Athens), M.Sc., Ph.D.(McG.), Eng.
- Robin A.L. Drew; B.Tech.(Bradford), Ph.D.(Newcastle)
  (Industry Professor of Mineral Processing)
- John E. Gruzleski; B.Sc., M.Sc.(Qu.), Ph.D.(Tor.), Eng. 
  (Gerald G. Hatch Professor of Mining and Metallurgy)
  (William C. Macdonald Professor of Mining and Metallurgy)
- Ralph Harris; B.Sc.(Qld), M.Eng., Ph.D.(McG.)
- Farmaraz (Ferri) P. Hassani; B.Sc., Ph.D.(Nott.), C.Eng.(U.K. Reg.) 
  (George Boyd Westbay Professor of Mining and Engineering) 
  (Director, Mining Engineering Program)
  (Henry Birks Professor of Metallurgy)
- Hani S. Mitri; B.Sc.(Cairo), M.Eng., Ph.D.(McMaster), Eng.
- Jerzy Szpunar; B.Sc., M.Sc., Ph.D., D.Sc.(Krakow)
- Steve Yue; B.Sc., Ph.D.(Leeds)

**Associate Professors**
- Mainul Hasan; B.Eng.(Dhaka), M.Sc.(Dhahran), Ph.D.(McG.)
- Janusz A. Kozinski; B.A., M.Eng., D.Sc.(Kraakow) (William Dawson Scholar)
- André Laplante; B.A.Sc., M.A.Sc.(Montr.), Ph.D.(Tor.), Eng.
- Jacques Ouellet; B.A.Sc.(Laval), M.A.Sc, Ph.D.(Montr.), Eng.

**Faculty Lecturers**
- John Mossop; B.Eng.(McG.)
- Florence Paray; B.Eng.(CSP), M.Eng., Ph.D.(McG.)

**Adjunct Professors**
- Marc Betournay, WilliamCaley, RoussosDimitrakopoulos, 
  Elhachmi Essadigi, Bryn Harris, AhmadHemami, 
  MohamadJahazi, RaadJassim, JoelKapusta, EricLifshin,
  MartinPugh, JohnH.Root, Viwek Vardya, AlbertE.Wraith

**CO-OP Programs**
**Director — Frank Mucciardi**
**Work-term Coordinators —**
- Genevieve Snider (Materials)
- Michel Vachon (Mining)

The Department of Mining, Metals and Materials Engineering offers programs leading to the Bachelor of Engineering degree in Materials Engineering or Mining Engineering. In addition to regular courses and laboratories, the curriculum includes seminars, colloquia and student projects reinforced by field trips to industrial operations.

The equipment operated by the Department is the best available. On the materials side there is a full range of laboratory facilities for extractive and process metallurgy as well as excellent materials characterization and processing facilities. In mining engi-
neering the Department has rock engineering laboratories to test the mechanical properties of both rock and backfill materials and computer-aided mine design facilities.

Materials Engineering (CO-OP). The Materials Engineering degree is a cooperative program leading to a B.Eng. and includes formal industrial work periods. It is built around a strong background of mathematics, basic sciences, computer skills and applications, and specific engineering and design courses to provide up-to-date training in metals/materials engineering. Students take core courses covering processing, fabrication, applications and performance. The program conforms with requirements of the Canadian Engineering Accreditation Board (CEAB) and is designed to offer students the best training for employment in Canada's large and vital metallurgical and manufacturing industries. The basic courses are supplemented by complementary courses which provide a good choice of specialties for the graduating engineer. The course structure is reinforced with laboratory exercises. Graduates find employment in a wide range of industries which include the mineral/metal producing and processing sectors, as well as the aerospace and manufacturing industries. Students in the CO-OP program benefit from the practical learning experience arising from work-term employment in meaningful engineering jobs. Students also benefit from the non-tangible learning experience arising from the increased responsibilities required to obtain and successfully complete the work terms.

Mining Engineering (CO-OP). McGill, which has the oldest mining engineering program in Canada, has always been noted for the excellence of its courses and for the training it provides in mining technology, mineral economics and mining practice. Graduates in mining engineering are in demand not only in Canada but throughout the world. Technical developments have been rapid in recent years. These offer a challenge to the imaginative student with a strong engineering interest. The Department offers a cooperative program leading to the B.Eng. degree in Mining Engineering. The CO-OP program is offered in collaboration with the Département des génies civil, géologique et des mines at École Polytechnique in Montreal, and includes formal industrial work periods. Students registered at McGill are required to take a series of technical mining courses at École Polytechnique in the latter part of the program. These courses are designated as such in the program outline (Subject Code MPMC).

Scholarships
The Department offers Entrance Scholarships each year, valued at $3,000; these scholarships are renewable. A substantial number of other scholarships and bursaries are awarded by the Department as well as by the Canadian Mineral Industry Education Foundation.

Student Advising
Students entering the Mining or Materials Engineering programs must plan their schedule of studies in consultation with one of the departmental advisors: Professors Laplante and Yue (Materials) or Mr. J. Mossop (Mining).

CURRICULUM FOR THE B.Eng. DEGREE IN MATERIALS ENGINEERING – CO-OP PROGRAM

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>Non-Departmental Courses</td>
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<tr>
<td>CHEE481 Polymer Engineering</td>
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<tr>
<td>CHEM233 Topics in Physical Chemistry</td>
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<tr>
<td>CIVE205 Statics</td>
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<tr>
<td>CIVE207 Soil Mechanics</td>
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<tr>
<td>COMP208 Computers in Engineering</td>
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<tr>
<td>MATH262 Intermediate Calculus</td>
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<tr>
<td>MATH263 Ordinary Differential Equations and Linear Algebra</td>
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<tr>
<td>MATH264 Advanced Calculus</td>
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<tr>
<td>Departmental Courses</td>
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<tr>
<td>MIME200 Introduction to the Minerals Industry</td>
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<tr>
<td>MIME202 Engineering Communication Skills</td>
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<tr>
<td>MIME209 Mathematical Applications</td>
<td>3</td>
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<tr>
<td>MIME212 Engineering Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MIME221 Engineering Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>MIME261 Structure of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MIME280 Industrial Training 1</td>
<td>2</td>
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<tr>
<td>MIME310 Engineering Economy</td>
<td>3</td>
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<tr>
<td>MIME311 Modelling and Automatic Control</td>
<td>3</td>
</tr>
<tr>
<td>MIME317 Analytical and Characterization</td>
<td>3</td>
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<tr>
<td>MIME337 Electrotechnology</td>
<td>2</td>
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<tr>
<td>MIME341 Introduction to Mineral Processing</td>
<td>3</td>
</tr>
<tr>
<td>MIME350 Extractive Metallurgical Engineering</td>
<td>3</td>
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<td>MIME352 Hydrochemical Processing</td>
<td>3</td>
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<td>MIME356 Heat, Mass and Fluid Flow</td>
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<td>MIME360 Phase Transformations: Solids</td>
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<td>MIME362 Mechanical Properties</td>
<td>3</td>
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<td>MIME367 Electronic Properties of Materials</td>
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<td>MIME380 Industrial Training 2</td>
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<tr>
<td>MIME442 Modelling and Control: Mineral Processing</td>
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<tr>
<td>MIME452 Process and Materials Design</td>
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<td>MIME455 Advanced Process Engineering</td>
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<td>MIME456 Steelmaking and Steel Processing</td>
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<td>MIME465 Ceramic Engineering</td>
<td>3</td>
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<tr>
<td>MIME480 Industrial Training 3</td>
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<td>MIME481 Industrial Training 4</td>
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</table>

COMPLEMENTARY COURSES

Technical Courses 12

Four courses may be taken; one of these can be chosen from the Faculty list. (Note: Not all courses are given annually; verification with course instructor is advised.)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>CHEE581 Polymer Composites Engineering</td>
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</tr>
<tr>
<td>CHEM455 Introductory Polymer Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM585 Colloid Chemistry</td>
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<td>CIVE512 Advanced Civil Engineering Materials</td>
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<td>MECH530 Mechanics of Composite Materials</td>
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<td>MIME361 Liquid State Processing of Materials</td>
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<td>MIME410 Research Project</td>
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<td>MIME412 Corrosion and Degradation</td>
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<td>MIME451 Environmental Controls: Met'l Plants</td>
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<td>MIME457 Light Metals Extraction and Processing</td>
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<td>MIME463 Deformation Processing of Metals</td>
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<td>MIME515 Advanced Metallurgical and Materials Thermodynamics</td>
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<tr>
<td>MIME544 Analysis: Mineral Processing Systems 1</td>
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<tr>
<td>MIME551 Electrochemical Processing</td>
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<td>MIME555 Thermal Remediation of Wastes</td>
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<td>MIME560 Joining Processes</td>
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<td>MIME563 Hot Deformation of Metals</td>
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<td>MIME564 X-ray Diffraction Analysis of Materials</td>
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<tr>
<td>MIME566 Texture, Structure &amp; Properties of Polycrystalline Materials</td>
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<tr>
<td>MIME567 Aluminum Casting Alloys</td>
<td>3</td>
</tr>
<tr>
<td>MIME568 Topics in Advanced Materials</td>
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<td>MIME569 Electron Beam Analysis of Materials</td>
<td>3</td>
</tr>
<tr>
<td>PHY555 Solid State Physics</td>
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</tbody>
</table>

General Complementaries 6

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

TOTAL 116

A fee of $500 is assessed by the University for each Industrial Training course.
**COMPLEMENTARY COURSES**

Two courses (6 credits), selected from an approved list: one course on the impact of technology on society and one in the humanities and social sciences, administrative studies and law. See section 3.4 “Complementary Studies” for further information.

**TOTAL** 119/120

---

### Technical Courses

Courses selected from those listed below or any other approved technical course(s). Note: not all courses are given annually; verification with course instructor is advised.

- MIME320 (3) Extraction of Energy Resources
- MIME442 (3) Modelling and Control: Mineral Processing
- MIME520 (3) Stability of Rock Slopes
- MIME521 (3) Stability of Underground Openings
- MIME526 (3) Mineral Economics
- MIME528 (3) Mining Automation
- MIME544 (3) Analysis: Mineral Processing Systems 1
- MIME545 (3) Analysis: Mineral Processing Systems 2
- MPMC327 (3) Hydrogéologie appliquée
- MPMC424 (2) Gérance d’exploitation minière
- MPMC525 (3) Recherche opérationnelle minière II

A fee of $300 is assessed by the University for each Industrial Work Period course.

### 4.7 School of Urban Planning

Macdonald-Harrington Building
815 Sherbrooke Street West
Montreal, QC H3A 2K6

Telephone: (514) 398-4075
Fax: (514) 398-8376
Email: admissions.planning@mcgill.ca
Website: www.mcgill.ca/urbanplanning

**Director** — David F. Brown

**Emerita Professor**

Jeanne M. Wolfe; B.Sc.(Lond.), M.Sc.(W.Ont.), M.A.(McG.)

**Professor**

Jane M. Glenn; B.A., LL.B.(Qu.), D. en Droit(Stras.)

**Associate Professors**

David F. Brown; B.A.(Bishop’s), M.U.P.(McG.), Ph.D.(Sheffield)

**Assistant Professors**

Madhav G. Badami; B.Tech., M.S.(I.I.T., Madras)
M.E.Des.(Calg.), Ph.D.(UBC) (joint appoint. with McGill School of Environment)
Lisa Bornstein; B.Sc.(U.C.Berk.), M.R.P.(C’nell), Ph.D.(U.C. Berk.)
Murtaza Haider; B.Sc.(Peshawar), M.A.Sc., Ph.D.(Toronto) (joint appoint. with Civil Engineering)

**Associate Member**

Gordon O. Ewing; M.A.(Glas.), M.A., Ph.D.(McG.)

**Instructor**

François Dufaux; B.Arch.(Laval), M.U.P.(McG.)

**Adjunct Professors**

David Farley; B.Arch.(McG.), M.Arch., M.C.P.(Harvard)
Mario Polèse; B.A.(CUNY), M.A., Ph.D.(Penn.)

**Guest Lecturers**

CameronCharlebois, EllaChmielewska, LucDanielse, MarcDenhez, AndrewHoffmann, PeterJacobs, BrendaLee, Léon Ploegarts, Damaris Rose, Alain Trudel, Ray Tomalty, MartinWexler

Modern urban planning developed into a profession in the early decades of the twentieth century, largely as a response to the appalling sanitary, social and economic conditions of rapidly developing industrial cities. Initially, the disciplines of architecture, civil engineering and public health provided the nucleus of concerned professionals; beautification schemes and infrastructure works marked the early stages of public intervention in the nineteenth century. Architects, engineers and public health specialists were joined by economists, sociologists, lawyers and geographers as the complexities of the city’s problems came to be more fully understood and public pressure mounted for their solution. Contemporary urban and regional planning techniques for survey,
analysis, design and implementation developed from an interdisciplinary synthesis of these various fields.

Today, urban planning can be described as the collective management of urban development. It is concerned with the welfare of communities, control of the use of land, design of the built environment, including transportation and communication networks, and protection and enhancement of the natural environment. It is at once a technical and a political process which brings together actors from the public, private and community spheres. Planners participate in that process in a variety of ways, as designers and analysts, advocates and mediators.

McGill University was the first institution in Canada to offer a full-time planning program. An interdisciplinary program was established in 1947, in which students combined a master's degree in Urban Planning with one in a related field. An autonomous program was established in 1972. It became the School of Urban Planning in 1976.

Students come to the School from diverse backgrounds, the physical sciences, the traditional professions, such as architecture and engineering, and the social sciences. Alumni of the School work as planners and designers at various levels of government, in non-profit organizations and with private consulting firms. Their expertise ranges from historic preservation to transportation planning, from housing development to computer imaging. They devote their efforts in increasing numbers to environmental planning and sustainable development.

The School is a partner in the Montreal Interuniversity Group “Urbanization and Development”, a consortium recognized by CIDA as a Centre of Excellence, which is devoted to the study of urban problems and the formulation of policies in developing regions. Faculty and students collaborate actively with members of other McGill departments, notably Architecture, Geography, Civil Engineering and Law, and with colleagues at other institutions in Canada and abroad.

The objective of the School is to produce qualified professional urban planners for the public, private and not-for-profit sectors. Training is provided at the postgraduate level; the degree offered is the Master of Urban Planning (M.U.P.). Upon completion of the two-year program of studies, graduates are expected to have acquired basic planning skills, a broad understanding of urban issues, and specialized knowledge in a field of their own choice.

The program of study offered by the School is fully recognized by the Ordre des Urbanistes du Québec (O.U.Q.) and the Canadian Institute of Planners (C.I.P.). Graduates can become full members of these professional organizations after meeting their internship requirements.

For details of the M.U.P. admission requirements and curriculum, consult the Graduate and Postdoctoral Studies Calendar, available on the Web at www.mcgill.ca.

The following 500-level courses are taught by the faculty of the School:

- ARCH550 Urban Planning 1
- ARCH551 Urban Planning 2
- URBP 501 Principles and Practice 1
- URBP 505 Geographic Information Systems
- URBP 506 Environmental Policy and Planning
- URBP 507 Planning and Infrastructure
- URBP 519 Sustainable Development Plans

5 Minor Programs and Choice of Electives or Complementary Courses

Minors are coherent sequences of courses which may be taken in addition to the courses required for the B.Eng. degree. Minor programs normally consist of 18-24 credits, allowing 9-12 credits of overlap with the degree program. The real credit cost to the student is typically 9 to 15 credits, representing one term beyond the B.Eng. degree program. All courses in a Minor program must be passed with a grade of C or better.

Students of the Faculty have a considerable variety of complementary course choices, which fall into the categories of technical and complementary studies. Students should refer to their respective departments for information concerning course selections. Departments also publish, in this Calendar and in separate documents, information regarding the choice of courses. Students should also consult their course advisors.

General information concerning Minors that are designed for students registered in the Faculty of Engineering is listed below. In addition, students are also permitted to register for Minor Concentrations offered through the various departments in the Faculty of Arts. Students are advised to seek approval from the specific department in the Faculty of Arts as well as the Faculty of Engineering Student Affairs Office, Room 378, Macdonald Engineering Building, prior to embarking on these Minors.

5.1 Arts Minor

Engineering students may obtain a Minor in Arts as part of their B.Eng. degree by satisfying the 24-credit requirement described below. In general, complementary studies courses given in the Faculty of Arts and listed under: (i) “3 credits of studies of the Impact of Technology on Society” and (ii) “the remaining credits to be elective social science and humanities courses” (see section 3.4 “Complementary Studies”), may be used to satisfy some of these requirements. In no case will more than 9 credits taken from these complementary studies requirements be credited towards the Minor in Arts.

Requirements

1. The program must consist of 24 credits as follows:
   a) at least two areas of concentration from within the Faculty of Arts must be chosen, with the minimum number of credits in any one area being 6;
   b) at least 12 credits must be at the 300 or above level.

2. All courses in the Minor program must be passed with a grade of C or better.

3. The selection of courses for the Minor is to be done in consultation with the Minor Advisor, Ms. Judy Pharo, Faculty of Engineering Student Affairs Office.

For further information, contact Professor B. Haskel, Political Science, or Ms. J. Pharo, Student Affairs Office, Faculty of Engineering.

5.2 Biotechnology Minor

The Faculties of Engineering and of Science offer a Minor in Biotechnology for students interested in taking additional courses in this area. For Engineering students, the Minor has been designed specifically for students within the Chemical Engineering Department; however, other Engineering students are invited to contact the Minor program supervisor, Professor Bennett, or Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, for further information.

Students should identify an interest in the Minor to their academic advisor and the supervisor of the program during the U1 year, and at the time of registration for the U2 year. With the agreement of the academic advisor, students should submit their course list to the program supervisor who will certify that the proposed program conforms to the requirements for the Minor.

The Biotechnology Minor Program is administered for the Faculties of Engineering and of Science by Prof. H. Bennett, Sheldon Biotechnology Centre (Lyman Duff Building), phone (514) 398-3998. A full description of the Minor program appears under the Faculty of Science, “Biotechnology (BIOT)” on page 312.

A Chemical Engineering student may complete the Biotechnology Minor by taking BIOL200, BIOL201, BIOL202, MIMM211, BIOT505, plus one course from the list of additional courses not including MIMM310. The Department of Chemical Engineering permits students in the Minor program to complete BIOT500 as one of their technical complementary requirements. The total course credit required for the Chemical Engineering student is 15 credits beyond the 111-credit B.Eng. program.
5.3 Chemistry/Chemical Engineering Minor

The Departments of Chemistry and Chemical Engineering offer a Minor Program in Chemistry, of particular interest to Chemical Engineering students, and a Minor in Chemical Engineering, of interest to Chemistry students (described under the Faculty of Science). The Minor in Chemistry consists of 25 credits as follows:

1. Required courses, 10 credits: CHEM212, CHEM233 and CHEM234 (or CEGEP equivalent)
2. At least 15 credits from the following list, two of which must be laboratory courses (* indicates lab). Note that CHEM212 is a prerequisite for most of the courses listed below. If students take CHEM222* instead of CHEM234, they will receive credit for one of the two laboratories that are required but they must have a total of 25 Chemistry credits for the Minor.

Inorganic Chemistry
CHEM281 Inorganic Chemistry 1
CHEM371 Inorganic Chemistry Laboratory*
CHEM381 Inorganic Chemistry 2
CHEM591 Bioinorganic Chemistry

Analytical Chemistry
CHEM257D1 Introductory Analytical Chemistry*
CHEM257D2 Introductory Analytical Chemistry*
CHEM277D1 Analytical Chemistry*
CHEM277D2 Analytical Chemistry*

CHEM307 Analytical Chemistry of Pollutants
CHEM367 Instrumental Analysis 1
CHEM377 Instrumental Analysis 2

Organic Chemistry
CHEM302 Introductory Organic Chemistry 3
CHEM352 Structural Organic Chemistry
CHEM362 Advanced Organic Chemistry Laboratory*
CHEM382 Organic Chemistry: Natural Products
CHEM402 Advanced Bio-organic Chemistry

Physical Chemistry
CHEM345 Molecular Properties and Structure 1
CHEM355 Molecular Properties and Structure 2
CHEM363 Physical Chemistry Laboratory 1*
CHEM393 Physical Chemistry Laboratory 2*
CHEM455 Introductory Polymer Chemistry

Please consult the program coordinators for more information: Professor D. Cooper (Chemical Engineering) and Dr. G. Wilczek (Chemistry). A passing grade for courses within the Minor is a C.

5.4 Computer Science Courses and Minor Program

The School of Computer Science offers an extensive range of courses for Engineering students interested in computers. The course explicitly for Engineering students (COMP208) and other courses in the core of the various Engineering programs are listed below. Descriptions of these and other Computer Science courses can be found on Class Schedule or in the Courses section.

COMP202 Introduction to Computing
COMP250 Introduction to Computer Science
COMP302 Programming Languages and Paradigms

Students in the Faculty of Engineering may obtain a Minor in Computer Science as part of their B.Eng. degree by satisfying the 24-credit requirement described below. In general, some complementary courses within Engineering departmental programs may be used to satisfy some of these requirements, but the Minor in Computer Science will require at least 12 extra credits from Computer Science (COMP) courses beyond those needed for the B.Eng. degree. Students should consult their departments about the use of complementary courses and credits that can be double counted.

Students should see the Undergraduate Secretary in the Lorne Trottier Building, Room 2060, to obtain the appropriate forms and to make an appointment to see the Minor Advisor for approval of their course selection. Forms must be approved before the end of the Add/Drop period of the student's final term.

For further information, please check the School of Computer Science Website, www.cs.mcgill.ca/acadpages/undergrad.

Minor in Computer Science for Engineering Students

The program must consist of 24 credits, from courses passed with a grade of C or better, as follows:

**Required Course (3 credits)**
COMP302 (3) Programming Languages and Paradigms

**Complementary Courses (21 credits)**
3 credits – one of the following courses:
COMP203 (3) Introduction to Computing 2
COMP250 (3) Introduction to Computer Science
COMP251 (3) Data Structures and Algorithms

3 credits – one of the following courses:
COMP206 (3) Introduction to Software Systems
ECSE221 (3) Introduction to Computer Engineering

3 credits – one of the following courses:
COMP273 (3) Introduction to Computer Systems
ECSE222 (3) Introduction to Computer Engineering 2

3 credits – one of the following courses:
COMP350 (3) Numerical Computing
MECH409 (3) Numerical Methods in Mechanical Engineering

9 credits chosen from Computer Science courses numbered 300 or higher.

Courses from other departments making considerable use of computing and approved by the School of Computer Science may also be selected. Students should consult with their advisors about counting specific courses.

**Note:**
A. COMP202 and COMP208 (compulsory for some Engineering students) do not form part of the Minor.
B. COMP202 is a prerequisite for COMP203. Students with a substantial high level language programming course may forego this prerequisite. Some additional make-up effort may be needed at the start of the course.
C. COMP208 cannot be taken for credit with or after COMP250.

5.5 Construction Engineering and Management Minor

Students in the Faculty of Engineering may obtain a Minor in Construction Engineering and Management by completing 24 to 25 credits chosen from the required and complementary courses listed below. By a careful selection of complementary courses, a Civil Engineering student may obtain this Minor by completing as few as 9 additional credits. Students in other departments would typically require 12 to 15 additional credits to complete the Minor.

For further information, contact Professor L. Chouinard at (514) 398-6446, Room 484, Macdonald Engineering Building.

**Prerequisites:**
CIVE208 Civil Engineering Systems Analysis
or an equivalent course in Operations Research
CIVE302 Probabilistic Systems or equivalent
COMP208 Computers in Engineering or equivalent
MIME310 Engineering Economy

**Requirements:**
The 24 to 25 credits listed below must be completed with a grade of C or higher in order to fulfill the requirements of the Minor.

1. **Management and Law:** 15 credits, as follows:
   - FACCC20 (3) Law for Architects and Engineers
   - INDR294 (3) Introduction to Labour-Management Relations
   - MGCR211 (3) Introduction to Financial Accounting
   - MGCR341 (3) Finance 1
   and one of:
   - CIVE324 (3) Construction Project Management
   - MECH472 (3) Case Studies in Project Mgmt
2. Either 3 or 4 credits, as follows:
a) 4 credits - Any two of the following relating to Building Structures:
   ARCH447 (2) Electrical Services
   ARCH451 (2) Building Regulations and Safety
   ARCH554 (2) Mechanical Services
   CIVE492 (2) Structures
   or
   b) 3 credits - One of the following relating to Heavy Construction:
      MIME322 (3) Rock Fragmentation
      MIME333 (3) Materials Handling

3. Other Construction-Related Complementaries: 6 credits
Any two of the following:
   ABEN411 (3) Off-Road Power Machinery
   BUSA462 (3) Management of New Enterprises
   CIVE446 (3) Construction Engineering
   CIVE527 (3) Renovation and Preservation: Infrastructure
   CIVE586 (3) Earthwork Engineering
   ECSE461 (3) Electric Machinery
   FINE445 (3) Real Estate Finance
   MIME520 (3) Stability of Rock Slopes
   MIME521 (3) Stability of Underground Openings
   MPCM321 (3) Mécanique des roches et contrôle des terrains

Total requirement: 24 or 25 credits

5.6 Economics Minor
The Minor consists of 18 credits in courses given in the Economics Department. It consists of required courses and complementaries. In addition, it is presumed that all Engineering students will have a sufficient background in statistics. Engineering Economy, MIME310, does not form part of this minor. For more information see the Department of Economics, Room 443, Leacock Building.

Required Courses (9 credits)
- ECON230D1* Microeconomic Theory
- ECON230D2* Microeconomic Theory
- ECON209** Macroeconomic Analysis and Applications

Complementary Courses (9 credits) from:
- ECON225 Economics of the Environment
- ECON302D1 Money and Banking
- ECON302D2 Money and Banking
- ECON303D1 Canadian Economic Policy
- ECON303D2 Canadian Economic Policy
- ECON305 Industrial Organization
- ECON306D1 Labour Economics and Institutions
- ECON306D2 Labour Economics and Institutions
- ECON308 Public Policies Toward Business
- ECON311 United States Economic Development
- ECON313 Economic Development 1
- ECON314 Economic Development 2
- ECON316 The Underground Economy
- ECON321 The Quebec Economy
- ECON326 Ecological Economics
- ECON329 Economics of Confederation
- ECON330D1 Macroeconomic Theory
- ECON330D2 Macroeconomic Theory
- ECON331 Economic Development: Russia and USSR
- ECON332 Comparative Economic Systems
- ECON333 Comparative Economic Systems
- ECON335 The Japanese Economy
- ECON337 Introductory Econometrics 1
- ECON344 The International Economy, 1830 - 1914
- ECON345 The International Economy Since 1914
- ECON347 Economics of Climate Change
- ECON404 Transportation
- ECON405 Natural Resource Economics
- ECON406 Topics in Economic Policy
- ECON408D1 Public Sector Economics
- ECON408D2 Public Sector Economics

5.7 Environmental Engineering Minor
The Environmental Engineering Minor is offered for students of Engineering and the Department of Bioresource Engineering (formerly Agricultural and Biosystems Engineering) wishing to pursue studies in this area.

The Minor program consists of 21 credits in courses. Up to a maximum of 12 credits of course work in the student’s B.Eng. program may double-count with the Minor.

To complete the Minor in Environmental Engineering, students must obtain a grade of C or better in all approved courses in the Minor; and satisfy the requirements of the Minor and of their departmental program.

The Environmental Engineering Minor Program is administered by the Department of Civil Engineering and Applied Mechanics. Further information may be obtained from Professor S. Ghoshal, Room 475C, Macdonald Engineering Building.

Note: Not all courses listed are offered every year. Students should consult with the department concerned about the courses that are offered in a given year.

Minor Requirements (21 credits)
Introductory course (3 credits minimum) – one of:
- CHEE230 (3) Environmental Aspects of Technology
- CIVE225 (4) Environmental Engineering

plus a minimum of 18 credits, either:

15 credits* (minimum) Engineering courses and
3 credits (minimum) Non-Engineering courses, from the course lists below:

* A minimum of 6 credits must be from outside the student’s principal departmental program. A maximum of 6 credits of research project courses may be counted towards this category provided the project has sufficient environmental engineering content (project proposal requires approval of project supervisor and Coordinator of the Minor).

OR
15 credits specified for the Barbados Field Study Semester, see page 361 (under the Faculty of Agricultural and Environmental Sciences), and
3 credits chosen from the Engineering Course list below, excluding CHEE496.
Engineering Course List
(Environmental Engineering Minor)

Agricultural Engineering (Macdonald Campus)
ABEN217 (3) Hydrology and Water Resources (not open to students who have passed CIVE323)
ABEN322 (3) Organic Waste Management
ABEN330 (3) GIS for Biosystems Engineering
ABEN416 (3) Engineering for Land Development
ABEN518 (3) Bio-Treatment of Wastes

Chemical Engineering
CHEE351 (3) Separation Processes
CHEE370 (3) Elements of Biotechnology
CHEE430 (3) Technology Impact Assessment (not open to students who have passed WILD437)
CHEE452 (3) Particulate Systems (offered in alternate years)
CHEE471 (3) Industrial Water Pollution Control (not open to students who have passed CIVE430)
CHEE472 (3) Industrial Air Pollution Control
CHEE496 (3) Environmental Research Project
CHEE591 (3) Environmental Bioremediation

Civil Engineering and Applied Mechanics
CIVE225 (4) Environmental Engineering
CIVE323 (3) Hydrology and Water Resources (not open to students who have passed ABEN217)
CIVE421 (3) Municipal Systems
CIVE430 (3) Water Treatment and Pollution Control (not open to students who have passed CHEE471)
CIVE451 (3) Geoenvironmental Engineering
CIVE526 (3) Solid Waste Management
CIVE550 (3) Water Resources Management
CIVE553 (3) Stream Pollution and Control
CIVE555 (3) Environmental Data Analysis
CIVE572 (3) Advanced Hydraulics
CIVE574 (3) Fluid Mechanics of Water Pollution
CIVE577 (3) River Engineering
CIVE585 (3) Groundwater Hydrology

Mechanical Engineering
MECH343 (3) Energy Conversion
MECH434 (3) Turbomachinery
MECH447 (3) Combustion
MECH525 (3) Intro. to Nuclear Engineering
MECH526 (3) Manufacturing and the Environment
MECH534 (3) Air Pollution Engineering

Mining, Metals and Materials Engineering
MIME412 (3) Corrosion and Degradation
MIME451 (3) Environmental Controls: Met’l Plants
MIME555 (3) Thermal Remediation of Wastes
MPCM327 (3) Hydrogéologie appliquée
MPCM328 (3) Environnement et gestion des rejets miniers
MPCM422 (3) Ventilation minière et hygiène du travail

Urban Planning
URBP506 (3) Environmental Policy and Planning

Non-Engineering Course List
(Environmental Engineering Minor)

Agricultural Sciences (Macdonald Campus)
AEBI200 (3) Biology of Organisms
AEBI201 (3) Biology of Organisms 2
AEBI205 (3) Principles of Ecology
AEPH510 (3) Agricultural Micrometeorology
ENTO380 (3) Food Systems and the Environment
MICR230 (3) Microbial World (not open to students who have passed CHEE370)
MICR331 (3) Microbial Ecology (not open to students who have passed CHEE370)

MICR341 (3) Mechanisms of Pathogenicity
SOIL210 (3) Principles of Soil Science (not part of the Minor for Agricultural Engineering Students)
SOIL331 (3) Soil Physics
WILD333 (3) Physical and Biological Aspects of Pollution
WILD375 (3) Issues: Environmental Sciences
WILD415 (3) Conservation Law
WILD437 (3) Assessing Environmental Impact (not open to students who have passed CHEE430)
WOOD420 (3) Environmental Issues: Forestry
ZOOL315 (3) Science of Inland Waters

Anthropology
ANTH206 (3) Environment and Culture

Atmospheric and Oceanic Sciences
ATO210 (3) Introduction to Atmospheric Science (not open to students who have passed GEOG321)
ATO220 (3) Introduction to Oceanic Sciences

Biology
BIOL205 (3) Biology of Organisms
BIOL208 (3) Introduction to Ecology
BIOL432 (3) Limnology
BIOL470 (3) Lake Management

Chemistry
CHEM307 (3) Analytical Chemistry of Pollutants

Earth and Planetary Sciences
EPSC243 (3) Environmental Geology (not open to students who have passed or will take EPSC221)
EPSC549 (3) Groundwater Hydrology

Economics
EC3225 (3) Economics of the Environment
EC326 (3) Ecological Economics
EC3347 (3) Economics of Climate Change

Geography
GEOG200 (3) Geographical Perspectives: World Environmental Problems
GEOG201 (3) Introductory Geo-Information Science
GEOG203 (3) Environmental Systems
GEOG205 (3) Global Change: Past, Present and Future
GEOG302 (3) Environmental Management 1
GEOG308 (3) Principles of Remote Sensing
GEOG321 (3) Climatic Environments (not open to students who have passed ATOC210)
GEOG404 (3) Environmental Management 2

Law
CMPL580 (3) Environment and the Law

Microbiology and Immunology
MIMM211 (3) Introductory Microbiology

Religious Studies (Macdonald Campus)
RELG270 (3) Religious Ethics and the Environment

Sociology
SOC1328 (3) Environmental Sociology

5.8 Minor in Environment

Environmental studies involve the interactions between humans and their natural or technological environment. Environmental problems are frequently comprehensive and complex, and their satisfactory solutions require the synthesis of humanistic, scientific, and institutional knowledge.

The Minor in Environment is offered and administered by the McGill School of Environment (MSE). Inquiries should be directed to Mr. Peter Barry, MSE Program Coordinator, E-mail: info.mse@mcgill.ca or telephone: (514) 398-4306.

Since the program comprises a total of 18 credits for the Minor, additional credits beyond those needed for the B.Eng. degree are required. Students wishing to receive the Minor should prepare a program and have it approved by both their regular Engineering
Advisor and the MSE Advisor. For program details, see “Minor in Environment” on page 379.

5.9 Management Courses and Minor Program

Many engineers begin to assume management functions within a few years of graduation. They can, at this stage, take up the study of economics, behavioural science and other management subjects. Students wishing to include such studies in their undergraduate program can take suitable courses from Engineering and Management as listed below.

Engineering Economy MME310 introduces the concept of costs into evaluations of engineering projects and architectural proposals. Prerequisite to entry to this Minor is a grade C or better in MME310.

Several additional courses are available, subject to timetable requirements, from the core program of the Faculty of Management. Other courses from the Management core program have considerable overlap with Engineering courses and thus are not available to Engineering students.

Note: Course MGCR211, a course in statistics, and a course in micro-economics are prerequisite for MGCR341. If included in the Minor in Management, MGCR423 should be taken at the end of the program.

Engineering students may obtain a Minor in Management by completing 15 credits of courses from the following list of Faculty of Management courses with a grade of C or better. Successful completion of this Minor is noted on a student's transcript.

Required Courses (6 credits)
MGCR211 Introduction to Financial Accounting
MGCR320 Managing Human Resources

Complementary Courses (9 credits)
3 credits, one of List A:
MGCR213 Introduction to Management Accounting
MGCR341 Finance 1
MGCR373 Operations Research 1
MGCR382 International Business

3 credits, one of List B:
BUSA462 Management of New Enterprises
or BUSA465 Technological Entrepreneurship
MGCR222 Introduction to Organizational Behaviour
MGCR352 Marketing Management 1
or MRKT360 Marketing of Technology
MGCR360 Social Context of Business
MGGR423 Organizational Policy

3 credits, any available 300 or 400-level Management course (for which the prerequisites, if any, have been met).

An Engineering course deemed equivalent by the Faculty of Management may be substituted for course MGCR373. There are three courses in Engineering that qualify: CIVE208, MECH474 and MIME326. It should be noted that MGCR373 does not count as a technical complementary course.

A student embarking on the Minor must be prepared to take credits additional to the normal Engineering program. The student may choose the non-technical complementary course(s) required in his/her program from list B above, but under no circumstances will more than 6 credits of non-technical complementary courses count towards both the Engineering program and the Minor. Students considering this Minor should consult their advisor or the Faculty of Engineering Student Affairs Office.

5.10 Materials Engineering Minor

Engineering students may obtain a Minor in Materials Engineering by completing 24 credits chosen from the required and complementary courses listed below. By a careful selection of complementary courses, Engineering students may obtain this Minor with a minimum of 15 additional credits. It should be noted that some departments (e.g., Mechanical Engineering) will allow their students to take courses from this list providing they complete the Minor prior to graduation. For further information, please contact the coordinator, Prof. J. Szpunar, Room 2M020, Wong Building.

Required Courses (15 credits)
MIME260 Materials Science and Engineering
or CHEE380 Materials Science
MIME367 Electronic Properties of Materials
MIME465 Ceramic Engineering
CHEE481 Polymer Engineering
CHEE484 Materials Engineering

Complementary Courses (9 credits)
Three courses to be chosen from the following list:
CHEE381 Polymer Technology
CHEE483 Industrial Rheology
CHEE487 Chemical Processing Electronics Industry
CHEE530 Structure and Properties of Paper
CHEE581 Polymer Composites Engineering
CHEM455 Introductory Polymer Chemistry
ECSE545 Microelectronics Technology
MECH530 Mechanics of Composite Materials
MIME360 Phase Transformations: Solids
MIME361 Liquid State Processing of Materials
MIME362 Mechanical Properties
MIME412 Corrosion and Degradation
MIME560 Joining Processes
MIME561 Advanced Materials Design
MIME563 Hot Deformation of Metals
MIME564 X-Ray Diffraction Analysis of Materials
MIME566 Texture, Structure & Properties of Polycrystalline Materials
MIME569 Electron Beam Analysis of Materials

5.11 Mathematics Minor

The Minor in Mathematics for students in the Faculty of Engineering requires satisfactory passes in 24 credits of approved courses in Mathematics not including the following:

MATH247 (or MATH223)
MATH260 (or MATH262 or MATH222)
MATH261 (or MATH263 or MATH315 or MATH325)
MATH265 (or MATH264 or MATH248 or MATH314)
MATH266
MATH270
MATH319

At least 18 credits must be chosen from the Mathematics and Statistics courses approved for the Mathematics Majors or Honours program, or from MATH249, MATH363, MATH381, MATH386. The remaining credits may be chosen from mathematically allied courses.

In addition to an Engineering Advisor, each student in the Minor program must have an Advisor designated by the Department of Mathematics and Statistics, normally beginning in the U2 year. The selection of courses for the Minor is to be done in conjunction with the Minor Advisor. Please consult the Department of Mathematics and Statistics for an Advisor.

5.12 Physics Minor

Students in Honours Electrical Engineering may obtain a Minor in Physics as part of their B.Eng. degree by satisfying the 18-credit requirement listed below.

PHYS253 Thermal Physics
PHYS357 Quantum Physics
PHYS457 Quantum Physics

and at least 9 credits chosen from the following:

PHYS332 Physics of Fluids
PHYS362 Statistical Mechanics
PHYS451 Classical Mechanics
PHYS514 General Relativity
PHYS551 Quantum Theory
PHYS557 Nuclear Physics
Students who take PHYS357 and PHYS457 can omit PHYS271 from their normal Electrical Engineering program. Candidates must go to the Department of Physics at registration time in their U3 year to fill out a Minor Program Form.

5.13 Technological Entrepreneurship Minor
Engineering students may obtain a Minor in Technological Entrepreneurship by completing 6 courses (18 credits) as listed below. Up to two courses (6 credits) may be double-counted for credit towards the Humanities and Social Sciences Complementary Courses.

This Minor is offered jointly by the Faculties of Engineering and Management. It will appeal to those students who have a concept, process or product idea in mind and who want to explore the opportunity of commercializing it. It will also be of interest to students who have a general interest in entrepreneurship and intend to pursue a career in small and medium-sized high technology/engineering companies.

Students considering the Minor should consult Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, e-mail: judy.pharo@mcgill.ca.

Required Courses (18 credits)
BUSA465 (3) Technological Entrepreneurship
FACC480 (3) Technological Entrepreneurship Project
MGCR320 (3) Managing Human Resources
MGPO562 (3) Seminar in Organizational Strategy
MRKT360 (3) Marketing of Technology
ORG321 (3) Leadership

5.14 Software Engineering Minor
This Minor will prepare an engineering student for a career in software engineering. It will provide a foundation in basic computer science, computer programming and software engineering practice.

The Minor consists of 24 credits (8 courses). Up to four of the courses (12 credits) may be double-counted for credit towards the B. Eng. degree in Electrical Engineering or Computer Engineering. Students in other programs may double-count up to three courses (9 credits).

Students considering this Minor should contact Ms. Judy Pharo, Faculty of Engineering Student Affairs Office, e-mail: judy.pharo@mcgill.ca.

Required Courses (9 credits)
ECSE221 (3) Introduction to Computer Engineering
ECSE321 (3) Introduction to Software Engineering
ECSE428 (3) Software Engineering Practice

Complementary Courses (15 credits)
one course (3 credits), either:
COMP203 (3) Introduction to Computing 2
or COMP250 (3) Introduction to Computer Science

At least one course (3 credits) must be selected from the following list of engineering courses:
CHEE458 (3) Computer Applications
CHEE571 (3) Small Computer Applications: Chemical Engineering
CIVE460 (3) Matrix Structural Analysis
CIVE550 (3) Water Resources Management
CIVE572 (3) Computational Hydraulics
ECSE322 (3) Computer Engineering
ECSE424 (3) Human-Computer Interaction
ECSE427 (3) Operating Systems
ECSE526 (3) Artificial Intelligence
ECSE531 (3) Real Time Systems
ECSE532 (3) Computer Graphics

MECH474 (3) Selected Topics in Operations Research
MECH524 (3) Computer Integrated Manufacturing
MECH539 (3) Computational Aerodynamics
MECH545 (3) Advanced Stress Analysis
MECH576 (3) Computer Graphics and Geometrical Modelling

No more than two courses (6 credits) can be selected from the following list of courses offered by the School of Computer Science:
COMP302 (3) Programming Languages and Paradigms
COMP335 (3) Software Engineering Methods
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP424 (3) Topics: Artificial Intelligence 1
COMP426 (3) Automated Reasoning
COMP431 (3) Algorithms for Engineers
COMP433 (3) Personal Software Engineering
COMP538 (3) Person-Machine Communication
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1 The Faculty

1.1 Location
Samuel Bronfman Building
1001 Sherbrooke Street West
Montreal, QC H3A 1G5
Canada
Telephone: (514) 398-4068
Website: www.management.mcgill.ca

1.2 Administrative Officers
Gerald H. B. Ross; B.Com.(McG.), M.Sc.(UBC), Ph.D.(W.Ont) Dean
Helen van Eyk Associate Director, B.Com. Program

1.3 The Faculty Then and Now
The Faculty was established in 1968, incorporating the Graduate School of Business with the School of Commerce of the Faculty of Arts and Science, where courses in commerce had been offered since the beginning of the century. Since 1971 the Faculty has been located at the corner of Sherbrooke and McTavish, easily accessible to the community it serves, in the Samuel Bronfman Building, named in honour of the late Mr. Bronfman who, while a Governor of the University, made a donation which was key to its construction.

The Faculty has gained a worldwide reputation as one of Canada’s leading international business schools and attracts top students and faculty members from every continent. The academic programs in Management offer strong international content in conjunction with a variety of functional specializations and include an opportunity for students to participate in exchange programs with many leading universities in Europe, Asia, the United States and South America. This recognition of the global nature of business was further reflected by the introduction of a Faculty Program in International Management as part of the B.Com. program in 1997.

2 General Information

2.1 Aims of the B.Com. Program
The primary objective of the undergraduate program in management is to prepare students for effective professional and managerial careers in organizations. At a general level this preparation includes developing in students a capacity for critical thinking, for integrating knowledge across different disciplines, and for utilizing current theory in approaching practical business problems. Students are also expected to become comfortable with taking risks and working as part of a team, and to develop the necessary skills to lead others. At a more specific level, students must acquire the critical management competencies which will enable them to offer the expertise organizations need to respond to the ever-changing, increasingly complex global marketplace.

The B.Com. curriculum offers students both breadth and depth. Breadth is achieved through a broad-based core of required courses which provide the necessary quantitative,
analytical, and communication skills, while grounding students in applied theory and practice across the major management disciplines. Depth is achieved through three alternate streams of study designed to meet the needs of a highly diverse student body with a wide range of career interests and priorities.

In Stream I, General Management, students pursue focused study in at least two different areas. They must choose one Concentration in Management, and for their second area of study, they have three options: 1) choosing a second Concentration in Management; 2) pursuing a Minor in another faculty; or 3) custom-designing their own sequence of higher level courses around a theme, with approval from the Area Coordinator of their Concentration.

In Stream II, Majors and Honours, students focus their study in only one area in order to get maximum exposure to their chosen field.

In Stream III, International Management, students have a chance to pursue interdisciplinary study of a particular geographic region of the world – East Asia, Latin America and the Caribbean, Western Europe, or North America. Language, social science, and humanities courses are taken to expand understanding of other cultures and to gain the necessary perspective for an international business career.

2.2 Part-time B.Com. Program
Students taking fewer than four courses per term are considered to be part-time students. Such students generally follow their program through evening courses offered by the Centre for Continuing Education. Since the range of Management and non-Management course offerings in an evening program is more restricted than in the day program, it is not possible to complete certain Concentrations, Honours or Majors, or the Faculty Program. Further information on program requirements for students who change from the full- to part-time program, or vice versa, can be obtained from the Student Affairs Office.

2.3 Summer Studies
Students wishing to make up deficiencies in their background, or to accelerate their progress to the degree, may apply to the Manager, Undergraduate Affairs and Advising, to take summer courses either at this University or at some other institution. Credit will be granted for such work only if it fits into the student’s overall program, and if written permission to do such work for credit has been obtained in advance. A course which overlaps with course material already completed in the student’s program, or a language course which does not substantially progress beyond corresponding language courses already taken by the student, will not receive credit approval.

Each summer, from early May to mid-August, many Core courses and several elective courses are offered by the Faculty of Management for full credit. They are available to Management students, and to students from other faculties and universities with the necessary course prerequisites. The University also offers a number of summer courses in various disciplines at different levels. Information on Management summer courses is available from the Student Affairs Office or from the Summer Studies Office.

Students working full or part-time during the summer will be allowed to take only one course in each of the two Summer Sessions.

Students who are not working and wish to follow a full-time period of study will be permitted to enrol for more than six credits per period only with special permission of the Associate Dean or the Associate Director. In no circumstance will they be allowed to take more than 12 credits in either period of the Summer Studies, and may take no more than 18 credits in a single summer.

2.4 International Student Exchange Program
Students are encouraged to participate in the International Student Exchange Program to gain a broader international perspective. Through this program, students may study and earn academic credits at over 30 universities in countries around the world. Exchange opportunities are open to students in all streams.

More information may be obtained from the Student Affairs Office (514) 398-4068, e-mail: bcom.mgmt@mcgill.ca or on the McGill Website at www.mcgill.ca/students-records/exchanges.

2.5 Internship Program
Students wishing to integrate valuable hands-on work experience in their academic studies are encouraged to apply to the Internship Program. This program provides students an opportunity to work for four or eight months in a business environment where they can apply their theoretical knowledge into practice.

The program is very competitive and requires that students submit a thorough application and pass an interview. To be eligible, students must meet the following requirements: be registered in the full-time Bachelor of Commerce program, have a minimum CGPA of 3.0/4.0, have completed all core courses except Organizational Policy (MGCR423), and have at least 12 credits remaining in the program. Students may register for internships starting in the Fall, Spring or Summer.

A student who is completing an internship appointment will receive a mid-term and final performance evaluation. After completing the internship appointment, the student is required to submit a written internship project report to the Associate Dean and return to McGill to complete the Bachelor of Commerce program.

Students who have successfully completed the Internship Program will receive one credit for each four-month internship appointment, up to a maximum of two credits and will receive the Internship Program notation on their transcript.

The fees associated with the program include a $25 enrolment fee and a $400 internship fee for each appointment the student undertakes, as well as the cost assessed for each credit.

More information is available on the Web at www.management.mcgill.ca under “Career Centre” or from the McGill Management Career Centre; contact the Manager, Internships Program by telephone: (514) 398-2071 or e-mail: intern.mgmt@mcgill.ca.

2.6 Scholarships, Prizes and Medals
For information, see “Entrance Scholarships and Awards” on page 24.

Registered students are automatically considered by the Faculty Scholarships Committee for each award for which they are eligible, with the following exceptions: Bank of Montreal Awards, KPMG Scholarship, Commerce ‘SS Scholarships, Export Development Corporation International Studies Scholarships, Stephen S. Goldbloom Memorial Prize, Hugh Howson Memorial Prize, Dr. Alex Paterson Scholarship, Paul-Hervé Desrosiers Scholarship in Entrepreneurial Studies, and STS Systems Ltd. Prize in Information Systems. For these, the Faculty Scholarships Committee welcomes recommendations, substantiated by curriculum vitae, from individual students, student groups and clubs. Such information should be forwarded to the Associate Dean, B.Com. Program. A minimum of 27 graded credits must have been completed in the year to be eligible; 14 credits in one term.

2.7 Management Undergraduate Society
The Management Undergraduate Society (MUS) represents all undergraduate students in the Faculty of Management and hosts a wide range of events, activities and resources, which add value to the quality of student life. Named 2001-2002 Faculty Association of the Year, the MUS offers countless services ranging from academic tutoring, fun-filled social gatherings to business contact opportunities. Through extra-curricular involvement with the MUS, students increase the value of their education and are provided with the opportunity to gain essential skills that are directly applicable in the business world. There are over 150 positions under the MUS that offer students the opportunity to get involved, meet new people and enhance their university experience.
Activities sponsored by the MUS include: Management Welcome Week, Management Winter Carnival, Management Achievement Awards Luncheon, Jeux du Commerce/Commerce Games, the AIDS benefit fashion show, the Cancer Auction, a Faculty newspaper and magazine, a yearbook and a Graduation Ball. The MUS is also the umbrella organization under which the McGill Investment Club, the Information Systems Club, the Marketing Network, the International Management Society and the McGill Accounting Society all operate. Each club organizes career information sessions, guest speakers, peer tutorial programs, social activities as well as other activities that complement regular classes.

3 B.Com. Program Requirements

3.1 Academic Requirements for Graduation

A student is graduated upon satisfactory completion of the full number of credits indicated in the letter of acceptance, subject to the curriculum requirements. For students entering with a CEGEP Diploma, the number of credits will generally be 90. Students from outside the province of Quebec who have not completed the equivalent of CEGEP graduation will normally be required to complete 120 credits.

All students are expected to conform to the curriculum set out below. It is the student's responsibility to make sure his/her course of study conforms with the curriculum requirements as described. Students wishing to depart from that program must obtain written permission from the Associate Dean.

A student who has transferred with advanced standing to the Faculty of Management from another faculty within this University or from another university, is normally required to complete a minimum of 60 credits while registered in the Bachelor of Commerce program, including such required courses as are deemed necessary, to become eligible for the degree of Bachelor of Commerce.

Completion of the 90-credit degree requirements normally will require three years of study. A maximum of five years is permitted, however, for completion of the requirements for the degree. In exceptional circumstances, this maximum requirement may be extended by the Associate Dean.

3.2 Academic Advising

Students entering the Faculty for the first time are required to attend an Orientation and Advising Session during the last week of August, at which the Associate Dean and advising staff (Helen Van Eyk, Giulia Campofredano, Ron Critchley and Heather McCombie) from the B.Com. Office provide information on all aspects of the B.Com. program. Students who have had difficulty registering for their courses have the opportunity to resolve the problem at this session.

Counselling is available throughout the year with area coordinators to discuss study plans and potential career paths. Appointments may be made after the first week of class to discuss such issues.

In February or March, an Information Session takes place which enables the student to select a course of study.

In April, students continuing in the B.Com. program plan their studies for the following year by completing a Study Plan Form, using the requirements as listed in the Calendar as a guide to their course selection, calling upon their Area Adviser or other faculty members for advice where appropriate. Students then register on-line using Minerva at www.management.mcgill.ca. The Study Plan Form must be signed by one of the Advisers, Helen Van Eyk, Ron Critchley, Giulia Campofredano or Heather McCombie.

Students in Stream I choosing to do a Minor in another Faculty as their second area of study must get approval from the Area Coordinator of their Concentration before taking more than two courses out of the six required at the 300- or 400-level. It should be noted that Minors must have a minimum of 18 credits not overlapping with other program requirements.

Students in Stream II, Honours or Majors programs must have their Study Plan Form initially authorized by the appropriate Area Coordinator or Department Adviser prior to submission to the Student Affairs Office.

Students in Stream III should meet with the appropriate International Management faculty adviser(s) in the Faculty of Management and/or Arts, at least once a year to plan their course of study. Students continuing in the part-time (evening) B.Com. program have their Study Plan Form authorized by Ron Critchley.

Students requesting general information about the program, or encountering difficulties (academic or personal) during the session, should contact Giulia Campofredano, Ron Critchley or Heather McCombie.

3.3 Registration

Course Selection: Full-time students must register on-line using Minerva. Additional information for new students is distributed at the time of admission and is also available on the Faculty Website at www.management.mcgill.ca under Degree Programs - B.Com. - Accepted Students.

Information for returning students and part-time students is available at the B.Com. Office.

Course Change: Students who wish to change the courses for which they are registered within the course change period must do so on-line using Minerva. Permission may be granted provided that such changes do not involve timetable conflicts or alter the sequence of courses. Students should complete and return to the B.Com. Office a Course Change Form after they have successfully made their course changes using Minerva.

Withdrawals: Students wishing to withdraw from a course after the course change deadline must do so on-line using Minerva by the withdrawal deadline. A grade of "W" will be indicated on the transcript. Approval to withdraw after the withdrawal deadline will be granted only in exceptional circumstances.

Students whose circumstances require withdrawal from their complete program should report to the B.Com. Office.

3.4 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course taken for credit at McGill, CEGEP, at another university, or advanced placement exams, Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate Diploma.

It is the student's responsibility to consult the Student Affairs Office as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

3.5 Academic Standing

Academic standing is based primarily on students' cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the fall term, in May for the winter term, and in September for the summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students' fall TGPA. Therefore, academic standings for the
fall term are designated as “interim” and should be interpreted as advisory. Note that interim standing will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing
Students in satisfactory standing may continue in their program.
• New students are admitted to satisfactory standing.
• Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing
Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.
• Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
• Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the summer term.
• Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing will be placed in probationary standing if their CGPA is less than 2.00. To remain in the program, students must satisfy relevant conditions specified in their letter of readmission.

Readmitted Unsatisfactory Standing
Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing will have their standing changed to readmitted unsatisfactory standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing
Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean no later than July 15 for readmission to the fall term and November 15 for the winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

• Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.
• Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing if their TGPA falls below 2.50 and their CGPA is below 2.00.
• Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

Incomplete Standings
Standing awaits deferred exam. Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course change period for that term; otherwise, their registration will be cancelled. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office.

3.6 Academic Distinctions
• Full-time students will be given the designation “Dean’s Honour List” when their academic standing is in the upper 10% of the B.Com. student body. The designation, while carrying no monetary reward, is an official recognition of the student’s achievements and will be noted on the student’s transcripts. A minimum of 27 graded credits must have been completed during the academic year to be eligible; 14 credits in one term.
• Students not in an Honours program who graduate with a CGPA of 3.50 or better will be awarded their degrees with “Great Distinction”; those with a CGPA between 3.30 and 3.49 will receive their degrees with “Distinction”. In the case of transfer students or transfer credits, consideration is given to the quality of the work done elsewhere in addition to the CGPA requirement.
• The designation of Dean’s Honour List for graduating students will be awarded by the Faculty to a maximum of 10% of its graduating students. The award will be made on the basis of the CGPA, with the minimum standard being set at a CGPA not lower than a 3.50.

3.7 Examinations
The following is supplemental to that which is listed under “Examinations” on page 51.

Supplemental Examinations
Supplemental examinations are not offered in undergraduate courses administered by the Faculty of Management. A student required to improve his/her standing in a course must repeat the course in a subsequent term, completing all course requirements to the satisfaction of the instructor.

Deferred Examinations
Students should apply in writing to their Associate Dean within SEVEN days of the final examination for deferred examination
privileges. If approved, such a deferred examination will generally be written within the next formal period for which there is an examination in the course. Special arrangements may be made where a student has an authenticated case of long-term illness.

3.8 Verification of Grades and Rereads

Every student has the right to arrange a meeting with the instructor to review the examination questions and see the corrected solutions. The instructor has the option of meeting with the student to answer any questions that the student may have about the grading of the paper, or alternatively, the instructor may provide the student with a sheet containing the correct answers to the examination questions. The student may review this in the presence of the faculty member or designate, but may not take the material away. Students must exercise their right to see their papers by the end of the third week of classes in September for preceding winter and summer courses, or by the end of the third week of classes in January for preceding fall courses.

In a case where a student feels that an error has been made in arriving at the final grade, a Verification of Grade Application must be completed in the Student Affairs Office, requesting the instructor to carry out a detailed check that all questions have been marked, and that the final grade has correctly been computed on the basis of the term work, final examination, etc. However, during the course of the term, any requests to have term work re-evaluated should initially be made directly to the instructor.

Students may apply to the Student Affairs Office for rereads of written course work. Rereads for computer-scored examinations are not possible, but students may request verification of their final grade.

The deadline for applying for a Verification of Grade or Reread for the winter and summer term courses is the end of September; the deadline for fall term courses is the end of January. There is no charge for Verification of Grades: students will pay a fee (which will be billed to their account) for each Reread. Verification of Grades or Rereads in courses not offered by the Faculty of Management are subject to the deadlines, rules and regulations of the particular faculty concerned.

When a Reread is requested, a second reader will be appointed, and will review the examination paper and several other papers in the same general mark range, and will be concerned with actual errors of marking, whether they be errors of omission or judgment. The recommendation of the second reader will stand, whether this recommendation involves an upgrading or a downgrading of the original mark. In a case where the original mark has been upgraded, the Reread fee will be refunded to the student.

4 B.Com. Program Structure

The Bachelor of Commerce (B.Com) degree program is a three- or four-year program when taken full-time. It can also be pursued on a part-time evening basis.

Although the language of instruction at McGill is English, those who plan to be part of the Quebec business environment are reminded of the importance of competence in both written and oral French.
Areas of specialization:
- Canada
- Latin America and the Caribbean
- Western Europe (France, Germany, Italy, or Spain)
- East Asia
- United States

5 Management Core

All B.Com. students take the 51-credit Core curriculum set out below, except where modifications are specifically required by a Major or Honours program. Any other student wishing to deviate from this program must obtain written permission from the Associate Dean.

A grade of C or better is required for all Core courses. If a D is obtained in a Core course, the grade must be improved during the following term.

The distribution of Core courses over years differs depending upon whether the student is in the 90-credit program (3 years) or the 120-credit program (4 years). Students who have completed the Core program enter the 90-credit program; students from outside Quebec who have been accepted on the basis of high school completion enter the 120-credit program.

5.1 90-credit Program, Core Course Distribution

U1 Required Courses (30 credits)

- MGCR211 (3) Introduction to Financial Accounting
- MGCR213 (3) Introduction to Management Accounting
- MGCR222 (3) Introduction to Organizational Behaviour
- MGCR271 (3) Statistics 1
- MGCR272 (3) Statistics 2
- MGCR293 (3) Managerial Economics
- MGCR331 (3) Information Systems
- MGCR341 (3) Finance 1
- MGCR352 (3) Marketing Management 1
- ECON295 (3) Macroeconomic Policy

U2 Required Courses (18 credits)

- MGCR320 (3) Managing Human Resources
- MGCR360 (3) Social Context of Business
- MGCR373 (3) Operations Research 1
- MGCR382 (3) International Business
- MGCR472 (3) Operations Management
- EDEC305 (3) Communication in Management 2 (Faculty of Education)

U3 Required Course (3 credits)

- MGCR423 (3) Organizational Policy

Program Footnotes:
1. Students considering the Faculty Program in International Management should take MGCR382 in U1 and MGCR213 in U2.
2. Students considering a Major or Minor in Mathematics replace MGCR271 and MGCR272 with MATH323 and MATH324. Students considering an Honours or Joint Honours Program in Economics replace them with ECON257D1/ECON257D2.
3. Students entering an Economics program replace MGCR293 in U1 with either ECON230D1/ECON230D2 (for the Majors program) or ECON250D1/ECON250D2 (for the Honours Program); and replace ECON295 in U2 with either ECON330D1/ECON330D2 (for the Majors program) or ECON352D1/ECON352D2 (for the Honours Program) taken in U2.

Also note that:
- A maximum of 6 credits will be permitted within the B.Com. program for MGCR 293 and ECON230D1/ECON230D2 or ECON250D1/ECON250D2.
- A maximum of 6 credits will be permitted within the B.Com. program for ECON 295 and ECON330D1/ECON330D2 or ECON 352D1/ECON 352D2.

5.2 120-credit Program, Core and Freshman Course Distribution

Students admitted to a program requiring 97-120 credits (four years) register in a Freshman Year in which they must complete MATH130 and MATH131 (or equivalents) as well as the 15 credits of Complementary Courses specified below.

A minimum grade of C is required for all Core and Freshman Complementary courses.

The Freshman and Core courses are distributed as follows:

U0 Required Courses (12 credits)

- MATH130 (3) Mathematics for Management 1
- MATH131 (3) Mathematics for Management 2
- MGCR211 (3) Introduction to Financial Accounting
- MGCR331 (3) Information Systems

U0 Complementary Courses (15 credits)

3 credits, one course, at the 100 or 200 level in Psychology (Subject Code PSYC), excluding PSYC204, or Sociology (Subject Code SOCI), excluding SOCI211.

6 credits of Humanities or Language courses, as specified below.

6 credits of Social Science or Science courses, as specified below.

U0 Elective Course (3 credits)

one 3-credit course

(Students should refer to Note 5 below as it may be necessary for them to take EDEC205 Communication in Management 1 in U0).

U1 Required Courses (27 credits)

- MGCR213 (3) Introduction to Management Accounting
- MGCR222 (3) Introduction to Organizational Behaviour
- MGCR271 (3) Statistics 1
- MGCR272 (3) Statistics 2
- MGCR293 (3) Managerial Economics
- MGCR341 (3) Finance 1
- MGCR352 (3) Marketing Management 1
- ECON295 (3) Macroeconomic Policy
- EDEC305 (3) Communication in Management 2

U2 Required Courses (15 credits)

- MGCR320 (3) Managing Human Resources
- MGCR360 (3) Social Context of Business
- MGCR373 (3) Operations Research 1
- MGCR382 (3) International Business
- MGCR472 (3) Operations Management

U3 Required Courses (3 credits)

- MGCR423 (3) Organizational Policy

Freshman Social Sciences/Sciences Courses List

Any course at the 100 or 200 level with these Subject Codes:
- ANTH (Anthropology)
- ATOC (Atmospheric and Ocean Sciences)
- BIOL (Biology)
- CAN (Canadian Studies)
- CHEM (Chemistry)
- ECON (Economics) excluding ECON208, ECON209, ECON217, ECON227, ECON230, ECON250, ECON257, ECON295; EPSC (Earth and Planetary Sciences)
- GEOG (Geography)
- HIST (History)
- LING (Linguistics)
- PHGY (Physiology)
- PHYS (Physics)
- POLI (Political Science)
- PSYC (Psychology) excluding PSYC204; SOCI (Sociology) excluding SOCI211; SSMD (Social Studies of Medicine)
- WMST (Women's Studies)

Any course at the 200 level with these Subject Codes:
- COMP (Computer Science)
- MATH (Mathematics)
- MATH203, MATH204, MATH211.

Freshman Humanities/Languages Courses List

Any course at the 100 or 200 level with these Subject Codes:
- ARTH (Art History)
- CANS (Canadian Studies)
- CLAS (Classics)
- DAN (Danish)
- EAST (Asian Languages and Literature)
- ENGC (English Communications)
- ENGL (English)
- FREN (French)
- FRSL (French as a Second Language)
- GERM (German)
- HIS (Hispanic Studies)
- ITAL (Italian)
- JWST (Jewish Studies)
- MUAR (Music-Arts)
- MUHL (Music)
A maximum of 6 credits will be permitted within the B.Com.

Program Footnotes:

1. Students considering a Major or Minor in Mathematics, or an Honours or Joint Honours program in Economics replace MATH130 and MATH131 with three of the following courses, or demonstrated proficiency through appropriate McGill Placement tests.

   MATH133 (3) Vectors, Matrices and Geometry
   MATH139 (4) Calculus
   or MATH140 (3) Calculus 1
   MATH141 (4) Calculus 2

   Six of these credits would be counted in the Freshman Year requirements, the remaining credits would be counted as Humanities or Science Complementary.

2. Students considering the Faculty Program in International Management should take MGCR382 in U1 and MGCR213 in U2.

3. Students considering a Major or Minor in Mathematics replace MGCR271 and MGCR272 with MATH323 and MATH324.

4. Students entering an Economics program replace MGCR293 in U1 with either ECON230D1/ECON230D2 (for the Majors program) or ECON250D1/ECON250D2 (for the Honours Program); and replace ECON295 with either ECON330D1/ECON330D2 (for the Majors program) or ECON352D1/ECON352D2 (for the Honours Program) in U2.

5. In order to register for EDEC305, students must either pass a Placement Test or have taken the prerequisite course, EDEC205. Credit for EDEC205, which would normally be taken in U0, would be counted as a Language Complementary or an elective.

   * All new students are required to take a placement test. The results determine whether students should register for EDEC205 (as of the second term, to count as Freshman Humanities or an elective); or EDEC 305 (as of U2, to fulfill the core requirement. Students in this group will take an additional core course of their choosing, or a free elective, to complete the 30 credits of U0); or CEGL 351 (not for credit, in the first term, to qualify for EDEC205 in the second term). Further details are posted on the Faculty Website at www.management.mcgill.ca under Degree Programs - B.Com. - Accepted Students.

Also note that:

- Management students cannot receive credit for ARET150, COMP 102 or COMP 199.
- A maximum of 6 credits will be permitted within the B.Com. program for MGCR 293 and ECON230D1/ECON230D2 or ECON250D1/ECON250D2.
- A maximum of 6 credits will be permitted within the B.Com. program for ECON 295 and ECON330D1/ECON330D2 or ECON 352D1/ECON 352D2.

5.3 Transfer Credit and Advanced Standing

Normally, students may transfer up to one-third of the credits required in their degree program, including the Concentration, Major, or Honours requirements.

See “Transfer Credits” on page 49 or the Student Affairs Office for more details.

6 Concentrations

In order to complete a Concentration, the student must achieve a grade of C or better in all the courses which comprise the Concentration. The student who has failed to earn 15 satisfactory credits will be required to embark on a new Concentration, repeat the course(s) in question or, where possible, to replace the course(s) with a satisfactory option from the Concentration courses.

In general, the student will begin taking courses from the chosen Concentration in the U2 year.

An adviser is appointed for each Management Concentration to assist students in choosing a Concentration and provide additional information regarding course selection.

Second Concentration:

Students who choose to take a second Concentration will be required to complete 15 non-overlapping credits at a satisfactory level with a minimum grade of C in each course.

6.1 Accounting Concentration

Adviser: Professor D. H. Drury

This Concentration is designed to meet the needs of Management students who want to have a good basic understanding of accounting but do not intend to become professional accountants or accounting specialists. It is primarily oriented towards users of financial information and emphasizes breadth of knowledge in a coherent selection of courses.

The Accounting Concentration complements or forms part of the B.Com., General Management Program. The individual courses in the Concentration also act as service courses for other areas in the Faculty for their Majors or Concentrations.

Required Courses (12 credits)

ACCT311 (3) Financial Accounting 1
ACCT312 (3) Financial Accounting 2
ACCT313 (3) Management Accounting 1
ACCT415 (3) Management Accounting 2

Complementary Courses (3 credits)
either:

ACCT417 (3) Taxation and Business Decisions
or another approved course at the 300 level or above in other Areas of the Faculty

6.2 Entrepreneurship Concentration

Adviser: Professor P. Johnson

This Concentration is concerned with the genesis and development of entrepreneurial activities. It deals with the integration of marketing, finance, organization and policy in the development and expansion of business enterprise. Included are the evaluation of new business ventures, the role of acquisitions, and the strategic issues and operating problems at various stages of a firm’s existence from its beginnings to maturity.

Required Course (3 credits)

BUSA464 (3) Management of Small Enterprises

Complementary Courses (12 credits)

one of:

BUSA462 (3) Management of New Enterprises
BUSA465 (3) Technological Entrepreneurship
and three of:

ACCT417 (3) Taxation and Business Decisions
BUSA364 (3) Business Law 1
FINE445 (3) Real Estate Finance
MGP0383 (3) International Business Policy
MGP0582 (3) Seminar in Organizational Strategy
MRKT354 (3) Marketing Management 2
MRKT452 (3) Consumer Behaviour
MRKT453 (3) Advertising Management
### 6.3 Finance Concentration

**Advisers:** Professors A.deMotta, J.Ericsson, P. Ruiz, and S. Sarkissian

This Concentration has been designed to provide understanding of key concepts in finance theory, financial institutions, investment analysis, risk management, and applied techniques. Graduates find a strong demand among financial organizations, governments, and non-financial firms where they pursue careers which lead to positions such as Managing Partner, Treasurer and V.P. Finance.

**Required Courses** (9 credits)
- FINE342 (3) Finance 2
- FINE441 (3) Investments and Portfolio Management
- FINE443 (3) Applied Corporate Finance

**Complementary Course** (6 credits)
- two of:
  - FINE442 (3) Capital Markets and Institutions
  - FINE444 (3) Risk Management and Insurance
  - FINE445 (3) Real Estate Finance
  - FINE448 (3) Derivatives and Risk Management
  - FINE480 (3) Global Investments
  - FINE482 (3) International Finance 1
  - FINE492 (3) International Finance 2
  - FINE541 (3) Applied Investments
  - FINE645 (3) Money and Capital Markets

### 6.4 Information Systems Concentration

**Adviser:** Professor K. Leitch

Two concentration streams are offered in Information Systems. The Systems Analysis stream provides the foundation for systems analyst, some design, IS project management, implementation and support positions. The Business Systems Design stream provides the foundation necessary for positions as systems designers and developers. Students are introduced to four different programming languages, and various design concepts, including event-driven, structured and object oriented design.

An IS Concentration differs from the Major in that it focuses on a restricted set of activities rather than the broader set of skills required of students intending to pursue careers in the information systems field.

Due to prerequisites, at least three terms are required to complete an IS Concentration.

**SYSTEMS ANALYSIS AND IMPLEMENTATION STREAM**

**Required Courses** (15 credits)
- INSY333 (3) Systems Analysis and Modeling
- INSY341* (3) Business Systems Design 1
- INSY432 (3) Information Systems Administration
- INSY436 (3) Telecommunications Management
- INSY437 (3) Data and Database Management

**BUSINESS SYSTEMS DESIGN STREAM**

**Required Courses** (15 credits)
- INSY333 (3) Systems Analysis and Modeling
- INSY341* (3) Business Systems Design 1
- INSY342* (3) Business Systems Design 2
- INSY422 (3) Object Oriented Design
- INSY438 (3) Graphical Development Environments

* Students who have already taken COMPxxx (Computer Science) courses must see the adviser.

Students seeking an elective in IS without pursuing a Concentration or Major should consider INSY333 and INSY341.

### 6.5 International Business Concentration

**Adviser:** Professor H. Etemad

The objective of this Concentration is to help the student develop conceptual and analytical skills needed to formulate feasible and effective management policies in an international setting. With economic and business activity becoming increasingly internationalized, the program provides useful preparation for careers in a variety of organizations, including local business firms with international trade, licensing or financial arrangements; headquarters or subsidiaries of multinational companies; banks and other international financial institutions; and various governmental organizations.

**Required Course** (3 credits)
- FINE342 (3) International Business Law

**Complementary Courses** (12 credits)
- four of:
  - MGPO383 (3) International Business Policy
  - MGPO384 (3) Asia-Pacific Management
  - MGPO385 (3) European Economy and Business
  - MGPO434 (3) Topics in Management
  - MGPO481 (3) North America: Global Markets
  - MGPO493 (3) Global Economic Competitiveness
  - FINE478 (3) International Financial Management
  - MGPO469 (3) Managing Globalization
  - MRKT483 (3) International Marketing Management
  - ORGB380 (3) Cross Cultural Management

### 6.6 Labour-Management Relations Concentration

**Adviser:** Professor R. Hebdon

The objective of this Concentration is to provide a general understanding of the factors affecting employer-employee relations, both at the micro-level and in relation to the socio-economic context in which they occur. Students interested in more intensive study of this area are urged to consider the Major Program in Labour-Management Relations.

**Required Courses** (6 credits)
- INDR294 (3) Introduction to Labour-Management Relations
- INDR496 (3) Collective Bargaining

**Complementary Courses** (9 credits)
- three of:
  - INDR434 (3) Topics: Labour-Management Relations
  - INDR449 (3) Occupational Health and Safety
  - INDR459 (3) International Labour Relations
  - INDR492 (3) Public Policy in Industrial Relations
  - INDR494 (3) Labour Law
  - INDR495 (3) Labour Relations: Public Sector
  - INDR497 (3) Contract Administration

### 6.7 Management Science Concentration

**Advisers:** Professors J.L.Goffin, R.J.Loulou, and G.A.Whitmore

This Concentration prepares students for careers as management scientists, systems analysts, and applied statisticians in business, government and consulting firms. Most courses in the Concentration are currently offered jointly to MBA students.

Management Science courses stress conceptual and problem-solving skills and familiarize students with modern mathematical and computational decision-making tools. The use of computers and spreadsheets is extensive. Students in other management areas who wish to complement their studies with valuable analytical training might consider these courses:

- Marketing students: MGSC632, MGSC676; Finance students: MGSC675, MGSC679; IS or Operations Management students: MGSC678.

(Concentration revision awaiting University approval)

**Required Courses** (6 credits)
- MGSC671 (3) Statistics for Business Decisions
- MGSC679 (3) Applied Deterministic Optimization
6.8 Marketing Concentration

Advisers: Professors L. Dubé, L. Gialloreto, A. Mukherjee, E. Sarıgöl, and V. Vaupshas

This Concentration prepares the student for a wide variety of career opportunities. Marketing graduates historically have found employment in the fields of product management, advertising, sales management, marketing management, pricing, marketing research, distribution, and retailing. The Marketing Concentration provides a balance between courses focusing on fundamental, theoretical and "need to know" material, and courses with a strong practical and applied orientation.

**Required Courses** (12 credits)
- MRKT354 (3) Marketing Management 2
- MRKT356 (3) Marketing Planning 1
- MRKT451 (3) Marketing Research (to be taken in U2)
- MRKT452 (3) Consumer Behaviour

**Complementary Course** (3 credits)
- one of:
  - MRKT351 (3) Marketing in Society
  - MRKT355 (3) Services Marketing
  - MRKT365 (3) New Products
  - MRKT434 (3) Topics in Marketing
  - MRKT438 (3) Brand Management
  - MRKT453 (3) Advertising Management
  - MRKT455 (3) Sales Management
  - MRKT456 (3) Business to Business Marketing
  - MRKT459 (3) Retail Management
  - MRKT461 (3) Advertising Practicum
  - MRKT483 (3) International Marketing Management
  - MRKT557 (3) Marketing Productivity

6.9 Operations Management Concentration

Advisers: Professors T. Boyaci, S. Li, and V. Verter

This Concentration prepares the student for a variety of career opportunities. Graduates typically begin their career in one of three kinds of jobs: 1) line positions involving production and materials management; 2) operations analyst positions at the corporate or strategic planning level, analyzing programs and investment options involving operations; or 3) consulting positions. The OM Concentration provides rigorous analytical training and links different functional areas in business with areas in operations such as technology management, production planning, inventory control, distribution systems, quality management, etc. Most courses in the Concentration are currently offered jointly to M.B.A. students. (Concentration revision awaiting University approval)

**Required Courses** (9 credits)
- MGSC601 (3) Management of Technology in Manufacturing
- MGSC605 (3) Total Quality Management
- MGSC631 (3) Analysis: Production Operations

6.10 Organizational Behaviour and Human Resource Management Concentration

Adviser: Professor M.D. Lee

This Concentration provides an opportunity for students to increase their awareness of behavioural issues encountered in job and organizational settings, and prepare themselves for graduate study in the behavioural sciences or for careers in general management or human resource management.

**Complementary Courses** (15 credits)

- five of:
  - ORGB321 (3) Leadership
  - ORGB380 (3) Cross Cultural Management
  - ORGB409 (3) Organizational Research Methods
  - ORGB420 (3) Managing Organizational Teams
  - ORGB421 (3) Managing Organizational Change
  - ORGB429* (6) Organizational Behaviour for Course Counsellors
  - ORGB434 (3) Advanced Topics in Organizational Behaviour
  - ORGB435 (3) Women as Global Leaders and Managers
  - ORGB525 (3) Compensation Management

*If ORGB429 is taken, only 3 credits will count towards the Concentration, the other 3 will be counted as elective.

6.11 Strategic Management Concentration

Advisers: Professors M. Graham and J. Jorgensen

There are two options offered in the Strategic Management Concentration: Global Strategy and Social Context.

The Global Strategy option is intended for students who want to learn strategic management and analysis in the context of globalization. Globalization is no longer the concern of a few large enterprises and financial institutions; it has consequences that affect all kinds of business and the environment in which they operate – economic, social, political and ecological. Global Strategy allows students to assess the various opportunities and threats inherent in globalization, and requires them to explore the consequences and implications of business decisions for society and the environment. It also enables them to think through the requirements of doing business in different economic and political systems. Finally, it offers them the opportunity to understand and analyze industry structures and the kinds of business opportunities they either create or destroy.

The Social Context option is intended for students who want to learn strategic management and analysis with special attention to the not-for-profit, or civil sector, or who want to focus on broader or more complex social issues within the for-profit sector. The civil sector – made up of voluntary and non-governmental organizations and foundations – is the sector that has been the fastest growing employer for the past decade. Students who focus on this stream will be challenged to place a high priority on environmental issues, as well as issues of sustainability, corporate social responsibility, and social impact. They will also investigate the social tools and mechanisms necessary to employ cross-sectoral collaboration to achieve desired social outcomes.

Complementary Courses (6 credits)
- two courses chosen from:
  - MGSC600 (3) Applications: Operations Management
  - MGSC602 (3) Manufacturing Strategy
  - MGSC603 (3) Logistics Management
  - MGSC671 (3) Statistics for Business Decisions
  - MGSC675 (3) Applied Time Series Analysis Managerial Forecasting
  - MGSC678 (3) Simulation of Management Systems
  - MGSC679 (3) Applied Deterministic Optimization
  - MGSC680 (3) Applied Sequential Optimization

and approved courses in other Areas or faculties.

Complementary Courses (9 credits)
- at least two of:
  - MGSC675 (3) Applied Time Series Analysis Managerial Forecasting
  - MGSC676 (3) Applied Decision Analysis
  - MGSC633 (3) Sample Survey Methods and Analysis
  - MGSC680 (3) Applied Deterministic Optimization

and approved courses in other Areas or faculties.
GLOBAL STRATEGY OPTION
Complementary Courses (15 credits)

at least three courses from:

- MGPO383 (3) International Business Policy
- MGPO445 (3) Industry Analysis & Competitive Strategy
- MGPO460 (3) Managing Innovation
- MGPO469 (3) Managing Globalization
- MGPO470 (3) Strategy and Organization

the remaining credits to be chosen from:

- BUSA391 (3) International Business Law
- ECON219 (3) Current Economic Problems: Topics
- ECON305 (3) Industrial Organization
- MGPO434 (3) Topics in Policy
- MGPO440 (3) Strategies for Sustainability
- MGPO450 (3) Ethics in Management
- MGPO468 (3) Managing Organizational Politics
- MGPO562 (3) Seminar in Organizational Strategy
- MGPO567 (3) Business in Society

SOCIAL CONTEXT OPTION

Required Courses (9 credits)

- MGPO440 (3) Strategies for Sustainability
- MGPO450 (3) Ethics in Management
- MGPO468 (3) Managing Organizational Politics

Complementary Courses (6 credits)

two courses chosen from:

- BUSA391 (3) International Business Law
- MGPO383 (3) International Business Policy
- MGPO434 (3) Topics in Policy
- MGPO445 (3) Industry Analysis & Competitive Strategy
- MGPO460 (3) Managing Innovation
- MGPO469 (3) Managing Globalization
- MGPO470 (3) Strategy and Organization
- MGPO562 (3) Seminar in Organizational Strategy
- MGPO567 (3) Business in Society

7 Minors

B.Com. Program Minors Adviser: Ron Critchley

The Minor programs offered in the Faculties of Arts and Science may be taken in conjunction with any B.Com. program.

Students doing a Minor program must have a Faculty of Management Minor Approval Form, listing the courses being applied to the Minor, signed by the Minor adviser. The Minor in Mathematics and the Minor in Statistics are detailed below. For all other Minors, please refer to the Arts and Science Faculty sections.

For the Minor in Economics, students must complete 18 credits of material which does not overlap with Management course content. A maximum of 6 credits will be permitted within the B.Com. program for MGCR 293 and ECON 230D1/D2 or ECON 250D1/D2, and a maximum of 6 for ECON 295 and ECON 330D1/D2 or ECON 352D1/D2. Students interested in this Minor must obtain approval from Ron Critchley in the Student Affairs Office.

Students should begin the Minor in Mathematics and the Minor in Statistics no later than the penultimate year and should immediately consult the appropriate adviser in the Department of Mathematics and Statistics.

Students planning to take the Minor in Mathematics or the Minor in Statistics are advised to substitute MATH323 and MATH324 for MGCR271 and MGCR272. Those courses will then count 6 credits towards the Minor. If the decision to take a Minor program is made after MGCR271 and MGCR272 have been taken, students who wish to take MATH323 and MATH324 will receive three new credits for each of MATH323 and MATH324; however MGCR271 and MGCR272 will count for a total of only three credits towards the 24-credit Minor requirement.

7.1 Minor in Mathematics

Adviser: Professor D. Leisen, Department of Mathematics and Statistics, Faculty of Science

Required Courses (6 credits)

- MATH222 (3) Calculus 3
- MATH315 (3) Ordinary Differential Equations

Complementary Courses (18 credits)

- MATH223 (3) Linear Algebra
- or MATH235 (3) Basic Algebra
- and MATH236 (3) Linear Algebra

The remaining credits may be freely chosen from the Required and Complementary courses for Majors and Honours students in Mathematics (MATH323 and MATH324 are strongly recommended), with the obvious exception of courses that involve duplication of material.

Alternatively, up to six credits may be allowed for appropriate courses from other departments. These include MGSC630, MGSC632 (if MATH425 is not taken), MGSC633, MGSC671, MGSC675, MGSC678, MGSC679, MGSC680.

All courses counted towards the Minor must be passed with a grade of C or better. No more than six credits of overlap are permitted between the Minor and the primary program.

7.2 Minor in Statistics

Adviser: Professor K. Worsley, Department of Mathematics and Statistics, Faculty of Science

Required Courses (6 credits)

- MATH222 (3) Calculus 3
- MATH423 (3) Regression and Analysis of Variance

Complementary Courses (18 credits)

- MATH223 (3) Linear Algebra
- or MATH235 (3) Basic Algebra
- and MATH236 (3) Linear Algebra

6 credits, one of the following sets:

- MATH323 (3) Probability Theory
- and MATH324 (3) Statistics
- or MATH356 (3) Probability
- and MATH357 (3) Statistics

at least 6 credits to be chosen from:

- MATH425 (3) Sampling Theory and Applications
- or MGSC632 (3) Sample Survey Methods and Analysis
- MATH447 (3) Stochastic Processes
- MATH524 (4) Nonparametric Statistics
- MATH556 (4) Mathematical Statistics 1
- MATH557 (4) Mathematical Statistics 2
- MGSC633 (3) Applied Decision Analysis
- MGSC634 (3) Econometric Methods in Management
- MGSC671 (3) Statistics for Business Decisions
- MGSC675 (3) Applied Time Series Analysis Managerial Forecasting
- MGSC676 (3) Applied Multivariate Data Analysis

No more than six credits may be taken outside the Department of Mathematics and Statistics. Further credits (if needed) may be freely chosen from the Required and Complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material.

All courses counted towards the Minor must be passed with a grade of C or better. No more than six credits of overlap are permitted between the Minor and the primary program.
8 Majors

B.Com. Program Majors Adviser: Ron Critchley


Because of the heavier demands of Major programs, students desiring to pursue a program of this type are advised to declare their intention at the beginning of the program. Students are then assigned an adviser from the appropriate department and a suitable program is worked out. Only grades of C or better may count towards the Major requirements.

8.1 Major in Economics for Management Students


Please consult the Economics Department Website at www.mcgill.ca/economics.

This Major is comprised of 36 credits of Economics courses (6 credits of which are counted as Core credits).

Required Courses (12 credits)
ECON230D1* (3) Microeconomic Theory
ECON230D2* (3) Microeconomic Theory
ECON330D1** (3) Macroeconomic Theory
ECON330D2** (3) Macroeconomic Theory

* 3 of the 6 credits for Microeconomic Theory are counted in the Core, where it replaces MGCR293.
** 3 of the 6 credits for Macroeconomic Theory are counted in the Core, where it replaces ECON295.

Complementary Courses (24 credits)
24 credits from other 200-, 300- and 400-level courses in Economics (Subject Code ECON), excluding courses with numbers below 210. At least 6 of these 24 credits should be taken from courses with 400-level numbers. No more than 6 of the 24 credits may be taken at the 200-level.

ECON227D1/ECON227D2 and ECON257D1/ECON257D2 or ECON230D1/ECON230D2 or ECON280D1/ECON280D2 or ECON330D1/ECON330D2 or ECON350D1/ECON350D2 are approved by the adviser.

8.2 Major in Finance

Advisers: Professors A. deMotta, J. Ericsson, P. Ruiz, and S. Sarkissian

The 30-credit Finance Major has been designed to meet the increasing demand for expertise in this rapidly growing functional area of business. The Major is designed to provide in-depth knowledge of finance theory, financial institutions, investment analysis, risk management, and applied techniques. Employment for graduates is most often obtained in investment and commercial banking, manufacturing and service firms, non-profit organizations, and governments, and non-financial firms.

Required Courses (15 credits)
FINE342 (3) Finance 2
FINE441 (3) Investments and Portfolio Management
FINE443 (3) Applied Corporate Finance
FINE446 (3) Derivatives and Risk Management
FINE482 (3) International Finance 1

Complementary Courses (15 credits)

at least 9 credits from:
FINE442 (3) Capital Markets and Institutions
FINE444 (3) Risk Management and Insurance
FINE449 (3) Implementing Derivatives Models
FINE480 (3) Global Investments

Required Courses will be permitted.

8.3 Major in Information Systems

Adviser: Professor K. Leitch

The 30-credit Major in IS is designed to provide a strong foundation in the design, development, and implementation of information systems within the framework of the Management program. The Major is most appropriate for students seeking a career in the information systems field as systems analysts, systems developers, support analysts, and managers of information systems teams and departments.

The IS Major combines both IS Concentration streams (Systems Analysis and Implementation, and Business Systems Development) with two additional courses chosen by the student and approved by the IS faculty.

Due to prerequisites, four terms are required to complete a Major in Information Systems.

(Program revision awaiting University approval)

Required Courses (24 credits)
INSY333 (3) Systems Analysis and Modelling
INSY334 (3) Business Systems Design 1
INSY342 (3) Business Systems Design 2
INSY422 (3) Object Oriented Design
INSY432 (3) Information Systems Administration
INSY436 (3) Telecommunications Management
INSY437 (3) Data and Database Management
INSY438 (3) Graphical Development Environments

Complementary Courses (6 credits)
6 credits chosen from the following:
INSY332 (3) Accounting Information Systems
INSY334 (3) Business Program Development
INSY431 (3) Information Systems Design
INSY444 (3) Decision Support Systems
ELEExxx* (3) Computer Engineering Courses
COMPxxx (3) Computer Science Courses**
CCCSxxx (3) Computer Courses in Continuing Education

* Courses with ELEE, COMP, or CCCS prefixes must be approved by the adviser.
** Students who have already taken COMPxxx (Computer Science) courses must see the adviser to determine if they may count these courses as Complementaries, or if exemptions from Required courses will be permitted.

8.4 Major in Labour-Management Relations

Adviser: Professor R. Hebdon

This 30-credit Major provides students with a general understanding of the factors affecting employer-employee relations, including labour unions and laws that regulate the employment relationship. It is integral to the practice of human resource management, particularly in a unionized environment.

In addition to giving students a foundation in various aspects of labour relations and labour markets, this program provides understanding of federal and provincial labour legislation, training in collective bargaining, the administration of trade union contracts, handling of grievances and preparation for participation in arbitration proceedings, a view of human resources, problems and planning on the macro level.
8.5 Major in Marketing
Adviser: Professor V. Vaupshas
This 30-credit Marketing Major is designed to provide students with a strong background in marketing in order to prepare them for the wide variety of marketing careers available. The Major is most appropriate for those students seeking a career in brand management, small business marketing, selling and sales management and business-to-business marketing.
(Progam revision awaiting University approval.)

Required Courses (15 credits)
MRKT354 (3) Marketing Management 2
MRKT357 (3) Marketing Planning 1
MRKT451 (3) Marketing Research
MRKT452 (3) Consumer Behaviour
MRKT453 (3) Advertising Management

Complementary Courses (15 credits)
five of:
BUSA464 (3) Management of Small Enterprises
MRKT351 (3) Marketing in Society
MRKT355 (3) Services Marketing
MRKT365 (3) New Products
MRKT438 (3) Brand Management
MRKT455 (3) Sales Management
MRKT456 (3) Business to Business Marketing
MRKT459 (3) Retail Management
MRKT461 (3) Advertising Practicum
MRKT483 (3) International Marketing Management
MRKT557 (3) Marketing Productivity

8.6 Major in Mathematics for Management Students
Adviser: Professor D. Leisen, Department of Mathematics and Statistics, Faculty of Science
This Major is comprised of 54 credits of Mathematics and related courses (15 credits of which are counted as Core credits). It provides students in Management with a sound mathematical basis for the understanding of the modern concepts of Management Science. These require a good knowledge of advanced calculus, analysis, linear algebra and statistics. Current research in various branches of Management Science also requires considerable training in mathematics.
Since management is, in part, a sequential decision making process, a good manager needs to be able to devise optimal strategies in a systematic and scientific way. Courses in stochastic processes, optimization, etc., will help to reinforce such skills.

Students entering the Major program in Mathematics are normally expected to have completed MATH133, MATH139 or MATH140, and MATH141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the credits specified in the Major. Students entering the 120-credit Management program would take these courses in place of MATH130 and MATH131 in U0, counting 6 credits as Freshman Program credits and the remaining credits as Freshman Complementary.
9 Honours

B.Com. Program Honours Adviser: Ron Critchley

An Honours program is available in Accounting and in Economics, as well as Joint Honours programs in Economics and Accounting, and in Economics and Finance.

The difference between the Honours and Major programs is not one of quantity but rather of quality, the Honours program involving study in greater depth. Students must register with the Economics Department, Faculty of Arts, for the Honours in Economics program. This will usually be done at the beginning of their U1 year but special arrangements may be made for students wishing to enter the program at the beginning of U2.

Graduation with an Honours standing requires a minimum CGPA of 3.00 and an average of 3.00 in the specified courses of the program.

9.1 Honours in Accounting

Adviser: Professor R. Cecere

The objectives of this 36-credit program are twofold — to prepare students for admission to the accountancy profession (CA, CMA, CGA) and to prepare students for careers in business and government, where accounting expertise is recognized as necessary and indispensable.

Students should note that although the program incorporates the academic and/or professional requirements imposed by the professional groups, the scope of the program is much broader. Courses are not designed specifically to meet professional requirements. Students entering the Accounting Honours program with the intention of proceeding onward to qualification as a CA, CMA or CGA should consult the Honours Adviser. Further information on the Graduate Diploma in Public Accountancy, one of the requirements for admission to the Ordre des comptables agréés du Québec (CA), may be obtained from the Faculty of Management office which administers that program. McGill’s Centre for Continuing Education should be contacted regarding the Certified General Accountant program.

Entry into the Honours program will be by application at the end of U1. Acceptance to the program is on a competitive basis; students who apply must have a CGPA of 2.80 (B-average) in U1 with at least a B- in MGCR211 and MGCR213.

To remain in the Honours program, students must maintain minimum standards. A grade of at least B- is required in each course in the Honours Program. Students receiving a grade of less than B- in any Required course will have to repeat that course; if a grade of less than B- is received for a Complementary course, it may be repeated or another Complementary course taken in its place.

Graduation with an Honours standing requires a minimum CGPA of 3.00 (B) in each year of the Honours Program (U2 and U3) and an average of 3.00 (B) in the specified courses of the program.

Required Courses (18 credits)

- ACCT351 (3) Intermediate Financial Accounting 1
- ACCT352 (3) Intermediate Financial Accounting 2
- ACCT361 (3) Intermediate Management Accounting 1
- ACCT362 (3) Intermediate Management Accounting 2
- ACCT385 (3) Principles of Taxation
- ACCT455 (3) Development of Accounting Thought

Complementary Courses (18 credits)

- a minimum of 9 credits (3 courses) must be chosen from Category A, and a maximum of 9 credits (3 courses) may be chosen from Category B

Category A:
- at least one of:
  - ACCT453 (3) Advanced Financial Accounting
  - ACCT463 (3) Advanced Management Accounting
  - the remainder to be chosen from:
    - ACCT356 (3) International Accounting
    - ACCT454 (3) Financial Reporting
    - ACCT434 (3) Topics in Accounting
    - ACCT471 (3) Non-Profit Accounting
    - ACCT475 (3) Principles of Auditing
    - ACCT476 (3) Internal Auditing
    - ACCT477 (3) External Auditing
    - ACCT486 (3) Business Taxation 2

Category B
- INSY332 (3) Accounting Information Systems
- INSY333 (3) Systems Analysis and Modelling
- INSY341 (3) Business Systems Design 1
- FINE342 (3) Finance 2
- FINE441 (3) Investments and Portfolio Management
- FINE443 (3) Applied Corporate Finance
- FINE482 (3) International Finance 1

and approved courses at the 300 level or higher in other Areas of the Faculty

9.2 Honours in Economics for Management Students

Advisers in Economics: Professors G. Grantham, R. Rowley, and N. Turaldiev, Department of Economics, Faculty of Arts

Please consult the Economics Department Website at www.mcgill.ca/economics.

This program is comprised of 42 credits of Honours Economics courses (12 credits of which are counted as Core credits).

To remain in the Honours program, students must obtain a grade of at least B- in ECON250D1/ECON250D2. Graduation with an Honours standing requires a minimum CGPA of 3.00 and an average of 3.00 in the specified courses of the program.

Required Courses (24 credits)

- ECON250D1 (3) Introduction to Economic Theory: Honours
- ECON250D2 (3) Introduction to Economic Theory: Honours
- ECON257D1a (3) Economic Statistics - Honours
- ECON257D2a (3) Economic Statistics - Honours
- ECON352D1a (3) Macroeconomics - Honours
- ECON352D2a (3) Macroeconomics - Honours
- ECON450D1 (3) Advanced Economic Theory - Honours
- ECON450D2 (3) Advanced Economic Theory - Honours

Notes:

1. 3 of the 6 credits for Introductory Economic Theory are counted in the Core, where it replaces MGCR293.
2. 3 of the 6 credits for Economic Statistics are counted in the Core, where it replaces MGCR271 and MGCR272.
3. 3 of the 6 credits for Macroeconomics are counted in the Core, where it replaces ECON295.
**9.3 Joint Honours in Economics and Accounting**

Advisers in Economics: Professors G. Grantham, R. Rowley, and N. Turdaliev, Department of Economics, Faculty of Arts

Please consult the Economics Department Website at www.mcgill.ca/economics

This Joint Honours program is comprised of 36 credits of Honours Economics courses (12 credits of which are counted as Core credits) and 12 credits of courses from the Honours in Accounting program.

To earn an Honours designation, a CGPA of 3.00 is required in the 36 credits in Economics (including a 3.00 CGPA in the specified courses) and a grade of B- or better with a CGPA of 3.00 in all Accounting courses.

**Economics Required Courses** (24 credits)

- ECON250D1 (3) Introduction to Economic Theory: Honours
- ECON250D2 (3) Introduction to Economic Theory: Honours
- ECON257D1 (3) Economic Statistics - Honours
- ECON257D2 (3) Economic Statistics - Honours
- ECON352D1 (3) Macroeconomics - Honours
- ECON352D2 (3) Macroeconomics - Honours
- ECON450D1 (3) Advanced Economic Theory - Honours
- ECON450D2 (3) Advanced Economic Theory - Honours

**Notes:**
1. 3 of the 6 credits for Introduction to Economic Theory are counted in the Core, where it replaces MGCR293.
2. 2 credits for this course are counted in the Core, where it replaces MGCR271 and MGCR272.
3. 3 of the 6 credits for Macroeconomics are counted in the Core, where it replaces ECON295.

**Economics Complementary Courses** (12 credits)

- ECON460 (3) History of Thought 1 - Honours
- ECON461 (3) History of Thought 2 - Honours
- ECON467D1 (3) Econometrics - Honours
- ECON467D2 (3) Econometrics - Honours

**Finance Required Courses** (12 credits)

- FINE342 (3) Finance 2
- FINE441 (3) Investments and Portfolio Management
- FINE443 (3) Applied Corporate Finance
- FINE447 (3) Advanced Finance Seminar

**Finance Complementary Courses** (6 credits)

- FINE448 (3) Derivatives and Risk Management
- FINE449 (3) Implementing Derivatives Models
- FINE480 (3) Global Investments
- FINE482 (3) International Finance 1
- FINE492 (3) International Finance 2
- FINE541D1 (1.5) Applied Investments
- FINE541D2 (1.5) Applied Investments

**10 Faculty Program in International Management**

B.Com. Faculty Program Adviser: Giulia Campofreddo

Students who choose this course of study take the standard 51 credits of Core courses but, instead of choosing a Major, Honours or Concentration, they focus on gaining knowledge of a specific geographical region of the world by taking a minimum of 27 credits of courses in an interdisciplinary area of study in the Faculty of Arts. The program also includes a minimum of 9 credits of 300 or higher level courses on integrative or international topics in management.

All students admitted into the full time B.Com. program are eligible for this course of study. Students considering the Faculty Program should take MGCR382 in U1 to help them decide.

In order to fulfill the requirements of this option in the three or four years typically taken to complete a B.Com. degree, students should select their region of specialization by the Spring of their U1 year. An adviser from the Faculty will be appointed to each of the interdisciplinary regional areas of study to help students plan their programs of study.

**Regional Interdisciplinary Areas of Specialization**

Three areas of study are offered to all students: Latin America and the Caribbean, East Asia, and Western Europe (Germany, Italy, France, or Spain). Two additional areas of study (Canada and the
United States) are offered for foreign students who come to McGill from other countries.

Students must complete 9 to 12 credits of language study appropriate to their regional area of study, unless they can demonstrate proficiency, in which case they must substitute courses taught in the language of their chosen region.

In addition to language study, a minimum of 15 to 18 credits of courses focused on the geographical region of choice must be taken. These courses are from a wide range of Faculty of Arts departments: Anthropology, Economics, Geography, History, Political Science, Religious Studies, etc.

A Term Abroad
All students in the program will be expected to spend one term in the region they have chosen to study. During this term they would be required to either:

a) take approved courses which can be used towards their language credits, their regional area studies, or the advanced management courses on integrative or international topics; or

b) work in a job where they must use a language from their chosen region. If they are able to arrange a verifiable, paid work experience, they will be eligible to receive 3 course credits to be used toward their advanced management courses if they make arrangements in advance to take an Independent Study course and write a paper related to their experiences.

Integrative or International Topics in Management
Students must take at least 9 credits of courses on international or integrative business topics. At least one of the courses must include an assignment which requires students to capitalize on their broad interdisciplinary knowledge and expertise gained from their study of a particular culture, as well as management.

Integrative/International Topics in Management Component
9 credits chosen from the following:
BUSA391 (3) International Business Law
BUSA394* (3) Asia/Pacific Management
BUSA395 (3) European Economy and Business
BUSA434 (3) Topics in Management
BUSA462 (3) Management of New Enterprises
BUSA464 (3) Management of Small Enterprises
BUSA481 (3) North America: Global Markets
BUSA493 (3) Global Economic Competitiveness
FINE478 (3) International Financial Management
FINE482 (3) International Finance 1
MGPO383 (3) International Business Policy
MGPO440 (3) Strategies for Sustainability
MGPO469 (3) Managing Globalization
MRKT483 (3) International Marketing Management
ORGB380 (3) Cross Cultural Management

or 3 credits of Independent Study - if, during the term abroad, students are able to arrange a verifiable, paid work experience; make arrangements in advance to take an Independent Study course; and write a paper related to the experience.

* This course is required for students taking the East Asian Studies option.

10.1 Latin American and Caribbean Studies

LANGUAGE COMPONENT (12 credits)
12 credits of Spanish language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in Spanish from the Hispanic Studies Department list below.

Spanish Language Courses List
HISP210D1 (3) Spanish Language: Beginners
HISP210D2 (3) Spanish Language: Beginners
or HISP218 (6) Spanish Language Intensive - Elementary
HISP220D1 (3) Spanish Language: Intermediate
HISP220D2 (3) Spanish Language: Intermediate
or HISP219 (6) Spanish Language Intensive - Intermediate

Other Hispanic Studies Department Courses List
HISP243 (3) Survey of Spanish-American Literature 1
HISP244 (3) Survey of Spanish-American Literature 2
HISP302 (3) Hispanic Literature - English Translation 2
HISP328 (3) Literature of Ideas: Spanish America
HISP332 (3) Spanish American Literature of 19th Century
HISP333 (3) Spanish-American Drama
HISP351 (3) Spanish-American Novel
HISP352 (3) Contemporary Spanish-American Novel
HISP356 (3) Spanish-American Short Story
HISP358 (3) Women Writers Fiction Spanish-American
HISP432 (3) Literature - Discovery and Exploration Spain
HISP433 (3) Gaucho Literature
HISP434 (3) Dictatorship: Hispanic America
HISP437 (3) Viceregal Spanish America
HISP442 (3) Modernismo
HISP453 (3) 20th Century Spanish-American Poetry
HISP505 (3) Seminar in Hispanic Studies
HISP506 (3) Seminar in Hispanic Studies
HISP507 (3) Seminar in Hispanic Studies

AREA FOCUS COMPONENT (15 credits)
Required Courses (6 credits)
HIST309 (3) History of Latin America to 1825
HIST360 (3) Latin America since 1825

Complementary Courses (9 credits)
6 credits, either the following two, or authorized substitutions from the list of Hispanic Studies Department courses given above:
HISP225 (3) Hispanic Civilization 1
HISP226 (3) Hispanic Civilization 2

3 credits chosen from the following:
ANTH326 (3) Peoples of Central and South America
ECON410 (3) Economic Development: Selected World Area
HIST464D1** (3) Topics: Latin American History
HIST464D2** (3) Topics: Latin American History
LACS497 (3) Research Seminar on Latin America and the Caribbean
POLI319 (3) Politics of Latin America
POLI472 (3) Developing Areas/Social Movements
SOC1366 (3) Social Change in the Caribbean

** if HIST464D1/HIST464D2 is taken, only 3 of the 6 credits will count towards the Option, the other 3 will be counted as elective.

10.2 East Asian Studies

Note: All students taking the East Asian Studies option must take BUSA394 Asia/Pacific Management as part of the Integrative/International Topics in Management Component.

The East Asian Studies option combines the study of either Chinese or Japanese with related courses in culture and history as follows:

LANGUAGE COMPONENT (9 credits)
9 credits of First Level Korean, Chinese or Japanese language or, with the approval of the Area Adviser, of courses taught in one of those languages by the East Asian Studies Department.

East Asian Languages Courses List
EAST220D1 (4.5) First Level Korean
and EAST220D2 (4.5) First Level Korean
or EAST230D1 (4.5) First Level Chinese
and EAST230D2 (4.5) First Level Chinese
or EAST240D1 (4.5) First Level Japanese
and EAST240D2 (4.5) First Level Japanese

Students with a prior knowledge of an Asian language may substitute a second-level language course (EAST 320D1/EAST 320D2, EAST 330D1/EAST 330D2, EAST 340D1/EAST 340D2) for 9 credits, or a third or fourth-level course for 6 credits, along with an
additional 3-credit course from the Complementary course list below.

**AREA FOCUS COMPONENT** (18 credits)

**Complementary Courses** (18 credits)

6 credits from:

- RELG253 (3) Religions of East Asia
- RELG451 (3) Zen: Maxims and Methods
- RELG452 (3) East Asian Buddhism
- RELG454 (3) East Asian Buddhist Philosophy

Students are encouraged to choose courses related to their language study although alternative programs are acceptable after consultation with an adviser.

### 10.3 Western European Studies

**LANGUAGE COMPONENT** (12 credits)

12 credits of French language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in French by the French Languages and Literature Department.

**French Language Courses List**

- FREN201 (3) Composition 1
- FREN203 (3) Composition 2
- FRSL101 (6) Beginners’ French
- FRSL207 (6) Elementary French
- FRSL211 (6) Oral and Written French 1
- FRSL215 (6) Oral and Written French 1 - Intensive
- FRSL302 (3) Listening Comprehension and Oral Expression 1
- FRSL303 (3) Listening Comprehension and Oral Expression 2
- FRSL305 (3) Intermediate French: Writing
- FRSL321 (6) Oral and Written French 2

**AREA FOCUS COMPONENT** (15 credits)

**Complementary Courses** (15 credits)

6 credits selected from:

- ANTH329 (3) Modern Chinese Society and Change
- ECON335 (3) The Japanese Economy
- ECON411 (3) Economic Development: A World Area
- FRSL321 (6) Oral and Written French 1
- HIAT310 (3) Histoire du cinéma français ou FREN311 (3) Histoire du cinéma français 2

9 credits selected from:

- FREN203 (3) Composition 2
- FREN250 (3) Littérature française avant 1800
- FREN251 (3) Littérature française après 1800
- FREN336 (3) La langue française
d’aujourd’hui
- FREN454 (3) La théâtre du 20e siècle
- FREN483 (3) Le roman depuis Sartre
- FREN484 (3) Réalisme et naturalisme
- HIST225 (3) History of France to 1789
- HIST346 (3) France, 1914 to the Present

**German Language Courses List**

- GERM202D1 (3) German Language, Beginners
- GERM202D2 (3) German Language, Beginners
- GERM200 (6) German Language, Intensive Beginners’
- GERM300 (6) German Language Intensive Intermediate
- GERM307D1 (3) German Language - Intermediate
- GERM307D2 (3) German Language - Intermediate

and/or any of the French Literature and French Civilization courses offered by the French Language and Literature Department or from the courses listed in section 10.3.5 "Complementary Courses Open to All Students in the Western European Studies Focus".

### 10.3.1 France

12 credits of French language courses at the level deemed appropriate for the student or, with the approval of the Area adviser, of courses taught in French by the French Languages and Literature Department.

**Language Component** (12 credits)

- ANTH329 (Modern Chinese Society and Change)
- ECON335 (The Japanese Economy)
- ECON411 (Economic Development: A World Area)
- FRSL321 (Oral and Written French 1)
- HIAT310 (Histoire du cinéma français) or FREN311 (Histoire du cinéma français 2)

9 credits selected from:

- FREN203 (Composition 2)
- FREN250 (Littérature française avant 1800)
- FREN251 (Littérature française après 1800)
- FREN336 (La langue française d’aujourd’hui)
- FREN454 (La théâtre du 20e siècle)
- FREN483 (Le roman depuis Sartre)
- FREN484 (Réalisme et naturalisme)
- HIST225 (History of France to 1789)
- HIST346 (France, 1914 to the Present)

The Western European Studies Focus combines the study of a European language with related courses in culture, history, and economics. Students choose one of the four geographical areas listed below in which to concentrate their studies.

**German Language Courses List**

- GERM202D1 (German Language, Beginners)
- GERM202D2 (German Language, Beginners)
- GERM200 (German Language, Intensive Beginners’)
- GERM300 (German Language Intensive Intermediate)
- GERM307D1 (German Language - Intermediate)
- GERM307D2 (German Language - Intermediate)

**German Language Courses List**

- GERM202D1 (German Language, Beginners)
- GERM202D2 (German Language, Beginners)
- GERM200 (German Language, Intensive Beginners’)
- GERM300 (German Language Intensive Intermediate)
- GERM307D1 (German Language - Intermediate)
- GERM307D2 (German Language - Intermediate)
GERM345 (3) Business German 1
GERM346 (3) Business German 2

**AREA FOCUS COMPONENT** (15 credits)
(Program revisions awaiting University Approval)

**Required Courses** (6 credits)

GERM400 (3) Interdisciplinary Seminar: Contemporary German Studies
HIST235 (3) German History since 1648

**Complementary Courses** (9 credits)

9 credits selected from:

- HIST214 (3) Introduction to European History
- HIST215 (3) Modern European History
- HIST234 (3) German History to 1648

and/or from all courses offered by the German Studies Department or from the courses listed in section 10.3.5 “Complementary Courses Open to All Students in the Western European Studies Focus”.

10.3.3 **Italy**

**LANGUAGE COMPONENT** (12 credits)

12 credits of Italian language courses at the level deemed appropriate for the student or, with the approval of the Area Adviser, of courses taught in Italian by the Italian Studies Department.

**Italian Language Courses List**

- ITAL205D1 (3) Italian for Beginners
- ITAL205D2 (3) Italian for Beginners
- ITAL206 (6) Beginners’ Italian Intensive
- ITAL210D1 (3) Elementary Italian
- ITAL210D2 (3) Elementary Italian
- ITAL215D1 (3) Intermediate Italian
- ITAL215D2 (3) Intermediate Italian
- ITAL216 (6) Intermediate Italian Intensive

**AREA FOCUS COMPONENT** (15 credits)

15 credits from the following list:

- ANTH337 (3) Mediterranean Society and Culture
- ARTH223 (3) Early Renaissance Art in Italy
- ARTH230 (3) Baroque Art in Italy
- ARTH234 (3) High Renaissance Art in Italy
- ARTH235 (3) Venetian High Renaissance Painting
- HIST345 (3) History of Italian Renaissance
- HIST365 (3) 17th - 18th C. Western Europe
- ITAL355 (3) Dante and the Middle Ages
- ITAL361 (3) Italian Prose after 1945
- ITAL363 (3) Gender, Literature and Society
- ITAL365 (3) The Italian Renaissance
- ITAL375 (3) Cinema and Society in Contemporary Italy
- ITAL379 (3) Italy and European Romanticism
- ITAL385 (3) The Italian Futurist Movement
- ITAL395 (3) Interdisciplinary Seminar on Italian Culture
- ITAL412 (3) Pirandello and European Theatre
- ITAL416 (3) The Twentieth Century
- ITAL416 (3) Machiavelli
- ITAL477 (3) Italian Cinema and Video
- MUAR387 (3) The Opera
- POLI414 (3) Society and Politics in Italy

and/or from all courses given in Italian by the Department of Italian Studies or from the courses listed in section 10.3.5 “Complementary Courses Open to All Students in the Western European Studies Focus”. Courses should be chosen in consultation with an adviser.

10.3.4 **Spain**

**LANGUAGE COMPONENT** (12 credits)

12 credits of Spanish language courses at the level deemed appropriate for the student or, with the approval of the Area Adviser, of courses taught in Spanish by the Hispanic Studies Department.

**Spanish Language Courses List**

- HISP210D1 (3) Spanish Language: Beginners
- HISP210D2 (3) Spanish Language: Beginners
- HISP218 (6) Spanish Language Intensive - Elementary
- HISP220D1 (3) Spanish Language: Intermediate
- HISP220D2 (3) Spanish Language: Intermediate
- HISP2219 (6) Spanish Language Intensive -Intermediate

**AREA FOCUS COMPONENT** (15 credits)

6 credits from:

- HISP225 (3) Hispanic Civilization I
- HISP226 (3) Hispanic Civilization II
- HIST217 (3) A Survey of Spanish History

9 credits selected from the following courses, most of which are taught in Spanish or from the courses listed in section 10.3.5 “Complementary Courses Open to All Students in the Western European Studies Focus”.

- ANTH337 (3) Mediterranean Society and Culture (in English)
- HISP241 (3) Survey of Spanish Literature I
- HISP242 (3) Survey of Spanish Literature II
- HISP301 (3) Hispanic Literature -English Translation I (in English)
- HISP321 (3) Spanish Literature - 18th Century
- HISP324 (3) 20th Century Drama
- HISP325 (3) Spanish Novel of the 19th Century
- HISP326 (3) Spanish Romanticism
- HISP327 (3) Literature of Ideas: Spain
- HISP349 (3) Generation of 1898: Essay
- HISP350 (3) Generation - 1898: Creative Genres
- HISP421 (3) Spanish Prose
- HISP423 (3) Modern Lyric Poetry
- HISP424 (3) Spanish Novel since Civil War
- HISP425 (3) The World of Pérez Galdós
- HISP451D1 (3) Cervantes
- HISP451D2 (3) Cervantes
- HISP457 (3) Medieval Literature
- HISP458 (3) Golden Age Drama
- HISP460 (3) Golden Age Poetry

10.3.5 **Complementary Courses Open to All Students in the Western European Studies Focus**

**Economics**

- ECON313 (3) Economic Development 1
- ECON314 (3) Economic Development 2
- ECON344 (3) The International Economy 1830-1914
- ECON345 (3) The International Economy since 1914
- ECON423D1 (3) International Trade and Finance
- ECON423D2 (3) International Trade and Finance

**History**

- HIST214 (2) Introduction to European History
- HIST215 (3) Modern European History
- HIST305 (3) War and Society 1
- HIST306 (3) East Central Europe since 1944
- HIST312 (3) East Central Europe: 1453-1740
- HIST313 (3) East Central Europe: 1740-1914
- HIST315 (3) Western Europe from the French Revolution to ca. 1850
- HIST317 (3) War and Society 2
- HIST325 (3) Renaissance- Reformation Europe
- HIST335 (3) Science from Greeks to Newton
- HIST354 (3) Women in Western Europe since 1750
- HIST365 (3) 17th - 18th C. Western Europe
- HIST372 (3) The Low Countries: 14th - 17th Century
- HIST388 (3) The Second World War

**Political Science**

- POLI121 (3) Government and Politics - Developed World
- POLI318 (3) Comparative Local Government
10.4 Canadian Studies

Required Courses (15 credits)

- CANS200 (3) Introduction to the Study of Canada
- CANS300 (3) Topics in Canadian Studies
- ECON303D1 (3) Canadian Economic Policy
- ECON303D2 (3) Canadian Economic Policy
- SOCI233 (3) Canadian Society

Compilimentary Courses (12 credits)

- POLI211 (3) Government of Canada
- POLI221 (3) Political Process and Behaviour in Canada
- POLI222 (3) Political Process and Behaviour in Canada
- HIST211 (3) American History to 1865
- HIST221 (3) United States since 1865
- HIST221 (3) United States since 1865
- POLI325D1 (3) Government and Politics: United States
- POLI325D2 (3) Government and Politics: United States

Plus 9 credits chosen from 300- or 400-level courses on Canada from the McGill Institute for the Study of Canada or other departments.

10.5 American Studies

Compilimentary Courses (27 credits)

at least 12 credits selected from the following:

- ECON308 (3) Governmental Policy Towards Business
- ECON311 (3) United States Economic Development
- ENGL225 (3) American Literature 1
- ENGL226 (3) American Literature 2
- HIST211 (3) American History to 1865
- HIST221 (3) United States since 1865
- POLI325D1 (3) Government and Politics: United States
- POLI325D2 (3) Government and Politics: United States

The remaining credits to be selected from the North American studies program listings, or other departments. Courses must be at the 300- or 400-level and specifically related to American culture.

11 Academic Staff

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Levy, Philippe; B.Com.(C'dia), Diploma in Public Accountancy, M.B.A.(McG.); Faculty Lecturer, Accounting
Li, Shanling; M.S.(Georgia), Ph.D.(Tex.); Associate Professor, Management Science
Liu, F.; B.Eng., M.Eng.(Tianjin-China), Ph.D.(C'dia); Assistant Professor, Finance
Loulou, Richard J.; M.Sc., Ph.D.(Berk.); Professor Emeritus, Management Science
Maguire, S.; B.Sc.(Queen's), M.B.A.(Br-Col.); Assistant Professor, Strategy and Organization
Mendonça, Manuel; B.A., B.Com. M.A.(Bombay), M.B.A.(McG.); Associate Professor (Part-time), Organizational Behaviour
Mintzberg, Henry; B.Eng.(McG.), B.A.(Syracuse), S.M., Ph.D.(M.I.T.); Professor, Strategy and Organization
    (John Cleghorn Professor of Management Studies)
Moore, Karl; B.Sc.(Ambassador University), M.B.A.(USC), Ph.D.(York); Associate Professor (Part-time), Marketing, Strategy and Organization
Mortensen, M.; BA, Colby Coll.(Maine); M.Sc., Ph.D.(Stanford); Assistant Professor, Organizational Behaviour
Mukherjee, A.; B.Eng.(Jadavpur-India), M.B.A.(Indian Inst. of Mgmt), Assistant Professor, Marketing
Oh, Wonseok; B.A.(SUNY); M.B.A.(Geo. Wash. U); M.Phil., Ph.D.(Stern); Assistant Professor, Information Systems
Perez-Aleman, Paola; B.Sc.(Berkeley), Ph.D.(M.I.T.); Assistant Professor, Information Systems
Pinsonneault, Alain; B.Comm.(C’dia); M.Sc.(HEC); Ph.D.(Calif.,Irvine); Associate Professor, Information Systems
    (IMASCO Professor of Investments)
Ray, Saibal; B.E.(Jadavpur), M.E.(Asian IT), Ph.D.(Waterloo); Assistant Professor, Management Science
Rivera-Batiz, L.; B.A.(U. Puerto Rico), M.A., Ph.D.(Chic.); Assistant Professor, Finance
Sarigollu, Emine; B.A., M.B.A.(Bogazici), M.A., Ph.D.(Penn.); Associate Professor, Marketing
Sarkissian, Sergei; M.S.(USC Berkeley), Ph.D.(Wash.); Assistant Professor, Finance
Sepinwall, Sharyn; B.A.(Sir G. Wms.), M.Ed.(McG.); Faculty Lecturer, Organizational Behavior
Smith, Brian E.; B.A., M.A.(Dublin), M.Sc.(Alta.), Ph.D.(Queen's); Faculty Lecturer, Management Science
Taylor, Laurel; B.Sc., M.B.A.(Alberta); Faculty Lecturer (Part-time), Organizational Behaviour
Toulan, O.; B.Sc.(Georgetown), Ph.D.(M.I.T.); Assistant Professor, Strategy and Organization
Vakratsas, Demetrios; B.Sc.(Aristotle U.), M.Sc., Ph.D.(Texas - Dallas); Assistant Professor, Marketing
Vaupshas, Vivian; B.Sc., M.B.A.(McG.); Faculty Lecturer, Marketing
Verter, Vedat; B.S., M.S.(Bogazici), Ph.D.(Bilkent); Associate Professor, Management Science
Vit, Gregory; B.Com.(McG.), M.B.A.(C’dia), Ph.D.(Bradford-UK); Associate Professor (Part-time), Strategy and Organization
Westley, Frances; B.A.(VI.), M.A., Ph.D.(McG.); Professor, Strategy and Organization (James McGill Professor)
Whitmore, G. Alex; B.Sc.(Man.), M.Sc., Ph.D.(Minn.); Professor, Management Science (Samuel Bronfman Professor of Management Science)
Yalovsky, Morty; B.Sc., M.Sc., Ph.D.(McG.); Associate Professor, Management Science
Zabowski, G.; B.Com., M.B.A.(McG.); Faculty Lecturer, Management Science
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      7.2.3 B.Mus. with Honours in Music Technology
      7.2.4 B.Mus. with a Major in Music History
      7.2.5 B.Mus. with Honours in Music History
      7.2.6 B.Mus. with a Major in Theory
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   7.3 Department of Performance
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      7.3.2 B.Mus. with a Major In Performance (Organ, Harpsichord, Guitar, Baroque Instruments)
      7.3.3 B.Mus. with a Major in Keyboard Studies (Piano, with senior level studies in a Second Keyboard Instrument)
      7.3.4 B.Mus. with a Major in Keyboard Studies (Organ, Harpsichord, with senior level studies in a Second Keyboard Instrument, Jazz Piano)
      7.3.5 B.Mus. with a Major in Performance (Voice)
      7.3.6 B.Mus. with a Major In Performance (Orchestral Instruments)
      7.3.7 B.Mus. with Honours in Performance (Voice)
      7.3.8 B.Mus. with Honours in Performance (Piano)
      7.3.9 B.Mus. with Honours in Performance (All Instruments except Piano and Voice)
      7.3.10 B.Mus. with a Major in Performance (Church Music)
      7.3.11 B.Mus. with a Major in Early Music Performance (Baroque Violin, Viola, Cello, Viola da Gamba, Flute, Recorder, Oboe, Voice, Organ and Harpsichord)
      7.3.12 B.Mus. with Honours in Early Music Performance (Baroque Violin, Viola, Cello, Viola da Gamba, Flute, Recorder, Oboe, Voice, Organ and Harpsichord)
      7.3.13 B.Mus. with a Major in Jazz Performance (Saxophone, Trumpet, Trombone, Drums, Piano, Guitar, Bass, Voice)
      7.3.14 Licentiate in Music (L.Mus.) (Piano)
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1 The Faculty

1.1 Location

Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Canada

Telephone: (514) 398-4535
Fax: (514) 398-8061
Website: www.mcgill.ca/music

1.2 The Faculty Then and Now

The Conservatorium of Music was established in 1904 and the Faculty of Music in 1920. Formerly housed in various buildings belonging to the University, the Faculty moved in 1972 to one location, the Strathcona Music Building, formerly the main section of the Royal Victoria College.

The Strathcona Music Building houses a Performance Library of over six thousand titles; a Music Education Research Laboratory; an Electronic Music Studio; five individual Recording Studios; ample classroom, studio, and practice space, student-lounge and cafeteria; the 80-seat Clara Lichtenstein Recital Hall and the Pollack Concert Hall (capacity: 600) with its large stage (including an orchestra pit), a Recording Studio, projection room, and spacious back-stage facilities (dressing rooms, a large rehearsal room and storage space). In addition, the Faculty uses the 400-seat Redpath Hall, which houses the University organ, as a concert venue.

The Marvin Duchow Music Library is located across the street on the 11th floor of 550 Sherbrooke Street West. (For more information, refer to the Libraries Website, www.library.mcgill.ca.)

The Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT) is a network of twelve world-class Quebec researchers in science, engineering, medicine and music from four institutions – McGill University, Université de Montréal, Université de Sherbrooke, and the CEGEP de Drummondville. These scientists will integrate their impressive body of expertise in a well-defined research program under the umbrella of the Centre’s facilities to be located at the Faculty of Music at McGill. The new infrastructure, consisting of state-of-the-art laboratories and studios integrated via an electronic network and housed in a newly constructed building, will contribute to the establishment of the proposed multidisciplinary, multi-institutional research program. Via this modern, fully networked building that can be electronically reconfigured to respond to any application, a new paradigm for interdisciplinary collaboration will be created.

The current student enrolment is over 550 at the undergraduate level and over 150 at the graduate level. The teaching staff includes 43 full-time and over 100 part-time members. Students and staff generate a lively performance activity: over 450 concerts, as well as master classes and lectures, and other public events are given annually, including presentations by the symphony orchestra, choirs, jazz bands and ensembles, chamber ensembles, the opera studio, and recitals by staff and student soloists.

2 Staff

2.1 Dean’s Office

Don McLean; Mus.Bac., M.A., Ph.D.(Tor.)  Dean
Donna Williams; B.A.(W.Ont.)  Development Officer
Erika White; B.A.(Wagner College)  Development and Alumni Relations Coordinator
Reisa Lipszyc; B.Mus. (McG.)  Recruitment and Liaison
Olga Makarios; Cert. in Mgmt.(McG.)  Recruitment Secretary
Ruth Bendzio; B.A.(C’dia)  Dean’s Secretary
Alain Terriault  LAN Manager
Tania Chomyk; B.Ed. (McG.)  Administrative Assistant to the Dean (acting)
Quynh-Ly Pham; B.Sc.(McG.)  Budget Officer
Valerie McConnell  Administrative Coordinator

2.2 Associate Dean’s Office

Bruce Minorgan; B.Mus.(U.B.C.), M.A.(Tor.)  Associate Dean (Administration)
Tracy Roach; B.Mus. (McG.)  Banner (SIS) Liaison
Charles Wan; B.CompSc.(C’dia)  Banner (FIS) Liaison
Dana Pietrzak  Secretary to the Associate Dean

2.3 Graduate Studies

Peter Schubert; B.A., M.A., Ph.D.(Col)  Director, Graduate Studies
Hélène Drouin  Secretary for Graduate Studies

2.4 Academic Affairs

Douglas McNabney; B.Mus.(Tor.), M.M.(W.Ont.), Mus.Doc. (Montr.)  Chair, Department of Performance
Linda Mannix; B.A. (C’dia)  Department Secretary
Jennifer Stephenson; B.A.(McG.)  Department Secretary (Scheduler)
Victor Houle; B.Mus.(Alta.)  Ensemble Resource Manager
Brian Cherney; Mus.Bac., Mus.M., Ph.D.(Tor.)  Chair, Department of Theory
Johanne Froncioni  Department Secretary

2.5 Student Affairs

Veronica Slobodian  Admissions Officer
Mary Di Stefano  Admissions Secretary
Maria Virgilio  Admissions Secretary
Marie Moscato  Senior Academic Advisor
Egidia De Michele  Senior Student Affairs Coordinator
Dana Pietrzak  Student Affairs Secretary

2.6 Building Management

John Fisher  Building Director
Peter Wightman; L.Mus., B.Mus., M.Mus.(McG.)  Assistant Building Director
Kerry Wagner; C.T.T.  Piano Technician
Nick Zervos  A/V Technician

2.7 Administrative Units

CONCERTS AND PUBLICITY
Pollack Concert Hall and Redpath Hall
Box Office (weekdays: 12:00 to 18:00): (514) 398-4547
Concert Information: (514) 398-4547 or 398-5145
Bookings: (514) 398-8993
Louise Ostiguy; B.Mus.(Montr.), C.G.E.(H.E.C.)  Director
Marianne Stadnyk; B.Mus.(McG.)  Front-of-House Coordinator
Diana Toni Dutz; B.Mus.(W.Ont.), Grad.Dip.(C’dia)  Marketing and Publicity Coordinator

2004-2005 Undergraduate Programs, McGill University
Katherine Simons; B.Mus., (Wilfrid Laurier) Production Co-ordinator
Serge Filiatrault Stage Manager (Pollack Hall)
Sylvain Murray Assistant Stage Manager (Pollack Hall)
Christopher Smythe; B.Mus., M.Mus., (McG.) Stage Manager (Redpath Hall)
Jacqueline Gauthier Box Office Clerk
Marie Pothier; B.Mus., (Montr.) Publicity Secretary
François Robitaille Piano Technician

MARVIN DUCHOW MUSIC LIBRARY
Telephone: (514) 398-4695
Cynthia Leive; B.Mus., (Eastman), M.L.S., (SUNY, Genesee), M.F.A., (Carl.) Librarian
John Black; B.A., (McG.) Audio Room Supervisor
Melanie Preuss Library Assistant, Audio Room and Circulation
Gail Youster Library Assistant, Circulation and Serials
David Curtis; B.Sc., (McG.)

PERFORMANCE MATERIALS LIBRARY
Telephone: (514) 398-4553
Katie Lai; B.F.A., (Wisc.), M.Mus., M.L.I.S., (McG.) Librarian
Alexis Hauser Program Director
Gordon Foote; B.Sc., M.A., (Minn.) Executive Director

OPERA MCGILL
Telephone: (514) 398-4535, ext. 0489
Dixie Ross-Neill; B.Mus., (N. Carolina), M.Mus., (Texas) Program Director

DIGITAL COMPOSITION STUDIO
Telephone: (514) 398-4522
Sean Ferguson; B.Mus., (Atla.), M.Mus., D.Mus., (McG.) Director
Richard McKenzie Technician

RECORDING STUDIO
Telephone: (514) 398-4549
Wieslaw Woszczyk; M.A., Ph.D., (F. Chopin Academy of Music, Warsaw) Director
TBA Technician

MUSIC TECHNOLOGY RESEARCH LABORATORIES
COMPUTATIONAL ACOUSTIC MODELING LABORATORY
Telephone: (514) 398-4535, ext. 0504
Gary P. Scavone, B.A., B.S. (Syr.), M.S., Ph.D. (Stanford) Director

DISTRIBUTED DIGITAL MUSICAL LIBRARIES LABORATORY
Telephone: (514) 398-4535, ext. 0300
Ichiro Fujinaga, B.Mus., B.Sc., (Alta.), M.A., Ph.D., (McG.) Director

ELECTRONICS DEVELOPMENT LABORATORY
Telephone: (514) 398-4535, ext. 00271
Fax: (514) 398 2962

SOUND PROCESSING AND CONTROL LABORATORY
Marcelo M. Wanderley, B. Eng. (UFPR), M. Eng. (UFSC), Ph.D. (Paris VI & IRCAM) Director

MUSIC EDUCATION RESEARCH LABORATORY
Telephone: (514) 398-4554

MCQUEEN UNIVERSITY RECORDS
Telephone: (514) 398-4537

MCQUEEN CONSERVATORY OF MUSIC
Telephone: (514) 398-4543 (Downtown Campus)
(514) 398-7673 (Macdonald Campus)
www.music.mcgill.ca/conservatory
Don McLean; Mus.Bac., M.A., Ph.D., (Tor.) Director
Dean Jobin-Bevans; B.Mus., (Tor.), M.Mus., (McG.) Associate Director
Nancy Soulsby; B.A., Dip.Ed., (McG.) Administrative Secretary

2.8 Academic Staff
Abdul Al-Khabyr, Muhammad; Instructor; Jazz Trombone
Aldrich, Simon; Instructor; Clarinet
Aligier, Stefano; Assistant Professor; Voice
Amirault, Greg; B.Mus., (McG.); Instructor; Jazz Guitar
Antonio, Garry; B.Mus., M.Mus., (McG.), D.Mus., (Montr.), D.I.A., (C’dia); Instructor
Antonio, Garry; B.Mus., M.Mus., (McG.), D.Mus., (Montr.), D.I.A., (C’dia); Instructor; Guitar Area Chair; Guitar, Guitar Techniques
Baskin, Theodore; B.Mus. (Curtis), M.Mus., (Auckland); Principal Oboe, Montreal Symphony; Associate Professor; Oboe
Beaudet, Jean; Instructor; Jazz Piano
Beghin, Tom; Assistant Professor; Fortepiano, Musicology
Bergeron, Sylvain; B.Mus., (Laval); Instructor; Lute
Boisvert, Guy; Instructor; Jazz Bass
Bolduc, Rémi; Instructor; Jazz Saxophone, Jazz Combo
Bouliane, Denys; B.Mus., M.Mus., (Laval), Graduate, Hochschule für Musik (Hamburg); Associate Professor; Composition, Orchestration, Contemporary Music Ensemble
Box, James; Principal Trombone, Montreal Symphony; Assistant Professor; Trombone
Brackett, David; Associate Professor; Musicology
Brault, Olivier; Instructor; Baroque Orchestra
Bravura, Andrew; A.O.C.A., B.A., (Guelph), M.F.A., (York), M.A., (McG.); Instructor; Music Technology
Burden, Douglas; National Arts Centre Orchestra; Instructor, Trombone
Caplin, William; B.M. (S.Calif.), M.A., Ph.D., (Chic.); Professor; Music Theory Area Chair; Theory and Analysis
Cazes, Alain; Premier Prix (Conservatoire de Montréal); Assistant Professor; Wind Symphony, Tuba, Instrumental Conducting
Chappell, Eric; B.Mus., (McG.); Montreal Symphony; Instructor; Double Bass
Chatel, Jean-Louis; Instructor; Trumpet
Cherney, Brian; Mus.Bac., Mus.M., Ph.D., (Tor.); Professor; Chair, Dept. of Theory; Composition, Theory and Analysis, History and Literature
Christie, Carolyn; B.Mus., (McG.); Montreal Symphony; Assistant Professor; Flute
Clayton, Greg; Instructor; Jazz Combo, Jazz Guitar, Jazz Improvisation
Cook, Peter; B.Mus., M.Mus., (McG.); C.B.C.; Instructor; Sound Recording
Cossette, Isabelle; Assistant Professor; Special Category
Couture, Jocelyn; Instructor; Jazz Trumpet
Couture, Johanne; M.Mus., D.Mus.; (McG.) Instructor; Continuo
Lozien, Frank; Instructor; Jazz Saxophone, Jazz Pedagogy
Lupien, Denise; B.M., M.M.(Julliard); Concertmaster, Orchestra Métropolitain; Assistant Professor; Violin, Orchestra
Lussier, Mathieu; Instructor; Baroque Bassoon
MacMillan, Betsy; B.Mus.(W.Ont.), M.Mus.(McG.); Instructor; Violà da Gamba, Early Music Ensemble
Mahar, Bill; B.Mus.(McG.); Instructor; Jazz Trumpet, Jazz Combo
Malashenko, André; L.Mus.(McG.); Principal Timpani, Montreal Symphony; Instructor; Percussion
Mangrum, Martin; Montreal Symphony; Instructor; Bassoon
Manker, Brian; Principal Cello, Montreal Symphony; Instructor; Cello
Martin, William; Associate Professor; Sound Recording
Martin, David; Montreal Symphony; Instructor; Trombone, Ensemble
Massenburg, George; President and Owner, GML Inc.; Instructor; Sound Recording
Mather, Pierrette; B.Mus.(Laval), B.A., Artist's Diploma(Tor.); Instructor; Musicianship
Maute, Matthias; Instructor; Recorder
McCann, Chris; Instructor; Jazz Drums, Jazz Combo
McClain, Washington; Instructor; Baroque Oboe
McLean, Don; Mus.Bac., M.A., Ph.D.(Tor.); Associate Professor; Dean, Faculty of Music, Theory and Analysis
McLean, Pierre; Instructor; Voice
McMahon, Michael; B.Mus.(McG.), Graduate, Hochschule für Musik (Vienna); Associate Professor; Voice Coaching, Opera Coaching, Song Interpretation, English and German Diction
McNabney, Douglas; B.Mus.(Tor.), M.M.(W.Ont.), Mus.Doc. (Montr.); Associate Professor; Chair, Dept. of Performance; Viola, Orchestra, Ensemble
Mdvani, Marina; Post-graduate Diploma (Moscow Cons.); Associate Professor; Piano, Ensemble
Meraw, Michael; B.Mus., M.Mus.(McG.); Instructor; Diction, Voice
Merkelo, Paul; B.Mus. (Eastman); Principal Trumpet, Montreal Symphony; Instructor; Trumpet
Michaud, Nathalie; B.A.(Ott.), Cert. of Interpretation(The Hague), M.A.(Montr.); Instructor; Recorder, Early Music Ensemble
Miller, Dennis; Principal Tuba, Montreal Symphony; Assistant Professor; Tuba, Ensemble
Minorgan, Bruce; B.Mus.(U.B.C.), M.A.(Tor.); Associate Professor; Associate Dean; History and Literature, Music Technology
Mitchell, Geoffrey; B.Mus., M.Mus.(McG.); Instructor; Sound Recording
Moldovan, Josefin; Instructor; Acting and Movement
Morton, Dorothy; Graduate, Conservatoire de Musique de Québec; Emeritus Professor; Piano
Muraco, Thomas; Assistant Professor; Opera Coaching
Napper, Suzie; Instructor; Baroque Cello
Neidhöfer, Christoph; Graduate, Hochschule für Musik(Basel), Ph.D.(Harvard); Assistant Professor; Musicianship Area Chair; Theory and Analysis
Neill, William; B.Mus., M.Mus.(Texas at Austin); Associate Professor; Vocal Area Chair; Voice
Palmer, Madeleine; B.A., M.A., L.Mus.(McG.); Instructor; Vocal Techniques
Pellegrini, Maria; Instructor; Opera Studio
Pennycook, Bruce; B.Mus., M.Mus. (Tor.), DMA (Stanford); Adjunct Professor; Music Technology
Pépin, Pierre; Instructor; Bass, Jazz Bass
Plaunt, Tom; B.A.(Tor.); Graduate, Nordwestdeutsche Musikakademie (Detmold, Germany); Associate Professor; Piano Area Chair; Piano, Ensemble
Plouffe, Hélène; Instructor; Baroque Viola
Purdy, Winston; B.Mus.(McG.), M.M.(Eastman); Assistant Professor; Voice
Quesnel, René; B.Mus., M.Mus., Ph.D.(McG.); Assistant Professor; Sound Recording
Raymond, Richard; Premier Prix (Conservatoire de Montréal), M.Mus.(Montr.); Associate Professor; Piano
Rea, John; B.Mus.(Wayne State), M.Mus.(Tor.), M.F.A., Ph.D.(Prin.); Professor; Composition Area Chair; Composition, Theory and Analysis
Rémiillard, Chantal; B.Mus.(Montr.); Instructor; Baroque Violin
Rice, Kelly; B.Mus., M.A.(McG.); Instructor; History and Literature
Roberts, Richard; B.Mus.(Ind.); Concertmaster, Montreal Symphony; Assistant Professor; Violin, Orchestra
Robinson, Brian; B.Mus.(Tor.); Montreal Symphony; Instructor; Double Bass, Orchestra
Ross-Neill, Dixie; B.Mus.(N. Carolina), M.Mus.(Texas); Associate Professor; Program Director, Opera McGill; Opera Coaching, Voice Coaching
Roy, André; Montreal Symphony; Assistant Professor; String Area Chair; Viola, Orchestra
Russell, Gary; B.Mus.(Vic.); Montreal Symphony; Instructor; Cello, Orchestra
Ryan, Charles; B.Mus. (U. N.), (W.Ont.); M.Mus.(Mich.); Ph.D.(McG.); Assistant Professor; Music Education Area Chair; Music Education
Sabourin, Carmen; B.Mus., M.Mus.(McG.), Ph.D.(Yale); Assistant Professor; Theory
Saint-Cyr, Marcel; B.A.(Laval), Premier Prix (Conservatoire de Musique de Québec), Concert Dip.(Hochschule für Musik, Karlsruhe); Associate Professor; Chamber Music, Cello
Scavane, Gary; Assistant Professor; Music Technology
Schubert, Peter; B.A., M.A., Ph.D.(Col.); Associate Professor; Director, Graduate Studies; Theory and Analysis
Sevadjian, Thérèse; B.Mus., M.Mus. (Montr.); Associate Professor; Voice
Sherman, Norma; B.A.(C’dia); B.Mus., M.A.(McG.); Faculty Lecturer; Musician
Shuter, Cindy; B.Mus.(Tor.); Instructor; Flute, Ensemble
Simons, Jan; Associate Professor; Voice, Song Interpretation
Smith, Christopher; M.Mus.(Eastman); Instructor; Jazz Arranging
Steifel, Van; Faculty Lecturer; Theory
Steprans, Janis; L.Mus., D.Mus.(McG.); Instructor; Jazz Saxophone
Stubley, Eleanor; B.Mus.(Tor.), M.Mus.(Bran.), Ph.D.(Illinois); Associate Professor; Music Education
Sullivan, Joe; B.A.(Ott.), M.M.(New England Cons.); Assistant Professor; Jazz Area Chair; Jazz Trumpet, Jazz Composition, Jazz Arranging
Swartz, Jennifer; Dip.(Curits); Principal Harp, Montreal Symphony; Instructor; Harp
Syvestre, Stéphan; Instructor; Piano
Thériault, Madeleine; Instructor; Jazz Voice
Umezaki, Koijro; M.A.(Dartmouth College), B.Sc.(Lafayette College); Instructor; Music Technology
Wachner, Julian; B.Mus., Mus.Doc. (Boston U.); Associate Professor; Choral Area Chair; Choral Ensemble; Choral Conducting
Walkington, Alexander; B.Mus., M.Mus.(McG.); Instructor; Jazz Bass
Wanderley, Marcelo; B.Sc.(UFPR) to B.Eng.(UFPR) and M.Sc.(UFSC) to M.Eng.(UFSC)
Wapnick, Joel; B.A.(N.Y.U.), M.A.(S.U.N.Y.), M.F.A.(Sarah L.), Ed.D.(Syr.); Associate Professor; Director, Music Education Research Lab; General Music Techniques
Wheeler, Robin; Instructor; Voice Coaching
White, André; B.A.(C’dia), M.Mus.(McG.); Assistant Professor; Jazz Drums, Jazz Piano, Jazz Combo, Jazz Improvisation
Whitesell, Lloyd; B.A.(Minn.), M.A., Ph.D.(SUNY, Stony Brook); Assistant Professor; Musicology Area Chair; History and Literature
Williams, Thomas; B.Mus.(Bran.); Associate Professor; Violin, Chamber Music
Wolszczak, Wieslaw; M.A., Ph.D. (F.Chopin Academy of Music, Warsaw); Professor; Director, Recording Studio; Sound Recording
Yamamoto, Takeo; B.Eng., D.Eng. (Tokyo); F.A.E.S.; Instructor; Sound Recording
Zirbel, Alexa; Graduate, Hochschule für Musik (Freiburg); Montreal Symphony; Instructor; Oboe, Ensemble
Zirbel, John; B.Mus.(Wisc.); Principal Horn, Montreal Symphony; Associate Professor; French Horn
Zuk, Luba; L.Mus.(McG.), Graduate, Conservatoire de Musique de Québec; Associate Professor; Piano, Ensemble

Associate Members
Jeremy Cooperstock, Dept. of Electrical and Computer Engineering
Vincent Hayward, Dept. of Electrical and Computer Engineering
Daniel Levitin, Dept. of Psychology
Robert Zatorre, Montreal Neurological Institute

3 General Information

3.1 Degrees and Diplomas Offered

DEGREE OF BACHELOR OF MUSIC (B.Mus.)
The degree of Bachelor of Music may be obtained in any one of the following fields:

- Composition (Major and Honours)
- Music Education (Major and Honours) – available only as a component of the Concurrent B.Mus./B.Ed. program
- Music History (Major and Honours)
- Music Technology (Honours)
- Theory (Major and Honours)
- Performance (Major and Honours)
- Performance (Church Music) (Major)
- Performance (Keyboard Studies) Major
- Early Music Performance (Major and Honours)
- Jazz Performance (Major)

Designated Major
Special programs of study in music may be proposed in consultation with Faculty advisers. Such special proposals must be approved by the relevant department, the Executive Committee and by Faculty Council.

Faculty Program
This program is designed to accommodate those students who are either undecided about the area of music in which they wish to specialize, or who are interested in a pattern of specialization not provided in the established majors and honours programs, or who are interested in combining studies in music with studies in other disciplines.

All of the above B.Mus. programs normally require three years of study following completion of the Quebec Diploma of Collegial Studies or four years of study following completion of secondary school elsewhere.

B.A. Major Concentration in Music
The Faculty of Arts offers a Bachelor of Arts degree with a Major Concentration in Music. Further details on the program can be found under Music in the Faculty of Arts section.

Minor Programs
A Minor in Music History for Performers is available to all students in Performance (Major or Honours) programs. This option will take the place of music electives, as well as history, literature and performance practice complementary courses, in Performance programs.

A Minor in Music Technology is available to music students who wish to graduate with a knowledge of newer technologies and the impact they are having on the field of music. (Space permitting, the Minors in Music Technology are also available to B.A. and B.Sc. students.)

Minor programs in Music are also available to students in the Faculty of Arts and the Faculty of Science. Further information on these Minors can be found under the Faculty of Arts, see “Music (MUAR)” on page 127 and the Faculty of Science, see “Music” on page 334.

M.Mus. Performance (Prerequisite courses)
Students wishing to prepare for the Master of Music in Conducting (Orchestral, Choral, or Wind Band), Piano Accompaniment, or Jazz Performance should include, in their Bachelor of Music program, the courses listed under section 7.3.18 “Special Prerequisite Courses for M.Mus. in Performance”.

M.Mus. Sound Recording (Prerequisite courses)
Students wishing to prepare for the Master of Music in Sound Recording should include, in their Bachelor of Music program, the courses listed under section 7.2.9 “Special Prerequisite Courses for M.Mus. in Sound Recording”.

LICENTIATE IN MUSIC (L.Mus.)
The Licentiate in Music is offered in Performance and is designed for advanced instrumentalists and singers who wish to concentrate on their practical subject while limiting their theoretical studies to basic areas in Music History, Theory and Musicianship. This program normally requires three years of study.

ARTIST DIPLOMA
The Artist Diploma is available only to advanced instrumentalists and singers who demonstrate technical and musical maturity. Admission into the program requires completion of a Bachelor of Music degree in Performance, a Licentiate in Music, or the equivalent.

DEGREE OF MASTER OF ARTS (M.A.)
The degree of Master of Arts may be obtained in the fields of Music Education, Music Technology, MusicoLOGY, and Theory.

DEGREE OF MASTER OF MUSIC (M.Mus.)
The degree of Master of Music may be obtained in the fields of Composition, Performance, and Sound Recording. The above Master’s programs, offered by the Faculty of Music in conjunction with the Office of Graduate and Postdoctoral Studies, require a minimum of 1½ years of full-time resident study (for Sound Recording, 2 years). Applicants who hold the equivalent of this University’s B.Mus. with Honours in the area of specialization may be able to complete the Master’s degrees in less than two years.

DEGREE OF DOCTOR OF MUSIC (D.Mus.)
The degree of Doctor of Music is available in Performance and Performance Studies and requires a minimum of two years following the completion of the Master of Music Degree.

DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.)
The degree of Doctor of Philosophy is available in the areas of Music Education, Musicology, Music Technology, Sound Recording, and Theory. The Ph.D. requires a minimum of three years of full-time resident study beyond a Bachelor’s degree equivalent to a McGill Honours degree in Music Education, Music History, or Theory. Applicants will normally be admitted to the M.A. program for the first year and may apply for admittance to the Ph.D. program after the completion of one full year of graduate course work. A candidate who holds a Master’s degree in the area of specialization may, on the recommendation of the Department, be permitted to count the work done for the Master’s degree as the first year of resident study.

For details of the Master’s and Doctoral programs, please consult the Graduate and Postdoctoral Studies Calendar.

3.2 Orchestral Training
Orchestral Training at McGill includes all students in the B.Mus., L.Mus., Artist Diploma, and M.Mus. degrees and diplomas whose major is one of the orchestral instruments. Many of its graduates are now members of professional orchestras throughout North America, Europe, and the rest of the world. Led by full-time conductors in residence and supported by a number of full-time
3.3 Scholarships and Financial Aid

General information on scholarships, including McGill Entrance Scholarships, and a detailed listing of all awards is contained in the Undergraduate Scholarships and Awards Calendar, available on the Web (www.mcgill.ca) or from the Admissions, Recruitment and Registrar’s Office.

A limited number of Music Entrance Scholarships (valued at $2,000 each) are awarded to incoming Performance students on the basis of auditions held only in February. All instruments, including voice, are eligible. In addition, outstanding string players applying to the Faculty of Music are encouraged to audition (February audition period only) for the Lloyd Carr-Harris String Scholarships (valued at $10,000 each). Application for Admission forms must be returned to the Admissions Office, Faculty of Music, by January 15.

While taking into account the stipulations of the individual awards, Faculty of Music scholarships, awards and prizes are given on the basis of a student’s record for the academic session ending in April and are tenable during the next academic year beginning in September. Students must have successfully completed at least 27 credits in the academic year preceding the award and must register for full-time studies during the subsequent year, unless fewer credits are needed to complete the program. Students whose records contain outstanding incompletes or deferrals will not be considered. No application is required.

3.4 Summer Studies

Summer Studies offers courses starting in May, June, and July. Students may take a maximum of 18 credits for the whole summer session. Those wishing to take more than 5 credits in any one month must obtain the permission of the Senior Academic Advisor.

Information concerning course offerings and application forms may be obtained from the McGill Summer Studies Office Website www.mcgill.ca/summer or by calling (514) 398-5212.

3.5 Music Credit Options for Students in Other Faculties

The Faculty of Music offers three groups of courses that may be taken for credit by students in other faculties.

The first group consists of music literature and theory courses especially designed for students from other faculties who may not have taken formal studies in music but who wish to take elective courses in the cultural, historical and theoretical aspects of music.

The second group is the sequence of courses in music theory and history which are part of the Faculty of Music undergraduate curriculum. These courses may be taken by those having the necessary prerequisite studies in music.

The third group of courses consists of selected music ensembles open, by audition, to students in other faculties.

For further details on these courses, please see “Music (Muar)” on page 127 under the Faculty of Arts. Other music courses may be taken by qualified students from other faculties providing they obtain permission from the relevant department in the Faculty of Music and from the Associate Dean of their own faculty.

3.6 Conservatory of Music

The McGill Conservatory of Music offers instruction in piano, guitar, harp, most orchestral instruments and voice, as well as Theory and Ear Training from the elementary level up to and including Collegiate levels.

In addition, the Conservatory offers Suzuki method instrumental instruction, a Music for Children course based on Orff/Kodaly principles, orchestras, children’s and youth choirs, chamber music ensembles, a variety of jazz combos, and a summer day camp.

Practical examinations to the Collegial II level and Theory and Ear Training examinations from the Secondary III to Secondary V levels are offered to both internal and external students. Theory and Ear Training examinations at the Elementary and Collegial I and II levels are available to internal students only.

The Conservatory also welcomes adult students (at any level) and encourages their participation not only in practical instruction but also in the orchestras, instrumental ensemble groups and Theory and Ear Training courses.

Further information is available from the McGill Conservatory of Music and on their Website at www.music.mcgill.ca/conservatory.

4 Admission

4.1 Application Procedure

All inquiries regarding admission should be directed to the Admissions Office, Faculty of Music, McGill University, 555 Sherbrooke Street West, Montreal, QC H3A 1E3.

Full information, including a Web-based application form, is available at www.mcgill.ca/music/prospective/undergraduate/applying.

In order to ensure proper consideration, Web applications for September must be submitted by January 15. For admission in January (Canadians and Permanent Residents only) – to those programs which accept students into the Winter term – the application deadline is November 1. Applications received after these deadlines will be considered if places are still available.

A detailed description of the applicant’s musical background and training including photocopies of diplomas, certificates and/or transcripts should be submitted. All applicants must also submit a Statement of Intent outlining reasons for wishing to enter the program(s) to which they have applied. An up-to-date transcript of the applicant’s academic record must also be forwarded to the Faculty.

Applicants are advised that satisfying the entrance requirements does not guarantee admission where instrumental places are limited.

4.2 Music Entrance Requirements

The minimum music entrance requirements are the equivalent of McGill Conservatory Collegial I Instrument or Voice (Performance applicants: Collegial II and Secondary V Theory and Ear Training).

Approximate Equivalents to Entrance Requirements in Practical Subjects (McGill Conservatory Collegial – Instrument/Voice)

<table>
<thead>
<tr>
<th>Quebec CEGEPS</th>
<th>CEGEP II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto Conservatory</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Western Board</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Mount Allison</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Associated Board of the Royal Schools of Music</td>
<td>Grade 7</td>
</tr>
</tbody>
</table>

The above listing is intended only as a general guide. Admissibility to any program is determined by audition. Students wishing to major in Performance should be approximately two years more advanced, and be able to demonstrate potential as performers at their audition.

All applicants must perform an audition of approximately 15 minutes’ duration. The student should choose material that will represent different musical periods and reveal musicianship and technical proficiency to best advantage. Applicants for the Artist Diploma program must prepare an audition of recital material lasting approximately 60 minutes. For entrance audition requirements...
please refer to www.mcgill.ca/music/prospective/undergraduate/requirements.

The entrance audition dates for September 2004 admission are February 21 to 29, 2004.
The entrance audition dates for September 2005 admission are February 19 to 27, 2005.
Tape-recordings (cassette and/or video) are acceptable when distance prevents an applicant from attending an audition in person.
Applicants for Composition are asked to submit two or three samples of their written work.
Music Education applicants are asked to submit a letter of intent outlining reasons for wishing to enter the Music Education field and a letter of reference from someone attesting to his or her suitability for teaching.

4.3 Academic Entrance Requirements

Bachelor of Music
The applicant’s entrance audition and the academic record are considered when making an admission decision. As a limit is placed upon the number of students admitted to study a particular instrument, fulfillment of the minimum entrance requirements does not guarantee acceptance. TOEFL may be required of non-Canadian students whose mother tongue is not English. It is the applicant’s responsibility to make the necessary arrangements with the examining board to write the test in the country of residence.

CEGEP Applicants
Students are expected to obtain the Quebec Diploma of Collegial Studies (Diplôme d’études collégiales) in the Music Concentration or equivalent. Applicants with a DCS/DEC in a field other than Music must have the equivalent Music prerequisites. The minimum overall average required is 70%. CEGEP graduates are admitted to a three-year program.

Canadian High School (excluding Quebec) Applicants
Applicants are expected to obtain a high school graduation diploma which leads to university admission in the student’s home province. Ontario high school students are normally expected to have obtained a minimum of 6 OACs; at least four of the six must have been taken at the 4U level. There are no specific non-music prerequisite courses required and the minimum overall average should be 70%. Canadian high school graduates are admitted to a four-year program.

U.S. High School Applicants
Applicants are expected to obtain a high school graduation diploma which meets the requirements for university/college admission in the U.S. The minimum overall average required is “B+”. There are no specific non-music prerequisite courses, or SAT and Achievement Test results required. Some credit will be granted for Advanced Placement Examinations in appropriate subjects. U.S. high school graduates are admitted to a four-year program.

International Applicants
In general, applicants must be eligible for admission to university in their country of origin and have above average grades. Students who have completed an International Baccalaureate, a French Baccalaureate, or a minimum of three GCE “A” (Advanced) Level examinations are considered for admission into a three-year program. Normally, applicants with five GCE “O” (Ordinary) Level results, plus one year of schooling beyond the Ordinary Level, are admitted to a four-year program. Applicants with qualifications from other systems will be considered for either a three-year or a four-year program.

Transfer Students
Transfer students are considered on the basis of both their university or college work and previous studies. Normally, students are expected to complete a full year of university studies prior to applying for admission and to be in good standing as defined by the university previously attended. The minimum overall average required is a CGPA of 3.00. Transfer credits for Arts and/or Science courses in which a grade of C or better has been received are granted following an evaluation of the student’s transcript. Transfer credits, with certain restrictions, are granted for music complementary or elective courses following an evaluation of the student’s transcript (a higher grade may often be required). Transfer students must complete a minimum of 60 credits at McGill in order to obtain a degree.

Mature Students
Applicants who are at least 21 years of age at or before registration, who have not met the high school or CEGEP academic requirements, and who are able to demonstrate exceptional talent in their discipline may be considered for admission. Such applicants may be resident anywhere. All available academic/educational documents must be submitted. An interview may be required.

Special Students
Special Students do not need to fulfill any of the academic requirements outlined previously but are required to have the necessary music prerequisites for the courses concerned. Registration is subject to the availability of space in the course(s) concerned. Special Students are normally not entitled to lessons in an instrument or in voice. Registration is permitted for one year only, after which time the student must apply for admission to either the B.Mus. or the L.Mus. program.

Visiting Students
Individuals wishing to take courses at McGill for credit at another university may be admitted as Visiting Students provided they have the prerequisites for the course(s) concerned and have official permission from their home university.

4.4 Diploma Programs

L.Mus. (All Applicants)
For admission to the Licentiate program, the applicant must have completed secondary school. The applicant’s music qualifications must be equivalent to McGill Conservatory Collegial II Instrument or Voice and Secondary V Theory/Ear Training. An entrance audition is required.

Artist Diploma (All Applicants)
For admission to the Artist Diploma program, the applicant must have a Bachelor of Music degree in Performance, the Licentiate in Music of the McGill Faculty of Music, or the equivalent and must pass a performance audition.

4.5 Music Placement Examinations

All applicants must sit diagnostic placement examinations in Theory, Musicianship (Ear Training), Music History, Keyboard Proficiency and, for jazz majors, Jazz Materials, in order to determine their course levels. General placement/advanced standing examinations will be given during the week prior to the beginning of classes in September.
Students accepted into either the Licentiate Diploma (L.Mus.) or the Artist Diploma, who have completed the degree of Bachelor of Music at a Canadian or American university (or the equivalent elsewhere) within the preceding three (3) years will not be required to sit the Music Placement Examinations and will be exempted from required Theory, Musicianship, and Music History, Literature or Performance Practice courses. Should such students wish to avail themselves of the diagnostic service that the Music Placement Examinations provide, they may sit them – without, however, being bound by the recommendation generated from their results. Nevertheless, should great difficulties arise in a specific class because of lack of adequate preparation, the Department Chair,
upon the advice of the instructor, reserves the right to counsel the student to undertake studies at a lower level.

4.6 Keyboard Proficiency Test (MUSP170)

Students entering any of the B.Mus. or L.Mus. programs should be prepared to demonstrate, in a Keyboard Proficiency Test, keyboard skills sufficient to enable them to use the piano as a tool in their studies at McGill.

Those who are unable to do so must register continuously for Keyboard Proficiency MUSP170 until they successfully complete the course. Majors in Jazz Performance must enrol in MUJZ170. Students in Jazz Performance who have completed MUJZ170 and MUJZ171, and who transfer to a Department of Theory program, will be required to complete MUSP171. Students who have been admitted to a degree or diploma program with keyboard as their principal instrument are exempt from the MUSP170 Test (but not from MUSP171).

The requirements of the test are as follows:
1. Sightreading (simple two-part piece using treble, bass and alto clefs).
2. Technique (scales, triads and arpeggios). Two octaves, hands together.
3. Prepared piece (contrapuntal texture in two or three parts, or simple homophonic textures, level equivalent to McGill Conservatory Secondary III).
4. Keyboard rudiments (recognition/playing of intervals, chords, scalar patterns, etc.).

Students will not be allowed to proceed with higher-level Musician-ship or Theory studies until these requirements are met. Exact test dates are determined by the Department of Theory.

4.7 Re-Admission

Students in satisfactory standing, who have not been registered in the Faculty of Music for one or two terms, may return to the program in which they were previously registered upon permission of the Faculty. Those who have been out for longer than two terms may be re-admitted upon permission of the Faculty, subject to the student’s previous record and current Faculty limitations on enrolment, but will be required to re-audition. Students wishing to return must submit a request in writing to the Student Affairs Office, giving a summary of their activities during their absence, and complete a Re-Admission Application Form. The deadline for the September session is January 15; for the January session, November 1.

5 Fees

The University reserves the right to make changes without notice in the published scale of fees.

5.1 Tuition Fees

General information on Tuition and Other Fees will be found in the General University Information section at the front of this book.

Individual practical instruction on a main instrument or voice as indicated in the various degree and diploma programs (Section 7) is included at the per-credit rate only while the student is full-time, and for a maximum number of years according to the following table:

<table>
<thead>
<tr>
<th>ENTR'ITEMENT</th>
<th>Maximum Years of Practical Instruction at the per credit rate, 1 hour per week.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category of Student</td>
<td>B.Mus. (Perf. or Jazz Perf.)</td>
</tr>
<tr>
<td>High School graduates (Gr.12)</td>
<td>4 years</td>
</tr>
<tr>
<td>[Canadian, except Quebec; United States; Overseas]</td>
<td></td>
</tr>
<tr>
<td>CEGEP graduates</td>
<td>3 years</td>
</tr>
<tr>
<td>[Holders of D.E.C. or D.C.S. in Music or a non-Music specialization]</td>
<td></td>
</tr>
<tr>
<td>Transfer students [from other colleges, universities or McGill faculties]</td>
<td>3 years</td>
</tr>
<tr>
<td>or degree holders</td>
<td></td>
</tr>
<tr>
<td>Mature Students</td>
<td>3 years</td>
</tr>
<tr>
<td>[without above academic qualifications but who are 21 years old as of Sept.1]</td>
<td></td>
</tr>
</tbody>
</table>
| Note: Part-time students in the B.Mus. and L.Mus. programs and those who have exhausted the above-listed maxima will be charged $785 per term ($1,570 per year) for practical instruction in addition to the per-credit fees. (Artist Diploma students: $1,175 per term or $2,350 per year.) Special or part-time Visiting students, who are permitted to enrol for practical instruction, will also be charged an extra $785 per term, in addition to the per-credit fees, as will all other students taking instruction in a second practical subject. Voice Coaching (MUIN300, MUIN301) is available at the per-credit rate for a maximum of two terms for full-time voice students only. In all other cases, the extra fee for this course is $550 per term. Special students in the Opera Studio will be charged an additional $680 per term ($1,360 per year). Degree or diploma candidates registered in Opera Studio, as well as Special students taking practical instruction at $785 per term, will be charged the per-credit fee for Opera Studio.
6 Academic Information

Students are required to be punctual at all classes and lessons. Grades in theoretical subjects are calculated on the basis of classwork and/or examinations. Students are warned that by missing examinations or classwork they risk failure in the subject concerned.

6.1 Ensemble Policy and Regulations

A. Preamble

The ensemble program comprises areas of activity designed to provide an enriched and cohesive curriculum in practical musicianship for every student. Much of this training is accomplished in the context of a large instrumental or choral ensemble, or specialized ensembles, over the three-year period that students normally spend on undergraduate studies.

Students are advised to check their program carefully in order to verify their basic (large) and small ensemble requirements.

Basic (large) Ensemble: All students registered as full-time or part-time students in the Department of Performance must audition for, and participate in, a basic (large) ensemble. This means that a student from the Province of Quebec must have a minimum of 12 credits for basic ensemble in order to graduate. A student from outside the province must have a minimum of 16 credits in order to graduate. In those cases where a student in the orchestral training program is registered for additional sessions, he/she must also register for basic ensemble for each additional session. (For exemptions, see section K.)

A student in the orchestral training program who is not assigned a basic ensemble following the auditions in either September or January because there is not a space available may substitute either

1. an additional small ensemble in lieu of the basic ensemble with the approval of the Chair of the Performance Department, or
2. a choral ensemble following an audition, with the permission of the Chair of the Choral Area and the Chair of the Performance Department.

Small Ensemble: With the exception of students registered in the regular Voice program, all students registered as full-time or part-time students in the Department of Performance must audition for, and participate in, a small ensemble. A student must have a minimum of 6 credits for small ensemble in order to graduate. With the exception of Keyboard, Guitar and Jazz students, this is an ongoing requirement.

Performance majors as well as sufficiently advanced players and singers from other programs are encouraged to participate in one or more small ensembles which meet their particular interest.

This policy and its regulations apply to all students performing in all ensembles, large or small, required, complementary, or elective. They apply also to all students who have been assigned to an ensemble for any reason, including conducting students, composers- and arrangers-in-residence, and others.

Important: This policy also applies to all students enrolled in vocal and instrumental techniques classes (MUCT255, MUCT335, MUT201, MUT202, MUT203, MUT204, MUT301, MUT302) and in choral and instrumental conducting classes (MUCT315, MUCT415, MUT315, MUT415) who are required to participate in Music Education ensemble labs. STUDENTS IN THESE LABS MUST FILL OUT REQUEST FORMS FOR ALL ABSENCES, INCLUDING ALL FIELD TRIPS IN WHICH THEY MAY PARTICIPATE. These forms should be returned to the Chair of the Music Education Area, not to the Ensemble Committee; students should consult the Chair of the Music Education Area for further details.

Note: In all cases where the term “Director” of an ensemble is used, it is understood to mean the conductor, director, stage director or coach of the ensemble.

B. Basic Ensemble Training and Assigned Small Ensembles

Basic Ensemble Training requirements vary by program and according to the student’s practical concentration. For ensemble purposes, the orchestral instruments include flute, oboe, clarinet, bassoon, saxophone, french horn, trumpet, trombone, tuba, percussion, harp, violin, viola, cello and double bass. Students studying these instruments will receive their Basic Ensemble Training in the large instrumental ensembles. Students whose principal instrument is other than one of these (except voice majors) will normally receive their Basic Ensemble Training in the choral ensembles. Voice majors may choose from a group of vocal and choral ensembles appropriate to the level of their development.

In all programs which specify an assigned small ensemble, the following are considered assigned small ensembles:

- MUEN480 Early Music Ensemble
- MUEN485 Mixed Ensembles
- MUEN489 Woodwind Ensembles
- MUEN491 Brass Ensembles
- MUEN498 Percussion Ensembles
- MUEN499 String Ensembles

C. Additional Ensembles

Additional ensembles chosen by students to reflect their particular interests may, with Departmental approval, be applied as Music Elective credit. Students electing an ensemble will normally be required to audition and will be placed accordingly.

D. Assignment and Auditions

All students registered as full-time or part-time students in the Department of Performance must audition for a basic ensemble in September and, where applicable, in January (e.g., woodwind and brass players in the orchestral training program). A student who cannot audition for a basic ensemble at any time must give due notice to the Performance Department of their non-availability at least five days before the date of the first audition. The student must have a valid reason (i.e., illness, death in the family, career commitment, etc.). If a student misses an audition for reasons unacceptable to the Performance Department, that student will not be allowed to audition for that semester and the requirement will have to be fulfilled later in order that the student can graduate. If the reason given is valid, the student will audition for whatever positions remain unassigned upon his/her arrival at the Faculty.

Assignments are posted on the Department of Performance notice board. Re-assignments or subsequent auditions may be made from time to time during a term and will also be posted. Jazz Majors in the rhythm section sightreading ensemble must audition every semester. Students are reminded that auditions for major ensembles are mandatory. Students who do not take the auditions cannot be assigned to any major ensembles, and they would have to make up the credit at a later time.

In the case of the Jazz Ensembles, an open challenge system is used as follows:

1. At any time during a term, a student may challenge for a position in a Jazz Ensemble.
2. The challenger must speak to the band directors involved, specifying the chair being challenged.
3. The challenger will have a private audition with not less than two directors who will offer a non-binding recommendation to the student as to whether or not to proceed with the challenge.
4. Should the challenger wish to proceed, the student being challenged will be notified by the Co-ordinator of the Jazz Ensembles.
5. The challenge will take the form of an audition of both the regular member of the ensemble and the challenger in a full band rehearsal, following which the directors will make a decision.
E. Commitment
Ensembles are courses. Each student who has registered for an ensemble, or who has been assigned to or who is auditioning an ensemble, has made a commitment to the ensemble and is required to attend all rehearsals, concerts, performances, field trips, recordings and other activities which constitute the course requirements of that ensemble. Except for reasons of ill health or in the case of an excused absence granted by the Ensemble Committee (see Section G, below), any absence may result in a failing grade for the student.

F. Failing Grade
A failing grade in any of the mandatory ensembles (Basic Ensemble, assigned small ensemble, complementary or elective ensemble) obliges the student to make up the credit at a later date. A subsequent failure in the same course may result in the student being required to withdraw from the Faculty.

G. Request to be Excused from a Rehearsal
ANY STUDENT WHO CANNOT ATTEND A REHEARSAL OR COACHING SESSION FOR ANY ENSEMBLE IS REQUIRED TO FILL OUT A REQUEST TO BE EXCUSED FROM ENSEMBLE FORM. THIS FORM IS AVAILABLE FROM THE DEPARTMENT OF PERFORMANCE OFFICE (E222).

Students are required to submit a completed copy of this form to the Department of Performance office (E222) at least eight (8) days prior to the rehearsal or coaching session which will be missed, stating the reason for the request. Students who have missed a rehearsal or coaching session due to illness must submit one of these forms within three (3) days of returning to school. In such cases a doctor’s certificate or statement from the Student Health Service must be attached to the form.

Ensemble Committee meets weekly during the term to consider the requests, and approve or refuse each individual case. Students are welcome to appear at this meeting to explain particular circumstances affecting their request. Students should check the Performance notice board after the day the form is submitted to find out if their request has been approved.

Students may be excused from a rehearsal or coaching session of an ensemble for the following reasons:

1. Sickness, or emergency medical or dental work. IMPORTANT NOTE
   ANY STUDENT WHO IS EXPERIENCING PAIN WHILE PLAYING OR SINGING SHOULD INFORM THEIR PRACTICAL TEACHER AND THE DIRECTOR OF THEIR ENSEMBLE(S), AND SHOULD SEEK APPROPRIATE MEDICAL ATTENTION. Students should not be reluctant to admit to injury; it is entirely acceptable for students to be excused from ensemble rehearsal(s) for health reasons. The Faculty does not want students to perform with pain or with injury.
2. An audition for a permanent professional engagement.
3. A master class.
4. A major competition.
5. A professional engagement deemed, in the opinion of the Ensemble Committee, to be very important for a student's developing career.
6. Family emergency or an especially important family occasion.
7. A conflict between an irregularly scheduled ensemble rehearsal or coaching session and a previous important commitment made by the student (proof required).
8. A field trip for another ensemble or class.
10. A religious holiday.

For Nos. 2, 3, 4 and 5, the request must be accompanied by authorization from the student's practical teacher and the appropriate area Chair. This permission is given for no more than three (3) rehearsals or coaching sessions.

Note: NO PERMISSION IS GIVEN TO BE EXCUSED FROM A DRESS REHEARSAL OR FROM A CONCERT EXCEPT FOR NO. 1 AND NO. 2 ABOVE. IN THE CASE OF OPERA MC GILL, NO ONE CAN BE EXCUSED FROM REHEARSALS DURING THE THREE (3) WEEKS PRECEDING THE OPENING NIGHT PERFORMANCE.

Students are not excused from ensemble rehearsals or coaching sessions for either of the following reasons:
1. Gigs.
2. Non-emergency medical or dental appointments. Students should request appointment times that do not conflict with rehearsals or coaching sessions.

H. Preparation
If the Director of an ensemble is not satisfied with the quality of preparation that a student has been making for the ensemble, the Director shall first warn the student. This warning shall be communicated by the Director to the Ensemble Committee which shall inform the student in writing. If, in the Director's opinion, this lack of preparation continues, the student will be required to perform the music for a committee consisting of the Director of the ensemble, the Chair of the area (Orchestral Training, Choral, Opera, Voice, etc.) and the Department Chair. If this committee decides that there has been a lack of sufficient preparation, the student will be required to appear before the Ensemble Committee to show cause why he or she should not be required to withdraw.

For any particular performance, if – after a written warning to the student(s) at least two (2) weeks prior to the performance, with a copy to the Ensemble Committee – the Director, in consultation with his/her coaches, feels that the performance of a student or group of students will not meet a certain minimum standard established by the Director, the Director may cancel the performance of the student(s).

I. Discipline
The Director of an ensemble may recommend that a student withdraw from an ensemble for disciplinary reasons. A student asked to do so will be required to appear before the Ensemble Committee to show cause why he or she should not be required to withdraw.

Students who are required to withdraw from an ensemble for reasons of lack of preparation or discipline will be given a grade of “F” which will be reflected in their Grade Point Average (GPA).

J. Withdrawal
Withdrawal for any reason obliges the student to make up the credit(s) at a later date.

K. Exemption From a Required Ensemble
In order to be given permission not to participate in a required ensemble for a term or part thereof, a student must:

i. be a participant in a major national or international competition, or (in the case of voice students) be given a significant role with a recognized performing arts ensemble, and (in the case of all students) have completed the minimum number of required terms of the ensemble, and have the permission of: 1. his or her practical teacher 2. the area Chair 3. the Director of the ensemble 4. Chair of the Orchestral Training, Choral, Opera or Voice Area (where appropriate) 5. Ensemble Committee or
   ii. have completed all program requirements except the final exam on his or her instrument or
   iii. have completed all musical requirements of his or her program, having only Arts and Science electives remaining or
   iv. have a significant medical reason.

NOTE: 1. Permission not to participate in a required or complementary ensemble for a term or part thereof is not an exemption and does not satisfy any credit requirements for a degree.
2. Students who are given permission not to participate in Orchestra (MUEN497 or MUEN697) for a term or part thereof may be ineligible to hold an Orchestral Instruments Scholarship for that term and may be ineligible for consideration for an Orchestral Instruments Scholarship for the following year based on that term.

L. Substitution of an Ensemble
1. In order to be given permission to substitute another large ensemble for a required or complementary large ensemble for a term, a student must:
   i. have completed the minimum number of terms in the required or complementary large ensemble and
   ii. have the permission as in K.i. (1-5) above, with the added condition that the Director of the required or complementary large ensemble may refuse consent for the simple reason that the student is needed in that ensemble.

2. Keyboard and Guitar Performance majors in all programs may substitute up to two (2) terms of Studio Accompanying (MUEN484) for two (2) terms of Choral Ensemble.

3. Performance majors are not permitted to substitute Basic Ensemble credits for required or complementary assigned small ensemble credits.

M. Rotation
Whenever possible and musically satisfactory, and in order to ensure equal opportunity and experience for students in the large instrumental ensembles, the seating of students in these ensembles may be rotated periodically throughout the term or year. The Director of the ensemble will determine whether or not rotation is possible and musically satisfactory.

N. Missed Classes due to Field Trips
Situations will arise where students are required to miss classes – both in the Faculty of Music as well as in other faculties – because of field trips. Teaching staff in the Faculty of Music are encouraged to assist students who approach them for information about course content and assignments that have been missed. Nonetheless, the onus remains on the student who goes on a field trip to complete class work.

O. Transfer Credits
The previous ensemble participation of students coming to McGill from other universities will be recognized if their ensemble experience was similar to that required of McGill students. In general, transfer credit is made on a term for term basis (not by credits) and usually does not exceed two (2) terms. Students are normally not permitted to reduce the Basic Ensemble Training requirements of their McGill program to less than the number of terms required for them to complete the rest of their program. In such cases, transfer credit may be given as Music Elective credit.

P. Extra Basic Ensemble Training Credits
Basic Ensemble Training credits accumulated above the minimum may be applied as Music Elective credits.

Q. Performance Music Library
Students are responsible for the music which has been loaned to them for their use, and for its return in good condition to the Performance Music Library. Students will be required to pay for the replacement of any music which has been lost, stolen or damaged.

6.3 Academic Category
All students in the Music Faculty are registered in one of the following categories:

Major: B.Mus. candidates may choose one or more of several majors as described under section 7 “Programs of Study”.

Honours: A more intensive program than a major. B.Mus. students may choose one or more honours programs as described under section 7 “Programs of Study”. Generally, an honours degree in the appropriate field is prerequisite to graduate study.

Faculty Program: A general B.Mus. program (see section 7.2.8 “Faculty Program”.

L.Mus., Artist Dip.: Students in diploma programs, as described in section 7.3 “Department of Performance”.

Special: Those who are not proceeding towards a degree or diploma.

Visiting: Those taking courses at McGill for credit towards a degree at another university.

6.4 Auditing
In general, auditing is not permitted in Faculty of Music courses. With the permission of the Departmental Chair concerned, students may audit a course which is not a required course in their program. It should be noted that auditors are not registered for such courses, that the instructor is not expected to correct any assignments or papers done by an auditor, and that an auditor may neither write an examination in that subject nor receive any credit for such course. Auditing is not permitted for Special or Visiting students.

6.5 Music Electives
Unless otherwise specified, any music course numbered at the 200 level or higher which is not a required course in the student’s program can be counted as a Music Elective in the B.Mus. or Artist Diploma programs. Two credits per term of practical instruction may be applied as Music Electives only if the lessons are taken after completion of the final examination required in the student’s program. Practical instruction in a second instrument may be taken for elective credit at the -100 level under certain conditions. Consult the Department of Performance for details. Basic Ensemble credits accumulated above the minimum may be applied as Music Elective credits.

6.6 Arts and Science Electives
In all B.Mus. programs, students are required to complete a minimum of 18 elective credits from courses offered by the Faculties of Arts or Science (or other faculties, with the approval of the student’s Departmental Chair). Students admitted from high schools outside Quebec, not holding a DCS, must complete an additional 6 credits of Arts and Science electives for a total of 24. Students holding a DCS in a non-Music program are exempt from 6 credits of their requirement. Students should note that certain programs have requirements in addition to the above.

The Faculty of Music allows up to 12 credits in English as a Second Language as an Arts elective in the B.Mus. program. These credits may be taken in the Faculty of Arts at the Intermediate or Advanced level OR they may be taken at the Centre for Continuing Education at level 4 or above.

6.7 Course Changes
Students are permitted to change courses and/or sections of a course during the first two-week period of classes in each term.
This is referred to as the official Course Change Period. Course and section changes are made by the student, using Minerva directly. Worksheets for this purpose are available at Student Affairs Office in the Strathcona Music Building.

Late course change requests, if approved, will be processed only upon payment of a fee of $25. No charge will be made for late changes imposed by the Faculty. If students’ registrations must be corrected after the Course Change Period to bring their records into conformity with the courses they are actually taking, the students will be charged the late fee.

### 6.8 Withdrawal from Course(s)

Students are permitted to withdraw from courses other than practical instruction or ensembles after the end of the Course Change Period. In such cases the student’s mark in the course will be W. Course withdrawals are also processed on Minerva, within permissible dates.

The final deadlines for withdrawing from Music courses are:

- For a one-term course: The end of the seventh week of classes.
- For a two-term course: The end of the Course Change period in the second term.

The deadline for withdrawing from practical lessons and ensembles is the end of the second week of classes in any term.

Music students who, in special circumstances such as illness or injury, are given permission to withdraw from practical instruction after the end of the Course Change Period will be charged $65 per week (for 1-hour lessons; $97.50 for 1 1/2 hours) up to a maximum equivalent to the total fees charged for the course. Full refunds for practical instruction will be given up to the end of the Course Change Period.

**Note:** Students who do not complete a course for which they remain registered will receive a grade of F or J.

For information on the REFUND POLICY, please refer to “Regulations Concerning Withdrawal” on page 43.

### 6.9 Incompletes

At the discretion of the instructor, a mark of K (Incomplete) may be given to a student who, due to extenuating circumstances, has not finished the course work on time. The deadline for completion and submission of the required work shall be set by the instructor but may not be later than four months after the K was given. A special form for incompletes, available from Student Affairs Office, must be signed by the student and the instructor by the last day of lectures. If the “Incomplete” is not removed by this time, the mark will be changed to KF (Incomplete Failed), unless an extension has been granted (K*). Completion of the course will cause the K to be replaced on official transcripts by the mark earned. A mark of K not cleared by mid-May makes the student ineligible for scholarships.

In exceptional cases, when research or an assignment cannot be completed for reasons beyond the student’s control, students may be given permission by their Departmental Chair or the Student Progress Committee to leave a course permanently incomplete (without penalty). The symbol K will be replaced by KK, in which case the student’s Grade Point Average will be calculated without including this course.

### 6.10 Deferrals

Deferred examinations are permitted in case of illness or other exceptional circumstances. A written request for the deferment of an examination (with the exception of practical examinations) must be submitted to the Senior Academic Advisor; a practical music examination, to the Performance Department Chair.

A deferred examination will be entered as L, which will be replaced on official transcripts by the actual mark when the examination is written. A mark of L not cleared by mid-May makes the student ineligible for scholarships.

### 6.11 Supplemamentals

Supplemental examinations may be given at the discretion of the instructor. A student who receives a mark below 30% in a course is not permitted to take a supplemental examination but must repeat the course.

### 6.12 Re-Reading of Examinations

A student wishing to have an examination paper re-read should apply in writing to the Departmental Chair. There is a non-refundable fee of $35. The mark given in the re-reading, whether higher or lower, will replace the mark originally given. Any request to have a term paper or other course work reassessed must be made directly to the instructor concerned.

### 6.13 Academic Standing

Academic standing is based primarily on students’ cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing, which is assessed after the end of each term, determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students’ fall TGPA. Therefore, academic standing for the fall term are designated as “interim” and should be interpreted as advisory; moreover, interim standings will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

#### Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.

- New students are admitted to satisfactory standing.
- Students with a CGPA of 2.00 or greater are in satisfactory standing.

#### Probationary/Interim Probationary Standing

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it, if appropriate. They are strongly advised to consult a departmental advisor, before the withdrawal deadlines, about their course selection for the winter term.

- Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
- Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the summer term.
- Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
- Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean will be placed in probationary standing if their CGPA is less than 2.00, but if they satisfy relevant conditions specified in their letter of readmission.

#### Readmitted Unsatisfactory Standing

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean will have their standing changed to readmitted unsatisfactory standing. Their course load
is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see the Senior Academic Advisor to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult the Senior Academic Advisor, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing who have failed to meet the minimum standards set by the Faculty may not continue in their program and their registration will be canceled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Dean no later than July 15 for readmission to the fall term and November 15 for the winter term.

Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally, supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Senior Academic Advisor for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.

For the fall and winter terms, students who were previously in probationary, readmitted unsatisfactory, or interim unsatisfactory standing will be placed in unsatisfactory standing if their CGPA falls below 2.50 and their CGPA is below 2.00.

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Dean who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

Incomplete Standings

Standing awaits deferred exam.

Must clear K's, L's or Suppleminals.

Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program.

Students whose standing changes to unsatisfactory standing may not continue in their program.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Dean as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of Course Change Period should immediately consult with the Student Affairs Office.

6.14 Graduation Requirements

1. Completion of all courses and proficiency requirements specified in the candidate's program. Students registered in two programs must fulfill all requirements for both programs. A grade of C or better must be achieved in all Required courses, all Complementary courses specified by course number, and in those courses which are prerequisites or corequisites. A grade of D (non-continuation pass) is acceptable only in terminal Elective courses or Complementary courses that are not specified by course number.

2. Minimum cumulative grade point average of 2.00.

3. Completion of a minimum of credits in residence at McGill University (B.Mus: 60 credits, L.Mus: 48 credits, Artist Dip: 32 credits).

6.15 Graduation with Distinction

Students in B.Mus. programs whose academic performance is appropriate may be awarded their degrees with Distinction or High Distinction on the basis of their CGPA under the following conditions:

• The top 15% of the graduating class of each Department (Performance and Theory) will graduate with High Distinction.

• The next 10% of the graduating class of each Department (Performance and Theory) will graduate with Distinction.

Departments may recommend to the Faculty that students be awarded Outstanding Achievement in recognition of superior performance on an instrument or in an academic discipline.

The designation Dean's Honour List may be awarded to a graduating student who, on the basis of his/her CGPA, is among the top 10% of the B.Mus. graduating class.

7 Programs of Study

7.1 Four-Year Program (Prerequisite Courses)

Students who hold a high school graduation diploma (minimum years of schooling: 12 years) from other provinces, the United States or overseas may apply for admission to any of the Major or Honours programs leading to the Bachelor of Music Degree, and may be admitted to a program of approximately 120 credits, normally requiring four years to complete. These programs will include the following prerequisite courses in addition to the requirements listed in 7.2, 7.3, 7.4 or 7.5:

<table>
<thead>
<tr>
<th>All students take:</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>MUTH110 Melody and Counterpoint</td>
<td>3</td>
</tr>
<tr>
<td>MUTH111 Elementary Harmony and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUSP129 Musicianship 1</td>
<td>2</td>
</tr>
<tr>
<td>MUSP131 Musicianship 2</td>
<td>2</td>
</tr>
<tr>
<td>MUHL184 History Survey - Medieval, Renaissance, Baroque</td>
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</tr>
<tr>
<td>MUHL185 History Survey - Classical, Romantic, 20th-C. Basic Ensemble Training</td>
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<td>Arts/Science Elective</td>
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<tr>
<td>Credits taken by all students</td>
<td>26</td>
</tr>
<tr>
<td>Additional courses for Non-Jazz/Non-Performance Majors:</td>
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</tr>
<tr>
<td>MUSP170 Keyboard Proficiency</td>
<td>1</td>
</tr>
<tr>
<td>MUSP171 Keyboard Lab 1</td>
<td>1</td>
</tr>
<tr>
<td>Practical Study</td>
<td>4</td>
</tr>
<tr>
<td>Total for students other than Jazz or Performance Majors</td>
<td>32</td>
</tr>
<tr>
<td>Additional courses for Performance Majors:</td>
<td></td>
</tr>
<tr>
<td>MUSP170 Keyboard Proficiency</td>
<td>1</td>
</tr>
<tr>
<td>MUSP171 Keyboard Lab 1</td>
<td>1</td>
</tr>
<tr>
<td>MUPG100 Life as a Professional Musician</td>
<td>1</td>
</tr>
<tr>
<td>Practical Study</td>
<td>8</td>
</tr>
<tr>
<td>Total for Performance Majors</td>
<td>37</td>
</tr>
<tr>
<td>Additional courses for Jazz Majors:</td>
<td></td>
</tr>
<tr>
<td>MUJZ160 Jazz Materials 1</td>
<td>3</td>
</tr>
<tr>
<td>MUJZ161 Jazz Materials 2</td>
<td>3</td>
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<tr>
<td>MUJZ170 Jazz Keyboard Proficiency 1</td>
<td>1</td>
</tr>
<tr>
<td>MUJZ171 Jazz Keyboard Proficiency 2</td>
<td>1</td>
</tr>
<tr>
<td>MUPN470 Jazz Combo</td>
<td>2</td>
</tr>
<tr>
<td>MUPG100 Life as a Professional Musician</td>
<td>1</td>
</tr>
<tr>
<td>Practical Study</td>
<td>8</td>
</tr>
<tr>
<td>Total for Jazz Majors</td>
<td>45</td>
</tr>
</tbody>
</table>
Applicants who can demonstrate through auditions and placement tests that they have mastered the material in any of the above courses will be exempt from them and may proceed to more advanced courses.

Incoming jazz students may substitute, with Performance Department approval, large ensemble participation from another college or university for the extra credits required of non-Quebec applicants.

7.2 Department of Theory: Composition; Music Education; Music History; Music Technology; Theory; Faculty Program

The Department embraces the disciplines of Composition, Music Education, Music History, Music Technology, and Theory at both the undergraduate and graduate levels, and Sound Recording at the graduate level. The philosophy of the Department is to encourage integration of the disciplines as much as possible within the learning process in each program of study: the development of basic musicianship, the absorption of the grammar and syntax of musical discourse, and the study of the world of ideas are understood as interconnected.

Honours programs provide a high degree of specialization and are a foundation for graduate-level study leading to academic careers in each discipline. Majors programs offer the student some focus with the flexibility to pursue other areas of interest. The Faculty Program is intended to offer an option for individual and creative plans of study. All of the Department’s programs give a solid grounding in analytic, synthetic, and writing skills that are useful preparation not only for the musical profession but also for professionals as diverse as law, journalism, management, and librarianship.

The Music Education program combines an orientation towards a professional career in primary and secondary schools with sensitivity to broader intellectual frameworks against which teachers should understand their roles. This program is offered concurrently with the B.Ed., Music.

Music Technology encourages interaction between musical creation, technology and research. The pedagogical goal of the Music Technology program is to provide students with an environment for professional-level music training with an intensive focus on programming of advanced music technologies. This training prepares students to meet the technological demands of contemporary composition and performance practice, and offers students a wide range of employment possibilities in the music technology and media industries.

The Department also offers a Minor in Music History to performance majors who seek to place their work in a larger context, and a Minor in Music Technology to Music and to B.A. and B.Sc. students.

All full-time students in B.Mus. programs who have not been exempted from History Survey MUHL184 and MUHL185 on the basis of placement examinations are required to enrol in one or both courses in their first year of study at the Faculty of Music and until such time as they obtain a passing grade in each. (Upon the recommendation of the adviser and the approval of the Chair of the Department of Theory, this requirement may be deferred for one year.)

For each program, all courses listed are REQUIRED Courses unless otherwise indicated.

7.2.1 B.Mus. with a Major in Composition

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>COMPOSITION</th>
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<tbody>
<tr>
<td>31</td>
<td>MUCO240D1 Tonal Composition 3</td>
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<tr>
<td></td>
<td>MUCO240D2 Tonal Composition 3</td>
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<td>MUCO245D1 Composition 2</td>
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<td>MUCO247D2 Composition 3</td>
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<td></td>
<td>MUCO341 Digital Studio Composition 1</td>
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<td></td>
<td>MUCO440D1 Composition 3</td>
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<td>MUCO440D2 Composition 3</td>
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<tr>
<td></td>
<td>MUCO541 Advanced Digital Studio Composition 1</td>
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<tr>
<th>THEORY</th>
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<tr>
<td>17</td>
<td>MUCO260 Instruments of the Orchestra 2</td>
</tr>
<tr>
<td></td>
<td>MUCO261 Elementary Orchestration 2</td>
</tr>
<tr>
<td></td>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis 3</td>
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<td></td>
<td>MUTH427D2 20th-Century Analysis 2</td>
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<td>MUTH427D2 20th-Century Analysis 2</td>
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<td>Two of (complementary):</td>
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<td></td>
<td>MUCO542 (3) Advanced Digital Studio Composition 2</td>
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<td></td>
<td>MUTH301 (3) Modal Counterpoint 1</td>
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<td></td>
<td>MUTH302 (3) Modal Counterpoint 2</td>
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<td></td>
<td>MUTH303 (3) Tonal Counterpoint 1</td>
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<td></td>
<td>MUTH304 (3) Tonal Counterpoint 2</td>
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<th>MUSICIANSHIP</th>
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<tr>
<td>8</td>
<td>MUSP229 Musicianship 3</td>
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<td></td>
<td>MUSP231 Musicianship 4</td>
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<td></td>
<td>MUSP329 Musicianship 5</td>
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<td>MUSP331 Musicianship 6</td>
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<tr>
<th>COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>(courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)</td>
<td>6</td>
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<tr>
<th>PERFORMANCE</th>
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<tr>
<td>8</td>
<td>MUIN220 Practical Instruction 3</td>
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<td>MUIN221 Concentration 1 Examination 2</td>
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<td>MUIN320 Practical Instruction 5</td>
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<td></td>
<td>MUIN321 Concentration 2 Examination 2</td>
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<td>Basic Ensemble Training, 8 credits from*:</td>
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<tr>
<td></td>
<td>MUEN490 McGill Winds</td>
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<tr>
<td></td>
<td>MUEN493 Choral Ensembles</td>
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<td>MUEN494 Contemporary Music Ensemble</td>
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<td>MUEN497 Orchestral Ensembles</td>
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<th>ARTS AND SCIENCE ELECTIVES</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

| TOTAL CREDITS | 96 |

Special Requirements:
1. Minimum grade of C in Concentration 2 Examination.
2. A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.
7.2.2 B.Mus. with Honours in Composition

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

**COMPOSITION**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<td>MUCO240D1</td>
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<td>Tonal Composition</td>
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<td>MUCO245D2</td>
<td>Composition</td>
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<td>MUCO340D1</td>
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<tr>
<td>MUCO340D2</td>
<td>Composition</td>
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<td>MUCO341</td>
<td>Digital Studio Composition 1</td>
<td>3</td>
</tr>
<tr>
<td>MUCO342</td>
<td>Digital Studio Composition 2</td>
<td>3</td>
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<tr>
<td>MUCO440D1</td>
<td>Composition</td>
<td>3</td>
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<tr>
<td>MUCO440D2</td>
<td>Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUCO541</td>
<td>Advanced Digital Studio Composition 1</td>
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**THEORY**

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUCO260</td>
<td>Instruments of the Orchestra</td>
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<tr>
<td>MUCO261</td>
<td>Elementary Orchestration</td>
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<tr>
<td>MUTH427D1</td>
<td>20th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH427D2</td>
<td>20th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUCO460D1</td>
<td>Advanced Orchestration</td>
<td>2</td>
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<tr>
<td>MUCO460D2</td>
<td>Advanced Orchestration</td>
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A minimum of 10 complementary credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUCO542</td>
<td>Advanced Digital Studio Composition 2</td>
<td>3</td>
</tr>
<tr>
<td>MUTH301</td>
<td>Modal Counterpoint 1</td>
<td>3</td>
</tr>
<tr>
<td>MUTH302</td>
<td>Modal Counterpoint 2</td>
<td>3</td>
</tr>
<tr>
<td>MUTH303</td>
<td>Tonal Counterpoint 1</td>
<td>3</td>
</tr>
<tr>
<td>MUTH304</td>
<td>Tonal Counterpoint 2</td>
<td>3</td>
</tr>
<tr>
<td>MUTH327D1</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH327D2</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH522D1</td>
<td>Advanced Counterpoint</td>
<td>3</td>
</tr>
<tr>
<td>MUTH522D2</td>
<td>Advanced Counterpoint</td>
<td>3</td>
</tr>
<tr>
<td>MUTH523D1</td>
<td>Advanced Harmony</td>
<td>3</td>
</tr>
<tr>
<td>MUTH523D2</td>
<td>Advanced Harmony</td>
<td>3</td>
</tr>
</tbody>
</table>

**MUSICIANSHIP**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSP229</td>
<td>Musicanship</td>
<td>2</td>
</tr>
<tr>
<td>MUSP231</td>
<td>Musicanship</td>
<td>2</td>
</tr>
<tr>
<td>MUSP329</td>
<td>Musicanship</td>
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<tr>
<td>MUSP331</td>
<td>Musicanship</td>
<td>2</td>
</tr>
<tr>
<td>MUSP432</td>
<td>Dictation</td>
<td>2</td>
</tr>
</tbody>
</table>

**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUCO260 (2)</td>
<td>Instruments of the Orchestra</td>
<td>2</td>
</tr>
<tr>
<td>MUCO261 (2)</td>
<td>Elementary Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUCO460D1 (2)</td>
<td>Advanced Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUCO460D2 (2)</td>
<td>Advanced Orchestration</td>
<td>2</td>
</tr>
</tbody>
</table>

Basic Ensemble Training*, 8 credits from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUEN490</td>
<td>McGill Winds</td>
<td>2</td>
</tr>
<tr>
<td>MUEN493</td>
<td>Choral Ensembles</td>
<td>2</td>
</tr>
<tr>
<td>MUEN494</td>
<td>Contemporary Music Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>MUEN497</td>
<td>Orchestral Ensembles</td>
<td>2</td>
</tr>
</tbody>
</table>

**ARTS AND SCIENCE ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUCO260 (2)</td>
<td>Instruments of the Orchestra</td>
<td>2</td>
</tr>
<tr>
<td>MUCO261 (2)</td>
<td>Elementary Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D1 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D2 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUMT323 (3)</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D1 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D2 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT339 (3)</td>
<td>Introduction to Electroacoustics</td>
<td>3</td>
</tr>
<tr>
<td>MUGT205 (3)</td>
<td>Psychology of Music</td>
<td>3</td>
</tr>
<tr>
<td>PHYS131 (4)</td>
<td>Mechanics and Waves</td>
<td>3</td>
</tr>
<tr>
<td>PSYC100 (3)</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC212 (3)</td>
<td>Perception</td>
<td>3</td>
</tr>
<tr>
<td>PSYC213 (3)</td>
<td>Cognition</td>
<td>3</td>
</tr>
</tbody>
</table>

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

7.2.3 B.Mus. with Honours in Music Technology

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

**MUSIC TECHNOLOGY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUMT202</td>
<td>Fundamentals of New Media</td>
<td>3</td>
</tr>
<tr>
<td>MUMT203</td>
<td>Introduction to Digital Audio</td>
<td>3</td>
</tr>
<tr>
<td>MUMT306</td>
<td>Music and Audio Computing 1</td>
<td>3</td>
</tr>
<tr>
<td>MUMT307</td>
<td>Music and Audio Computing 2</td>
<td>3</td>
</tr>
<tr>
<td>MUMT402</td>
<td>Advanced Multimedia Development</td>
<td>3</td>
</tr>
<tr>
<td>MUMT502</td>
<td>Senior Project: Music Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

**THEORY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUTH210</td>
<td>Tonal Theory and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUTH211</td>
<td>Tonal Theory and Analysis 2</td>
<td>3</td>
</tr>
<tr>
<td>MUTH327D1</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH327D2</td>
<td>19th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH427D1</td>
<td>20th-Century Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUTH427D2</td>
<td>20th-Century Analysis</td>
<td>2</td>
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</table>

**MUSICIANSHIP**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSP229</td>
<td>Musicanship</td>
<td>2</td>
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<tr>
<td>MUSP329</td>
<td>Musicanship</td>
<td>2</td>
</tr>
<tr>
<td>MUSP331</td>
<td>Musicanship</td>
<td>2</td>
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</tbody>
</table>

**PERFORMANCE**

Practical Concentration: 2 credits per term. Completion of Concentration 2 Examination

Basic Ensemble Training: minimum of 4 credits per year for 2 years*

Orchestral Instruments:
- Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble
- Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble
- Strings: Orchestra or Contemporary Music Ensemble
- Other Instruments: Choral Ensemble

**SCIENCE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS224</td>
<td>Physics and Psychophysics of Music</td>
<td>3</td>
</tr>
<tr>
<td>PHYS225</td>
<td>Musical Acoustics</td>
<td>3</td>
</tr>
<tr>
<td>COMP250</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>COMP251</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
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</tbody>
</table>

Nine credits of complementary courses in the School of Computer Science. Note: Some knowledge of calculus is required in COMP250. Students with no background in calculus, or whose calculus needs refreshing or updating, are advised to take an introductory calculus course first.

**COMPLEMENTARY MUSIC AND SCIENCE**

18 credits from the following**:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUCO260 (2)</td>
<td>Instruments of the Orchestra</td>
<td>2</td>
</tr>
<tr>
<td>MUCO261 (2)</td>
<td>Elementary Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D1 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D2 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUMT323 (3)</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D1 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D2 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT339 (3)</td>
<td>Introduction to Electroacoustics</td>
<td>3</td>
</tr>
<tr>
<td>MUGT205 (3)</td>
<td>Psychology of Music</td>
<td>3</td>
</tr>
<tr>
<td>PHYS131 (4)</td>
<td>Mechanics and Waves</td>
<td>3</td>
</tr>
<tr>
<td>PSYC100 (3)</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC212 (3)</td>
<td>Perception</td>
<td>3</td>
</tr>
<tr>
<td>PSYC213 (3)</td>
<td>Cognition</td>
<td>3</td>
</tr>
</tbody>
</table>

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

**TOTAL CREDITS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUCO260 (2)</td>
<td>Instruments of the Orchestra</td>
<td>2</td>
</tr>
<tr>
<td>MUCO261 (2)</td>
<td>Elementary Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D1 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUCO230D2 (2)</td>
<td>The Art of Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUMT323 (3)</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D1 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT300D2 (3)</td>
<td>Introduction to Music Recording</td>
<td>3</td>
</tr>
<tr>
<td>MUMT339 (3)</td>
<td>Introduction to Electroacoustics</td>
<td>3</td>
</tr>
<tr>
<td>MUGT205 (3)</td>
<td>Psychology of Music</td>
<td>3</td>
</tr>
<tr>
<td>PHYS131 (4)</td>
<td>Mechanics and Waves</td>
<td>3</td>
</tr>
<tr>
<td>PSYC100 (3)</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC212 (3)</td>
<td>Perception</td>
<td>3</td>
</tr>
<tr>
<td>PSYC213 (3)</td>
<td>Cognition</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 101
Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. All MUSIC TECHNOLOGY courses – grade of A or B in each.
3. Minimum grade of C in Concentration 2 Examination.
   * A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.
   ** Students who wish to complete the prerequisites for the graduate program in Sound Recording must take Instruments of the Orchestra, Introduction to Music Recording, Introduction to Electronics and Introduction to Electroacoustics and should notify Prof. Wieslaw Woszczyk, Director, Sound Recording Studio, of their intent to do so.

7.2.4 B.Mus. with a Major in Music History

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

** CREDITS
HISTORY 24
MUHL570 Research Methods in Music 3
plus 7 complementary courses from Groups I and II, with a minimum of two from each group

Group I
MUHL220 (3) Women in Music
MUHL377 (3) Baroque Opera
MUHL379 (3) Solo Song 1100-1700
MUHL380 (3) Medieval Music
MUHL381 (3) Renaissance Music
MUHL382 (3) Baroque Music
MUHL395 (3) Keyboard Literature before 1750
MUHL591D1 (1.5) Paleography
and MUHL591D2 (1.5) Paleography
MUPP381 (3) Topics: Performance Practice before 1800

Group II
MUHL330 (3) Music and Film
MUHL342 (3) History of Electroacoustic Music
MUHL362 (3) Popular Music
MUHL366 (3) The Era of the Fortepiano
MUHL372 (3) Solo Song outside Germany and Austria
MUHL383 (3) Classical Music
MUHL384 (3) Romantic Music
MUHL385 (3) Early Twentieth-Century Music
MUHL386 (3) Chamber Music Literature
MUHL387 (3) Opera from Mozart to Puccini
MUHL388 (3) Classical Music
MUHL389 (3) Early Twentieth-Century Music
MUHL390 (3) The German Lied
MUHL391 (3) Canadian Music
MUHL392 (3) Music since 1945
MUHL393 (3) History of Jazz
MUHL396 (3) Era of the Modern Piano
MUHL397 (3) Choral Literature after 1750
MUHL398 (3) Wind Ensemble Literature after 1750
MUPP385 (3) Topics: Performance Practice after 1800

THEORY 12
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and Analysis 3
MUTH311 20th-Century Theory and Analysis 3

MUSICIANSHIP 8
MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

FREE ELECTIVES 14

** PERFORMANCE
Practical Concentration: 8
MUIN220 Practical Instruction 3 2
MUIN221 Concentration 1 Examination 2
MUIN320 Practical Instruction 5 2
MUIN321 Concentration 2 Examination 2
Basic Ensemble Training, 8 credits from*: 8
MUEN490 McGill Winds
MUEN493 Choral Ensembles
MUEN494 Contemporary Music Ensemble
MUEN497 Orchestral Ensembles

** ARTS AND SCIENCE ELECTIVES 18
TOTAL CREDITS 92

7.2.5 B.Mus. with Honours in Music History

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

** CREDITS
HISTORY 33
MUHL570 Research Methods in Music 3
MUHL591D1 Paleography 1.5
MUHL591D2 Paleography 1.5
plus 9 complementary courses from Groups I and II, with a minimum of three from each group

Group I
MUHL220 (3) Women in Music
MUHL377 (3) Baroque Opera
MUHL379 (3) Solo Song 1100-1700
MUHL380 (3) Medieval Music
MUHL381 (3) Renaissance Music
MUHL382 (3) Baroque Music
MUHL383 (3) Classical Music
MUHL384 (3) Romantic Music
MUHL385 (3) Early Twentieth-Century Music
MUHL386 (3) Chamber Music Literature
MUHL387 (3) Opera from Mozart to Puccini
MUHL388 (3) Orchestral Literature
MUHL390 (3) The German Lied
MUHL391 (3) Canadian Music
MUHL392 (3) Music since 1945
MUHL393 (3) History of Jazz
MUHL396 (3) Era of the Modern Piano
MUHL397 (3) Choral Literature after 1750
MUHL398 (3) Wind Ensemble Literature after 1750
MUPP385 (3) Topics: Performance Practice after 1800

Group II
MUHL330 (3) Music and Film
MUHL342 (3) History of Electroacoustic Music
MUHL362 (3) Popular Music
MUHL366 (3) The Era of the Fortepiano
MUHL372 (3) Solo Song outside Germany and Austria
MUHL383 (3) Classical Music
MUHL384 (3) Romantic Music
MUHL385 (3) Early Twentieth-Century Music
MUHL386 (3) Chamber Music Literature
MUHL387 (3) Opera from Mozart to Puccini
MUHL388 (3) Classical Music
MUHL389 (3) Early Twentieth-Century Opera
MUHL390 (3) Orchestral Literature
MUHL391 (3) The German Lied
MUHL392 (3) Canadian Music
MUHL393 (3) History of Jazz
MUHL396 (3) Era of the Modern Piano
MUHL397 (3) Choral Literature after 1750
MUHL398 (3) Wind Ensemble Literature after 1750
MUPP385 (3) Topics: Performance Practice after 1800

THEORY 20 or 21
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
plus one of the following options: 14 or 15
(a) MUTH327D1 (2) 19th-Century Analysis
MUTH327D2 (2) 19th-Century Analysis
MUTH427D1 (2) 20th-Century Analysis
MUTH427D2 (2) 20th-Century Analysis
Two of (complementary):
MUTH301 (3) Modal Counterpoint 1
MUTH302 (3) Modal Counterpoint 2
MUTH303 (3) Tonal Counterpoint 1
MUTH304 (3) Tonal Counterpoint 2

(b) MUTH327D1 (2) 19th-Century Analysis
MUTH327D2 (2) 20th-Century Analysis
MUTH426 (3) Analysis of Early Music
MUTH427D1 (2) 20th-Century Analysis
MUTH427D2 (2) 20th-Century Analysis
One of (complementary):
MUTH301 (3) Modal Counterpoint 1
MUTH302 (3) Modal Counterpoint 2
MUTH303 (3) Tonal Counterpoint 1
MUTH304 (3) Tonal Counterpoint 2

(c) MUTH310 (3) Mid and Late 19th-Century Theory and Analysis
MUTH311 (3) 20th-Century Theory and Analysis
MUTH426 (3) Analysis of Early Music
One of (complementary):
MUTH301 (3) Modal Counterpoint 1
and MUTH302 (3) Modal Counterpoint 2
or MUTH303 (3) Tonal Counterpoint 1
and MUTH304 (3) Tonal Counterpoint 2

MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

PERFORMANCE
Practical Concentration:
MUIN220 Practical Instruction 3 2
MUIN221 Concentration 1 Examination 2
MUIN320 Practical Instruction 5 2
MUIN321 Concentration 2 Examination 2
Basic Ensemble Training, 8 credits from*:
MUE490 McGill Winds
MUE493 Choral Ensembles
MUE494 Contemporary Music Ensemble
MUE497 Orchestral Ensembles

COMPLEMENTARY ARTS AND SCIENCE 12
Must include German (6 credits), European History (6 credits), with Departmental approval

ARTS AND SCIENCE ELECTIVES 6

TOTAL CREDITS 95 or 96

Special Requirements:
1. Cumulative Grade Point Average: minimum 3.00.
2. All HISTORY courses – grade of A or B in each.
3. Minimum grade of C in Concentration 2 Examination.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval, and 6 elective credits.

7.2.6 B.Mus. with a Major in Theory

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

7.2.7 B.Mus. with Honours in Theory

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS

MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH327D1 19th-Century Analysis 2
MUTH327D2 19th-Century Analysis 2
MUTH427D1 20th-Century Analysis 2
MUTH427D2 20th-Century Analysis 2
MUHL570 Research Methods in Music 3

Two of (complementary):
MUTH301 Modal Counterpoint 1
MUTH302 Modal Counterpoint 2
MUTH303 Tonal Counterpoint 1
MUTH304 Tonal Counterpoint 2
A minimum of 9 complementary credits from the following* (may include 6 credits of counterpoint courses not taken in the category above)
MUTH426 Analysis of Early Music
MUTH522D1 Advanced Counterpoint
MUTH522D2 Advanced Counterpoint
MUTH523D1 Advanced Harmony
MUTH523D2 Advanced Harmony
MUTH528 Schenkerian Techniques
MUTH529 Proseminar in Music Theory 1
MUTH538 Mathematical Models/Musical Analysis

MUCO230D1 The Art of Composition 2
MUCO230D2 The Art of Composition 2

MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE (courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)

FREE ELECTIVES 12

PERFORMANCE
Practical Concentration: 2 credits per term. Completion of Concentration 2 Examination
Basic Ensemble Training: minimum of 4 credits per year for 2 years**
Orchestral Instruments:
Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble
Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble*
Strings: Orchestra or Contemporary Music Ensemble
Other Instruments: Choral Ensemble

ARTS AND SCIENCE ELECTIVES 18

TOTAL CREDITS 92

Special Requirements:
1. Minimum grade of C in Concentration 2 Examination.
2. All HISTORY courses – grade of A or B in each.
3. Minimum grade of C in Concentration 2 Examination.

* A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.
One of (complementary):  
PHYS224 (3) Physics and Psychophysics of Music  
MUTH426 (3) Analysis of Early Music  
MUGT205 (3) Psychology of Music  

Three of (complementary):  
MUTH301 (3) Modal Counterpoint 1  
MUTH302 (3) Modal Counterpoint 2  
MUTH303 (3) Tonal Counterpoint 1  
MUTH304 (3) Tonal Counterpoint 2  

MUSICIANSHIP  
MUSP229 Musicianship 3  
MUSP231 Musicianship 4  
MUSP329 Musicianship 5  
MUSP331 Musicianship 6  

COMPLEMENTARY HISTORY  
Music History, Literature or Performance Practice (courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)  
3

Plus one of:  
MUHL380 (3) Medieval Music  
MUHL381 (3) Renaissance Music  
MUHL382 (3) Baroque Music  
MUHL383 (3) Classical Music  
MUHL384 (3) Romantic Music  
MUHL385 (3) Early Twentieth-Century Music  
MUHL392 (3) Music since 1945  

MUSIC ELECTIVES (with Departmental Approval)  
12

PERFORMANCE  
Practical Concentration: 2 credits per term. Completion of Concentration 2 Examination  
8

Basic Ensemble Training: minimum of 4 credits per year for 2 years*  
8

Orchestral Instruments:  
Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble  
Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble  
Strings: Orchestra or Contemporary Music Ensemble  
Other Instruments: Choral Ensemble

ARTS AND SCIENCE ELECTIVES  
18

TOTAL CREDITS  
98

Special Requirements:  
1. Cumulative Grade Point Average: minimum 3.00.  
2. All THEORY courses – grade of A or B in each.  
3. PHYS224 Physics and Psychophysics of Music – minimum grade of C.  
4. Minimum grade of C in Concentration 2 Examination. As MUTH528 and MUTH529 are offered every other year, students are expected to check with their advisers to ensure that these required courses are taken by the time of graduation. * A maximum of 2 credits of Complementary Ensemble may be substituted for 2 credits of Basic Ensemble Training, with Departmental approval.

7.2.8 Faculty Program  
The Faculty Program in Music has been designed to accommodate those students who are either undecided about the area of music in which they wish to specialize, or who are interested in a pattern of specialization not provided in the established majors and honours programs, or who are interested in combining studies in music with studies in other disciplines. Students registered in the Faculty Program may, with the approval of a staff adviser, design their own programs around specific interests or develop programs with a broader base by incorporating courses from other disciplines.

BACHELOR OF MUSIC DEGREE (B.Mus.)  
For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

THEORY  
MUTH210 Tonal Theory and Analysis 1  
MUTH211 Tonal Theory and Analysis 2  
MUTH310 Mid and Late 19th-Century Theory and Analysis  
MUTH311 20th-Century Theory and Analysis  

MUSICIANSHIP  
MUSP229 Musicianship 3  
MUSP231 Musicianship 4  
MUSP329 Musicianship 5  
MUSP331 Musicianship 6  

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE (courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)  
8

PERFORMANCE  
Practical Concentration: 2 credits per term. Completion of Concentration 2 Examination  
8

Basic Ensemble Training: minimum of 4 credits per year for 2 years  
8

Orchestral Instruments:  
Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble  
Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble  
Strings: Orchestra or Contemporary Music Ensemble  
Other Instruments: Choral Ensemble

MUSIC ELECTIVES  
20

FREE ELECTIVES  
12

ARTS AND SCIENCE ELECTIVES  
18

TOTAL CREDITS  
92

Special Requirements:  
1. Minimum grade of C in Concentration 2 Examination.

7.2.9 Special Prerequisite Courses for M.Mus. in Sound Recording  
Students wishing to follow this package of prerequisite courses while registered in the Faculty Program or in any other B.Mus. program must notify Prof. Wieslaw Woszczyk, Director, Sound Recording Studio of their intent to do so.

CREDITS  
Faculty of Music  
MUC0260 Instruments of the Orchestra  
MUMT202 Fundamentals of New Media  
MUMT203 Introduction to Digital Audio  
MUMT232 Introduction to Electronics  
MUMT300D1 Introduction to Music Recording  
MUMT300D2 Introduction to Music Recording  
MUMT301 Music and the Internet  
MUMT339 Introduction to Electroacoustics  

One of (complementary):  
MUMT302 (3) New Media Production  
MUMT306 (3) Music and Audio Computing  

Faculty of Science  
PHYS224 Physics and Psychophysics of Music  
PHYS225 Musical Acoustics  

TOTAL CREDITS  
32

Note: In order to be considered for admission to the Master of Music in Sound Recording, students must attain a minimum grade of B in all of the above courses and must have a B.Mus. degree with a minimum CGPA of 3.00.
### 7.2.10 Minor in Music History for Performers

Available to all students in Performance (Major or Honours) programs. This option will take the place of music electives, as well as history, literature and performance practice complementary courses, in Performance programs.

<table>
<thead>
<tr>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HISTORY</td>
</tr>
<tr>
<td>MUHL570 Research Methods in Music</td>
</tr>
<tr>
<td>plus 5 Music History complementary courses chosen freely from Groups I and II</td>
</tr>
</tbody>
</table>

**Group I**

| MUTH220 Women in Music | 3 |
| MUHL377 Baroque Opera | 3 |
| MUHL379 Solo Song 1100-1700 | 3 |
| MUHL380 Medieval Music | 3 |
| MUHL381 Renaissance Music | 3 |
| MUHL382 Baroque Music | 3 |
| MUHL385 Keyboard Literature before 1750 | 3 |
| MUHL591D1 (1.5) Paleography and MUHL591D2 (1.5) Paleography | 3 |
| MUPP381 Topics: Performance Practice before 1800 | 3 |

**Group II**

| MUTH330 Music and Film | 3 |
| MUTH362 Popular Music | 3 |
| MUHL366 The Era of the Fortepiano | 3 |
| MUHL372 Solo Song outside Germany and Austria | 3 |
| MUHL383 Classical Music | 3 |
| MUHL384 Romantic Music | 3 |
| MUHL385 Early Twentieth-Century Music | 3 |
| MUHL386 Chamber Music Literature | 3 |
| MUHL387 Opera from Mozart to Puccini | 3 |
| MUHL388 Twentieth-Century Opera | 3 |
| MUHL389 Orchestral Literature | 3 |
| MUHL390 The German Lieb | 3 |
| MUHL391 Canadian Music | 3 |
| MUHL392 Music since 1945 | 3 |
| MUHL393 History of Jazz | 3 |
| MUHL396 Era of the Modern Piano | 3 |
| MUHL397 Choral Literature after 1750 | 3 |
| MUHL398 Wind Ensemble Literature after 1750 | 3 |
| MUPP385 Topics: Performance Practice after 1800 | 3 |

### 7.2.11 Minor in Music Technology

Available to Music students who wish to graduate with a knowledge of newer technologies and the impact they are having on the field of music.

Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Academic Affairs Office of the Faculty of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2004 and must be completed and returned to that office by May 15, 2004. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2004.

<table>
<thead>
<tr>
<th>CREDITS</th>
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<tbody>
<tr>
<td>PHYS224 Physics and Psychophysics of Music</td>
</tr>
<tr>
<td>PHYS225 Musical Acoustics</td>
</tr>
<tr>
<td>MUHL342 History of Electroacoustic Music</td>
</tr>
<tr>
<td>MUMT202 Fundamentals of New Media</td>
</tr>
<tr>
<td>MUMT203 Introduction to Digital Audio</td>
</tr>
<tr>
<td>MUMT301 Music and the Internet</td>
</tr>
<tr>
<td>MUMT302 New Media Production 1</td>
</tr>
<tr>
<td>MUMT303 New Media Production 2</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS** 24

### 7.3 Department of Performance

The Department offers undergraduate and graduate degree programs leading to the B.Mus. and M.Mus., and diploma programs leading to the L.Mus. and Artist Diploma in all areas of musical performance. Programs include regular practical instruction available on all instruments and a highly developed ensemble program. The programs offer a number of major options including Orchestral Training, Solo, Jazz, Early Music, and Church Music. The Orchestral Training program is the largest performance program – many of its graduates are now members of professional orchestras throughout North America and Europe. McGill ensembles perform many concerts each year, including a number in centres across North America. (Within the past several years, McGill ensembles have performed at Carnegie Hall, Le Grand Théâtre (Québec), the National Arts Centre, the International Buxtehude-Scheidt Festival, Lincoln Center, Roy Thomson Hall, Saile Wilfrid Pelletier, the International Association of Jazz Educators Convention in New Orleans, in Washington and Boston, Paris, London and Cork [Ireland], and at the Holetown Festival in Barbados.) In addition, they have recorded for McGill Records. These recordings have received considerable critical acclaim and a number of awards, including a Noah Greenberg Award, three Grand Prix du Disques, and a Juno Award.


Performance Programs are also available in Church Music, Early Music, and Jazz.

All full-time students in B.Mus. programs who have not been exempted from History Survey MUHL184 and MUHL185 on the basis of placement examinations are required to enrol in one or both courses in their first year of study at the Faculty of Music and until such time as they obtain a passing grade in each. (Upon the recommendation of the adviser and the approval of the Chair of the Department of Theory, this requirement may be deferred for one year.)

The course MUPG100 Life as a Professional Musician is a requirement for all Performance students to be completed within the first year of study.

For each program, all courses listed are REQUIRED Courses unless otherwise indicated.

#### 7.3.1 B.Mus. with a Major In Performance (Piano)

For prerequisite requirements for this program, see section 7.1 "Four-Year Program (Prerequisite Courses)".

<table>
<thead>
<tr>
<th>CREDITS</th>
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<tbody>
<tr>
<td>PERFORMANCE</td>
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<tr>
<td>MUEN493 Choral Ensembles</td>
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<tr>
<td>(during each of the first four terms)</td>
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<tr>
<td>MUIN230 Performance Practical Instruction 3</td>
</tr>
<tr>
<td>MUIN231 Performance 1 Examination</td>
</tr>
<tr>
<td>MUIN330 Performance Practical Instruction 5</td>
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<tr>
<td>MUIN340 Performance 2 Examination</td>
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<tr>
<td>MUIN430 Performance Practical Instruction 7</td>
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<tr>
<td>MUIN431 Performance 3 Examination</td>
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<tr>
<td>MUIN433 Piano Techniques 3</td>
</tr>
<tr>
<td>MUPG541 Senior Piano Seminar 1</td>
</tr>
<tr>
<td>MUPG542 Senior Piano Seminar 2</td>
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</table>

**COMPLEMENTARY PERFORMANCE** 6

6 credits of ensembles from MUEN481, MUEN483, MUEN484, and MUEN485

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<tr>
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<tbody>
<tr>
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<td>MUTH210 Tonal Theory and Analysis 1</td>
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<tr>
<td>MUTH211 Tonal Theory and Analysis 2</td>
</tr>
<tr>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis</td>
</tr>
</tbody>
</table>
7.3.2 B.Mus. with a Major In Performance (Organ, Harpsichord, Guitar, Baroque Instruments)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

<table>
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<td>PERFORMANCE</td>
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<td>8</td>
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<tr>
<td>4</td>
<td>MUNI230 Performance Practical Instruction 3</td>
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<td>4</td>
<td>MUNI231 Performance 1 Examination</td>
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<td>MUNI331 Performance 2 Examination</td>
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<td>MUPG433 Piano Techniques 3</td>
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<td>2</td>
<td>MUPG541 Senior Piano Seminar 1</td>
</tr>
<tr>
<td>2</td>
<td>MUPG542 Senior Piano Seminar 2</td>
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<tr>
<td>8</td>
<td>Keyboard, Second Study (Organ, Harpsichord, Jazz Piano, Keyboard Technology)</td>
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<th>THEORY</th>
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<td>MUTH210 Tonal Theory and Analysis 1</td>
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<td>MUTH211 Tonal Theory and Analysis 2</td>
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<tr>
<td>3</td>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis</td>
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<tr>
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<td>MUTH311 20th-Century Theory and Analysis</td>
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<td>MUSP229 Musicianship 3</td>
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<td>MUSP329 Musicianship 5</td>
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<td>10</td>
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<th>CREDITS</th>
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<tr>
<td>96 - 98</td>
<td>96 - 98</td>
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</tbody>
</table>

7.3.3 B.Mus. with a Major in Keyboard Studies (Piano, with senior level studies in a Second Keyboard Instrument)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

<table>
<thead>
<tr>
<th>CREDITS</th>
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<td>Keyboard, Second Study (Piano, Organ, Harpsichord, Jazz Piano, Keyboard Technology)</td>
</tr>
<tr>
<td>12</td>
<td>Basic Ensemble Training:</td>
</tr>
<tr>
<td>6</td>
<td>Choral Ensemble during each of the first six terms</td>
</tr>
<tr>
<td>6</td>
<td>Complementary Ensembles</td>
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</table>

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>THEORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>MUTH210 Tonal Theory and Analysis 1</td>
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<tr>
<td>3</td>
<td>MUTH211 Tonal Theory and Analysis 2</td>
</tr>
<tr>
<td>3</td>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis</td>
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<tr>
<td>3</td>
<td>MUTH311 20th-Century Theory and Analysis</td>
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<td>2</td>
<td>MUSP231 Musicianship 4</td>
</tr>
<tr>
<td>2</td>
<td>MUSP329 Musicianship 5</td>
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<td>2</td>
<td>MUSP331 Musicianship 6</td>
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<table>
<thead>
<tr>
<th>CREDITS</th>
<th>COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>(courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)</td>
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<table>
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<tr>
<th>CREDITS</th>
<th>MUSIC ELECTIVES</th>
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<tr>
<td>10</td>
<td>Jazz Second Study students must include as part of their elective requirements MUJZ160 Jazz Materials 1, MUJZ161 Jazz Materials 2, MUJZ223 Jazz Improvisation 1, MUJZ224 Jazz Improvisation 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>ARTS AND SCIENCE ELECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>TOTAL CREDITS 96 - 98</td>
</tr>
</tbody>
</table>

7.3.4 B.Mus. with a Major in Keyboard Studies (Organ, Harpsichord, with senior level studies in a Second Keyboard Instrument, Jazz Piano)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>PERFORMANCE</th>
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<tbody>
<tr>
<td>16</td>
<td>PERFORMANCE</td>
</tr>
<tr>
<td>8</td>
<td>Keyboard, Second Study (Piano, Organ, Harpsichord, Jazz Piano, Keyboard Technology)</td>
</tr>
<tr>
<td>12</td>
<td>Basic Ensemble Training:</td>
</tr>
<tr>
<td>6</td>
<td>Choral Ensemble during each of the first six terms</td>
</tr>
<tr>
<td>6</td>
<td>Complementary Ensembles</td>
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</table>

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>THEORY</th>
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<tbody>
<tr>
<td>12</td>
<td>MUTH210 Tonal Theory and Analysis 1</td>
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<td>MUTH211 Tonal Theory and Analysis 2</td>
</tr>
<tr>
<td>3</td>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis</td>
</tr>
<tr>
<td>3</td>
<td>MUTH311 20th-Century Theory and Analysis</td>
</tr>
</tbody>
</table>
7.3.5 B.Mus. with a Major in Performance (Voice)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

**Special Requirements:**
1. Continuation in the program requires that a minimum grade of B- be maintained in Voice practical study.
2. Prior to, or concurrent with registration in the corresponding Diction courses, the Voice Major must furnish evidence of having completed ESLN400 or ESLN401, ITAL205D1/ITAL205D2, GERM202, and FRSL207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the Arts and Science requirements above, or by extra University courses.

7.3.6 B.Mus. with a Major in Performance (Orchestral Instruments)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

**CREDITS**

**PERFORMANCE**
Practical: Major (4 credits each term) 24
Performance 3 Examination

Basic Ensemble Training: during every term of enrolment as a full-time or part-time student

Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble
Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble
Strings: Orchestra or Contemporary Music Ensemble

PLUS an assigned small ensemble min. 6

**THEORY**

MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and Analysis 3
MUTH311 20th-Century Theory and Analysis 3

**MUSICIANSHIP**

MUSP229 Musicanship 3 2
MUSP231 Musicanship 4 2
MUSP329 Musicanship 5 2
MUSP331 Musicanship 6 2

**COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE**
(courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)

6

**MUSIC ELECTIVES**

10 - 12

**ARTS AND SCIENCE ELECTIVES**

18

**TOTAL CREDITS**

96 - 98

7.3.7 B.Mus. with Honours in Performance (Voice)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

**CREDITS**

**PERFORMANCE**
Practical: Honours (4 credits each term) 24
Honours Performance 2 Examination and Honours Performance 3 Examination
MUIN300 Vocal Repertoire Coaching 1 (this 2-credit course is to be taken twice)
MUSIC – PERFORMANCE

By 2004-2005

Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Continuation in the program requires that a minimum grade of A- be maintained in practical instruction/exams, ensembles, and Voice Coaching.
3. Prior to, or concurrent with registration in the corresponding Diction courses, the Honours Voice student must furnish evidence of having completed ESLN400 or ESLN401, ITAL205D1/ITAL205D2, GERM202, and FRSL207, or their equivalent. This language requirement may be fulfilled by appropriate High School or CEGEP courses, or as part of the Arts and Science requirements above, or by extra University courses.

7.3.8 B.Mus. with Honours in Performance (Piano)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

PERFORMANCE

MUEN493 Choral Ensembles (during each of the first four terms) 8
MUEN494 Contemporary Music Ensemble 2
MUIN230 Performance Practical Instruction 3 4
MUIN231 Performance 1 Examination 4
MUIN340 Honours Practical Instruction 5 4
MUIN341 Honours Performance 2 Examination 4
MUIN433 Piano Techniques 3 0
MUIN440 Honours Practical Instruction 7 4

MUIN441 Honours Performance 3 Examination 4
MUPG541 Senior Piano Seminar 1 2
MUPG542 Senior Piano Seminar 2 2

COMPLEMENTARY PERFORMANCE
6 credits of ensembles, with Departmental Approval.

THEORY

MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH327D1 19th-Century Analysis 2
MUTH327D2 19th-Century Analysis 2
MUTH427D1 20th-Century Analysis 2
MUTH427D2 20th-Century Analysis 2

MUSICIANSHP

MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

MUSIC HISTORY AND LITERATURE

MUHL366 The Era of the Fortepiano 3
MUHL396 Era of the Modern Piano 3

ARTS AND SCIENCE ELECTIVES

3

TOTAL CREDITS
99
COMPLEMENTARY MUSIC HISTORY OR LITERATURE 6
Organ/Harpischord must include the following:
MUHL395 Keyboard Literature before 1750
MUHL396 Era of the Modern Piano
Orchestral Instruments must include the following:
MUHL389 Orchestral Literature
PERFORMANCE PRACTICE ELECTIVE 3
MUSIC ELECTIVES (with Departmental Approval) 6
(except Harpsichord and Organ students)
COMPLEMENTARY MUSIC (for Organ students only) 6
Must include Continuo MUPG272D1 and MUPG272D2
CONTINUO (for Harpsichord students only)
MUPG272D1 Continuo 2
MUPG272D2 Continuo 2
MUPG372D1 Continuo 1
MUPG372D2 Continuo 1
6 ARTS AND SCIENCE ELECTIVES 18
TOTAL CREDITS 99
Ensemble Requirements:
1. Students majoring in violin, viola, or cello must commence their assigned ensembles with four terms of string quartets.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.
Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Grade of A- in practical instruction/exams and ensembles.
* Harpsichord and viola da gamba students will take MUPP381 (Topics: Performance Practice before 1800) instead of Contemporary Music Ensemble.

7.3.10 B.Mus. with a Major in Performance (ChurchMusic)
For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS
PERFORMANCE
Practical: Major (4 credits each term) 24
Performance 3 Examination 12
Basic Ensemble Training: (2 credits per term in each term of enrolment) 12
Voice Majors: Students must complete two terms of Choral Ensemble and may choose Cappella Antica or Collegium Musicum to make up the total of 12 credits.
Instrumentalists: students must register in Collegium Musicum.
Keyboard players: students must normally register in Choral Ensemble but with the permission of the Area Chair may play continuo in Collegium Musicum to satisfy their Basic Ensemble requirement.
Early Music Ensemble
With the permission of the instructor and the Area Chair, students may participate in a second Basic Ensemble to fulfill the Early Music Ensemble requirement. Any extra credits earned may be applied as music electives.

THEORY 12
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and Analysis 3
MUTH311 20th-Century Theory and Analysis 3

MUSICIANSHIP 8
MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

HISTORY 6
MUHL399 Church Music 3

MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE 9
MUPP381 Topics: Performance Practice before 1800 3
plus 6 complementary credits from the following with at least one course from each group
(a) MUHL380 (3) Medieval Music
MUHL381 (3) Renaissance Music
MUHL382 (3) Baroque Music
MUHL383 (3) Classical Music
(b) MUHL395 Keyboard Literature before 1750 3
MUHL570 (3) Research Methods in Music
MUHL591D1 (1.5) Paleography
MUHL591D2 (1.5) Paleography

MUSIC EDUCATION 9
MUCT235 Vocal Techniques 3
MUCT315 Choral Conducting 1 3

MUCT415 Choral Conducting 2 3

MUSIC ELECTIVES (with Departmental Approval) 6
ARTS AND SCIENCE ELECTIVES 18
Students are encouraged to include at least one course in the Faculty of Religious Studies.
TOTAL CREDITS 99
Special Requirements:
1. Students majoring in Performance must achieve at least a B- in their Performance 1 Examination, and in each subsequent term. Students majoring in Church Music are not required to perform their examinations from memory.

7.3.11 B.Mus. with a Major in Early Music Performance (Baroque Violin, Viola, Cello, Viola da Gamba, Flute, Recorder, Oboe, Voice, Organ and Harpsichord)
For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)”.

CREDITS
PERFORMANCE
Practical: Major (4 credits each term) 24
Performance 3 Examination 12
Basic Ensemble Training: Choral Ensemble during each of the first six terms MUPG272D1 Continuo 2
MUPG272D2 Continuo 2
Voice Majors: Students must complete two terms of Choral Ensemble and may choose Cappella Antica or Collegium Musicum to make up the total of 12 credits.
Instrumentalists: students must register in Collegium Musicum.
Keyboard players: students must normally register in Choral Ensemble but with the permission of the Area Chair may play continuo in Collegium Musicum to satisfy their Basic Ensemble requirement.

Early Music Ensemble
With the permission of the instructor and the Area Chair, students may participate in a second Basic Ensemble to fulfill the Early Music Ensemble requirement. Any extra credits earned may be applied as music electives.

THEORY 12
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and Analysis 3
MUTH311 20th-Century Theory and Analysis 3

MUSICIANSHIP 8
MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE 9
MUPP381 Topics: Performance Practice before 1800 3
plus 6 complementary credits from the following with at least one course from each group
(a) MUHL380 (3) Medieval Music
MUHL381 (3) Renaissance Music
MUHL382 (3) Baroque Music
MUHL383 (3) Classical Music
(b) MUHL395 Keyboard Literature before 1750 3
MUHL570 (3) Research Methods in Music
MUHL591D1 (1.5) Paleography
MUHL591D2 (1.5) Paleography
MUSIC – PERFORMANCE

MUSIC ELECTIVES 6 (except for Harpsichord, Organ or Voice students)
CONTINUO (for Harpsichord or Organ students only)
MUPG272D1 Continuo 2
MUPG272D2 Continuo 2
MUPG372D1 Continuo 1
MUPG372D2 Continuo 1

DICTION (for voice students only)
MUPG210 Italian Diction 2
MUPG211 French Diction 2
MUPG212 English Diction 2
MUPG213 German Diction 2

ARTS AND SCIENCE ELECTIVES 18
TOTAL CREDITS 95 or 97

Special Requirements:
1. Grade of B- in practical instruction/exams and ensembles.
2. Prior to, or concurrent with registration in the corresponding
   Diction courses, the Voice Major must furnish evidence of hav-
   ing completed ESLN400 or ESLN401, ITAL205D1/
   ITAL205D2, GERM202, and FRSL207, or their equivalent.
   This language requirement may be fulfilled by appropriate High
   School or CEGEP courses, or as part of the Arts and Science
   requirements above, or by extra University courses.

7.3.12 B.Mus. with Honours in Early Music Performance
(BaroqueViolin, Viola, Cello, Viola da Gamba, Flute,
Recorder, Oboe, Voice, Organ and Harpsichord)

For prerequisite requirements for this program, see section 7.1
"Four-Year Program (Prerequisite Courses)".

PERFORMANCE
Practical: Honours (4 credits each term) 24
Honours Performance 2 Examination and
Honours Performance 3 Examination 12
Basic Ensemble Training; (2 credits per term in each
term of enrolment) 8
Voice Majors: Students must complete two terms of
Choral Ensemble and may choose Cappella Antica
or Collegium Musicum to make up the total of 12
credits.
Instrumentalists: students must register in Collegium
Musicum.
Keyboard players: students must normally register in
Choral Ensemble but with the permission of the
Area Chair may play continuo in Collegium Musicum
to satisfy their Basic Ensemble requirement.
Early Music Ensemble
With the permission of the instructor and the Area
Chair, students may participate in a second Basic
Ensemble to fulfill the Early Music Ensemble
requirement. Any extra credits earned may be applied
as music electives.

THEORY
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and
Analysis 3
MUTH311 20th-Century Theory and Analysis 3
MUTH426 Analysis of Early Music 3

MUSICIANSHIP
MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE
MUHL570 Research Methods in Music 3
MUPP381 Topics: Performance Practice before
1800 3

plus 6 complementary credits from the following with at
least one course from each group
(a) MUHL380 (3) Medieval Music
MUHL381 (3) Renaissance Music
MUHL382 (3) Baroque Music
MUHL383 (3) Classical Music
(b) MUHL377 (3) Baroque Opera
MUHL379 (3) Solo Song 1100-1700
MUHL395 (3) Keyboard Literature before
1750

MUHL591D1 (1.5) Paleography
MUHL591D2 (1.5) Paleography

MUSIC ELECTIVES 6 (except for Harpsichord, Organ or Voice students)
CONTINUO (for Harpsichord or Organ students only)
MUPG272D1 Continuo 2
MUPG272D2 Continuo 2
MUPG372D1 Continuo 1
MUPG372D2 Continuo 1

DICTION (for Voice students only)
MUPG210 Italian Diction 2
MUPG211 French Diction 2
MUPG212 English Diction 2
MUPG213 German Diction 2

ARTS AND SCIENCE ELECTIVES 18
TOTAL CREDITS 101 or 103

Special Requirements:
1. Cumulative Grade Point Average of 3.00 or better.
2. Grade of A- in practical instruction/exams, ensembles, and
   Voice Coaching.
3. Grade of A or B in MUHL570 and in all History, Literature or
   Performance Practice courses.
4. Prior to, or concurrent with registration in the corresponding
   Diction courses, the Voice Major must furnish evidence of hav-
   ing completed ESLN400 or ESLN401, ITAL205D1/
   ITAL205D2, GERM202, and FRSL207, or their equivalent.
   This language requirement may be fulfilled by appropriate High
   School or CEGEP courses, or as part of the Arts and Science
   requirements above, or by extra University courses.

7.3.13 B.Mus. with a Major in Jazz Performance
(Saxophone, Trumpet, Trombone, Drums, Piano,
Guitar, Bass, Voice)

For prerequisite requirements for this program, see section 7.1
"Four-Year Program (Prerequisite Courses)".

PERFORMANCE
Practical: Jazz Major (4 credits each term). Completion
of Performance 3 Examination 24
Basic Ensemble Training: 4 credits per year for 1 year
Orchestral Instruments:
Winds: Orchestra or Wind Symphony
Bass: Orchestra
Other Instruments: Choral Ensemble or Vocal Jazz
Workshop
MUEN470 Jazz Combo 4
MUEN495 Jazz Ensembles 8
MUJZ223 Jazz Improvisation/Musicianship 1 3
MUJZ224 Jazz Improvisation/Musicianship 2 3
 MUJZ423  Jazz Improvisation/Musicianship 3  3
 MUJZ424  Jazz Improvisation/Musicianship 4  3

THEORY
 MUTH312  19th-Century Theory and Analysis/Jazz Majors  3
 MUTH313  20th-Century Theory and Analysis/Jazz Majors  3
 MUJZ261D1  Jazz Arranging  3
 MUJZ261D2  Jazz Arranging  3
 MUJZ340D1  Jazz Composition  3
 MUJZ340D2  Jazz Composition  3

HISTORY
 MUHL393  History of Jazz  3
 MUJZ493  Jazz Performance Practice  3

PEDAGOGY
 MUJZ356  Jazz Pedagogy  3

COMPLEMENTARY MUSIC
 One of the following pairs:
 MUJZ440D1  (2) Advanced Jazz Composition
 MUJZ440D2  (2) Advanced Jazz Composition
 or MUJZ461D1  (2) Advanced Jazz Arranging
 MUJZ461D2  (2) Advanced Jazz Arranging

ARTS AND SCIENCE ELECTIVES  18

TOTAL CREDITS  101

Special Requirements:
1. Students majoring in Jazz Performance must achieve a minimum of B- in all Jazz courses and Practical study, including Jazz Combo and Jazz Ensemble, excluding MUJZ1xx courses.
2. Prior to graduation, all woodwind Jazz Performance Majors (saxophone, clarinet, flute) will be required to pass a non-credit Doubling Proficiency test (two of: MUIN180, MUIN181, and/or MUIN182) on their two non-major instruments.

Note: MUJT356 may be substituted by graduate pedagogy course (MUJZ601).

7.3.14 Licentiate in Music (L.Mus.) (Piano)

PERFORMANCE
 MUEN493  Choral Ensembles  8 (during each of the first four terms)
 MUIN250  L.Mus. Practical Instruction 1  8
 MUIN251  L.Mus. Performance 1 Examination  8
 MUIN350  L.Mus. Practical Instruction 3  8
 MUIN351  L.Mus. Performance 2 Examination  8
 MUIN433  Piano Techniques 3  0
 MUIN450  L.Mus. Practical Instruction 5  8
 MUIN451  L.Mus. Performance 3 Examination  8
 MUPG541  Senior Piano Seminar 1  2
 MUPG542  Senior Piano Seminar 2  2

COMPLEMENTARY PERFORMANCE
 6 credits of ensembles from MUEN481, MUEN483, MUEN484, and MUEN485

THEORY
 MUTH110  Melody and Counterpoint  3
 MUTH111  Elementary Harmony and Analysis  3
 MUTH210  Tonal Theory and Analysis 1  3
 MUTH211  Tonal Theory and Analysis 2  3

MUSCIANSHIP
 MUSP129  Musicianship 1  3
 MUSP131  Musicianship 2  3
 MUSP229  Musicianship 3  2
 MUSP231  Musicianship 4  2
 MUSP170  Keyboard Proficiency 1  1
 MUSP171  Keyboard Lab 1  1

DICTION (for Voice Students only)
 MUPG210  Italian Diction  2
 MUPG211  French Diction  2
 MUPG212  English Diction  2
 MUPG213  German Diction  2

PERFORMANCE (for Voice students only)
 MUIN300  Vocal Repertoire Coaching 1  2
 MUIN301  Vocal Repertoire Coaching 2  2

TOTAL CREDITS  94 or 100

Ensemble Requirements:
1. Students majoring in violin, viola, or cello must commence their assigned ensembles with four terms of string quartets.
2. Violin Majors will be required to complete two terms of ensemble playing on viola.

Special Requirements:
1. Continuation in the program requires that a grade of A- be maintained in practical instruction/exams, ensembles, and Voice Coaching.
2. Candidates must take the L.Mus. Performance 1 Examination at the end of their first year of study and the L.Mus. Performance 2 and 3 Examinations in each of the next two years if they hope to complete the program in the normal length of time.

7.3.16 Artist Diploma (Voice)

[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

CREDITS

PERFORMANCE

32

Three public recitals and two concertos
MUPG 690 Vocal Styles and Conventions
MUIN600 Vocal Repertoire Coaching
and MUIN601
Basic Ensemble Training: during every term of enrolment as a full-time or part-time student – minimum of 8 complementary credits from:
MUE472 Cappella Antica
MUE401 Song Interpretation
MUE403 Early Music Ensemble
MUE406 Cappella McGill
MUE495 Choral Ensembles
MUE494 Contemporary Music Ensemble
MUE496 Opera Studio
MUE496 Opera Theatre

THEORY

6

MUTH310 Mid and Late 19th-Century Theory and Analysis
MUTH311 20th-Century Theory and Analysis

MUSICIANSHIP

4

MUSP329 Musicanship 5
MUSP331 Musicanship 6

COMPLEMENTARY MUSIC HISTORY OR PERFORMANCE PRACTICE

6

(courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)

TOTAL CREDITS 60

Ensemble Requirement:
1. Violin Majors will be required to complete two terms of ensemble playing on viola.

Special Requirements:
1. Continuation in the program requires that a grade of A- in practical instruction/exams and ensembles.
2. Guitarists are required to present three recitals while only two are demanded of keyboard and orchestral players. This third recital may be counted as a substitute for 4 credits of ensemble. For concerto requirements, refer to section 8.2.4 "Post-Graduate Study."

Note: Courses taken as credit towards a B.Mus. or L.Mus. may not be applied to the Artist Diploma requirements except for the required courses in Theory and Musicanship.

7.3.18 Special Prerequisite Courses for M.Mus. in Performance

Piano Accompaniment

(Credit: Piano)

One of:
MUEL372 (3) Solo Song outside Germany and Austria
MUEL390 (3) The German Lied

Two of:
MUPG210 (2) Italian Diction (or equivalent)
MUPG211 (2) French Diction (or equivalent)
MUPG212 (2) English Diction (or equivalent)
MUPG213 (2) German Diction (or equivalent)

Orchestral Conducting

27

MUCO260 Instruments of the Orchestra
MUCO261 Elementary Orchestration
MUCO460D1 Advanced Orchestration
MUCO460D2 Advanced Orchestration
MUHL389 Orchestral Literature
MUIN201 String Techniques
MUIN202 Woodwind Techniques
MUIN203 Brass Techniques
MUIN204 Percussion Techniques
MUPG315D1 Introduction to Orchestral Conducting (or equivalent)
MUPG315D2 Introduction to Orchestral Conducting (or equivalent)
7.4 Designated Major Program

**B.Mus. with a Designated Major**

(The courses comprising the Major field must be approved by the departments concerned prior to registration in the program.)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses).

**CREDITS**

<table>
<thead>
<tr>
<th>DESIGNATED MAJOR AREA*</th>
<th>32</th>
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<tbody>
<tr>
<td>THEORY</td>
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<tr>
<td>MUTH210 Tonal Theory and Analysis 1</td>
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<tr>
<td>MUTH211 Tonal Theory and Analysis 2</td>
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<tr>
<td>MUTH310 Mid and Late 19th-Century Theory and Analysis</td>
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<td>MUSP331 Musicianship 6</td>
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<tr>
<td>COMPLEMENTARY MUSIC HISTORY, LITERATURE OR PERFORMANCE PRACTICE</td>
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<tr>
<td>(courses with a MUHL or MUPP prefix, may include MUHL362 or MUHL393 but not both)</td>
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</tr>
<tr>
<td>PERFORMANCE</td>
<td></td>
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<tr>
<td>Practical Concentration: 2 credits per term</td>
<td>8</td>
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<tr>
<td>Completion of Concentration 2 Examination</td>
<td>8</td>
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<tr>
<td>Basic Ensemble Training: minimum of 4 credits per year for 2 years</td>
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<tr>
<td>Orchestral Instruments: Winds: Orchestra, Wind Symphony or Contemporary Music Ensemble</td>
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<tr>
<td>Percussion: Orchestra, Wind Symphony or Contemporary Music Ensemble</td>
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<tr>
<td>Strings: Orchestra or Contemporary Music Ensemble</td>
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<tr>
<td>Other Instruments: Choral Ensemble</td>
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<tr>
<td>ARTS AND SCIENCE ELECTIVES</td>
<td>18</td>
</tr>
<tr>
<td>TOTAL CREDITS</td>
<td>92</td>
</tr>
</tbody>
</table>

* The courses comprising the Major field must be approved by the departments concerned prior to registration in the program. When offered concurrently with the Bachelor of Music (Major in Music Education), the program offers students the opportunity to obtain a Bachelor of Education degree and a Bachelor of Music degree after the completion of 143/144 credits, normally 5 years (173/174 credits or 6 years for out-of-province students). The concurrent program combines academic studies in music, professional studies and field experience. The two degrees are awarded during the same convocation period.

To be admitted to the Concurrent program, students must satisfy the regular admission requirements of the Faculty of Education and the Faculty of Music. Normally, students will be admitted to both components of the Concurrent program simultaneously. Applicants who already hold a Bachelor of Music degree should apply to the Faculty of Education. Students who have completed 30 or more credits in a Bachelor of Music program, exclusive of the Freshman Year for out-of-province students, may apply for admission to the Concurrent program.

All applications for the Concurrent program are to be made to the Admissions Office of the Faculty of Music.

Music Education in the Faculty of Music focuses on the development of the prospective music educator as a musician. This is achieved not only through core music history, theory, musicianship and performance courses but also through different instrumental, vocal and conducting techniques courses. Laboratory experiences provide an opportunity to develop facility with basic music rehearsing/teaching techniques, with emphasis on the ability to diagnose and correct technical and musical problems.

The components of the 143/144-credit Bachelor of Education in Music/ Bachelor of Music (Music Education) are as follows: 53/54 professional credits, 78 music academic credits (including 9 music elective credits), 12 elective credits.

Students who wish to complete only the Bachelor of Education in Music have the option of doing so after the successful completion of the first two years of the concurrent program and completion of MUIJ 321 Concentration 2 Exam or equivalent. Students who decide to complete only a Bachelor of Music may transfer at any time into the Bachelor of Music, Faculty Program. Students in the Concurrent B.Mus./B.Ed. who receive an F or J in any Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program, however, they may apply for transfer to the B.Mus. Faculty Program.

CONCURRENT BACHELOR OF MUSIC (MUSIC EDUCATION) AND BACHELOR OF EDUCATION IN MUSIC PROGRAM (143/144 credits)

For prerequisite requirements for this program, see section 7.1 “Four-Year Program (Prerequisite Courses)” CREDITS 78
THEORY COURSES 14
MUTH210 Tonal Theory and Analysis 1 3
MUTH211 Tonal Theory and Analysis 2 3
MUTH310 Mid and Late 19th-Century Theory and Analysis 3
MUTH311 20th-Century Theory and Analysis 3
MUTH461 Choral and Keyboard Arranging 1 2

MUSICIANSHIP COURSES 8
MUSP229 Musicianship 3 2
MUSP231 Musicianship 4 2
MUSP329 Musicianship 5 2
MUSP331 Musicianship 6 2

PERFORMANCE COURSES 16
Practical Concentration 8
Basic Ensemble Training 8

COMPLEMENTARY MUSIC HISTORY COURSES 6
3 credits chosen from Music History (MUHL) offerings at the 300 level 3
3 credits of Music History/Literature chosen from:
MUHL389 Orchestral Literature 3
MUHL397 Choral Literature after 1750 3
MUHL398 Wind Ensemble Literature after 1750 3

MUSIC EDUCATION COURSES 25
MUIT202 Woodwind Techniques 3
MUIT203 Brass Techniques 3
MUIT204 Percussion Techniques 3
MUCT235 Vocal Techniques 3
MUGT215 Basic Conducting Techniques 1
MUGT356 Music for Children 1: Philosophy and Techniques 3
MUGT357 Music for Children 2: Philosophy and Techniques 3
MUIT401 Issues in Music Education 3
MUIT356 Jazz Instruction: Philosophy and Techniques 3

COMPLEMENTARY MUSIC EDUCATION COURSES 9
MUIT201 String Techniques 3
or MUIT250 Guitar Techniques 3
MUCT315 Choral Conducting 1 3
or MUIT315 Instrumental Conducting 3
EDEA362 Movement, Music and Communication 3

EDEA301 Assignment Card (including Voice Coaching) by the specified deadline. The deadline for withdrawing from practical lessons is the end of the second week of classes in any term.

8.1 Practical Subjects

8.1.1 Registration/Withdrawal
Registration for practical instruction and examinations is not available on Minerva. Students are reminded to submit a Lesson Assignment Card to the Department of Performance by the specified deadlines. Practical Instruction will then be added onto students’ records.

The deadline for withdrawing from practical lessons is the end of the second week of classes in any term.

8.1.2 Assignment of Teachers
The assignment of students to teachers for private lessons is the responsibility of the Chair of the Department of Performance. Student requests for specific teachers will be taken into consideration where possible. In general, students will be assigned on a first priority basis to study with full-time members of the teaching staff.

It is understood that returning students will study with the same teacher unless prior arrangements have been made with the Chair of the Department in consultation with the teachers concerned. However, those students who do not return the Lesson Assignment Card (including Voice Coaching) by the specified deadline cannot be guaranteed the teacher of their choice, and they will be assessed a late fee of $25. Teacher assignments will be made soon after the period of enrolment and posted on the notice boards during the first week of classes. Following this assignment, it is the students’ responsibility to contact their teachers and arrange lesson times.

Individual lessons missed as a consequence of the instructor’s absence will be made up at the mutual convenience of the instructor and student. Lessons missed as the result of the student’s absence will be made up only if notice of cancellation has been given 48 hours in advance, or if a doctor’s certificate is produced and prior notice of the cancellation is given.

Note: Students who are taking practical lessons in fulfillment of the requirements for any degree are required to study with teachers on the staff of the Faculty of Music.

8.1.3 Credit Weights for Practical Study
B.Mus. Elective or Concentration 2 credits per term
B.Mus. Major or Honours 4 credits per term
8.2 Examinations and Goals in Practical Subjects

Different levels of achievement are required of students depending upon the program of study for which they are registered. These levels are defined in part by the difficulty of material and length of program required at the various examinations, and in part by the examiners' assessment of how well the student plays this material.

In general there are five categories of practical study: Concentration Study, Major and Honours Study, Licentiate Study, Post-Graduate Study, and Elective Study.

8.2.1 Concentration Study

A student in the Faculty Program or specializing in Composition, Music Education, Music History, Music Technology or Theory is obliged to present two examinations in order to fulfill the practical requirement of these programs. These are: the Concentration 1 Examination MUIN221 and the Concentration 2 Examination MUIN321.

The sequence would normally be:
MUIN120 Practical Instruction 1
MUIN121 Practical Instruction 2
MUIN220 Practical Instruction 3
MUIN221 Concentration 1 Examination
MUIN320 Practical Instruction 5
MUIN321 Concentration 2 Examination

Concentration 1 Examination (MUIN221)
Purpose: To assess the student's progress in the practical area and make recommendations for further study. The panel may recommend to the Department in which the student is registered that: a) the student be asked to withdraw from the program; or b) the student, having made sufficient progress, may proceed to the Concentration 2 Exam.
Panel: A minimum of two staff members (not including the teacher), one of whom must be from the area. The panel is appointed by the Chair of the Department of Performance. At the discretion of the Departmental Chair, the teacher may be included on panels of three or more examiners.
Distribution of Marks: For students registered in practical lessons through the Faculty of Music, the teacher submits a term mark which is included as 50% of the final mark. In instances where the student's teacher is on the panel, the teacher's global evaluation will nevertheless be equal to 50% of the final mark. When a student is not registered for lessons through the Faculty of Music, the final mark will be the average of the marks submitted by the examination panel.

Concentration 2 Examination (MUIN321)
Purpose: To determine that the student is sufficiently accomplished to qualify for the degree of Bachelor of Music.
Panel: A minimum of two staff members (not including the teacher), one of whom must be from the area. The panel is appointed by the Chair of the Department of Performance. At the discretion of the Departmental Chair, the teacher may be included on panels of three or more examiners.
Distribution of Marks: For students registered in practical lessons through the Faculty of Music, the teacher submits a term mark which is included as 50% of the final mark. In instances where the student's teacher is on the panel, the teacher's global evaluation will nevertheless be equal to 33% of the final mark. In instances where the students' teacher is on the panel, the teacher's global evaluation will nevertheless be equal to 33% of the final mark. When a student is not registered for lessons through the Faculty of Music, the final mark will be the average of the marks submitted by the examination panel.

8.2.2 Major and Honours Study

A student majoring in Performance (B.Mus. or L.Mus.) must show talent for this field before being admitted to the program. The practical requirement for these programs comprises examinations and recitals as specified in the programs.

Any U1 Performance Major (except Jazz Performance) may indicate an intention to pursue an Honours program but admission becomes final only after the results of the Major Performance 1 Exam are available. Admission to the Honours program requires a grade of A- or better in the Performance 1 Exam (or most recent exam), a GPA of 3.00 or better, the approval of the student’s teacher and the examining panel. Following the Major Performance 1 Exam, Honours students must present the Honours Performance 2 Exam and the Honours Performance 3 Exam.

B.MUS. MAJOR IN PERFORMANCE, MAJOR IN EARLY MUSIC PERFORMANCE, AND MAJOR IN JAZZ PERFORMANCE

The sequence would normally be:
MUIN130 Performance Practical Instruction 1
MUIN131 Performance Practical Instruction 2
MUIN230 Performance Practical Instruction 3
MUIN231 Performance 1 Examination
MUIN330 Performance Practical Instruction 5
MUIN333 Piano Techniques 2
MUIN331 Performance 2 Examination
MUIN430 Performance Practical Instruction 7
MUIN433 Piano Techniques 3
MUIN431 Performance 3 Examination
MUIN369 Concerto (mandatory test for pianists)

Performance 1 Examination (MUIN331)
Purpose: To assess the student's progress in the practical area and determine whether or not the student may continue in the program. The panel may recommend to the Department that the student be: a) asked to withdraw from the program; b) permitted to continue to the Performance 2 Exam; c) admitted to the Performance Honours program.
Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.
Distribution of Marks: The teacher submits a term mark which is included as 50% of the final mark. In instances where the student's teacher is on the panel, the teacher's global evaluation will nevertheless be equal to 50% of the final mark.

Performance 2 Examination (MUIN331)
Purpose: To assess the student’s ability to perform a program of sufficient length and suitable repertoire as specified in the requirements for each instrument.
Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.
Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average.

Performance 3 Examination (MUIN331)
Purpose: All recitals are to be performed in public before a jury and are intended to demonstrate technical mastery of their instrument/voice as well as an understanding of different musical styles appropriate to their level of study.
Panel: A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.
Distribution of Marks: Each member of the panel submits a mark for the examination, with the final mark being the average.

B.MUS., HONOURS IN PERFORMANCE AND IN EARLY MUSIC PERFORMANCE

The sequence would normally be:
MUIN130 Performance Practical Instruction 1
MUIN131 Performance Practical Instruction 2
MUIN230 Performance Practical Instruction 3
MUIN231 Performance 1 Examination
MUIN340 Honours Practical Instruction 5
MUIN333 Piano Techniques 2
MUIN341 Honours Performance 2 Examination
MUIN351 L.Mus. Performance 2 Examination (MUIN351)
*Purpose:* The recital is a public presentation, before a jury, intended to demonstrate competence in public solo performance. Non-keyboard performers and singers must use appropriate accompaniment.
*Panel:* A minimum of three staff members, one of whom may be the student's teacher. The panel is appointed by the Chair of the Department of Performance.
*Distribution of Marks:* Each member of the panel submits a mark for the examination, with the final mark being the average.

L.Mus. Performance 3 Examination (MUIN451)
*Purpose:* All recitals are to be performed in public before a jury and are intended to demonstrate technical mastery of their instrument/voice as well as an understanding of different musical styles appropriate to their level of study.
*Panel:* A minimum of three staff members, one of whom may be the student's teacher. The panel is appointed by the Chair of the Department of Performance.
*Distribution of Marks:* Each member of the panel submits a mark for the examination, with the final mark being the average.

### 8.2.4 Post-Graduate Study
Artist Diploma candidates must present a number of public recitals and fulfill various special performance requirements (concertos, chamber music, orchestral passages, etc.). Grades of A- in all practical requirements are mandatory for continuation in the program.

M.Mus. candidates should consult the *Graduate and Postdoctoral Studies Calendar* for requirements of their program.

**ARTIST DIPLOMA**
The sequence would normally be:
- MUIN460 Artist Diploma Practical Instruction 1
- MUIN461 Artist Diploma Recital 1
- MUIN560 Artist Diploma Practical Instruction 3
- MUIN561 Artist Diploma Recital 2
- MUIN562 Artist Diploma Recital 3

In addition, the Artist Diploma program in orchestral instruments, piano and voice requires the candidate to present two concertos:
- MUIN469 Artist Diploma Concerto 1
- MUIN569 Artist Diploma Concerto 2

Applications for Artist Diploma Concerto hearings must be submitted to the Department of Performance Office five (5) weeks prior to the proposed date. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.

**Artist Diploma Recital 1 (MUIN461)**
*Purpose:* Recital programs are intended to demonstrate that the student is qualifed to engage in professional performance activities, and has attained the high level of performing ability required for the Artist Diploma.
*Panel:* The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned (in Voice recitals, one voice teacher plus one staff member from another area).
*Distribution of Marks:* Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass.

**Artist Diploma Recital 2 (MUIN561)**
*Purpose:* Recital programs are intended to demonstrate that the student is qualifed to engage in professional performance activities, and has attained the high level of performing ability required for the Artist Diploma.
*Panel:* The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned (in Voice recitals, one voice teacher plus one staff member from another area).
**Distribution of Marks:** Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass.

**Artistic Diploma Recital 3 (MUIN562)**

**Purpose:** Recital programs are intended to demonstrate that the student is qualified to engage in professional performance activities, and has attained the high level of performing ability required for the Artistic Diploma.

**Panel:** The panel consists of the Departmental Chair or delegate as well as two staff members from the area concerned (in Voice recitals, one voice teacher plus one staff member from another area).

**Distribution of Marks:** Examiners judge the recital independently and submit their evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass.

**Artistic Diploma Concerto 1 (MUIN469)**

**Purpose:** The Artistic Diploma program in orchestral instruments, piano and voice requires the candidate to present concertos which are normally examined only by a jury. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.

**Panel:** A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

**Distribution of Marks:** Examiners judge the concerto independently and submit their evaluation without consulting the other examiners. All the examiners must judge the concerto to be satisfactory for the candidate to pass.

**Artistic Diploma Concerto 2 (MUIN569)**

**Purpose:** The Artistic Diploma program in orchestral instruments, piano and voice requires the candidate to present concertos which are normally examined only by a jury. The concerto examinations may be planned for any time during the academic session subject to the availability of examiners and facilities.

**Panel:** A minimum of three staff members, one of whom may be the student’s teacher. The panel is appointed by the Chair of the Department of Performance.

**Distribution of Marks:** Examiners judge the concerto independently and submit their evaluation without consulting the other examiners. All the examiners must judge the concerto to be satisfactory for the candidate to pass.

**8.2.5 Elective Study**

Students may elect to pursue further practical study in addition to their curricular requirements. The student is not expected to follow a specific program. Additional fees apply.

**Other Examinations:**

It is the teachers’ prerogative to request a committee examination during any term if they feel that this is in the student’s best interest. This is recorded as an elective exam and represents a level midway between the student’s most recent mandatory exam and the succeeding one. The teacher submits a term mark which is included as 50% of the final mark.

**8.3 Practical Examinations**

Details of specific examination requirements may be obtained for each area (Brass, Early Music, Guitar, Harp, Jazz, Organ, Percussion, Piano, Strings, Voice, Woodwinds) from the Department of Performance Office.

Normally, students are required to sit a practical exam at the end of the Winter term. Students should check on Minerva to verify that they have been registered for an exam course number (e.g., MUIN221 Concentration 1 Examination). Students who have entered the University in January, and those who are given permission to defer, may sit the practical exam in the December examination period. Students must submit their exam repertoire by the deadlines stated below.

**8.3.1 Withdrawal from Practical Examinations**

Permission to withdraw from, or postpone, a practical examination must be made on the appropriate form available from the Department of Performance Office by the deadlines stated below. Normally, permission to withdraw will be granted only for medical reasons. A medical certificate must be submitted to the Department of Performance Office within seven days after the withdrawal request has been made. Withdrawal on other than medical grounds must be authorized by the Department of Performance Chair.

**Examination Period**

<table>
<thead>
<tr>
<th>Repertoire Submission/ Withdrawal Deadline</th>
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<tbody>
<tr>
<td>December 6-21, 2004</td>
</tr>
<tr>
<td>January 30, 2005</td>
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</tbody>
</table>

**8.3.2 Examination Marking**

Normally, the final mark for any practical examination is the average of all the marks submitted by the individual examiners. In addition, however, at least half of the examiners on the panel must pass the student in order to continue to the next level of examination. (NB: the passing grade in the Honours, L.Mus. and Artist Diploma programs is A-; in the Major Performance programs, it is B-.) In instances where the average mark is a passing grade but a majority of the panel has failed the student, the final mark will be the letter grade immediately below the required passing grade.
1. The Faculty, page 285

1.1 Location
William and Henry Birks Building
3520 University Street
Montreal, QC H3A2A7
Canada
Telephone: (514) 398-4121
Website: www.mcgill.ca/religiousstudies

1.2 Administrative Officers
Dean
Kathleen MacDonald; B.A., M.A.(McG.)
Assistant to the Dean,
B.Th.Program Coordinator
Luvana Di Francesco
Administrative Assistant

1.3 History
The Faculty and the Colleges
During the nineteenth century several Theological Colleges in
Montreal became affiliated with McGill. In 1912 they formed a Joint Board for the academic study of Theology,
leaving each denominational College to provide its own professional training for Christian ministry. This relationship
between the Colleges and the University led naturally to the
creation in 1948 of a Faculty of Divinity, which assumed the
academic functions of the Joint Board. This University Faculty
now offers the Bachelor of Theology (B.Th.) degree and
several graduate degree programs.

1.4 Facilities
The Faculty of Religious Studies is located in the handsome
(William and Henry) Birks Building, erected in 1931, formerly
known as Divinity Hall, at 3520 University Street. Besides the
usual classrooms, offices and common rooms, this building
accommodates the University Chapel and the Birks Reading Room.

1.5 Birks Lectures
An annual series was established in 1950 through the generos-
itly of the late William M. Birks. The lectures are given by
distinguished visitors, usually in late September or early
October. The first lecturer was the Right Reverend Leslie Hunter. More recent lecturers have included Huston Smith,
Northrop Frye, Wilfred Cantwell Smith, Gregory Baum,
Robert McAfee Brown, Krister Stendahl, Charles Adams,
Jon Levenson, David Little and Azim Nanji. Paul Griffiths is
scheduled to speak in October 2004.

1.6 Numata Visiting Professor in Buddhist Studies
In recognition of the strong Buddhist Studies program in the
Faculty of Religious Studies, the Numata Foundation has
given a 20-year grant to the Faculty to bring a visiting scholar in
Buddhist Studies to McGill each year.

The Visiting Professor teaches two courses, one at the
undergraduate level and one at the graduate level, gives a
public lecture and is available to students for conferences and
consultation. The first Numata Professor, in 1999-2000, was
Dr. Mahinda Deegalle (Ph.D., Chicago), a Theravada Buddhist Sri Lankan monk. Subsequent visitors include
Dr. John Petitte, Professor Robert Morrison, Dr. Thupen Jinpa, Kate Crosby and Ven. Yifa (2005).

2 Bachelor of Arts (B.A.) in Religious Studies, page 285

2.1 Bachelor of Arts (B.A.) in Religious Studies
Honours Concentration, Major Concentration and Minor Concentration in Religious Studies are offered in cooperation with the Faculty of Arts. Religious Studies B.A. Honours, Majors, and Minor students may take any of the courses described below except where otherwise indicated.

Admission is to the Faculty of Arts and all admission requirements and procedures, academic rules and regulations of that Faculty apply to students in these programs.

For general information on B.A. Honours, Majors and Minor concentrations and courses, consult the Adviser. For specific course information, consult the instructor. Students who are interested in the Bachelor of Theology (B.Th.) or Master of Divinity (M.Div.) programs should refer to the appropriate listing.

3 Master of Divinity (M.Div.)
Students who have completed a first degree prior to the B.Th.
with a minimum CGPA of 2.7 are eligible to apply the B.Th.
degree towards the Master of Divinity (M.Div.) degree con-
ferred by the Theological Colleges. This degree requires, in
addition to the B.Th. degree, successful involvement in
integrative seminars during the two B.Th. years and a year of
professional pastoral study beyond the B.Th. This is called
the “In-Ministry Year” (IMY) and is offered by the three affili-
ated theological colleges under the auspices of the Joint Board
of Theological Colleges.

Students from the affiliated colleges may be eligible for
bursary assistance if they are properly registered candidates for ministry. Information about church requirements and the professional year should be sought from the principals of the appropriate colleges.
One biblical language, usually Greek, is required by some of the colleges. Ministerial candidates should consult with the College advisers regarding biblical language requirements.

Applicants for the M.Div. program must apply to the McGill B.Th. program as well as to one of the Theological Colleges. College application forms should be requested from one of the following:

The Montreal School of Theology
(formerly The Joint Board of Theological Colleges)
Bureau Conjoint des Séminaires (affiliées à l’Université McGill)
3473 University Street, Montreal, Quebec H3A 2A8

Faculty of Religious Studies
McGill University, William and Henry Birks Bldg.
3520 University Street, Montreal, Quebec H3A 2A7

Montreal Diocesan Theological College
3473 University Street, Montreal, Quebec, H3A 2A8

The Presbyterian College
3495 University Street, Montreal, Quebec, H3A 2A8

The United Theological College/Le séminaire Unió
3521 University Street, Montreal, Quebec, H3A 2A8

Prospective students should contact the Chair of the B.Th. Committee to discuss their qualifications, expectations and objectives. Appointments can be made by telephoning (514) 398-3995 or by visiting the B.Th. Program Coordinator, Room 113, Birks Building.

4 Bachelor of Theology (B.Th.)

The Bachelor of Theology (B.Th.) program is designed primarily for those who intend to qualify for the ordained ministry in a Christian denomination, although some students pursue the degree out of an interest in the academic study of theology for its own sake. Those studying for the ordained ministry pursue the B.Th. as part of the Master of Divinity (M.Div.) degrees (see below) offered by the three Theological Colleges affiliated with McGill: Montreal Diocesan Theological College (Anglican Church of Canada), the Presbyterian College (Presbyterian Church in Canada), and United Theological College (United Church of Canada).

The main goals of the program are:

1. to offer the academic disciplines of theology within a university setting and
2. to contribute to preparation for ministry in the contemporary world by giving special attention to:
   a) the Canadian and North American contexts;
   b) the Quebec context;
   c) religious pluralism.

4.1 ATS Accreditation

The B.Th. program offered by McGill and the M.Div. program offered by the Theological Colleges are together fully accredited by the Association of Theological Schools in the U.S. and Canada (ATS).

4.2 Admission Requirements

The B.Th. program has three main options:

a) For the 60-credit or second Bachelor degree option, the applicant is expected to have already completed a B.A. or other Bachelor’s degree with a minimum CGPA of 2.7 (B-). No credits can be transferred into the 60-credit option.

b) For the 90-credit or first degree option, the applicant is expected to have completed the Diploma of Collegial Studies (DCS) of a Quebec CEGEP with a minimum average of 75%.

This option is open only to applicants from the province of Quebec. A maximum of 30 university credits can be considered for transfer into the 90-credit option. A McGill student may apply for transfer into the 90-credit program.

c) The 120-credit option is open to applicants from outside Quebec only if they intend to pursue the B.Th. as part of the M.Div. degree program. A maximum of 60 university credits can be considered for transfer into the 120-credit option. This option is also available to any applicant who qualifies for mature student status (see below).

4.2.1 Mature Student Admissions Policy

Residents of Canada who will be 27 years of age or older by September 1 of the year that they seek admission (i.e., to the Fall Term) or January 1 (for admission to the Winter Term), and who lack the academic background normally required for entry into the B.Th. program, may apply for entrance as mature students into the 120-credit program of studies. If accepted, such students are enrolled in a qualifying year of designated Religious Studies and Arts courses (assigned by the Chair of the B.Th. Committee) before being considered for the 90-credit B.Th. program. A minimum CGPA of 2.5 (with no grade less than 60%) is required for advancement into the 90-credit B.Th. program. Those who achieve a GPA of at least 3.0 (with no grade less than 65%) during their first full term of the qualifying year may, upon approval of the B.Th. Committee, be advanced to the 90-credit B.Th. retroactively.

4.3 Competence in English

Please note that for non-Canadian applicants whose mother tongue is not English, documented proof of competency in oral and written English by an appropriate examination is required. Test of English as a Foreign Language (TOEFL) with a minimum score of 575 for the paper based version is required. Permanent residents of Canada may be required to submit a TOEFL score as well. All official documents must be sent to the Faculty of Religious Studies address given below.

4.4 Applying to the B.Th. Program

All applications must be made on-line at the McGill University website for prospective students: www.mcgill.ca/applying. The on-line application process should take about 20 minutes and a credit card is required for payment of the application fee. Once completed, the on-line application form may be printed for your own records.

Note: Owing to McGill University’s implementation of a comprehensive on-line application system, paper applications to the B.Th. Program can no longer be accepted. All applicants must apply on-line.

4.4.1 Required Documents

- Two letters of reference, at least one of which should be from an instructor in an academic institution previously attended.
- Official transcript(s) of all previous post-secondary academic work.

A complete set of these required documents must be sent to the Faculty of Religious Studies (see address below).

If you are applying for admission to one of the theological colleges, another complete set of these required documents must also be sent to the college concerned.

Please note that your file will not be considered by the Admissions Committee until all the required documents have been received.

4.4.2 Mailing Address

Bachelor of Theology Program
Faculty of Religious Studies
McGill University
3520 University Street
Montreal, QC H3A 2A7
Canada
4.5 Application Deadlines

Applicants to the B.Th. Program may be accepted into either the Fall or the Winter Term. The on-line application deadline is May 1st for September admissions and November 1st for January admissions. Please note that all required documents listed above must be received by the Faculty of Religious Studies prior to these deadlines in order for the applicant to be considered by the Admissions Committee.

4.6 Tuition Fees and Funding

Information concerning current tuition fees may be found at the following website: www.mcgill.ca/student-accounts. Applicants for admission to one of the Colleges should contact the institution concerned for information regarding College-related fees.

4.7 Appeals Procedures

An unsuccessful applicant or a Faculty of Religious Studies Council member acting on behalf of the applicant who believes that not all factors having a bearing on the application have been fully considered has the right to request that the B.Th. Admissions and Awards Committee review the application.

If the findings of the review procedure uphold the initial decision of the B.Th. Admissions and Awards Committee, the applicant has the right to appeal in writing to the Dean. The Dean shall put the appeal before the B.Th. Appeals Committee, which shall consist of three full-time members of the Faculty of Religious Studies Council who are not at the same time members of the B.Th. Admissions and Awards Committee.

The decision of the B.Th. Appeals Committee may be appealed to the Vice-Principal (Academic).

4.8 Registration Procedures

Students register on-line at www.mcgill.ca/minerva-students. Minerva for students provides web access to registration, class schedules, course descriptions, and address changes.

- Returning students must register via Minerva between March 15 and the first day of classes. After this period a late registration fee will be applied.
- New students entering in September should register via Minerva between Aug. 7 and Sept. 3, 2003. After Sept. 3 a late registration fee will be applied.
- All B.Th. students should consult their advisor before registration.

4.9 Withdrawal Procedures

Withdrawal from and adding courses prior to the deadline listed in the Calendar (see above) must be done via Minerva. The permission of the advisor is required for all such changes in the initial registration. In case of withdrawal from the University prior to the published course withdrawal deadline, the student must withdraw from all courses via Minerva. In addition, students must contact the Chair of the B.Th. Committee and complete the necessary withdrawal form.

4.10 Graduation Requirements

a) The B.Th. is either a 90-credit program (for those who were admitted on the basis of a Quebec D.C.S. or equivalent), or a 60-credit program (for those who were admitted on the basis of a recognized Bachelor degree).

b) Qualification for the degree shall include satisfactory standing (a grade of C or better) in all required courses and the complementary courses specified in year three, and the accumulation of sufficient acceptable credits to make a total of either 60 or 90 credits. It should be noted that students who take the B.Th. program as part of the M.Div. program need to maintain a minimum CGPA of 2.5 to be eligible for the M.Div. degree.

c) Normally, the program credits must be earned within five years from the date of entrance.

4.11 Course Selection

Candidates for the ministry from the three Theological Colleges associated with the Faculty must select their courses in consultation with their College advisers. The course selection form needs to be signed by the chair of the B.Th. Committee.

Those seeking the degree and not sponsored by one of the three colleges associated with the Faculty will need to clear their course selections with the Chair of the B.Th. Committee.

In all cases this consultation should take place before registration.

4.12 Academic Standing and Course Loads

Satisfactory Standing

Students enter the University in satisfactory standing and remain in this standing unless their GPA (grade point average) or CGPA (cumulative grade point average) for any year drops below 2.00. The normal course load in any academic session is five courses per term (15 credits per term). A student with a high GPA (at least 3.00) may take more than the normal five courses per term.

Probationary Standing

A student is placed in probationary standing if the GPA/CGPA falls between 1.50 and 1.99. Probationary students may take a maximum of 12 credits per term, and must raise their CGPA to 2.00 within one academic session. Those who fail to do so will be placed in unsatisfactory standing.

A student in probationary standing may return to satisfactory standing at the end of the next academic session by obtaining either a GPA of at least 2.50 or both a GPA and a CGPA of 2.00 or greater unless the student was admitted on probationary standing. A student admitted on probationary standing must obtain a GPA of 2.50.

Students in probationary standing who obtain a GPA between 1.50 and 1.99 remain in probationary standing if they also have a CGPA of 2.00 or greater.

A student in probationary standing who fails to achieve the levels of performance specified above will be placed in unsatisfactory standing.

Unsatisfactory Standing

A GPA of less than 1.50 places a student in unsatisfactory standing.

A student in unsatisfactory standing will have to withdraw, or seek readmission as a probationary student with special permission from the B.Th. Committee and the Dean. A student who is readmitted on probationary standing may have additional restrictions or conditions to meet and above those required of students referred to above under “Probationary Standing”.

A student in unsatisfactory standing for the second time must withdraw permanently.

Incomplete Standing

A student whose record in any year shows a mark of K, K*, L, L*, or && will have no GPA or CGPA calculated for that year, and the record will show “Standing Incomplete”. After completing the appropriate course requirements the GPA and CGPA will be calculated and the student’s standing determined as described above.

Students whose standing is still “incomplete” at the time of registration for the next academic year must obtain a Letter of Permission to Register from the Chair of the B.Th. Committee.
4.13 Academic Achievement

Several designations are used to acknowledge the superior academic achievement of in-course and graduating students. These designations are awarded at the discretion of the Faculty:

**Distinction:** to designate graduating students, not in Honours, who have completed a minimum of 60 credits at McGill and achieved a CGPA of 3.30 - 3.49.

**Great Distinction:** to designate graduating students, not in Honours, who have completed a minimum of 60 credits at McGill and achieved a CGPA of 3.50 or better.

**Honours:** to designate graduating students who have completed a minimum of 60 credits at McGill and have fulfilled the honours course requirements with a CGPA of 3.20, or 3.50 for First Class Honours.

**Dean's Honour List:** to designate graduating students with a CGPA of 3.50 or better. This designation applies in addition to those described in b) and c) above, except that it may not normally be awarded to more than 10% of the graduating class.

**Dean's Honour List:** to designate in-course students who have completed a minimum of 27 credits during regular session (14 credits for those registered for one term) and have attained a GPA placing them in the top 5-10% of their class.

4.14 Evaluation

Competence in a course may be determined by examinations and/or essays, or by other means chosen by the instructor and approved by the Dean.

4.15 Bachelor of Theology Program Requirements

The course extends over three academic years of full-time studies for those admitted with a Diploma of Collegial Studies and two academic years for those admitted with a Bachelor's degree. The normal load consists of five 3-credit courses (15 credits) each term.

Program revisions are under consideration for September 2004. Contact the Faculty or go to www.mcgill.ca (Course Calendars) in July for details.

**Students entering the B.Th. as a first degree program take 90 credits, beginning with the following courses:**

**Year 1 - Required Courses (12 credits)**
- RELG252 (3) Hinduism and Buddhism
- RELG253 (3) Religions of East Asia
- RELG320 (3) History of Christian Thought 1
- RELG327 (3) History of Christian Thought 2

**Students entering the B.Th. as a second degree program take 60 credits, beginning with Year 2 courses:**

**Year 2 - Required Courses (24 credits)**
- RELG302 (3) Old Testament Studies 1
- RELG303 (3) Literature of Ancient Israel 2
- RELG311 (3) New Testament Studies 1
- RELG312 (3) New Testament Studies 2
- RELG322 (3) The Church in History 1
- RELG323 (3) The Church in History 2
- RELG333 (3) Principles of Christian Theology 1
- RELG341 (3) Introduction: Philosophy of Religion

**Year 3 - Required Courses (12 credits)**
- RELG420* (3) Canadian Church History
- RELG434 (3) Principles of Christian Theology 2
- RELG470 (3) Theological Ethics
- RELG479 (3) Christianity in Global Perspective

* Exception permitted if recommended by College adviser.

**Year 3 - Complementary Courses (12 credits)**
One 3-credit course in a religious tradition other than Christianity, such as:
- RELG252 (3) Hinduism and Buddhism
- RELG280D1/RELG280D2 (3) Theologies of Asia (or similar courses for credit elsewhere).

**9 credits, 3 in each of the following areas:**
- **Old Testament**
  - RELG407 (3) The Writings
  - RELG408 (3) The Prophets

- **New Testament**
  - RELG411 (3) New Testament Exegesis
  - RELG482 (3) Exegesis of Greek New Testament
- **Christian Theology**
  - RELG330 (3) Reformed Theology
  - RELG336 (3) Contemporary Theological Issues
  - RELG399 (3) Christian Spirituality
  - RELG423 (3) Reformation Thought

* Students who have previously taken a university-level course in world religions may replace this with another complementary course.

By permission of the B.Th. Committee, students may substitute courses for any of the required courses if they have already taken them or similar courses for credit elsewhere.

**Additional Complementary courses**
The remaining courses needed each term to make up the normal load may be chosen from among the 300- or 400-level courses offered in the B.Th. or B.A. Religious Studies programs (or RELG280D1/RELG280D2). The following courses are recommended and do not have a time conflict with B.Th. 2 and/or B.Th. 3 courses listed above:
- RELG320 (3) History of Christian Thought 1
- RELG327 (3) History of Christian Thought 2
- RELG338 (3) Women and the Christian Tradition
- RELG361 (3) Religious Behaviour

**Permission is needed from the B.Th. Committee for courses selected from the curriculum of other departments of the University.**

By permission of the Dean and the Chair of the B.Th. Committee, students may also enrol for courses at any university in the province of Quebec. See “Inter-University Transfer Agreement” in the General University Information section for details.

Professional and vocational courses (e.g., leading to ordination) are available through the In-Ministry Year (see section 3 “Master of Divinity (M.Div.)” upon the completion of the B.Th. degree.

4.16 B.Th. Honours

Students who have achieved a CGPA of 3.30 at the end of B.Th. 2 year may apply to the B.Th. Committee for permission to enter the Honours program. They will be required to complete RELG494 and 495 in the B.Th. 3 year with a grade of B or better, to complete the degree with Honours.

5 Academic Staff

Daniel A. Arnold; B.A.,(Carleton Coll.), M.A. (Columbia), M.A. (Iliff), Ph.D. (Chicago); Assistant Professor of Buddhist Studies

Gregory Baum; B.A.(McM.), M.A. (Ohio St.), D.Th. (Fribourg);
Emeritus Professor. Theological Ethics (PT)

Douglas B. Farrow; B.R.E. (Providence), M.Div. (Grace), M.Th. (Regent), Ph.D. (Lond.); Associate Professor of Christian Theology
Gaëlle Fiasse, B.A., M.A., Ph.D. (Louvain-le-Neuve); Assistant Professor of Ethics and Religious Ethics (Joint appointment with Department of Philosophy)


Ian H. Henderson; B.A.(Man.), B.D.(St. Andrews), M.A.(McM.), D.Phil.(Oxon); Associate Professor of New Testament

G. Victor S. Hori; B.A., M.A.(Tor.), Ph.D.(Stan.); Associate Professor of Japanese Religions

Torrance Kirby; B.A.(King’s, Halifax), M.A.(Dal.), D.Phil.(Oxon); Associate Professor of Old Testament

B. Barry Levy; B.A., B.R.E., M.A.(Yeshiva), Ph.D.(N.Y.U.); Professor of Jewish and Biblical Studies

Joseph C. McLelland; B.A.(McM.), M.A.(Tor.), B.D.(Knox, Tor.), Ph.D.(Edin.), D.D.(Mtl.Dio.Coll.; Knox, Tor.); J.W. McConnell Emeritus Professor of Philosophy of Religion

G. S. Oegema; B.A., Th.D.(Free, Amsterdam), M.A., Ph.D.(Freie, Berlin), Dr. Thed. Habil (Tübingen); Associate Professor of Hebrew Bible and Greco-Roman Judaism

Arvin Sharma; B.A.(Allahabad), M.A.(Syr.), M.T.S., Ph.D.(Harv.); Henry Birks Professor of Comparative Religion

L. H. Sideris; B.A., M.A., Ph.D.(Indiana); Assistant Professor of Environmental Ethics (Joint appoint. with McGill School of Environment)

Devesh Soneji; B.A.(Manit.), Ph.D.(McG.); Assistant Professor of Hinduism

Frederik Wisse; Ing.(Utrecht), B.A., B.D.(Calvin, Mich.), Ph.D.(Claremont); Professor of New Testament (Post-retirement)

Katherine K. Young; B.A.(Vt.), M.A.(Chic.), Ph.D.(McG.); Professor of Comparative Religion (James McGill Professor)

Lecturers

Lara Brailstein; B.A., M.A.(McG.); Tibetan and Mahayana Buddhism

Norman Cornett; A.B.(Calif.), M.A., Ph.D.(McG.); Course Lecturer in Canadian Church History

K. Crosby; M.A., D.Phil.(Oxf.); Numata Visiting Professor in Buddhist Studies

Antony Gabriel; B.A.(Syracuse), M.Div.(St. Vladimir’s Theological Academy), M.A.(River Forest), S.T.M.(Lutheran School of Theology); Course Lecturer in Eastern Orthodox Mysticism

Barbara Galli; B.A.(Carleton), M.A.(Tor.), Dip.Ed., Ph.D.(McG.); Course Lecturer in Religion and Culture

Sujata Ghosh; B.A. (C’dia), Ph.D. Candidate (McG.); Lecturer in Women’s Studies in Hinduism and Buddhism

Manuel Jinbachian; B.D.(Near East School of Theology), B.Litt.(Oxford), Ph.D.(Strasbourg); Course Lecturer in Septuagint

Maureen Jones; B.A.(C’dia), M.A. Candidate(McG.); Course Lecturer in Sexual Ethics

Jim Kanaris; B.A.(C’dia), M.A., Ph.D.(McG.); Faculty Lecturer in Philosophy of Religion

Lucille Marr; B.A., M.A., Ph.D.(Wat.); Course Lecturer in Church History and Christian Tradition

John Milton; B.A.(C’dia), M.Div.(Trinity International University); Course Lecturer in Biblical Studies

Rowshan Nemazee; B.A.(Trinity College of Vermont), M.A.(McG.); Course Lecturer in Women and the Christian Tradition/Feminist Theology

Mirela Saim; B.A., M.A.(Bucarest), Ph.D.(McG.); Course Lecturer in Dialogues and Controversies

Vanessa Sasson; B.A., M.A., Ph.D.(McG.); Course Lecturer in Introduction to World Religions

John M. Simons; B.A.(Bishop’s), S.T.B.(Trinity), Ph.D.(Georgetown); Principal, Montreal Diocesan Theological College; Course Lecturer in Theology

Manjit Singh; B.A., M.A.(Delhi); Course Lecturer in Sikhism

Glenn Smith; B.A.(Michigan), M.A.(Ont.), D.Min.(Northern Baptist Seminary, Ill.); Course Lecturer in Christian

Michael Storch; B.A.(Alta.); Course Lecturer in Sexual Ethics

John Vissers; B.A.(Tor.), M.Div.(Knox, Tor.), Th.M.(Princeton), Th.D.(Knox, Tor.); Principal, Presbyterian College; Course Lecturer in Theology

Richard Walker; B.A., M.A.(Calg.), Ph.D. Candidate(McG.); Course Lecturer in Philosophy of Religion and Philosophy of Technology

Visiting Numata Professor

Ven. Yifa; B.A.(National Taiwan), M.A.(Hawaii), Ph.D.(Yale)

Associate Members

A. Uner Turgay; B.A.(Robert Coll., Istanbul), M.A., Ph.D.(Madison-Wis.); Institute of Islamic Studies

Leigh Turner; B.A.(Winn.), M.A.(Manit.), M.A., Ph.D.(USC); Biomedical Ethics, Faculty of Medicine

Adjunct Professor

T. Jinpa Langri; Dr. Div, B.A.(King’ Coll.), Ph.D.(Camb.)
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## 1 The Faculty

### 1.1 Location

Dawson Hall  
853 Sherbrooke Street West  
Montreal, QC H3A 2T6  
Canada  
Telephone: (514) 398-4210  
Faculty Website: www.mcgill.ca/science  
Student Affairs Office Website: www.mcgill.ca/artscisao

The Student Affairs Office and the Office of the Associate Dean of the Faculty of Science are located in Dawson Hall, Rooms 110 and 115. The Student Affairs Office serves students in both the Faculty of Science and the Faculty of Arts.

### 1.2 Faculty Administrative Officers

Alan G. Shaver; B.Sc.(Car.), Ph.D.(M.I.T.)  Dean  
Morton J. Mendelson; B.Sc.(McG.), A.M., Ph.D.(Harv.)  AssociateDean (Academic)  
TBA  AssociateDean (Student Affairs)  
David H. Burns; B.Sc.(Puget Sound), Ph.D.(Wash.)  AssociateDean(Research)  
Josie D'Amico  Assistant to the Dean  
Sharon Bezeau; B.A.(Tor.), M.A.(C’dia)  Recorder and ChiefInvigilator  
Donald Sedgwick; B.Sc., M.Sc.(McG.)  Senior Adviser

### 1.3 Programs and Teaching in Science

The Faculty of Science is committed to providing outstanding teaching and research facilities. The Faculty draws on its involvement in cutting-edge research to ensure teaching excellence at the undergraduate level. Professors who are
spearheading projects that are changing people’s understanding of the world teach regularly at the undergraduate level. Also, research-based independent study courses offer students the opportunity to contribute to their professors’ work, rather than just learn about it.

In an effort to supplement classroom learning with real life experience, the Faculty of Science has increased opportunities for undergraduate students to participate in fieldwork. Certain B.Sc. programs can include an internship component. This is on top of the many undergraduate students the Faculty hires for Work-Study projects and other research programs. McGill Science students have an opportunity to get involved in the structuring of their own education. A Science Undergraduate Society initiative launched Operation Open Access, a project that gives Science students universal access to e-mail, the Internet, and the latest in science software through computer ‘infopoints’ located in areas of the campus frequented by Science students.

The Faculty of Science offers programs leading to the degree of Bachelor of Science (B.Sc.). Admission is selective; fulfilment of the minimum requirements does not guarantee acceptance. Admission criteria are described under “Admission Requirements” on page 26.

There are also two Diploma programs offered in Science. The Diploma in Environment, as page 393 under the McGill School of Environment, is a 30-credit program available to holders of a B.Sc. or B.A. or equivalent. The Diploma in Meteorology, see section 12.2 “Atmospheric and Oceanic Sciences (ATOC)”, is a one-year program available to holders of a degree in Mathematics, Engineering, Physics or other appropriate disciplines who wish to qualify for a professional career in Meteorology. All credits for these diplomas must be completed at McGill.

The concurrent B.Sc./B.Ed. program is designed to provide students with the opportunity to obtain both a B.Sc. and a B.Ed. after a minimum of 135 credits of study. For more information see section 12.28 “Science for Teachers” and “Concurrent Bachelor of Science (Major or Major Concentration with a Minor for Teachers) and Bachelor of Education Secondary Program” on page 189.

A Bachelor of Software Engineering program is offered jointly with the Faculty of Engineering, refer to the Department of Electrical and Computer Engineering on page 215.

Finally, the Faculties of Arts and Science jointly offer the Bachelor of Arts and Science (B.A.&Sc.), which is described in the Arts and Science section of the Calendar.

1.4 Student Affairs Office

The Student Affairs Office, located in Dawson Hall, provides assistance in interpreting records as well as general academic information and advice on the following: prerequisites and program requirements, registration, course change, procedures for withdrawal, deferred exams, supplemental exams, rereads, academic standing, inter-faculty transfer, year or term away, transfer credits, second programs, second degrees, and graduation.

Special requests can be made, in writing, to the Associate Dean (Academic and Student Affairs). The Committee on Student Standing (CSS) will consider appeals of the Associate Dean’s decisions. For information about CSS, see the Associate Dean’s secretary.

2 Faculty Admission Requirements

For information about admission requirements for the B.Sc., please refer to “Admission Requirements” on page 26.

For information about inter-faculty transfers, please refer to the General University Information and Regulations, “Inter-Faculty Transfer” on page 44, as well as the relevant information posted on the Student Affairs Office Website at www.mcgill.ca/artsci, and in the Student Affairs Office, Dawson Hall, Room 110.

3 Faculty Degree Requirements

Each student in the Faculty of Science must be aware of the Faculty Regulations as stated in this Calendar. While departmental and faculty advisers and staff are always available to give advice and guidance, the ultimate responsibility for completeness and correctness of course selection and registration, for compliance with, and completion of, program and degree requirements, and for the observance of regulations and deadlines rests with the student. It is the student’s responsibility to seek guidance from the Student Affairs Office if in any doubt; misunderstanding or misapprehension will not be accepted as cause for dispensation from any regulation, deadline, program or degree requirement.

To be eligible for a B.Sc. degree, students must fulfill all faculty and program requirements as indicated below:

- Minimum Credit Requirement, see section 3.1
- Residency, see section 3.2
- Cumulative Grade Point Average (CGPA), see section 3.3
- Time Limit for the Completion of the Degree, see section 3.4
- Program Requirements, see section 3.5
- Course Requirements, see section 3.6

3.1 Minimum Credit Requirement

Each student’s minimum credit requirement for the degree is determined at the time of acceptance and is specified in the letter of admission.

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 to students who obtain satisfactory results in International Baccalaureate, French Baccalaureate, Advanced Levels, Advanced Placement tests, or the Diploma of Collegial Studies (DCS). Quebec students with a DCS in Science are granted 30 credits advanced standing and will have normally completed the equivalent of, and are therefore exempt from, the basic science courses in biology, chemistry, mathematics and statistics, and physics. Students with satisfactory results in International Baccalaureate, French Baccalaureate, Advanced Levels, and Advanced Placement tests may be exempt from some or all of the basic science courses.

Students who are readmitted after interrupting their studies for a period of five consecutive years or more may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new CGPA will be calculated. The Associate Dean, in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

Students who are readmitted after a period of absence are subject to the program and degree requirements in effect at the time of readmission. The Associate Dean, in consultation with the department, may approve exemption from any new requirements.

3.2 Residency

To obtain a B.Sc. degree, students must satisfy the following residency requirements: a minimum of 60 credits of courses used to satisfy the B.Sc. degree requirements must be taken and passed at McGill, exclusive of any courses completed as part of the basic science requirements defined below. At least two-thirds of all departmental program requirements (Honours, Major, Faculty Program, or Minor) must normally be completed at McGill. However, students in Honours, Major, and Faculty Programs who pursue an approved Study Away or Exchange Program may, with departmental approval, be exempted from the two-thirds rule. In addition, some departments may require that their students complete specific components of their program at McGill.

The residency requirement for diplomas is 30 credits completed at McGill.
3.3 Cumulative Grade Point Average (CGPA)

Each candidate for the degree must achieve a minimum cumulative grade point average (CGPA) of 2.00.

3.4 Time Limit for the Completion of the Degree

Students who need 96 or fewer credits to complete their degree requirements are expected to complete their program in no more than eight terms after their initial registration for the degree. Students who exceed these limits must receive permission from the Faculty to continue their studies. Permission for exceeding the time limits will normally be granted only for valid academic reasons, such as a change of program (approval of the department is required) and part-time status.

Students in the Freshman Program become subject to these regulations one year after their initial registration.

3.5 Program Requirements

3.5.1 Freshman Program and Basic Science Requirements

Students who need 97-120 credits (four years) to complete their degree requirements must register in the Science Freshman Program, which is designed to provide the basic science foundation for a student’s subsequent three-year Faculty, Major, or Honours program. The basic science requirements are as follows: two terms each of calculus, general chemistry, and general physics, and one term of biology.

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, mathematics and statistics, and physics. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits.

For a more detailed description of the Science Freshman Program, students should consult the Arts and Science Freshman Student information available on the Student Affairs Website, www.mcgill.ca/artsciaco.

3.5.2 Faculty, Major, and Honours Programs

Science students who need 96 or fewer credits to complete their degree requirements are required to have an approved degree program and to select their courses in each term with a view to timely completion of their degree and program requirements. Students must register in one of the following types of departmental programs leading to the degree of Bachelor of Science:

- A Faculty program is an approved coherent selection of courses giving students a useful concentration in a recognized area. Students in a Faculty program may choose a pattern of study that can range from one yielding a broad education to one specializing in particular areas.

- Major programs are more specialized than Faculty programs and are usually centred on a specific discipline or department. For prospective teachers, the Faculty also offers Major programs that can constitute the Science component of the Concurrent B.Sc./B.Ed. Program. For more information about this joint degree, refer to section 3.5.5 “Concurrent B.Sc./B.Ed. Program”.

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

3.5.3 Minor and Minor Concentration Programs

In addition to the above degree programs, students in the Faculty of Science may select a Minor program. These are coherent sequences of courses in a given discipline or interdisciplinary area that may be taken in addition to the courses required for the degree program.

Science Minors consist of up to 24 credits.

Arts Minor Concentrations consist of 18 credits.

A minimum of 18 new credits must be completed in the Minor or Minor Concentration.

For a list of Minor Programs, see section 11.6: for Minor Concentrations that are approved for Science students, see section 11.10 “Faculty of Arts Major and Minor Concentration Programs Available to Science Students”.

3.5.4 Other Second Programs

In addition to a Faculty, Major, or Honours program, students may pursue a second Faculty, Major, or Honours program, or an Arts Major Concentration program. A minimum of 36 new credits must be completed in the second program.

3.5.5 Concurrent B.Sc./B.Ed. Program

The Concurrent B.Sc./B.Ed. Program described in section 12.28 “Science for Teachers”, applies only to students who were already registered in it as of September 2002.

Admission into the program is open for September 2004.

Science students who might want to enter the program should visit the B.Sc./B.Ed. Web site at www.physics.mcgill.ca/~bscbed or contact Prof. Dik Harris, e-mail: dik.harris@mcgill.ca.

3.5.6 Internship Program for Engineering and Science (IYES)

Certain B.Sc. programs offered by the Department of Atmospheric and Oceanic Sciences, the Department of Mathematics and Statistics, the Department of Physics, and the School of Computer Science can include an internship component, see section 11.9 “Internship Programs – Internship Year for Engineering and Science (IYES)”. Students from other departments are also eligible to apply for an internship year, but this will not be part of their degree designation. For more details, students should refer to the Faculty of Engineering, “IYES: Internship Year for Engineering and Science” on page 205.

3.5.7 McGill School of Environment

The Faculty of Science is one of the three faculties in partnership with the McGill School of Environment, see page 377.

3.5.8 Bachelor of Software Engineering and B.Sc. in Software Engineering

The School of Computer Science, jointly with the Department of Electrical and Computer Engineering, offers a Bachelor of Software Engineering program. Graduates of the B.S.E. program should be eligible for accreditation (once accreditation standards for Software Engineers have been adopted). For program details, students should refer to the Faculty of Engineering, Department of Electrical and Computer Engineering on page 215.

The School of Computer Science also offers a B.Sc. Major program in Software Engineering. For details of the B.Sc. Major, students should refer to section 12.8 “Computer Science (COMP)”. The B.Sc. program does not lead to accreditation.

3.6 Course Requirements

All required and complementary courses used to fulfill program requirements, including the basic science requirements, must be completed with a grade of C or better. Students who fail to obtain a satisfactory grade in a required course must either pass the supplemental examination in the course or do additional work for a supplemental grade, if these options are available, or repeat the course. Course substitution will be allowed only in special cases; students should consult their academic adviser.
4. For 500-level statistics courses not listed above, students must appeal to the Associate Dean for permission to take the course a third time. If permission is denied by the Associate Dean and/or by the Committee on Student Standing, on appeal, the student must withdraw from the program. If the failed course is a complementary course required by the program, a student may choose to replace it with another appropriate complementary course. If a student chooses to substitute another complementary course for a complementary course in which a D was received, credit for the first course will still be given, but as an elective. If a student repeats a required course in which a D was received, credit will be given only once.

Full details of the course requirements for all programs offered are given in each unit’s section together with the locations of departmental advisory offices, program directors, and telephone numbers should further information be required.

3.6.1 Course Overlap

Students will not receive credit towards their degree for any course that overlaps in content with a course passed at McGill, at another university, at CEGEP, or advanced placement exams. Advanced Level results, International Baccalaureate Diploma, or French Baccalaureate. It is the student’s responsibility to consult the Student Affairs Office or the department offering the course as to whether or not credit can be obtained and to be aware of exclusion clauses specified in the course description in the Calendar.

Sometimes the same course is offered by two different departments. Such courses are called “double-prefix” courses. When such courses are offered simultaneously, students should take the course offered by the department in which they are obtaining their degree. For example, in the case of double-prefix courses CHEMXYZ and PHYSXYZ, Chemistry students would take CHEMXYZ and the Physics students would take PHYSXYZ. If a double-prefix course were offered by different departments in alternate years, students could take whatever course best fits their schedule.

Credit for computer and statistics courses offered by faculties other than Science requires the permission of the Associate Dean of Science (Academic and Student Affairs) and will be granted only under exceptional circumstances.

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

1. Credit will be given for ONLY ONE of the following introductory statistics courses: AEMA310, BIOI373, ECON227D1/ECON227D2, ECON257D1/ECON257D2, EPSC215, GEG202, MATH203, MGGR271, PSYC204, SOC1350.

2. Credit will be given for ONLY ONE of the following intermediate statistics courses: AEMA411, ECON227D1/ECON227D2, ECON257D1/ECON257D2, EPSC215, MATH203, MATH204, MGGR271, MGGR272, PSYC204, PSYC305, SOCI1350.

3. Students in Mathematics or Computer Science programs, and the Physics students would take PHYSXYZ. If a student repeats a required course in which a D was received, credit for the first course will still be given, but as an elective. If a student chooses to replace it with another course offered by the department in which they are obtaining their degree.

Credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science.

Credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science.

Credit for courses in Education and Continuing Education requires the permission of the Associate Dean of Science.

Credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science.

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

3.6.3 Courses outside the Faculties of Arts and Science

Students in the Faculty of Science should consult the statement of regulations for taking courses outside the Faculties of Arts and of Science. The regulations are posted in the Student Affairs Office, Dawson Hall, and on the Student Affairs Website, www.mcgill.ca/artscistudent. A list of approved/not approved courses in other faculties is posted with the regulations; students may take courses on the approved list and may not, under any circumstances, take courses on the not-approved list. Requests for permission to take courses that are not on either list should be addressed to the Associate Dean.

The regulations are as follows:

• Courses in other faculties that are considered as taught by Science (e.g., BIOT, EXMD, and PHAR) are so designated in the Science section of the Calendar.

• Courses in Music are considered as outside the Faculties of Arts and of Science, except MUAR courses which are considered as Arts courses.

• Courses in other faculties can be taken as elective courses or as part of a program as specified in the Calendar.

• Students may take only 6 credits per year, up to 18 credits in all, of courses outside the Faculties of Arts and of Science.

• Students must have the necessary prerequisites and permission of the instructor for such courses.

• Credit for courses in Education and Continuing Education requires the permission of the Associate Dean of Science.

• Credit for computer and statistics courses offered by faculties other than Arts and Science requires the permission of the Associate Dean of Science and will be granted only under exceptional circumstances.

• Students who use Minerva to register for a course that exceeds the specified limitations or that is not approved will have the course flagged for no credit after the course change period.

• Credit will not be given for any “how to” courses offered by other faculties that are intended to provide students with only practical or professional training in specific applied areas. Examples include courses that teach the use of certain computer packages (databases, spreadsheets, etc.) or computer languages (SQL, COBOL, FORTRAN, etc.), machine shop or electronic shop courses, technical drawing courses, and professional practice courses.

• Students in the Major in Software Engineering may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and Science beyond the requirements of their major.

• For students registered in the McGill School of Environment before September 2003: Students in the MSE may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and Science beyond the requirements of their MSE programs.

• For students registered in the McGill School of Environment on or after September 2003: Students in the MSE may take up to 18 credits of approved courses outside the Faculties of Arts and Science beyond the requirements of their MSE programs.

• For students who registered in the McGill School of Environment before September 2003: Students in the MSE may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and of Science beyond the requirements of their major.

• For students who registered in the McGill School of Environment on or after September 2003: Students in the MSE may take as many courses outside the Faculties of Arts and of Science as are necessary to complete their program of study. They may also take up to 18 credits of approved courses outside the Faculties of Arts and Science beyond the requirements of their major.
Welcome to McGill, the Arts and Science Registration system.

5 Registration

All students register by Minerva, McGill’s Web-based registration system.

New students register in August prior to the first day of classes. For detailed information about registration, students should refer to “Registration” on page 41, Welcome to McGill, to the information on the Student Affairs Website, www.mcgill.ca/artsci, and to the Minerva Website, www.mcgill.ca/minerva.

Returning students register at the end of March, April, and May for the coming academic year. For detailed information about registration, students should refer to “Registration” on page 41, and to the information on the Student Affairs Website www.mcgill.ca/artsci, and to the Minerva Website, www.mcgill.ca/minerva.

Students who have an outstanding fee balance from a previous term or outstanding fines will not be permitted to register. In addition, students who have registered for the upcoming academic year, but subsequently take summer courses without paying the fees, will have their registration cancelled. Registration on Minerva will be denied until these debts are paid in full. Students must pay all debts before the end of the registration period to be permitted to reregister. Students with financial problems should consult the Student Aid Office, Brown Student Services Building.

Students who decide not to return to McGill after initiating registration must withdraw from all of their courses on Minerva or inform the Student Affairs Office in writing. The deadline for withdrawal from the University is the same deadline as for a course withdrawal; see the Calendar of Dates. After the deadline, students may, under exceptional circumstances, be granted permission to withdraw from the University. Such students should contact the Student Affairs Office in Dawson Hall for further information.

5.1 Program Registration

Students should refer to Welcome to McGill, the Arts and Science Registration information on the Student Affairs Website, www.mcgill.ca/artsci, or the Minerva Website, www.mcgill.ca/minerva.

See section 11 "Lists of Programs Offered" for a list of programs that can be taken by Science students.

5.2 Course Registration

All courses have limited enrolment.

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

Since the registration system is unable to verify whether or not Faculty regulations are respected, it is technically possible to register for courses that are closed to Science students. When students’ records are manually verified, however, any “closed” courses will be flagged after the end of course change period as "not for credit towards the B.Sc.”. As a result, the students’ expected date of graduation may be delayed.

Some courses may require special permission. Students should consult this Calendar and/or the Class Schedule to determine if permission is required of the instructor, the department, or the Faculty for any course they wish to take.
Students who believe they have valid reasons to take a course that is normally closed to Science students must obtain permission from the Associate Dean of Science (Academic and Student Affairs) before registering for the course. Only the Associate Dean or, on appeal, the Committee on Student Standing, can make exceptions to the Faculty rules.

6.1 Incomplete Grades

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

- students graduating in June: fall courses, winter courses: April 30
- non-graduating students: fall courses: April 30
- winter courses, and courses spanning fall/winter: July 30

Students’ deadlines for submitting their work must be sufficiently in advance of these dates to ensure that the work can be graded and the mark submitted on time. 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 April 30 for fall courses, or July 30 for winter courses and courses spanning fall/winter, 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 “Grading and Grade Point Averages (GPA)” on page 48 for more information about grading and credit.

7 Examinations

Students should refer to “Examinations” on page 51 for information about final examinations and deferred examinations. Note that for the Faculty of Science, “University Regulations Concerning Final Examinations” on page 51 applies to courses up to and including the 500 level.

The exam schedules are posted on the McGill Website, www.mcgill.ca and in the Student Affairs Office, Dawson Hall, Room 110, normally one month after the start of classes for Tentative Exam Schedules, and two months after the start of classes for Final Examination Schedules. Students should also refer to the Student Affairs Website for more information, www.mcgill.ca/artsciass.

8 Supplemental Assessments

8.1 Supplemental Examinations

Students who wish to write supplemental examinations for certain courses must apply to the Student Affairs Office for permission. The following conditions apply:

- students must be in satisfactory or probationary standing;
- students must have received a final grade of D, F, J or U in the course;
- students must avail themselves of this privilege at the time of the next supplemental examination period;
- special permission is required if a student wishes to write supple- mentals totalling more than 8 credits;
- only one supplemental examination is allowed in a course;
- the supplemental result may or may not include the same pro- portion of class work as did the original grade; the instructor will announce the arrangements to be used for the course by the end of the course change period;
- the format of the supplemental examination (e.g., multiple- choice or essay questions) will not necessarily be the same as the format for the final examination, so students should consult the instructor about the format of the supplemental;
- the supplemental result will not erase the grade originally obtained, which is used in calculating the GPA; both the original mark and the supplemental result will be calculated in the CGPA;
- in courses in which both a supplemental examination and additional work are available, the student may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting
marks for both the supplemental examination and the additional work:

• additional credit will not be given for a supplemental exam where the original grade for the course was a D and the student already received credit for the course;

• supplemental examinations in courses outside the Faculties of Arts or of Science are subject to the deadlines, rules and regulations of the relevant faculty;

• no supplemental examinations are available for students who fail to achieve satisfactory grades in a course with a deferred examination.

For courses in the Faculties of Arts and of Science, the supplemental examination period for fall courses is during the months of April and May; for winter courses, and courses spanning fall/winter, the supplemental examination period is during the last week of August.

Supplemental applications are available at the Student Affairs Office. The deadline for submission of applications is March 1 for fall courses and July 15 for winter courses and courses spanning fall/winter. A non-refundable fee for each supplemental paper is payable at the time of application. Students who register for a supplemental examination and subsequently find themselves unprepared for it should not write it; except for the loss of the registration fee, there is no penalty for not writing a supplemental examination. Students should consult the Student Affairs Office for further information.

8.2 Additional Work

Instructors of courses that include graded written term work may choose to provide the option of additional work to eligible students. The following conditions apply:

• if there is an option for additional work, it must be announced in the course outline at the beginning of the course;

• additional work involves revising one or more previously submitted papers or submitting new written work to replace the original work;

• students must be in satisfactory or probationary standing;

• students must have received a final grade of D, J, F, or U in the course;

• the weight of the additional work will be equal to the weight given the work revised or replaced when the original mark was submitted;

• the mark resulting from the revised or additional work will be recorded as a supplemental mark;

• the supplemental result will not erase the grade originally obtained, which is used in calculating the GPA; both the original mark and the supplemental mark will count in calculating the CGPA;

• in courses in which both a supplemental examination and additional work are available, the student may choose the additional work or the examination or both; where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work;

• additional work in courses outside the Faculties of Arts and of Science is subject to the deadlines, rules, and regulations of the relevant faculty.

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

8.3 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark, to discuss this submission with the examiner, and to obtain an impartial and competent review of any mark.

The Faculty of Science recognizes two types of impartial reviews: reassessments of course work (i.e., of term papers, mid-terms, assignments, quizzes, etc.) and rereads of final examinations. In both cases, rather than recorrect the work and grade it as they would have done themselves, reviewers assess the appropriateness of the original grade based, for example, on the application of the grading key to the student’s work. If a grade is deemed unfair, it is changed, whether the new grade is higher or lower than the original — i.e., the reviewer’s grade takes precedence over the original grade.

A. Reassessment of Course Work

Reassessments of course work are administered and conducted solely by the units involved according to procedures specified by the units and made available to staff and students. Requests for such reassessments must be made within 10 working days after the graded material has been made available for students to view it. Reassessments should normally be completed within 20 working days of the request.

B. Rereads of Final Examinations

Rereads of final examinations are administered by the Student Affairs Office, but conducted by the units involved. Students must apply in writing to the Student Affairs Office by March 31 for courses in the Fall term and by September 30 for courses in the Winter or Summer terms (these deadlines are strictly enforced and no requests for rereads will be accepted past them). Students are assessed a fee of $35 for such rereads. It is strongly recommended, but not required, that students consult the instructor of the course before requesting a reread of a final examination.

Reassessments and rereads in courses not in the Faculty of Science are subject to the deadlines, rules, and regulations of the relevant faculty.

9 Academic Standing

Academic standing is based primarily on students’ cumulative grade point average (CGPA), but may also be affected by their term grade point average (TGPA). Academic standing is assessed in January for the fall term, in May for the winter term, and in September for the summer term. Academic standing in each term determines if students will be allowed to continue their studies in the next term and if any conditions will be attached to their registration.

Decisions about academic standing in the fall term are based only on grades that are available in January. Grades for courses in which students have deferred examinations and fall-term grades for courses that span the fall and winter terms do not affect academic standing for the fall term, even though they will ultimately affect students’ fall TGPA. Therefore, academic standings for the fall term that are designated as “interim” should be interpreted as advisory. Note that interim standing will not appear on external transcripts. Interim standing decisions are mentioned below only if the rules for them differ from those for regular standing decisions.

Satisfactory/Interim Satisfactory Standing

Students in satisfactory standing may continue in their program.

• New students are admitted to satisfactory standing.

• Students with a CGPA of 2.00 or greater are in satisfactory standing.

Probationary/Interim Probationary Standing

Students in probationary standing may continue in their program, but must carry a reduced load (maximum 14 credits per term) and raise their TGPA and CGPA to return to satisfactory standing (see
above). They should see their departmental adviser to discuss their course selection.

Students in interim probationary standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

- Students who were previously in satisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99.
- Students who were previously in probationary standing will remain in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher, although the TGPA requirement will not apply to the summer term.
- Students who were previously in interim unsatisfactory standing will be placed in probationary standing if their CGPA falls between 1.50 and 1.99 and their TGPA is 2.50 or higher.
- Students who were previously in unsatisfactory readmitted standing will be placed in probationary standing (for the fall or winter term) if their CGPA is less than 2.00, and if they satisfy relevant conditions specified in their letter of readmission.

Unsatisfactory Readmitted Standing

Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean (Academic and Student Affairs) or the Committee on Student Standing will have their standing changed to unsatisfactory readmitted standing. Their course load is specified in their letter of readmission as are the conditions they must meet to be allowed to continue in their program. They should see their departmental adviser to discuss their course selection.

Unsatisfactory/Interim Unsatisfactory Standing

Students in interim unsatisfactory standing may continue in their program, but should evaluate their course load and reduce it as appropriate. They are strongly advised to consult a departmental adviser, before the withdrawal deadlines, about their course selection for the winter term.

Students in unsatisfactory standing have failed to meet the minimum standards set by the Faculty. They may not continue in their program, and their registration will be cancelled.

Appeals for readmission by students in unsatisfactory standing should be addressed to the Associate Dean (Academic and Student Affairs) no later than July 15 for readmission to the fall term and November 15 for the winter term. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation). Students in unsatisfactory standing for the second time must withdraw permanently.

Normally supplemental examinations are not permitted; however, students in unsatisfactory standing may appeal to the Associate Dean for permission to write a supplemental examination, clearly stating the reasons for special consideration and providing proof as appropriate.

- Students will be placed in unsatisfactory standing (winter or summer term) or interim unsatisfactory standing (fall term) if their CGPA falls or remains below 1.50.

- Students who were previously in probationary, unsatisfactory readmitted, or interim unsatisfactory standing will be placed in unsatisfactory standing (fall or winter term) if their TGPA falls below 2.50 and their CGPA is below 2.00.

- Students who were previously in unsatisfactory standing and who were readmitted to the Faculty by the Associate Dean or the Committee on Student Standing and who have not at least satisfied the conditions to attain probationary standing that were specified in the letter of readmission will be placed in unsatisfactory standing.

Students in the Concurrent B.Sc./B.Ed. Program who receive an F or J in any Education Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program. However, they may apply to transfer to a conventional B.Sc. program as outlined in section 12.28 "Science for Teachers".

Incomplete Standings

Standing awaits deferred examination. Must clear Ks, Ls or Supplemental.

Standing Incomplete.

Students with incomplete standings in the winter or summer term may register for the fall term, but their standing must be resolved by the end of the course-change period for that term. Students whose incomplete standing changes to satisfactory, probationary, or interim unsatisfactory standing may continue in the program. Students whose standing changes to unsatisfactory standing may not continue in their program, and their registration will be cancelled.

Students whose standing changes to unsatisfactory and who wish to ask for permission to continue in their program must make a request to the Associate Dean as soon as they are placed in unsatisfactory standing. Readmission will be considered only when proof of extenuating circumstances that affected academic performance can be provided (e.g., medical or other documentation).

Students whose standing is still incomplete by the end of course change period should immediately consult with the Student Affairs Office. At the end of the winter term, students with a mark of K or L will be placed in the appropriate standing in June, if the outstanding mark in the course will not affect their result. Otherwise the standing decision will only be made once their incomplete marks have been cleared. For more information about incomplete grades please refer to section 6.1 "Incomplete Grades".

10 Awards and Honourary Designations

10.1 Honours and First-Class Honours

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

- students must complete all requirements imposed by the department;
- for Honours, the CGPA at graduation must be at least 3.00;
- for First-Class Honours, the CGPA at graduation must be at least 3.50;
- some departments may impose additional requirements, which must be met before students are recommended for Honours or First-Class Honours. These will be found in the departmental descriptions of Honours programs.

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

10.2 Distinction or Great Distinction

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

- students must have completed a minimum of 60 McGill credits towards the B.Sc. degree to be eligible;
- for Distinction, the CGPA at graduation must be 3.30 to 3.49;
- for Great Distinction, the CGPA at graduation must be 3.50 or greater;
- these designations may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Science.
10.3 Dean’s Honour List

The designation *Dean’s Honour List* may be awarded to graduating students under the following conditions:

• students must have completed a minimum of 60 McGill credits towards the B.Sc. degree to be considered;
• students must be in the top 10% of the Faculty’s graduating class of students; this calculation is based on the CGPA;
• this honorary designation may be withdrawn, in the case of transfer students, if their CGPA in another faculty or at another university is not comparable to the CGPA earned in the Faculty of Science.

The designation *Dean’s Honour List* may be awarded at the end of each academic year to continuing students under the following conditions:

• students must have completed at least 27 graded credits during the academic year to be considered;
• students must be among the top 10% of the Faculty. This calculation is based on the TGPA.

10.4 Medals and Prizes

Various medals, scholarships and prizes are open to continuing and graduating students. Full details of these are set out in the *Undergraduate Scholarships and Awards Calendar*, available in the Admissions, Recruitment and Registrar’s Office or on the Web www.mcgill.ca. No application is required except in the case of the Moyse Travelling Scholarships.
11 Lists of Programs Offered

11.1 Faculty Programs
Anatomy and Cell Biology
Biochemistry
Biology
Biology and Mathematics – see Biology
Chemistry
Chemistry and Biological Sciences – see Chemistry
Chemistry and Mathematics – see Chemistry
Mathematics and Computer Science – see Mathematics and Statistics. Also check with the School of Computer Science, since that unit limits enrolment.
Mathematics, Statistics and Computer Science – see Mathematics and Statistics. Also check with the School of Computer Science, since that unit limits enrolment.
Mathematics, Chemistry and Physics – see Mathematics and Statistics
Microbiology and Immunology – application required, see departmental entry for information.
Physics
Physiology
Psychology

11.2 Major Programs
Anatomy and Cell Biology
Atmospheric Science
Biochemistry
Biology
Chemistry
Chemistry (Bio-organic option)
Chemistry (Environmental Chemistry option)
Chemistry (Materials)
Computer Science – application required, see unit entry for information.
Earth and Planetary Sciences
Environment (Atmospheric Environment and Air Quality domain) – see McGill School of Environment.
Environment (Biodiversity and Conservation domain) – see McGill School of Environment.
Environment (Earth Sciences and Economics domain) – see McGill School of Environment.
Environment (Ecological Determinants of Health domain) – see McGill School of Environment.
Environment (Environmetrics domain) – see McGill School of Environment.
Environment (Food Production and Environment domain) – see McGill School of Environment.
Environment (Land Surface Processes and Environmental Change) – see McGill School of Environment.
Environment (Renewable Resource Management domain) – see McGill School of Environment.
Environment (Water Environments and Ecosystems domain) – see McGill School of Environment.
Geography
Mathematics
Microbiology and Immunology – application required, see departmental entry for information.
Physics
Physiology
Psychology
Software Engineering – application required, see unit entry for information

11.3 Joint Major Programs
Atmospheric Science and Physics
Mathematics and Computer Science – see Mathematics and Statistics. Also check with the School of Computer Science, since that unit limits enrolment.
Physics and Computer Science – see Physics. Also check with the School of Computer Science, since that unit limits enrolment.
Physics and Geophysics
Physiology and Mathematics
Physiology and Physics

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

11.5 Joint Honours Programs
Mathematics and Computer Science – see Mathematics and Statistics. Also check with the School of Computer Science, since that unit limits enrolment.
Mathematics and Physics – see Physics
Physics and Chemistry – see Physics

11.6 Minor Programs
Atmospheric Science
Biology
Biotechnology
Chemical Engineering – see Chemistry
Chemistry
Cognitive Science
Computational Molecular Biology - see Computer Science.
Computer Science
Earth and Planetary Sciences
Education for Science Students – see Science for Teachers.
Electrical Engineering – see Physics.
Environment
Geochemistry – see Earth and Planetary Sciences.
Geography
Geographical Information Systems – see Geography.
Human Nutrition – see Faculty of Agricultural and Environmental Sciences entry for School of Dietetics and Human Nutrition.
Kinesiology – see Faculty of Science entry.
Management* – see Faculty of Science entry for Management.
Mathematics
Music Technology – application required, see Faculty of Science entry for Music.
Neuroscience
Pharmacology
Physics
Psychology
Statistics – see Mathematics and Statistics.
Technological Entrepreneurship for Science Students – application required, see Faculty of Science entry.

Notes:
1. The Minor in Computer Science is not available to students in the following programs: Honours in Computer Science; Honours in Mathematics and Computer Science; Faculty Program in Mathematics and Computer Science.
2. The Minor in Chemical Engineering is only available to students in Chemistry.
3. The Minor in Electrical Engineering is only available to students in the Major program in Physics.

11.7 Concurrent B.Sc/B.Ed. Program (Science for Teachers)

Programs Accepting Students as of September 2004:
Major in Mathematics for Teachers - see Science for Teachers.
Major Concentration in Biology with a Minor in Chemistry for Teachers - see Science for Teachers.
Major Concentration in Biology with a Minor in Physics for Teachers - see Science for Teachers.
Major Concentration in Chemistry with a Minor in Biology for Teachers - see Science for Teachers.
Major Concentration in Chemistry with a Minor in Physics for Teachers - see Science for Teachers.
Major Concentration in Physics with a Minor in Biology for Teachers - see Science for Teachers.
Major Concentration in Physics with a Minor in Chemistry for Teachers - see Science for Teachers.

Programs No Longer Accepting New Students:
Biology and Chemistry for Teachers - see Science for Teachers.
Biology and Geography for Teachers - see Science for Teachers.
Biology and Mathematics for Teachers - see Science for Teachers.
Chemistry and Physics for Teachers - see Science for Teachers.
Mathematics and Chemistry for Teachers - see Science for Teachers.
Mathematics and Physics for Teachers - see Science for Teachers.

11.8 Bachelor of Arts and Science

Please see the Arts and Science section of the Calendar for details.

11.9 Internship Programs – Internship Year for Engineering and Science (IYES)

The following programs are also available with an Internship component. For more information, please see “IYES: Internship Year for Engineering and Science” on page 205.

Atmospheric and Oceanic Sciences
Major in Atmospheric Science
Honours in Atmospheric Science

Computer Science
Major in Computer Science
Honours in Computer Science

Mathematics and Statistics
Major in Mathematics
Honours in Mathematics

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

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

11.10 Faculty of Arts Major and Minor Concentration Programs Available to Science Students

For more information, please see the relevant departmental entries in the Faculty of Arts section.

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

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

12 Academic Programs

12.1 Anatomy and Cell Biology (ANAT)

Strathcona Anatomy and Dentistry Building
3640 University Street, Room 1/48
Montreal, QC H3A 2B2
Telephone: (514) 398-6355
Website: www.medicine.mcgill.ca/anatomy

Chair — John J.M. Bergeron
Emeritus Professors
Yves Clermont; B.Sc.(Montr.), Ph.D.(McG.), F.R.C.S.
Dennis G. Osmond; B.Sc., M.B., Ch.B., D.Sc.(Brist.), M.R.C.S., L.R.C.P., F.R.C.S.
H. Warshawsky; B.Sc.(Sir G.Wms), M.Sc., Ph.D.(McG.)

Professors
Alain Beaudet; M.Sc., Ph.D., M.(Montr.) (joint appoint. with Neurology & Neurosurgery)
Gary C. Bennett; B.A., B.Sc.(Sir G.Wms.), M.Sc., Ph.D.(McG.)
John J.M. Bergeron; B.Sc.(McG.), Ph.D., D.Phil.(Oxon.)
James R. Brawer; B.S.(Tufts), Ph.D.(Harv.)
M. Burnier; M.D., M.Sc., Ph.D.(Brazl) (joint appoint. with Ophthalmology)
Louis Hermon; B.A.(Loyo), M.Sc., Ph.D.(McG.)
Charles P. Leblond; M.D.(Paris), Ph.D.(Montr.), D.Sc.(Acad.), F.R.S., F.R.S.C.
Sandra C. Miller; B.Sc.(Sir G.Wms.), M.Sc., Ph.D.(McG.)
Carlos R. Morales; DVM.(U.N., Argentina), Ph.D.(McG.)
Barry I. Posner; M.D.(Man.), F.R.C.P.(C) (joint appoint. with Medicine)
Charles E. Smith; D.D.S., Ph.D.(McG.) (joint appoint. with Dentistry)

Associate Professors
Philip Barker; B.Sc.(S.Fraser), Ph.D.(Alta.) (joint appoint. with Neurology & Neurosurgery)
Orest W. Blaschuk; B.Sc.(Winn.), M.Sc.(Manit.), Ph.D.(Tor.) (joint appoint. with Surgery)
Eugene Daniels; M.Sc., Ph.D.(Man.)
Samuel David; Ph.D.(Man.) (joint appoint. with Neurology & Neurosurgery)
Elaine Davis; B.Sc., M.Sc.(W.Ont.), Ph.D.(McG.)
Timothy Kennedy; B.Sc.(McM.), M.Phil, Ph.D.(Columbia) (joint appoint. with Neurology & Neurosurgery)
Antonis E. Koromilas; B.Sc., Ph.D.(Aristotelian U., Greece) (joint appoint. with Oncology)
Paul F. Lasko; A.B.(Harv.), Ph.D.(M.I.T) (joint appoint. with Biology)
Martin Laterich; B.Sc., Ph.D.(Durham)
Marc D. McKee; B.Sc., M.Sc., Ph.D.(McG) (joint appoint. with Dentistry)
Peter McPherson; B.Sc.(Manit.), Ph.D.(Iowa) (William Dawson Scholar) (joint appoint. with Neurology & Neurosurgery)
Alfredo Riberio-da-Silva; M.D., Ph.D.(Oporto) (joint appoint. with Pharmacology and Therapeutics)
Hojatollah Vali; B.Sc., M.Sc., Ph.D.(Munich) (joint appoint. with Earth and Planetary Sciences)
Dominique Walker; B.Sc., Ph.D.(Geneva) (joint appoint. with Psychiatry)

Assistant Professors
Chanelle Autexier; B.Sc.(C’dia), Ph.D.(McG.)
Fiona Bedford; B.Sc.(Birm.), Ph.D.(Lond.)
Eric Chevet; M.Sc., Ph.D.(Paris) (joint appoint. with Surgery)
Michael T. Greenwood; B.Sc., M.Sc.(C’dia), Ph.D.(McG) (joint appoint. with Medicine)
Nathalie Lamarche; B.Sc., Ph.D.(Montr.)
Craig Mandato; B.Sc., Ph.D.(Wat.)
John F. Presley; B.A., Ph.D.(Texas)
Wayne Sossin; S.B.(M.I.T.), Ph.D.(Stan.) (joint appoint. with Neurology & Neurosurgery)
Stefano Stifani; Ph.D.(Rome), Ph.D.(Alta.) (joint appoint. with Neurology & Neurosurgery)
Gary W. Wild; B.Sc., Ph.D., M.D., C.M.(McG.) (joint appoint. with Medicine)

Associate Member
David Y. Thomas (Biochemistry)

Adjunct Professors
Daniel Cyr; B.Sc., M.Sc.(C’dia), Ph.D.(Manit.)
Jacques Drouin; B.Sc., D.Sc.(Laval)
Sadayuki Inoue; M.Sc., Ph.D.(Hok. U.)
André Nantel; B.Sc., M.Sc.(Laval), Ph.D.(Chapel Hill)
Jackson G. Snipes; Ph.D., M.D.(Vanderbilt)

The Department of Anatomy and Cell Biology offers courses which deal with cell biology, histology, embryology, neuroanatomy, and gross anatomy. The Honours Program is designed as the first phase in the training of career cell and molecular biologists. The Major and Faculty programs offer decreasing levels of specializa-
tion in Anatomy and Cell Biology but with a broader base in other biological sciences. These programs also form a sound background for graduate studies in Anatomy and Cell Biology, or for further professional training in schools of medicine, dentistry and other health sciences. A B.Sc. in Anatomy and Cell Biology provides an excellent preparation for technical and administrative positions in laboratories of universities, research institutions, hospitals and pharmaceutical and biotechnological industries.

The Department is equipped to perform cell fractionation, protein purification, recombinant DNA technology, micro-injection of molecules into single cells, cytochemical, immunocytochemical and fluorescent analysis and electron microscopy, proteomics and genomics. The Department has a well-equipped centre for electron microscopy as well as a centre for confocal and immunofluorescence.

Inquiries about programs should be directed to the Department of Anatomy and Cell Biology.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Biomedical Sciences” on page 170 for details.

**FACULTY PROGRAM IN ANATOMY AND CELL BIOLOGY**

(57 credits)

**Required Courses (39 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ANAT212</td>
<td>Molecular Mechanisms of Cell Function</td>
<td>3</td>
</tr>
<tr>
<td>ANAT214</td>
<td>Systemic Human Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>ANAT261</td>
<td>Introduction to Dynamic Histology (must be taken in U1)</td>
<td>4</td>
</tr>
<tr>
<td>ANAT262</td>
<td>Introductory Molecular and Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>ANAT321</td>
<td>Circuitry of the Human Brain</td>
<td>3</td>
</tr>
<tr>
<td>BIOL200</td>
<td>Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL202</td>
<td>Basic Genetics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM212*</td>
<td>Introductory Organic Chemistry 1</td>
<td>4</td>
</tr>
<tr>
<td>CHEM222*</td>
<td>Introductory Organic Chemistry 2</td>
<td>4</td>
</tr>
<tr>
<td>PHGY209</td>
<td>Mammalian Physiology 1</td>
<td>3</td>
</tr>
<tr>
<td>PHGY210</td>
<td>Mammalian Physiology 2</td>
<td>3</td>
</tr>
<tr>
<td>MATH203*</td>
<td>Principles of Statistics 1</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC204</td>
<td>Introduction to Psychological Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL373</td>
<td>Biometry</td>
<td>3</td>
</tr>
</tbody>
</table>

* If the equivalents to these courses were passed in CEGEP, they are not required for the Anatomy and Cell Biology programs, and may not be re-taken at McGill. Students must take the equivalent number of credits in Elective Courses to satisfy the total credit requirement for their degree.

**Complementary Courses (18 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT322</td>
<td>Neuroendocrinology</td>
<td>3</td>
</tr>
<tr>
<td>ANAT355</td>
<td>Cell Biology: Secretory Process</td>
<td>3</td>
</tr>
<tr>
<td>ANAT381</td>
<td>Basis of Embryology</td>
<td>3</td>
</tr>
<tr>
<td>ANAT458</td>
<td>Membranes and Cellular Signaling</td>
<td>3</td>
</tr>
</tbody>
</table>

12 credits selected from biologically oriented courses (BOC), as defined in the Faculty Program.

**HONOURS IN ANATOMY AND CELL BIOLOGY**

(81 credits)

Students should register at the Major level in U1 and, if accepted, may enter the Honors Program at the beginning of U2. To enter the program, the student must obtain a CGPA of at least 3.00 at the end of U1. For promotion to the U3 year of the Honours program, or for entry into the program at this level, the student must have a CGPA of at least 3.20 at the end of their U2 year. It is expected that at the beginning of the third year the students who wish to continue in the Honours Program will be those who feel that they are seriously interested in a career in Cell Biology. The Honours Degree will be recommended after successful completion of the Program with a CGPA of at least 3.20.

**Required Courses (78 credits)**

all Major Program required courses, plus:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT322</td>
<td>Neuroendocrinology</td>
<td>3</td>
</tr>
<tr>
<td>ANAT355</td>
<td>Cell Biology: Secretory Process</td>
<td>3</td>
</tr>
<tr>
<td>ANAT381</td>
<td>Basis of Embryology</td>
<td>3</td>
</tr>
<tr>
<td>ANAT432</td>
<td>Research Project: Anatomical Science</td>
<td>9</td>
</tr>
<tr>
<td>ANAT458</td>
<td>Membranes and Cellular Signaling</td>
<td>3</td>
</tr>
<tr>
<td>BIOL311</td>
<td>Metabolic Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIOL312</td>
<td>Biochemistry of Macromolecules</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses (3 credits)**

3 credits of biologically oriented courses (BOC), as defined in the Faculty Program.

**12.2 Atmospheric and Oceanic Sciences (ATOC)**

Burnside Hall, Room 945
805 Sherbrooke Street West
Montreal, QC H3A2K6

Telephone: (514) 398-3764
Fax: (514) 398-6115
E-mail: undergraduateinfo.aos@mcgill.ca
Website: www.mcgill.ca/meteo

Chair — John R. Gyakum
Emeritus Professors
Roddy R. Rogers; B.S.(Texas), S.M.(M.I.T.), Ph.D.(N.Y.U.)
Edward J. Stansbury; M.A., Ph.D.(Tor.)

Professors
Jacques F. Derome; M.Sc.(McG.), Ph.D.(Mich.)
Henry G. Leighton; M.Sc.(McG.), Ph.D.(Alta.)
Charles A. Lin; B.Sc.(U.B.C.), Ph.D.(M.I.T.)
The Department of Atmospheric and Oceanic Sciences offers, at the undergraduate level, a broad range of courses and degree programs in atmospheric science. At the postgraduate level, programs of study are offered in physical oceanography, air-sea interaction, and climate research as well as in different branches of atmospheric science. The study of atmospheric science is based largely on physics and applied mathematics. All required courses except those at the introductory level generally have prerequisites or corequisites in physics, mathematics, and atmospheric science.

One of the goals of the discipline is to develop the understanding necessary to improve our ability to predict the weather, but atmospheric science is more than weather forecasting.

Another important area of study focuses on the possible changes in global climate caused by the changing chemical composition of the atmosphere. The approach is always quantitative. Like other parts of physics, atmospheric science attempts to create theoretical models of its complex processes, as a means of analyzing the motion and composition of the air, its thermodynamic behaviour, and its interaction with radiation and with the solid or liquid surface beneath it.

From one viewpoint, the atmosphere may be studied as a large volume of gas by the methods of fluid mechanics: winds, circulation patterns, turbulence, and energy and momentum exchanges are the ideas employed in this approach. Alternatively, the atmosphere may be studied from the point of view of its detailed physics: how water condenses in the air, how cloud droplets make rain, how sunlight warms the ground and the ground warms the air above it by radiation and convection, and how the atmosphere and ocean interact to shape the weather and climate. A comprehensive understanding requires both viewpoints, and these are reflected in the curriculum.

The Department of Atmospheric and Oceanic Sciences offers four main programs in Atmospheric Science: Honours, Major, Minor, and a Joint Major in Atmospheric Science and Physics. The Honours program is meant for students with high standing. It is based on courses similar to those in the Major program, but provides the opportunity to take advanced optional courses. The Major program, although somewhat less intensive, satisfies the requirements for a professional career as a meteorologist, and like the Honours program equips the student to undertake postgraduate study in meteorology, atmospheric science, and related sciences (for example physical oceanography) at any of the leading universities. The Department also offers a special one-year Diploma program to B.Sc. or B.Eng. graduates.

A degree in Atmospheric Science can lead to a professional career in government service or private industry. The Meteorological Service of Canada has traditionally been the main employer of graduating students, but certain provincial governments and environmental consulting and engineering firms also employ graduates trained in atmospheric science. Positions in teaching and research are available to graduates with M.Sc. and Ph.D. degrees.

Students interested in any of the undergraduate programs should consult the Undergraduate Adviser, Room 946, Burnside Hall.

Internship Year for Engineering and Science (IYES)

IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see "IYES: Internship Year for Engineering and Science" on page 205.

The following programs are also available with an Internship component:
- Major in Atmospheric Science
- Honours in Atmospheric Science
- A Science Major Concentration in Earth, Atmosphere and Ocean Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Earth, Atmosphere and Ocean Sciences” on page 171 for details.

MINOR IN ATMOSPHERIC SCIENCE (18 credits)

The Minor may be taken in conjunction with any program in the Faculty of Science.

<table>
<thead>
<tr>
<th>Required Courses (15 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC214 (3) Introduction: Physics of the Atmosphere</td>
</tr>
<tr>
<td>ATOC215 (3) Oceans, Weather and Climate</td>
</tr>
<tr>
<td>ATOC219 (3) Introduction to Atmospheric Chemistry</td>
</tr>
<tr>
<td>or CHEM219 (3) Introduction to Atmospheric Chemistry</td>
</tr>
<tr>
<td>ATOC309 (3) Weather Radars and Satellites</td>
</tr>
<tr>
<td>ATOC315 (3) Water in the Atmosphere</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary Course (3 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC412 (3) Atmospheric Dynamics</td>
</tr>
<tr>
<td>or ATOC540 (3) Synoptic Meteorology 1</td>
</tr>
</tbody>
</table>

MAJOR IN ATMOSPHERIC SCIENCE (61 credits)

<table>
<thead>
<tr>
<th>Required Courses (46 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC214 (3) Introduction: Physics of the Atmosphere</td>
</tr>
<tr>
<td>ATOC215 (3) Oceans, Weather and Climate</td>
</tr>
<tr>
<td>ATOC309 (3) Weather Radars and Satellites</td>
</tr>
<tr>
<td>ATOC315 (3) Water in the Atmosphere</td>
</tr>
<tr>
<td>ATOC412 (3) Atmospheric Dynamics</td>
</tr>
<tr>
<td>ATOC540 (3) Synoptic Meteorology 1</td>
</tr>
<tr>
<td>ATOC541 (3) Synoptic Meteorology 2</td>
</tr>
<tr>
<td>ATOC546 (1) Current Weather Discussion</td>
</tr>
<tr>
<td>COMP208 (3) Computers in Engineering</td>
</tr>
<tr>
<td>MATH222 (3) Calculus 3</td>
</tr>
<tr>
<td>MATH223 (3) Linear Algebra</td>
</tr>
<tr>
<td>MATH314 (3) Advanced Calculus</td>
</tr>
<tr>
<td>MATH315 (3) Ordinary Differential Equations</td>
</tr>
<tr>
<td>PHYS230 (3) Dynamics of Simple Systems</td>
</tr>
<tr>
<td>PHYS232 (3) Heat and Waves</td>
</tr>
<tr>
<td>PHYS257 (3) Experimental Methods 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary Courses (15 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-6 credits to satisfy a statistics requirement, usually:</td>
</tr>
<tr>
<td>MATH203 (3) Principles of Statistics 1</td>
</tr>
<tr>
<td>or MATH323 (3) Probability Theory</td>
</tr>
<tr>
<td>and MATH324 (3) Statistics</td>
</tr>
<tr>
<td>3 credits selected from:</td>
</tr>
<tr>
<td>PHYS333 (3) Thermal and Statistical Physics</td>
</tr>
<tr>
<td>PHYS340 (3) Electricity and Magnetism</td>
</tr>
<tr>
<td>6-9 credits ordinarily selected from:</td>
</tr>
<tr>
<td>ATOC419 (3) Advances in Chemistry of Atmosphere</td>
</tr>
<tr>
<td>or CHEM419 (3) Advances in Chemistry of Atmosphere</td>
</tr>
<tr>
<td>ATOC515 (3) Turbulence in Atmosphere and Oceans</td>
</tr>
<tr>
<td>GEOG322 (3) Environmental Hydrology</td>
</tr>
<tr>
<td>GEOG372 (3) Running Water Environments</td>
</tr>
<tr>
<td>MATH317 (3) Numerical Analysis</td>
</tr>
<tr>
<td>MATH319 (3) Partial Differential Equations</td>
</tr>
<tr>
<td>MATH423 (3) Regression and Analysis of Variance</td>
</tr>
<tr>
<td>PHYS241 (3) Signal Processing</td>
</tr>
</tbody>
</table>
PHYS331 (3) Topics in Classical Mechanics  
PHYS332 (3) Physics of Fluids  
or MATH555 (4) Fluid Dynamics  
PHYS340 (3) Electricity and Magnetism  
PHYS442 (3) Electromagnetic Waves  

**JOINT MAJOR IN ATMOSPHERIC SCIENCE AND PHYSICS**  
(67 credits)

This program provides a solid basis for graduate study in meteorology, atmospheric physics, or related fields, and the necessary preparation for embarking on a professional career as a meteorologist directly after the B.Sc.

The program is jointly administered by the Department of Physics and the Department of Atmospheric and Oceanic Sciences. Students should consult undergraduate advisers in both departments.

**Required Courses** (64 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC214</td>
<td>3</td>
<td>Introduction: Physics of the Atmosphere</td>
</tr>
<tr>
<td>ATOC215</td>
<td>3</td>
<td>Oceans, Weather and Climate</td>
</tr>
<tr>
<td>ATOC309</td>
<td>3</td>
<td>Weather Radars and Satellites</td>
</tr>
<tr>
<td>ATOC315</td>
<td>3</td>
<td>Water in the Atmosphere</td>
</tr>
<tr>
<td>ATOC412</td>
<td>3</td>
<td>Synoptic Meteorology 1</td>
</tr>
<tr>
<td>ATOC450</td>
<td>3</td>
<td>Synoptic Meteorology 2</td>
</tr>
<tr>
<td>ATOC456</td>
<td>1</td>
<td>Current Weather Discussion</td>
</tr>
<tr>
<td>MATH222</td>
<td>3</td>
<td>Calculus 3</td>
</tr>
<tr>
<td>MATH223</td>
<td>3</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH314</td>
<td>3</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>MATH315</td>
<td>3</td>
<td>Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH223</td>
<td>3</td>
<td>Calculus 3</td>
</tr>
<tr>
<td>MATH314</td>
<td>3</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>MATH222</td>
<td>3</td>
<td>Calculus 3</td>
</tr>
</tbody>
</table>

**Complementary Course** (3 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS344</td>
<td>3</td>
<td>Optics</td>
</tr>
<tr>
<td>or PHYS449</td>
<td>3</td>
<td>Laboratory in Modern Physics</td>
</tr>
</tbody>
</table>

**HONOURS IN ATMOSPHERIC SCIENCE** (70 credits)

Students can be admitted to the Honours program after completion of the U1 year of the Major in Atmospheric Science program with a minimum GPA of 3.00. They need to complete the U1 year in a different program with a standing of at least 3.00 in order to be admitted to the Honours program on the recommendation of the Department.

A minimum GPA of 3.00 in the Honours Program courses (taken as a whole) is required to remain in the program. A CGPA of 3.00 on the total program is also required to graduate with honours.

**Required Courses** (52 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC214</td>
<td>3</td>
<td>Introduction: Physics of the Atmosphere</td>
</tr>
<tr>
<td>ATOC215</td>
<td>3</td>
<td>Oceans, Weather and Climate</td>
</tr>
<tr>
<td>ATOC309</td>
<td>3</td>
<td>Weather Radars and Satellites</td>
</tr>
<tr>
<td>ATOC315</td>
<td>3</td>
<td>Water in the Atmosphere</td>
</tr>
<tr>
<td>ATOC450</td>
<td>3</td>
<td>Synoptic Meteorology 1</td>
</tr>
<tr>
<td>ATOC515</td>
<td>3</td>
<td>Turbulence in Atmosphere and Oceans</td>
</tr>
<tr>
<td>COMP208</td>
<td>3</td>
<td>Computers in Engineering</td>
</tr>
<tr>
<td>MATH222</td>
<td>3</td>
<td>Calculus 3</td>
</tr>
<tr>
<td>MATH223</td>
<td>3</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH314</td>
<td>3</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>MATH315</td>
<td>3</td>
<td>Ordinary Differential Equations</td>
</tr>
</tbody>
</table>

**Complementary Courses** (18 credits)

3-6 credits to satisfy a statistics requirement, usually:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC203</td>
<td>3</td>
<td>Principles of Statistics 1</td>
</tr>
<tr>
<td>or MATH323</td>
<td>3</td>
<td>Probability Theory</td>
</tr>
<tr>
<td>and MATH324</td>
<td>3</td>
<td>Statistics</td>
</tr>
</tbody>
</table>

3 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS333</td>
<td>3</td>
<td>Electricity and Magnetism</td>
</tr>
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</table>

3-6 credits ordinarily selected from:

<table>
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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC419</td>
<td>3</td>
<td>Advances in Chemistry of Atmosphere</td>
</tr>
<tr>
<td>or CHEM419</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATOC515</td>
<td>3</td>
<td>Turbulence in Atmosphere and Oceans</td>
</tr>
<tr>
<td>MATH317</td>
<td>3</td>
<td>Numerical Analysis</td>
</tr>
<tr>
<td>PHYS241</td>
<td>3</td>
<td>Signal Processing</td>
</tr>
<tr>
<td>PHYS333</td>
<td>3</td>
<td>Topics in Classical Mechanics</td>
</tr>
<tr>
<td>PHYS332</td>
<td>3</td>
<td>Physics of Fluids</td>
</tr>
<tr>
<td>or MATH555</td>
<td>3</td>
<td>Fluid Dynamics</td>
</tr>
<tr>
<td>PHYS340</td>
<td>3</td>
<td>Electricity and Magnetism</td>
</tr>
<tr>
<td>PHYS342</td>
<td>3</td>
<td>Electromagnetic Waves</td>
</tr>
<tr>
<td>GEOG322</td>
<td>3</td>
<td>Environmental Hydrology</td>
</tr>
<tr>
<td>GEOG372</td>
<td>3</td>
<td>Running Water Environments</td>
</tr>
<tr>
<td>MATH423</td>
<td>3</td>
<td>Regression and Analysis of Variance</td>
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6 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC513</td>
<td>3</td>
<td>Waves and Stability</td>
</tr>
<tr>
<td>ATOC531</td>
<td>3</td>
<td>Climate Dynamics 2</td>
</tr>
<tr>
<td>ATOC541</td>
<td>3</td>
<td>Synoptic Meteorology 2</td>
</tr>
</tbody>
</table>

**DIPLOMA IN METEOROLOGY** (30 credits)

The Department offers an intensive, one-year program in theoretical and applied meteorology B Sc. or B.Eng. graduates of suitable standing in physics, applied mathematics or other appropriate disciplines. Leading to a Diploma in Meteorology. The program is designed for students with little or no previous background in meteorology who wish to direct their experience to atmospheric or environmental applications, or who need to fulfill academic prerequisites in meteorology to qualify for employment. For further information, consult the Administrative Officer, Burnside Hall, Room 946.

An exemption of up to 6 credits may be allowed for courses already taken. Students granted such exemptions are required to add complementary courses from an approved list to maintain a total credit count of 30 completed at McGill.

**Required Courses** (18 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC512</td>
<td>3</td>
<td>Atmospheric &amp; Oceanic Dynamics</td>
</tr>
<tr>
<td>ATOC513</td>
<td>3</td>
<td>Waves and Stability</td>
</tr>
<tr>
<td>ATOC530</td>
<td>3</td>
<td>Climate Dynamics 1</td>
</tr>
<tr>
<td>ATOC531</td>
<td>3</td>
<td>Climate Dynamics 2</td>
</tr>
<tr>
<td>ATOC540</td>
<td>3</td>
<td>Synoptic Meteorology 1</td>
</tr>
<tr>
<td>ATOC541</td>
<td>3</td>
<td>Synoptic Meteorology 2</td>
</tr>
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</table>

**Complementary Courses** (12 credits)

6 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC309</td>
<td>3</td>
<td>Weather Radars and Satellites</td>
</tr>
<tr>
<td>ATOC315</td>
<td>3</td>
<td>Water in the Atmosphere</td>
</tr>
<tr>
<td>ATOC419</td>
<td>3</td>
<td>Advances in Chemistry of Atmosphere</td>
</tr>
<tr>
<td>or CHEM419</td>
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</table>

6 credits ordinarily selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOC515</td>
<td>3</td>
<td>Turbulence in Atmosphere and Oceans</td>
</tr>
<tr>
<td>GEOG522</td>
<td>3</td>
<td>Advanced Environmental Hydrology</td>
</tr>
<tr>
<td>MATH317</td>
<td>3</td>
<td>Numerical Analysis</td>
</tr>
<tr>
<td>MATH319</td>
<td>3</td>
<td>Partial Differential Equations</td>
</tr>
<tr>
<td>PHYS331</td>
<td>3</td>
<td>Topics in Classical Mechanics</td>
</tr>
<tr>
<td>PHYS340</td>
<td>3</td>
<td>Electricity and Magnetism</td>
</tr>
<tr>
<td>PHYS342</td>
<td>3</td>
<td>Electromagnetic Waves</td>
</tr>
</tbody>
</table>
12.3 Biochemistry (BIOC)

McIntyre Medical Sciences Building, Room 802
3655 Promenade Sir William Osler
Montreal, QC H3G 1Y6

Telephone: (514) 398-1898
Fax: (514) 398-7384
E-mail: rachel.leger@mcgill.ca
Website: www.medicine.mcgill.ca/biochem

Chair — David Y. Thomas

Emeritus Professors
Angus F. Graham; M.Sc.(Edin.), Ph.D., F.R.S.C.
Rose M. Johnston; B.Sc., Ph.D.(McG.), F.R.S.C.
Samuel Solomon; M.Sc., Ph.D.(McG.), F.R.S.C.
Theodore L. Sourkes; M.Sc.(McG.), Ph.D.(Corn.), F.R.S.C.

Professors
Rhoda Blobstein; B.Sc., M.Sc., Ph.D.(McG.) (joint appoint. with Medicine)
Nicole Beauchemin; B.Sc., M.Sc., Ph.D.(Montr.) (joint appoint. with Oncology)
Philip E. Branton; B.Sc., M.Sc., Ph.D.(Tor.) (Gilman Cheney Professor of Biochemistry)
Peter E. Braun; B.Sc., M.Sc. (U.B.C.), Ph.D. (Berk.)
Vincent Gigüere; B.Sc., Ph.D.(Laval) (joint appoint. with Oncology)
Philippe Gros; B.Sc., M.Sc.(Montr.), Ph.D.(McG.) (James McGill Professor)
Annette A. Herscovics; B.Sc., Ph.D.(McG.), F.R.S.C. (joint appoint. with Oncology)
Robert E. MacKenzie; M.N.S., B.Sc.(Agr.) (McG.), Ph.D.(Ch'ell.)
Edward A. Meighen; B.Sc.(Alta.), Ph.D.(Berk.)
William Muller; B.Sc., Ph.D.(McG.)
Walter E. Mushynski; B.Sc., Ph.D.(McG.)
Morag Park; B.Sc., Ph.D.(Glasgow) (William Dawson Scholar) (joint appoint. with Oncology)
Jerry Pelletier; B.Sc., Ph.D.(McG.)
Gordon C. Shore; B.Sc.(Guelph), Ph.D.(McG.)
Joseph Shuster; B.Sc.(McG.), Ph.D.(Calif.), M.D.(Alta.) (joint appoint. with Medicine)
John R. Silvius; B.Sc., Ph.D.(Alta.)
Nahum Sonenberg; M.Sc., Ph.D.(Weizmann Inst.), F.R.S.C.
(James McGill Professor)
Clifford P. Stanners; B.Sc.(McM.), M.A., Ph.D.(Tor.) (joint appoint. with Oncology)
David V. Thomas; B.Sc.(Bristol), M.Sc.,Ph.D.(Univ. College, Lond.), F.R.S.C.
Michel L. Tremblay; B.Sc., M.Sc. (Sher.), Ph.D.(McM.)
Maria Zannis-Hadjopoulos; B.Sc.,M.Sc., Ph.D.(McG.) (joint appoint. with Oncology)

Associate Professors
Albert Berghuis; B.Sc., M.Sc.(Rijks Univ.Groningen, The Netherlands), Ph.D.(U.B.C.)
Kalie Gehring; M.Sc.(Mich.), Ph.D.(Berk.)
Alain Nepveu; B.Sc.,M.Sc.(Montr.), Ph.D.(Sher.) (joint appoint. with Oncology)
Arnim Pause; B.Sc., M.Sc.(U. Konstanz, Germ.), Ph.D.(McG.)

Assistant Professors
Maxime Bouchard; B.Sc, Ph.D.(Laval)
Imed Gallouzi; Matrise, DEA, Ph.D.(Montpellier, France)

Associate Members
Karine Auclair (Chemistry); John J. Bergeron (Anatomy & Cell Biology); Katherine Cianflone (Exp. Medicine, RVH);
Mark S. Featherstone (Oncology); William C. Galley (Chemistry); Michael Hallett (Computer Science); Peter J. Roughley (Shriners Hospital); Erwin Schutt (Exp. Medicine, RVH); Charles Scrivener (Pediatrics, MCH); Bernard Turcotte (Exp. Medicine, RVH);
Simon Wing (Medicine); Xiang-Jiao Yang (Molecular Oncology, RVH)

Adjoint Professors
Prabhat Arya (NRCC, Ottawa); Michael Cordingley (Boehringer Ingelheim); Mirek Czygler (B.R.I.); Jacques Drouin (Clin. Res. Inst.); Karen Meervootvich (Phytophobie); Donald Nicholson (Merck Frosst); Maureen O'Connor-McCort (B.R.I.); Enrico Purisma (B.R.I.); Sophie Roy (Merck Frosst); Marc Therrien (Clin. Res. Inst.)

Biochemistry is the application of chemical, genetic, and biophysical approaches to the study of biological processes at the cellular and molecular level. Biochemists are interested in the dynamic events that occur in cells, for example, in mechanisms of brain function; cellular differentiation; energy utilization by animals and microorganisms and in the molecular basis of inheritance and disease. The biochemist seeks to determine how specific molecules such as proteins, nucleic acids, lipids, vitamins and hormones function in various cellular processes. Biochemists place particular emphasis on the regulation of reactions in living cells. The knowledge and methods developed by biochemists are applied in all fields of medicine, in agriculture and in many chemical and health-related industries. Biochemistry is unique in providing basic theoretical training as well as basic practical laboratory training and research in both enzymology and genetic engineering, the two basic components in the rapidly expanding field of Biotechnology.

Three programs are offered by the Department of Biochemistry. The Honours and Major programs provide a sound background for students who wish to have a professional career in biochemistry, and can lead to post graduate studies and research careers in hospital, university or industrial laboratories. The Faculty program is less specialized offering students opportunities to select courses in other fields of interest.

During the first year, each program provides basic training in organic, physical and analytical chemistry as well as in biology and physiology. The Honours and Major programs become more specialized in biochemistry during the following two years with additional work in chemistry and biology. Students interested in pursuing an ad hoc Joint Major or Joint Honours degree between Biochemistry and a second discipline may consult with our Chief Adviser.

The increasing involvement of complex technology in modern society requires personnel trained in both chemistry and biology. With the advent of biotechnology, the combination of chemistry, molecular biology, enzymology and genetic engineering found in the biochemistry program provides the essential background and training in this area as well. The biochemist is in an advantageous position to fulfill this role and assume a wide variety of positions in industry and the health field. These range from research and development in the chemical and pharmaceutical industries to testing as well as research in government and hospital laboratories to management. Many graduates take higher degrees in research and attain academic positions in universities and colleges.

PRE-PROGRAM REQUIREMENTS

Entrance requirements for the Faculty, Major and Honours programs are: 6 credits in elementary biology, 6 credits in general chemistry, 3 credits in organic chemistry, 6 credits in calculus, 8 credits in physics.

ADVISERS

New students interested in Biochemistry should call (514) 398-1898 for information regarding academic advising.

Returning Students must schedule an advising appointment directly with the academic adviser assigned to them in their first year in Biochemistry.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Biomedical Sciences” on page 170 for details.
FACULTY PROGRAM IN BIOCHEMISTRY (55 credits)

U1 Required Courses (16 credits)
- BIOC212 (3) Molecular Mechanisms of Cell Function
- BIOL200 (3) Molecular Biology
- BIOL202 (3) Basic Genetics
- CHEM204 (3) Physical Chemistry/Biological Sciences 1
- CHEM222 (4) Introductory Organic Chemistry 2

U1 Complementary Courses (9 credits)
6 credits selected from:
- BIOL205 (3) Biology of Organisms
- MIMM211 (3) Introductory Microbiology
- PHGY209 (3) Mammalian Physiology 1
- PHGY210 (3) Mammalian Physiology 2

3 credits selected from:
- BIOL373 (3) Biometry
- COMP202 (3) Introduction to Computing 1
- MATH222 (3) Calculus 3
- PSYC204 (3) Introduction to Psychological Statistics

U2 Required Courses (15 credits)
- BIOC300D1 (3) Laboratory in Biochemistry
- BIOC300D2 (3) Laboratory in Biochemistry
- BIOC311 (3) Metabolic Biochemistry
- BIOC312 (3) Biochemistry of Macromolecules
- CHEM302 (3) Introductory Organic Chemistry 3

U2 Complementary Courses (3 credits)
3 credits selected from:
- ANAT261 (4) Introduction to Dynamic Histology
- BIOL303 (3) Developmental Biology
- BIOL313 (3) Eukaryotic Cell Biology
- CHEM352 (3) Structural Organic Chemistry
- CHEM382 (3) Organic Chemistry: Natural Products
- MIMM314 (3) Immunology

U3 Complementary Courses (12 credits)
at least 3 credits selected from:
- BIOC450 (3) Protein Structure and Function
- BIOC454 (3) Nucleic Acids

the remaining credits selected from the following list or the above:
- ANAT261 (4) Introduction to Dynamic Histology
- BIOC404 (3) Biophysical Chemistry
- BIOC455 (3) Neurochemistry
- BIOC458 (3) Membranes and Cellular Signaling
- BIOL205 (3) Biology of Organisms
- BIOL303 (3) Molecular Biology of the Gene
- BIOL304 (3) Evolution
- BIOL314 (3) Molecular Biology of Oncogenes
- CHEM214 (3) Physical Chemistry/Biological Sciences 2
- CHEM257D1 (2) Introductory Analytical Chemistry
- CHEM257D2 (2) Introductory Analytical Chemistry
- CHEM352 (3) Structural Organic Chemistry
- CHEM362 (2) Advanced Organic Chemistry Laboratory
- CHEM382 (3) Organic Chemistry: Natural Products
- CHEM402 (3) Advanced Bio-organic Chemistry
- CHEM572 (3) Synthetic Organic Chemistry
- EXMD502 (3) Advanced Endocrinology
- EXMD503 (3) Advanced Endocrinology
- MIMM314 (3) Immunology
- MIMM324 (3) Fundamental Virology
- PHAR300 (3) Drug Action
- PHAR301 (3) Drugs and Disease
- PHGY209 (3) Mammalian Physiology 1
- PHGY210 (3) Mammalian Physiology 2

MAJOR IN BIOCHEMISTRY (67 or 70 credits)
Students may transfer into the Major program at any time provided they have met all course requirements.

U1 Required Courses (20 credits)
- BIOC212 (3) Molecular Mechanisms of Cell Function
- BIOL200 (3) Molecular Biology

U1 Complementary Courses (9 credits)
6 credits, selected from:
- BIOL205 (3) Biology of Organisms
- MIMM211 (3) Introductory Microbiology
- PHGY209 (3) Mammalian Physiology 1
- PHGY210 (3) Mammalian Physiology 2

3 credits selected from:
- BIOL309 (3) Mathematical Models in Biology
- BIOL373 (3) Biometry
- COMP202 (3) Introduction to Computing 1
- MATH203 (3) Principles of Statistics 1
- MATH222 (3) Calculus 3
- PSYC204 (3) Introduction to Psychological Statistics

U2 Required Courses (23 credits)
all Faculty Program U2 Required Courses, plus:
- ANAT282 (3) Introductory Molecular and Cell Biology
- CHEM214 (3) Physical Chemistry/Biological Sciences 2
- CHEM362 (2) Advanced Organic Chemistry Laboratory

U2 Complementary Courses (3 credits)
3 credits selected from:
- BIOL303 (3) Developmental Biology
- BIOL313 (3) Eukaryotic Cell Biology
- CHEM352 (3) Structural Organic Chemistry
- CHEM382 (3) Organic Chemistry: Natural Products
- MIMM314 (3) Immunology

U3 Complementary Courses (6 or 9* credits)
3 credits selected from:
- BIOC404 (3) Biophysical Chemistry
- BIOC455 (3) Neurochemistry
- BIOC458 (3) Membranes and Cellular Signalling
- BIOC460* (6) Advanced Lab in Biochemistry
- BIOC503 (3) Immunohistochemistry

the remainder, if any, to be selected from the following list:
- BIOL300 (3) Molecular Biology of the Gene
- BIOL303 (3) Developmental Biology
- BIOL304 (3) Evolution
- BIOL313 (3) Eukaryotic Cell Biology
- BIOL314 (3) Molecular Biology of Oncogenes
- CHEM352 (3) Structural Organic Chemistry
- CHEM382 (3) Organic Chemistry: Natural Products
- CHEM402 (3) Advanced Bio-organic Chemistry
- CHEM552 (3) Physical Organic Chemistry
- CHEM572 (3) Synthetic Organic Chemistry
- EXMD502 (3) Advanced Endocrinology
- EXMD503 (3) Advanced Endocrinology
- MIMM314 (3) Immunology
- MIMM324 (3) Fundamental Virology
- PHAR300 (3) Drug Action
- PHAR301 (3) Drugs and Disease
- PHGY209 (3) Mammalian Physiology 1
- PHGY312 (3) Intermediate Physiology 2

* Students who are given special permission to take BIOC460 are required to complete 9 credits of complementary courses in U3.

HONOURS IN BIOCHEMISTRY (76 credits)
Admission to the Honours program will not be granted until U2. Students who wish to enter the Honours program in U2 should follow the U1 Major program. Those who satisfactorily complete the
U1 Major program with a GPA of at least 3.20 and a mark of B or B- or better in every required course are eligible for admission to the Honours program.

Students entering the Honours program must obtain permission from the Student Affairs Officer during the Add/Drop period in September of their second year.

Promotion to U3 year is based on satisfactory completion of U2 courses with a GPA of at least 3.20 and a B in every required course. In borderline cases, the marks received in BIOC311 and BIOC312 will be of particular importance for continuation in the U3 Honours year.

For graduation in the Honours program, the student must complete a minimum of 90 credits, pass all required courses with no grade less than B, and achieve a CGPA of at least 3.20.

U1 Required Courses (20 credits)
as for the Major Program U1

U1 Complementary Courses (9 credits)
as for the Major Program U1

U2 Required Courses (23 credits)
as for the Major Program U2

U2 Complementary Courses (3 credits)
as for the Major Program U2

U3 Required Courses (15 credits)

BIOC404  (3)  Biophysical Chemistry
BIOC450  (3)  Protein Structure and Function
BIOC454  (3)  Nucleic Acids
BIOC460  (6)  Advanced Lab in Biochemistry

U3 Complementary Courses (6 credits)
at least 3 credits selected from:

BIOC455  (3)  Neurochemistry
BIOC458  (3)  Membranes and Cellular Signaling
BIOC491  (6)  Independent Research
BIOC503  (3)  Immunology

the remainder, if any, to be selected from the following list:

BIOI300  (3)  Molecular Biology of the Gene
BIOI303  (3)  Developmental Biology
BIOI304  (3)  Evolution
BIOI313  (3)  Eukaryotic Cell Biology
BIOI314  (3)  Molecular Biology of Oncogenes
CHEM352  (3)  Structural Organic Chemistry
CHEM382  (3)  Organic Chemistry: Natural Products
CHEM402  (3)  Advanced Bio-organic Chemistry
CHEM552  (3)  Physical Organic Chemistry
CHEM572  (3)  Synthetic Organic Chemistry
EXMD502  (3)  Advanced Endocrinology
EXMD503  (3)  Advanced Endocrinology
MIMM314  (3)  Immunology
MIMM324  (3)  Fundamental Virology
PHAR300  (3)  Drug Action
PHAR301  (3)  Drugs and Disease
PHGY311  (3)  Intermediate Physiology 1
PHGY312  (3)  Intermediate Physiology 2

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY, see page326. This program is offered by the Departments of Biochemistry, Microbiology and Immunology, and Physiology.

12.4 Biology (BIOL)

Stewart Biological Sciences Building, Room W4-7
1205 Avenue Docteur Penfield
Montreal, QC H3A 1B1
Telephone: (514) 398-6400
Fax: (514) 398-5069
Website: www.mcgill.ca/biology

Chair — Paul F. Lasko

Emeritus Professors
Robert L. Carroll; B.S. (Mich.), M.A., Ph.D.(Harv.), F.R.S.C.
Clark Fraser; O.C., B.Sc (Acadia), M.Sc., Ph.D., M.D.(McG.),
D.Sc.(Acadia), F.R.C.P.(C), F.R.S.C. (Molson Emeritus
Professor of Genetics) (joint appoint. with Human Genetics)
Sarah P. Gibbs; A.B., M.S.(C’nell), Ph.D.(Harv.), F.R.S.C.
(Macdonald Emeritus Professor of Botany)
Jacob Kalif; M.S.A.(Tor.), Ph.D.(Ind.)
John B. Lewis; B.Sc., M.Sc., Ph.D.(McG.)
Gordon A. Maclachlan; B.Sc.(Sask.), Ph.D.(Manit.) (Macdonald
Emeritus Professor of Botany)
Barid B. Mukherjee; B.Sc.(Calc.), M.S.(Brig. Young), Ph.D.(Utah)
(joint appoint. with Human Genetics)
Rolf Sattler; B.Sc.(Tubingen), Ph.D.(Munich), F.R.S.C.

Professors
Graham A.C. Bell; B.A., D.Phil.(Oxon.), F.R.S.C. (James McGill
Professor)
Gregory G. Brown; B.Sc,(Notre Dame), Ph.D.(N.Y.)
A. Howard Bussey; B.Sc., Ph.D.(Brist.), F.R.S.C.
Ronald Chase; A.B.(Stan.), Ph.D.(M.I.T.)
Rajinder S. Dhindsa; B.Sc., M.Sc.(Punj.), Ph.D.(Wash.)
Donald L. Kramer; B.Sc.(Boston Coll.), Ph.D.(Br.Col.)
Paul F. Lasko; A.B.(Harv.), Ph.D.(M.I.T.) (Molson Professor of
Genetics) (joint appoint. with Anatomy & Cell Biology)
Martin Lechowicz; B.A.(Mich. State), M.S., Ph.D.(Wis.)
Louis Lefebvre; B.Sc., M.A., Ph.D.(Montr.)
Catherine Potvin; B.Sc., M.Sc.(Montr.), Ph.D.(Duke)
Rima Rozen; B.Sc., Ph.D., M.Sc.(McG.) (James McGill Professor)
Daniel J. Schoen; B.Sc., M.Sc.(Mich.), Ph.D.(Calif.) (Macdonald
Professor of Botany) (on leave)

Associate Professors
Thomas Bureau; B.Sc.(Calif.), Ph.D.(Texas) (William Dawson
Scholar)
François Fagotto; Ph.D.(Neuchâtel)
Gregor Fussman; Diploma (Berlin), Ph.D.(Max-Planck-Institute)
Andrew Gonzalez; B.Sc.(Univ. Nottingham), Ph.D.(Imperial
College, Univ. London)
Siegfried Hekimi, M.Sc., Ph.D.(Geneva)
Robert L. Levine; B.Sc.(Brown), M.Sc., Ph.D.(Yale)
Gerald S. Pollack; M.A., Ph.D.(Prin.)
Neil M. Price; B.Sc.(New Br.), Ph.D.(Br.Col.)
Beat Suter; Dip., Ph.D.(Zür.) (on leave)

Assistant Professors
Ehab Abouheif; M.Sc.(C’dia), Ph.D.(Duke) (on leave)
Joseph A. Dent; B.Sc., Ph.D.(Colo.)
Irene Gregory-Eaves; B.Sc.(Vic., B.C.), M.Sc., Ph.D.(Queen's)
Frédéric Guichard; B.Sc.(Montr.), Ph.D.(Laval)
Christian Hardtke; M.Sc., Ph.D.(Munich)
Paul Harrison; B.Sc.(National Univ. of Ireland), Ph.D.(University of
London)
Andrew Hendry; B.Sc.(Vic., B.C.) M.Sc., Ph.D.(Wash.)
Rudiger Krahe; Diploma (Alexander University), Ph.D.(Humboldt
University)
Hans Larsson; B.Sc.(McG.), Ph.D.(Chic.)
Laura Nilson; B.A.(Colgate), Ph.D.(Yale) (Canada Research Chair
in Developmental Genetics)

Richard Roy; B.Sc.(Bishop's), Ph.D.(Laval)
Frieder Schoeck; Diploma (Enhrangen), Ph.D.(Max-Planck-
Institute)
Jacalyn Vogel; M.Sc.(E.Ill.), Ph.D.(Kansas)
Tamara Western; B.Sc.(Dal), Ph.D.(Br.Col.)
Monique Zetka; B.Sc., Ph.D.(Br.Col.)

Associate Members
Allan Memorial Institute; Roberta Palmour
Biochemistry: David Y. Thomas
MGH: Sal Carbonetto, Pierre Drapeau, Guy Rouleau
MNI: Kenneth Hastings, Paul Holland
Neurology and Neurosurgery: Michael Ferns
Neuroscience: Robert Dunn
Chair, Dept. of Human Genetics: David Rosenblatt
RVH: Hugh J. Clarke, Teruko Taketo
Biology is the study of living things at the molecular, cellular and organismal levels. It deals with fundamental questions such as the origin and evolution of plants and animals, interactions between living organisms and their environment, mechanisms of embryonic development, structure and function of the living cell and its organelles, molecular basis of inheritance, biochemical and genetic basis of human diseases, and the operation of the brain and the nervous system. The study of biology also has vast practical applications. The knowledge, methods and concepts developed through research in the various fields of biology are applied extensively in agriculture, medicine, biotechnology, genetic engineering, environmental protection and wildlife management.

The Department of Biology offers two Faculty Programs, a Major Program, an Honours Program, a Minor Program and a Minor Concentration in Science for Arts students. The details of these programs are given below.

The prerequisites for Biology programs include, in addition to the minimum requirements for admission to the Faculty of Science, an additional Biology and one course in Organic Chemistry. Students who have a DEC in Science but lack either of these courses must take them as extra requirements. It is advisable to take the additional CEGEP Biology in advance, if possible. The two Biology courses together prepare students for the Biology Program at McGill. Note that an introductory course in Cell and Molecular Biology (BIOL112) is offered in the summer at McGill.

The programs in Biology offer students an opportunity to specialize in more than one area of biology and provide them with a broad training in biology as compared to the more specialized programs in Biochemistry, Microbiology, Physiology and Anatomy. A B.Sc. degree in Biology, therefore, prepares students for a wide range of employment opportunities, including entry to professional schools in medicine, veterinary science, dentistry, agriculture, nursing, education and library science. It also provides solid background for those interested in careers related to environmental protection, wildlife management, biotechnology and genetic engineering. A B.Sc. degree in Biology can also lead to post-graduate studies and research careers in universities, research institutes, hospitals, and industrial or governmental laboratories.

The Department of Biology has well-equipped teaching and research laboratories and its academic staff members, research associates, post-doctoral fellows and graduate students carry out research in areas of molecular biology, human genetics, ecology, animal behaviour, developmental biology, neurobiology, marine biology, plant biology, and evolution. Its teaching and research resources are extended by the Redpath Museum; the Montreal Children's, Jewish General, Montreal General, Royal Victoria and Shriners Hospitals; Macdonald Campus; Montreal Neurological Institute; and the Sheldon Biotechnology Centre. For courses taught in the field, the stations at the Gault Nature Reserve, the Morgan Arboretum, the Bellairs Research Institute in Barbados, the Huntsman Marine Science Centre in New Brunswick, and the Smithsonian Tropical Research Institute in Panama are used. In addition, field stations near Lake Memphremagog and at Schefferville in northern Quebec are available for research projects.

The Department of Biology Undergraduate Programs 2004-2005 booklet ("Blue Book") describes in detail the content of each course and the level at which it is given, the aims and methods used, lectures, references, grading procedures, etc. The "Blue Book" also contains more information on registration, counselling, committee structure and the research interests and facilities which are represented in the Department. It is available on the Web at www.mcgill.ca/biology/undergrad/bluebook.html or for sale in the Biology Department, Room W4/8. Inquiries about undergraduate programs should be directed to the Undergraduate Affairs Office, in Room W4/8, Stewart Biological Sciences Building, telephone (514) 398-7045.

Two Science Major Concentrations in Biology (Organismal Option and Cell/Molecular Option) are available to students pursuing the B.A. & Sc. degree. These Major Concentrations are described in the Bachelor of Arts and Science section of the Calendar; see "Biology (BIOL)" on page 170 for details.

MINOR IN BIOLOGY (24 credits)

The Minor in Biology may be taken in conjunction with any primary program in the Faculty of Science (other than programs offered by the Department of Biology). Students are advised to consult the Undergraduate Adviser in Biology as early as possible (preferably during their first year), in order to plan their course selection.

Six credits of overlap are allowed between the Minor and the primary program.

Required Courses (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL200</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>BIOL201</td>
<td>Cell Biology and Metabolism</td>
</tr>
<tr>
<td>BIOL202</td>
<td>Basic Genetics</td>
</tr>
<tr>
<td>BIOL205</td>
<td>Biology of Organisms</td>
</tr>
<tr>
<td>BIOL215</td>
<td>Introduction to Ecology and Evolution</td>
</tr>
</tbody>
</table>

Complementary Courses (9 credits)

9 credits to be chosen from the Biology Department's course offerings, at the 300 level or above.

FACULTY PROGRAMS

In view of the constantly changing job market for B.Sc. graduates in biology, the Department has designed Faculty Programs to allow students to prepare for a wider range of employment opportunities. These programs offer students an opportunity to specialize in more than one area of biology, to broaden the scope of their scientific background. These programs can be tailored to provide a relatively broad spectrum of biology courses, or provide a degree of specialization in biology which approaches that of a Major Program. The flexibility and scope of these programs will not only enhance the graduate's prospects for employment, but also entrance into graduate studies.

FACULTY PROGRAM IN BIOLOGY (54 or 55 credits)

Required Courses (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL200</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>BIOL201</td>
<td>Cell Biology and Metabolism</td>
</tr>
<tr>
<td>BIOL202</td>
<td>Basic Genetics</td>
</tr>
<tr>
<td>BIOL205</td>
<td>Biology of Organisms</td>
</tr>
<tr>
<td>BIOL215</td>
<td>Introduction to Ecology and Evolution</td>
</tr>
</tbody>
</table>

Complementary Courses (39 or 40 credits)

21 or 22 credits of Biology courses, including 3 or 4 credits selected from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL206</td>
<td>Methods in Biology of Organisms</td>
</tr>
<tr>
<td>BIOL301</td>
<td>Cell and Molecular Laboratory</td>
</tr>
</tbody>
</table>

18 credits of Science courses including, at most, 3 credits of general interest Science courses (not listed in Science Major Programs). Of the Complementary courses at least 6 of the 15 remaining Biology credits and 6 of the 18 Science credits must be above the 200-level, none may be at the 100-level; all are to be approved by the adviser.

FACULTY PROGRAM IN BIOLOGY AND MATHEMATICS (57 credits)

Required Courses (21 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP202</td>
<td>Introduction to Computing I</td>
</tr>
<tr>
<td>MATH133</td>
<td>Vectors, Matrices and Geometry</td>
</tr>
<tr>
<td>MATH222</td>
<td>Calculus 3</td>
</tr>
<tr>
<td>MATH223</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH315</td>
<td>Ordinary Differential Equations</td>
</tr>
<tr>
<td>MATH323</td>
<td>Probability Theory</td>
</tr>
<tr>
<td>MATH324</td>
<td>Statistics</td>
</tr>
</tbody>
</table>
Complementary Courses (36 credits)
21 credits in Biology including
12 credits selected from:
BIOL200 (3) Molecular Biology
BIOL201 (3) Cell Biology and Metabolism
BIOL202 (3) Basic Genetics
BIOL205 (3) Biology of Organisms
BIOL206 (3) Methods in Biology of Organisms
BIOL215 (3) Introduction to Ecology and Evolution
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2
and 9 credits selected from:
BIOL303 (3) Developmental Biology
BIOL306 (3) Neurobiology and Behaviour
BIOL307 (3) Behavioural Ecology/ Sociobiology
BIOL324 (3) Ecological Genetics
BIOL370 (3) Human Genetics Applied
BIOL473 (3) Ecology of Aquatic Invertebrates
BIOL520 (3) Gene Activity in Development
BIOL530 (3) Neural Basis of Behaviour
BIOL531 (3) Neurobiology Learning Memory

6 credits of any other Biological Sciences courses
9 credits of Mathematics
including at least 3 credits selected from:
MATH314 (3) Advanced Calculus
MATH317 (3) Numerical Analysis
MATH319 (3) Partial Differential Equations
MATH327 (3) Matrix Numerical Analysis
MATH407 (3) Dynamic Programming
MATH423 (3) Regression and Analysis of Variance
MATH427 (3) Stochastic Processes
or other suitable mathematics courses chosen in consultation with the adviser.

Advisers: Dr. M. Mackey and L. Glass (Department of Physiology)

MAJOR IN BIOLOGY (55 credits)
The Major requires 55 credits comprising 34 as specified below and 21 additional credits which are to be chosen by students in consultation with their adviser.

U1 Required Courses (18 credits)
BIOL200 (3) Molecular Biology
BIOL201 (3) Cell Biology and Metabolism
BIOL202 (3) Basic Genetics
BIOL205 (3) Biology of Organisms
BIOL206 (3) Methods in Biology of Organisms
BIOL215 (3) Introduction to Ecology and Evolution

U2 or U3 Required Courses (4 credits)
BIOL301 (4) Cell and Molecular Laboratory

U2 or U3 Complementary Courses (12 credits)
12 credits selected from:
BIOL300 (3) Molecular Biology of the Gene
BIOL303 (3) Developmental Biology
BIOL304 (3) Evolution
BIOL306 (3) Neurobiology and Behaviour
BIOL308 (3) Ecological Dynamics

Other Complementary Courses (21 credits)
To be selected in consultation with the student’s adviser. All courses must be at the 300 level or higher; they are to include any seven Biology courses of which at most three may be substituted, given the adviser’s consent, with science courses offered by other departments. Unless required by the Major Program, prerequisites for these courses must be taken as electives.

BIOLOGY CONCENTRATIONS
The concentrations set out below are only guidelines for specialized training. They do not constitute sets of requirements. Students interested in advanced studies in any biological discipline are strongly advised to develop their skills in computing as appropriate. As an aid to students wishing to specialize, the concentrations list key and other suggested courses by discipline.

Animal Behaviour Concentration
Understanding the diverse ways in which animals feed, mate, care for their offspring, avoid predators, select their habitats, communicate, and process information constitute the subject matter of behaviour. Several approaches are used to study these questions. Some focus on ecological consequences and determinants, some on physiological, genetic and developmental mechanisms, others on evolutionary origins.

Key courses:
BIOL304, BIOL305, BIOL306, BIOL307, BIOL331 or BIOL334 or another field course with a significant behavioural component, BIOL373.

Other suggested courses:
BIOL377, BIOL471D1/BIOL471D2, BIOL477, BIOL478

Since animal behaviour builds upon the fields of behaviour, ecology, and evolutionary biology, most courses from these fields will be relevant. Some courses that focus on a particular taxonomic group such as birds (Natural Resource Sciences WILD420), amphibians and reptiles (BIOL327) and marine mammals (BIOL335) include a significant amount of behaviour.

Biological Diversity and Systematics
The study of biological diversity deals with the maintenance, emergence, and history of the inexhaustible variety of different kinds of organisms. It is deeply concerned with the particular characteristics of different organisms and therefore emphasizes the detailed study of particular groups and forms the basis of comparative biology. Our knowledge of diversity is organized through the study of systematics which seeks to understand the history of life and the phylogenetic and genetic relationships of living things. Appreciation and knowledge of diversity and systematics are essential in ecology and evolutionary biology and underlie all work in resource utilization and conservation biology.

Key course:
BIOL304, BIOL305, BIOL373

Other suggested courses:
BIOL240, BIOL324, BIOL327, BIOL328, BIOL329, BIOL331 or BIOL334, BIOL335, BIOL341, BIOL350, BIOL352, BIOL358, BIOL465, BIOL471D1/BIOL471D2, BIOL477 or BIOL478, BIOL505, BIOL555, BIOL569, BIOL594

Macdonald Campus:
PLNT358, PLNT451; ENTO440; WILD350, WILD420; ZOOL307, ZOOL312, ZOOL313, ZOOL424

Evolutionary Biology Concentration
Evolutionary Biology is the study of processes that change organisms and their characteristics through time. Evolutionary biologists are concerned with adaptations of organisms and the process of natural selection.

Key courses:
BIOL304, BIOL305, BIOL307, BIOL324, BIOL331, BIOL352, BIOL373, BIOL435, BIOL471D1/BIOL471D2, BIOL477 or BIOL478, BIOL478, BIOL555, BIOL569, BIOL570, BIOL571, BIOL572, BIOL594

Other suggested courses in Organismal Biology:
BIOL240, BIOL327, BIOL328, BIOL335, BIOL350, BIOL358

Macdonald Campus: WILD420

Genetics and Development: BIOL300, BIOL303

Ecology and Behaviour: BIOL309, BIOL329, BIOL331, BIOL341, BIOL534
**Experimental Plant Biology Concentration**
Research interests span modern molecular genetics, plant physiology and biochemistry, plant ecology and genetics, plant morphogenesis, and the adaptation and evolution of plant form and function. Research is carried out in the field and in the Department's large, excellent controlled-environment facilities. The importance of adaptation to climate and the use of plants for food, chemicals, pharmaceuticals and materials underlie research using biotechnology and quantitative methods to improve cultivated plants and understand natural plant populations.

Key courses:
- BIOL300, BIOL303, BIOL358, BIOL373, BIOL485
- BIOL465, BIOL471D1/BIOL471D2, BIOL477, BIOL478, BIOL555

**Human Genetics Concentration**
The courses recommended for students interested in Human Genetics are designed to offer a broad perspective in this rapidly advancing area of biology. Genetics is covered at all levels of organization (the gene, the chromosome, the cell, the organism and the population), using pertinent examples from all species, but with special emphasis on humans.

Key courses:
- BIOL301, BIOL370, BIOL373, BIOL516, BIOL520, BIOL568, BIOL575

**Molecular Genetics and Development Concentration**
The discoveries that have fuelled the ongoing biomedical and biotechnological revolution have arisen at the intersection of a number of fields of biological investigation, including molecular biology, genetics, cellular and developmental biology and biochemistry. A substantial and significant quantity of this research has been conducted upon model eukaryotic organisms, such as yeast, nematode, the fruit fly, and the mustard weed, Arabidopsis. In the molecular genetics and development concentration students will obtain a comprehensive understanding of how the "model eukaryotes" have advanced our knowledge of the mechanisms responsible for cellular function and organismal development. Graduates from this concentration will be well prepared to pursue higher degrees in the fields of basic biology, biotechnology, and biomedicine or to assume a wide variety of positions in government, universities, and medical and industrial institutions.

Key courses:
- BIOL300, BIOL301, BIOL303, BIOL373, BIOL551, BIOL569; CHEM222, CHEM203 or CHEM204 and CHEM214; MIMM314

**Neurobiology Concentration**
Nervous systems are perhaps the most complex entities in the natural world, being composed of up to trillions of interconnected cells that must operate in a coordinated manner to produce behaviour which can range from the mundane (e.g., regulation of heart rate) to the magnificent (e.g., musical composition). The Neurobiology discipline is one of the fastest growing areas of modern biology, seeks to understand the evolution, development, and operation of nervous systems. The Neurobiology concentration addresses these issues by examination of neural structure, function and development at levels of organization that range from the molecular to the organismal. As a result of exposure to a wide range of experimental and intellectual approaches, students receive a sound, broadly based education in biology.

Key courses:
- BIOL306, BIOL373, BIOL389, BIOL530, BIOL531, BIOL532, BIOL588

**Other suggested courses:**
- ANAT322, BIOL455; BIOL500, BIOL503, BIOL471D1/BIOL471D2, BIOL477, BIOL478; NEUR310; PHAR562; PHGY451, PHGY520, PHGY556; PSYC311, PSYC318, PSYC342, PSYC410, PSYC470, PSYC522; PSYT500

**CONCENTRATIONS AVAILABLE WITHIN THE AREA OF ECOTOLOGY**
Ecology is the study of the interactions between organisms and environment that affect distribution, abundance, and other characteristics of the organisms. A strong analytical and quantitative orientation is common to all areas of ecology, and thus students wishing to specialize in these areas are strongly encouraged to develop their background in statistical analysis, computer, and mathematical modeling. Many of the ecology courses feature a strong analytical component, and students will find that background preparation in this area is very useful, if not essential. Ecology depends heavily on field research, and thus BIOL331 and other field courses should be considered as vital to all concentrations in this area.

**Aquatic Ecology Concentration**
This concentration is designed to introduce the principles of ecology as they pertain to aquatic ecosystems and aquatic biota. Since it is essential to know how knowledge is obtained, as well as what has been learned, three of the courses (limnology, fish ecology, and aquatic invertebrate ecology) involve field components that stress the techniques used to study aquatic ecology. In addition, the concentration includes a field course in ecology. There is also a variety of courses in aquatic disciplines offered in other departments that complement the aquatic ecology courses offered in Biology.

Key courses:
- BIOL305, BIOL308, BIOL331 or another field course, BIOL373, BIOL432, BIOL441, BIOL442, BIOL465; COMP202 or COMP273

**General and Applied Ecology Concentration**
The concentration in general and applied ecology is designed to introduce the breadth of contemporary ecology, at the levels of the ecosystem, communities and populations, and at the level of the individual organism, with an accent on the application of this science to practical problems in environmental management, and the management of resources and pests. In addition to general courses dealing with general principles, there is a selection of courses dealing with particular groups of organisms. Since it is essential to know how knowledge is obtained, the concentration includes a field course in ecology.

Key courses:
- BIOL305, BIOL308, BIOL331 or BIOL334, BIOL350, BIOL373; COMP202 or COMP273

**Macdonald Campus:**
- PLNT451, PLNT460

**Marine Biology Concentration**
This concentration is designed to offer students a broad introduction to Marine Biology and Marine Ecology which will form the basis for graduate studies in the fields, or to employment in Aquatic Biology and Oceanography.

Key courses:
- ATOC310; BIOL305, BIOL308, BIOL335, BIOL373, BIOL441, BIOL442
Other suggested courses:
ATOC220, ATOC512, ATOC550, ATOC551, ATOC561; BIOL329, BIOL331, BIOL334, BIOL432, BIOL465, BIOL534; EPSC542

For students intending to proceed to graduate work, one independent studies course (BIOL471D1/BIOL471D2, BIOL477 or BIOL478) is recommended. Because of the importance of numerical analyses in all fields of Ecology, courses in Biomethy (e.g. BIOL373) and Computer Science (COMP202 or COMP273) are recommended.

**HONOURS IN BIOLOGY** (68 or 71 credits)

The Honours program in Biology is designed expressly as a preparation for graduate studies and research, and provides students with an enriched training in biology and some research experience in a chosen area. Acceptance into the Honours Program at the end of U2 requires a CGPA of 3.20 and approval of a 9- or 12-credit Independent Studies proposal (see listing of BIOL479 and BIOL480 for details). For an Honours degree, a minimum CGPA of 3.20 in the U3 year and adherence to the program as outlined below are the additional requirements.

**U1 Required Courses** (18 credits)

as for the Major program

**U2 and U3 Required Courses** (7 credits)

BIOL301 (4) Cell and Molecular Laboratory
BIOL373 (3) Biometry

**U2 and U3 Complementary Courses** (30 credits)

12 credits selected from:

BIOL300 (3) Molecular Biology of the Gene
BIOL303 (3) Developmental Biology
BIOL304 (3) Evolution
BIOL306 (3) Neurobiology and Behaviour
BIOL308 (3) Ecological Dynamics

18 credits in Biology at the 300 level or higher

**U3 Required Courses** (4 credits)

BIOL499D1 (2) Honours Seminar in Biology
BIOL499D2 (2) Honours Seminar in Biology

**U3 Complementary Courses** (9 or 12 credits)

either:

BIOL479D1 (4.5) Independent Studies in Biology
BIOL479D2 (4.5) Independent Studies in Biology
or:

BIOL480D1 (6) Independent Studies in Biology
BIOL480D2 (6) Independent Studies in Biology

**PANAMA FIELD STUDY SEMESTER**, see page393 under the McGill School of Environment for details of the 15-credit interdisciplinary PFSS.

**AFRICAN FIELD STUDY SEMESTER**, see page325 under Geography for details of the 15-credit interdisciplinary AFSS.

**Note:** The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

Also available is a Minor in Computational Molecular Biology, see page319 under Computer Science.

12.5 Biotechnology (BIOT)

Sheldon Biotechnology Centre
Lyman-Duff Building
Telephone: (514) 398-3998

Program Supervisor
Professor Hugh P.J. Bennett; B.A.(York), Ph.D.(Brun.)

Biotechnology, the science of understanding, selecting and promoting useful organisms and specific gene products for commercial and therapeutic purposes, is the success story of this generation. It demands a broad comprehension of biology and engineering as well as detailed knowledge of at least one basic subject such as molecular genetics, protein chemistry, microbiology, or chemical engineering.

The Minor in Biotechnology is offered by the Faculties of Engineering and of Science, and students combine the Minor with the regular departmental Major (or Honours or Faculty) program. The Minor emphasizes an area relevant to biotechnology which is complementary to the main program.

Students should identify their interest in the Biotechnology Minor to their departmental academic adviser and to the Program Supervisor of the Minor and, at the time of registration for the U2 year, should declare their intent to embark on the Minor. Before registering for the Minor, and with the agreement of the academic adviser, students must submit their course list to the Program Supervisor who will certify that the student's complete program conforms to the requirements for the Minor. Students should ensure that they will have fulfilled the prerequisite requirements for the courses selected.

The BIOT course listed in the course section of this Calendar is considered as a course taught by the Faculty of Science.

**GENERAL REGULATIONS**

To obtain the Minor in Biotechnology the students must:

a) satisfy the requirements both for the departmental program and for the Minor.

b) complete 24 credits, 18 of which must be exclusively for the Minor program.

c) obtain a grade of C or better in the courses presented for the Minor.

**MINOR IN BIOTECHNOLOGY** (24 credits)

**PROGRAM FOR STUDENTS IN THE FACULTY OF SCIENCE**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>15 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL200 (3) Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL201 (3) Cell Biology and Metabolism</td>
<td></td>
</tr>
<tr>
<td>or BIOC212 (3) Molecular Mechanisms of Cell Function</td>
<td></td>
</tr>
<tr>
<td>BIOL202 (3) Basic Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOT505 (3) Selected Topics in Biotechnology</td>
<td></td>
</tr>
<tr>
<td>MIMM211 (3) Introductory Microbiology</td>
<td></td>
</tr>
</tbody>
</table>

**Complementary Courses** (9 credits)

selected from courses outside the department of the main program, these may be taken from those listed as required courses for Engineering students. Alternatively, or in addition, courses may be taken from the lists below; in which case, at least three courses must be taken from one area of concentration as grouped.

* As 18 credits must be applied exclusively to the Minor, approved substitutions must be made for any of the specified courses which are part of the student's main program.

**PROGRAM FOR STUDENTS IN THE FACULTY OF ENGINEERING**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>12 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOT505 (3) Selected Topics in Biotechnology</td>
<td></td>
</tr>
<tr>
<td>CHEE200 (3) Introduction to Chemical Engineering</td>
<td></td>
</tr>
<tr>
<td>CHEE204 (3) Chemical Manufacturing Processes</td>
<td></td>
</tr>
<tr>
<td>CHEE474 (3) Biochemical Engineering</td>
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</tr>
</tbody>
</table>

**Complementary Courses** (12 credits)

selected from courses outside the department of the main program, these may be taken from those listed as required courses for Science students. Alternatively, or in addition, courses may be taken from the lists below; in which case, at least three courses must be taken from one area of concentration as grouped.

* As 18 credits must be applied exclusively to the Minor, approved substitutions must be made for any of the specified courses which are part of the student's main program.

**Biomedicine**

| ANAT541 (6) Cell and Molecular Biology of Aging |
| EXMD504 (6) Biology of Cancer |
| PATH300 (6) Human Disease |
Yvan Guindon;  B.Sc., Ph.D. (Montr.), F.C.I.Ch., F.R.S.C.
Romas Kazlauskas;  B.Sc. (Clev. St.), Ph. D. (M.I.T.)
R. St. John Manley;  B.Sc., Ph.D. (McG.), D.Sc. (Uppsala)
Christian Reber;  B.Sc., Ph.D. (Berne)
Youla Tsantizios;  B.Sc., Ph.D. (McG.)
Theo G.M. van de Ven;  Kand. Doc. (Utrech), Ph.D. (McG.)
Ivor Wharf;  B.Sc., Ph.D. (Lond.), A.R.C.S., D.I.C.
C.T. Yim;  B.Sc., Ph.D. (McG.)
Robert Zamboni;  B.Sc., Ph.D. (McG.)

Office for Science and Society
The Office for Science and Society is dedicated to the promotion of critical thinking and the presentation of practical scientific information to the public, educators and students in an accurate and responsible fashion. The Office answers queries from the public as well as from the media, with a view towards establishing scientific accuracy. The Office also offers a variety of educational and interesting presentations on scientific topics and its members contribute to a number of courses under the umbrella of "The World of Chemistry".

Director
Joseph A. Schwarcz;  B.Sc., Ph.D. (McG.)

Members
Ariel Fenster;  L. ès S., D.E.A. (Paris), Ph.D. (McG.)
David N. Harpp;  A.B. (Middlebury), M.A. (Wesleyan), Ph.D. (N.Carolina), F.C.I.Ch. (William C. Macdonald Professor of Chemistry)

Chemistry is both a pure science, offering a challenging intellectual pursuit, and an applied science whose technology is of fundamental importance to the economy and society. Modern chemists seek an understanding of the structure and properties of atoms and molecules to predict and interpret the properties and transformations of matter and the energy changes that accompany those transformations. Many of the concepts of physics and mathematics are basic to chemistry, while chemistry is of fundamental importance to many other disciplines such as the biological and medical sciences, geology, metallurgy, etc.

A degree in chemistry leads to a wide variety of professional vocations. The large science-based industries (petroleum refining, plastics, pharmaceuticals, etc.) all employ chemists in research, development and quality control. Many federal and provincial departments and agencies employ chemists in research and testing laboratories. Such positions are expected to increase with the currently growing concern for the environment and for consumer protection. A background in chemistry is also useful as a basis for advanced study in other related fields, such as medicine and the biological sciences. For a business career, a B.Sc. in Chemistry can profitably be combined with a master's degree in Business Administration, or a study of law for work as a patent lawyer or forensic scientist.

Chemistry courses at the university level are traditionally divided into four areas of specialization: 1) organic chemistry, dealing with the compounds of carbon; 2) inorganic chemistry, concerned with the chemistry and compounds of elements other than carbon; 3) analytical chemistry, which deals with the identification of substances and the quantitative measurement of the composition; and 4) physical chemistry, which treats the physical laws and energetics governing chemical reactions. Naturally, there is a great deal of overlap between these different areas, and the boundaries are becoming increasingly blurred. After a general course at the collegial level, courses in organic, inorganic, analytical and physical chemistry are offered through the university years. Since chemistry is an experimental science, laboratory classes accompany most undergraduate courses. In addition, courses are offered in polymer, theoretical, green, nano and biological chemistry to upper-year undergraduates.

There are two main programs in the Department of Chemistry, Honours and Major. The Honours program is intended primarily for students wishing to pursue graduate studies in chemistry. While the Major program is somewhat less specialized, it is still recognized as sufficient training for a career in chemistry. It can also lead to graduate studies although an additional qualifying year may be necessary. There are also a number of Faculty programs available. Interested students may inquire about these at the Student Advisory Office, Room 304, Otto Maass Chemistry Building, or see www.mcgill.ca/chemistry/advising.

PRE-PROGRAM REQUIREMENTS
Students entering from the Freshman program must have included CHEM120/CHIM110, BIOL111 or BIOL112, MATH150/ MATH151 or MATH140/ MATH141, PHYS131/PHYS142, or their equivalents in their Freshman year. Quebec students must have completed the DEC with appropriate science and mathematics courses.

REQUIRED COURSES IN CHEMISTRY PROGRAMS
The required courses in Chemistry programs consist of 56 credits in chemistry, physics and mathematics, listed below. The courses marked with an asterisk (*) are omitted from the program of students who have successfully completed them at the CEGEP level but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Ordre des chimistes du Québec. Students from outside Quebec or transfer students should consult the academic adviser.

A computer science course, either COMP102 or COMP202, will be required during U1 for students who have no previous introduction to computer programming. Students are required to contact their adviser on this matter. Completion of Mathematics MATH222 and MATH315 during U1 is strongly recommended. Physics PHYS242 should be completed during U2.

Chemistry Majors and Honours Programs
Required Courses (56 credits)

CHEM212*  (4) Introductory Organic Chemistry 1
CHEM213  (3) Introductory Physical Chemistry
CHEM222*  (4) Introductory Organic Chemistry 2
CHEM273  (1) Chemical Kinetics
CHEM277D1  (1.5) Analytical Chemistry
CHEM277D2  (1.5) Analytical Chemistry
CHEM281  (3) Inorganic Chemistry 1
CHEM302  (3) Introductory Organic Chemistry 3
CHEM345  (3) Molecular Properties and Structure 1
CHEM355  (3) Molecular Properties and Structure 2
CHEM363  (2) Physical Chemistry Laboratory 1
CHEM365  (2) Statistical Thermodynamics
CHEM367  (3) Instrumental Analysis 1
CHEM377  (3) Instrumental Analysis 2
CHEM381  (3) Inorganic Chemistry 2
CHEM394  (3) Integrated Inorganic/Organic Laboratory
CHEM393  (2) Physical Chemistry Laboratory 2
MATH133*  (3) Vectors, Matrices and Geometry
MATH222*  (3) Calculus 2
CHEM355  (3) Ordinary Differential Equations
PHYS242  (2) Electricity and Magnetism

* asterisks denote courses with CEGEP equivalents

HONOURS IN CHEMISTRY (74 credits)
Required Courses (56 credits)
56 credits as listed above

Complementary Courses (18 credits)
6 credits of research*:
CHEM470  (6) Research Project
or CHEM480  (3) Research Project
and CHEM490  (3) Research Project

and 12 credits of additional Chemistry courses:
6 credits of which must be at the 300 level or higher, and
6 credits of which must be at the 400 level or higher

* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfill the program requirement.
Attainment of the Honours degree requires a CGPA of at least 3.00.
HONOURS WITH BIO-ORGANIC OPTION (78 credits)

Required Courses (60 credits)
54 credits, all courses specified above for Chemistry Honours, except PHYS242.
plus the following 6 credits:
BIOI200 (3) Molecular Biology
BIOI201 (3) Cell Biology and Metabolism

Complementary Courses (18 credits)
6 credits of research:
CHEM470 (6) Research Project
or CHEM480 (3) Research Project
and CHEM490 (3) Research Project
6 credits, two of:
BIOI202 (3) Basic Genetics
BIOI301 (3) Cell and Molecular Laboratory
CHEM302 (3) Advanced Bio-Organic Chemistry
MIMM211 (3) Introductory Microbiology
MIMM314 (3) Immunology
MIMM323 (3) Microbial Physiology
PHGY201 (3) Human Physiology: Control Systems
PHGY202 (3) Human Physiology: Body Functions
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2
and 6 credits of additional Chemistry courses at the 400 level or higher.

* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

HONOURS IN CHEMISTRY: ENVIRONMENTAL CHEMISTRY OPTION (77 credits)

Required Courses (62 credits)
56 credits, all courses specified above for Honours Chemistry, plus the following 6 credits:
CHEM219 (3) Introduction to Atmospheric Chemistry
CHEM307 (3) Analytical Chemistry of Pollutants

Complementary Courses (15 credits)
6 credits of research:
CHEM470 (6) Research Project
or CHEM480 (3) Research Project
and CHEM490 (3) Research Project
3 credits, one of:
CHEM419 (3) Advances in Chemistry of Atmosphere
CHEM462 (3) Green Chemistry
CHEM567 (3) Chemometrics: Data Analysis
CHEM575 (3) Chemical Kinetics

6 credits, two of:
ATOC220 (3) Introduction to Oceanic Sciences
CHEM352 (3) Structural Organic Chemistry
CHEM597 (3) Analytical Spectroscopy
EPSC342 (3) Chemical Oceanography

* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

HONOURS WITH MATERIALS OPTION (77 credits)

Required Courses (62 credits)
56 credits, all courses specified above for Honours Chemistry plus the following 6 credits:
CHEM344 (3) Advanced Materials
CHEM455 (3) Introductory Polymer Chemistry

Complementary Courses (15 credits)
6 credits of research:
CHEM470 (6) Research Project
or CHEM480 (3) Research Project
and CHEM490 (3) Research Project
6 credits, two of:
CHEM531 (3) Chemistry of Inorganic Materials
CHEM534 (3) Nanoscience and Nanotechnology
CHEM543 (3) Chemistry of Pulp and Paper
CHEM571 (3) Polymer Synthesis
CHEM585 (3) Colloid Chemistry
3 credits, one of:
CHEE481 (3) Polymer Engineering
MIME280 (3) Materials Science and Engineering
MRKT360 (3) Marketing of Technology

* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfill the program requirement.

Attainment of the Honours degree requires a CGPA of at least 3.00.

HONOURS IN CHEMISTRY (62 credits)

Required Courses (56 credits)
56 credits as listed above

Complementary Courses (6 credits)
6 credits of additional Chemistry courses at the 300 level or higher.

Attainment of the Honours degree requires a CGPA of at least 3.00.

MAJOR IN CHEMISTRY (62 credits)

Required Courses (56 credits)
54 credits as listed above
Complementary Courses (6 credits)
6 credits of additional Chemistry courses at the 300 level or higher.

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR WITH BIO-ORGANIC OPTION (66 credits)

Required Courses (63 credits)
54 credits, all courses specified above for the Chemistry Major, except PHYS242.
plus the following 9 credits:
BIOI200 (3) Molecular Biology
BIOI201 (3) Cell Biology and Metabolism
CHEM502 (3) Advanced Bio-Organic Chemistry

Complementary Course (3 credits)
one of:
BIOI202 (3) Basic Genetics
BIOI301 (3) Cell and Molecular Laboratory
MIMM211 (3) Introductory Microbiology
PHGY201 (3) Human Physiology: Control Systems
PHGY202 (3) Human Physiology: Body Functions
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR IN CHEMISTRY: ENVIRONMENTAL CHEMISTRY OPTION (65 credits)

Required Courses (62 credits)
56 credits, all courses specified above for the Chemistry Major, plus the following 6 credits:
CHEM219 (3) Introduction to Atmospheric Chemistry
CHEM307 (3) Analytical Chemistry of Pollutants
one of:
CHEM419 (3) Advances in Chemistry of Atmosphere
CHEM462 (3) Green Chemistry
CHEM567 (3) Chemometrics: Data Analysis
CHEM575 (3) Chemical Kinetics

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR WITH BIO-ORGANIC OPTION (66 credits)

Required Courses (63 credits)
54 credits, all courses specified above for the Chemistry Major, plus the following 9 credits:
BIOI200 (3) Molecular Biology
BIOI201 (3) Cell Biology and Metabolism
CHEM502 (3) Advanced Bio-Organic Chemistry

Complementary Course (3 credits)
one of:
BIOI202 (3) Basic Genetics
BIOI301 (3) Cell and Molecular Laboratory
MIMM211 (3) Introductory Microbiology
PHGY201 (3) Human Physiology: Control Systems
PHGY202 (3) Human Physiology: Body Functions
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2

Attainment of the Major degree requires a CGPA of 2.00.

MAJOR IN CHEMISTRY: ENVIRONMENTAL CHEMISTRY OPTION (65 credits)

Required Courses (62 credits)
56 credits, all courses specified above for the Chemistry Major, plus the following 6 credits:
CHEM219 (3) Introduction to Atmospheric Chemistry
CHEM307 (3) Analytical Chemistry of Pollutants
one of:
CHEM419 (3) Advances in Chemistry of Atmosphere
CHEM462 (3) Green Chemistry
CHEM567 (3) Chemometrics: Data Analysis
CHEM575 (3) Chemical Kinetics

Attainment of the Major degree requires a CGPA of 2.00.
MAJOR WITH MATERIALS OPTION (65 credits)

Required Courses (52 credits)
56 credits, all courses specified above for the Chemistry Major, plus the following 6 credits:
CHEM344 (3) Advanced Materials
CHEM455 (3) Introductory Polymer Chemistry

Complementary Course (3 credits)
one of:
CHEM531 (3) Chemistry of Inorganic Materials
CHEM534 (3) Nanoscience and Nanotechnology
CHEM543 (3) Chemistry of Pulp and Paper
CHEM571 (3) Polymer Synthesis
CHEM585 (3) Colloid Chemistry

Attainment of the Major degree requires a CGPA of 2.00.

FACULTY PROGRAMS IN CHEMISTRY

Faculty programs in Chemistry are constructed from the U1 courses and the general courses of U2 and U3 intended for these students. Consult the Department of Chemistry Student Advisory Office for an adviser. A computer science course, either COMP102 or COMP202, will be required during U1 for students who have no previous introduction to computer programming.

FACULTY PROGRAM IN CHEMISTRY (52 credits)

Required Courses (31 credits)
CHEM212* (4) Introductory Organic Chemistry 1
CHEM222* (4) Introductory Organic Chemistry 2
CHEM277D1 (1.5) Analytical Chemistry
CHEM277D2 (1.5) Analytical Chemistry
CHEM302 (3) Introductory Organic Chemistry 3
CHEM345 (3) Molecular Properties and Structure 1
CHEM367 (3) Instrumental Analysis 1
CHEM377 (3) Instrumental Analysis 2
MATH222* (3) Calculus 3
MATH315 (3) Ordinary Differential Equations
PHYS242 (2) Electricity and Magnetism

* asterisks denote courses with CEGEP equivalents

Complementary Courses (21 credits)
6 credits, one of the following course sets:
CHEM204 (3) Physical Chemistry/Biological Sciences 1
and CHEM214 (3) Physical Chemistry/Biological Sciences 2
or CHEM213 (3) Introductory Physical Chemistry
and CHEM355 (3) Molecular Properties and Structure 2

6 credits, two of the following courses:
CHEM201 (3) Modern Inorganic Chemistry 1
or CHEM281 (3) Inorganic Chemistry 1
CHEM301 (3) Modern Inorganic Chemistry 2
or CHEM381 (3) Inorganic Chemistry 2
9 credits from:
CHEM352 (3) Structural Organic Chemistry
CHEM355 (3) Molecular Properties and Structure 2
CHEM363 (2) Physical Chemistry Laboratory 1
CHEM382 (3) Organic Chemistry: Natural Products
CHEM392 (3) Physical Chemistry/Biological Sciences 1
CHEM562 (2) Advanced Organic Chemistry Laboratory
CHEM582 (3) Organic Chemistry: Natural Products

or any 400-level courses in Chemistry for which the prerequisites are satisfied.

FACULTY PROGRAM IN CHEMISTRY AND BIOLOGICAL SCIENCES (55 credits)

Required Courses (49 credits)
Biol200 (3) Molecular Biology
Biol201 (3) Cell Biology and Metabolism
Biol205 (3) Biology of Organisms
Biol301 (4) Cell and Molecular Laboratory
Biol304 (3) Evolution
CHEM204 (3) Physical Chemistry/Biological Sciences 1
CHEM214 (3) Physical Chemistry/Biological Sciences 2
CHEM222* (4) Introductory Organic Chemistry 2
CHEM257D1 (2) Introductory Analytical Chemistry
CHEM257D2 (2) Introductory Analytical Chemistry
CHEM302 (3) Introductory Organic Chemistry 3
CHEM352 (3) Structural Organic Chemistry
CHEM362 (2) Advanced Organic Chemistry Laboratory
CHEM382 (3) Organic Chemistry: Natural Products
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2
PHYS242 (2) Electricity and Magnetism

* asterisks denote courses with CEGEP equivalents

Complementary Courses (6 credits)
6 credits approved by the adviser.

FACULTY PROGRAM IN CHEMISTRY AND MATHEMATICS

(51 or 52 credits)

Required Courses (46 credits)
CHEM212* (4) Introductory Organic Chemistry 1
CHEM222* (4) Introductory Organic Chemistry 2
CHEM277D1 (1.5) Analytical Chemistry
CHEM277D2 (1.5) Analytical Chemistry
CHEM281 (3) Inorganic Chemistry 1
CHEM345 (3) Molecular Properties and Structure 1
CHEM355 (3) Molecular Properties and Structure 2
MATH222* (3) Calculus 3
MATH223 (3) Linear Algebra
MATH314 (3) Advanced Calculus
MATH315 (3) Ordinary Differential Equations
MATH317 (3) Numerical Analysis
MATH319 (3) Partial Differential Equations
MATH323 (3) Probability Theory
MATH324 (3) Statistics
PHYS242 (2) Electricity and Magnetism

* asterisks denote courses with CEGEP equivalents

Complementary Courses (5 or 6 credits)
5 or 6 credits, one of the following course sets:
CHEM204 (3) Physical Chemistry/Biological Sciences 1
and CHEM214 (3) Physical Chemistry/Biological Sciences 2
or CHEM213 (3) Introductory Physical Chemistry
and CHEM365 (2) Statistical Thermodynamics

FACULTY PROGRAM IN MATHEMATICS, CHEMISTRY AND PHYSICS, see page 330 under Mathematics and Statistics.

MINOR IN CHEMISTRY (18 credits)

Required Courses (18 credits)
CHEM203 (3) Survey of Physical Chemistry
CHEM212 (4) Introductory Organic Chemistry 1
CHEM222* (4) Introductory Organic Chemistry 2
CHEM257D1 (2) Introductory Analytical Chemistry
CHEM257D2 (2) Introductory Analytical Chemistry
CHEM281 (3) Inorganic Chemistry 1

* asterisks denote courses with CEGEP equivalents

Substitutions for these by more advanced courses may be made at the discretion of the adviser.

MINOR IN CHEMICAL ENGINEERING (24 credits)

A Chemical Engineering Minor will be of interest to Chemistry students who wish to study the problems of process engineering and its related subjects. A student completing this Minor will be able to make the important link between molecular sciences and industrial processing. This Minor will not provide Professional Engineering accreditation.

Required Courses (7 credits)
CHEE200 (4) Introduction to Chemical Engineering
CHEE204 (3) Chemical Manufacturing Processes

Complementary Courses (17 credits)
at least one of:
CHEE220 (3) Chemical Engineering Thermodynamics
CHEE314 (4) Fluid Mechanics
with the remainder chosen from the following:
CHEE230  (3) Environmental Aspects of Technology
CHEE315  (4) Heat and Mass Transfer
CHEE351  (3) Separation Processes
CHEE370  (3) Elements of Biotechnology
CHEE380  (3) Materials Science
CHEE392  (4) Project Laboratory 1
and CHEE393  (5) Project Laboratory 2
CHEE443  (3) Engineering Principles in Pulp and Paper Processes
CHEE452  (3) Particulate Systems
CHEE471  (3) Industrial Water Pollution Control
CHEE472  (3) Industrial Air Pollution Control
CHEE481  (3) Polymer Engineering
CHEE487  (3) Chemical Processing; Electronics Industry
CHEE494  (3) Research Project and Seminar
or CHEE495  (4) Research Project and Seminar
MATH314  (3) Advanced Calculus

12.7 Cognitive Science

Program Director — Professor James McGilvray
Website: www.cogsci.mcgill.ca

Cognitive Science is the multidisciplinary study of cognition in humans and machines. The goal is to understand the principles of intelligence with the hope that this will lead to better understanding of the mind and of learning, and to the development of intelligent devices that constructively extend human abilities.

The Minor in Cognitive Science is intended to supplement and support Major or Honours programs in Computer Science, Linguistics, Philosophy, or Psychology. Students wishing to enrol in this Minor must register with the Program Director.

MINOR IN COGNITIVE SCIENCE  (27 credits)

Required Course  (3 credits)
PSYC532  (3) Cognitive Science

Complementary Courses  (24 credits)
from outside of the student’s home department, selected from the courses listed below.

Computer Science
COMP424  (3) Topics: Artificial Intelligence 1
COMP426  (3) Automated Reasoning
COMP558  (3) Fundamentals of Computer Vision

Educational Psychology
EDPE555  (3) Applied Cognitive Science

Linguistics
LING331  (3) Phonology 1
LING355  (3) Language Acquisition 1
LING370  (3) Introduction to Semantics
LING371  (3) Syntax 1
LING419  (3) Linguistic Theory 1
LING440  (3) Morphology
LING531  (3) Phonology 2
LING555  (3) Language Acquisition 2
LING571  (3) Syntax 2
LING590  (3) Introduction to Neurolinguistics

Mathematics
MATH318  (3) Mathematical Logic
MATH328  (3) Computability and Mathematical Linguistics

Philosophy
PHIL210  (3) Introduction to Deductive Logic 1
PHIL304  (3) Chomsky
PHIL306  (3) Philosophy of Mind
PHIL310  (3) Intermediate Logic
PHIL410  (3) Topics in Advanced Logic 1
PHIL415  (3) Philosophy of Language
PHIL419  (3) Epistemology

PHIL506  (3) Seminar: Philosophy of Mind
PHIL507  (3) Seminar: Cognitive Science

Psychology
PSYC211  (3) Intro Behavioural Neuroscience
PSYC212  (3) Perception
PSYC213  (3) Cognition
PSYC301  (3) Learning
PSYC308  (3) Behavioural Neuroscience 1
PSYC311  (3) Human Cognition and the Brain
PSYC353  (3) Laboratory in Human Perception
PSYC410  (3) Special Topics in Neuropsychology
PSYC413  (3) Cognitive Development
PSYC470  (3) Memory and Brain

12.8 Computer Science (COMP)

McConnell Engineering Building, Room 318
3480 University Street
Montreal, QC H3A 2A7
Telephone: (514) 398-7071
Fax: (514) 398-3883

Undergraduate Student Affairs Office
Lorne Trotter Building, Room 2060
3830 University Street
Montreal, QC H3A 2B2
Telephone: (514) 398-7071
Fax: (514) 398-4653

E-mail: judy.kenigsberg@mcgill.ca
Website: www.cs.mcgill.ca/acadpages/undergrad

Director — Denis Thérien
Emeritus Professor
Christopher Paige

Professors
David M. Avis; B.Sc.(Wat.), Ph.D.(Stan.) (on leave Jan. 2005-June 2005)
Luc P. Devroye; M.S.(Louvain), Ph.D.(Texas) (on leave 2004-05)
Laurie Hendren; B.Sc., M.Sc.(Queen’s), Ph.D.(Cornell)
Tim H. Merrett; B.Sc.,Ph.D.(Oxon.)
Monroe M. Newborn; B.E.E.(R.P.I.), Ph.D.(Ohio St.), F.A.C.M.
Prakash Panangaden; M.Sc.(I.T. Kanpur), M.S.(Chicago), Ph.D.(Wis.)
Gerald F.G. Ratzer; B.Sc.(Glas.), M.Sc.(McG.)
Bruce Reed; B.Sc., Ph.D.(McG.) (Canada Research Chair)
Denis Thérien; B.Sc.(Montr.), M.Sc., Ph.D.(Wat.) (James McGill Professor)

Associate Professors
Claude Crépeau; B.Sc., M.Sc,(Montr.) Ph.D.(M.I.T.)
Gregory Dudek; B.Sc.(Queen's), M.Sc., Ph.D.(Tor.)
Nathan Friedman; B.A.(W.Ont.), Ph.D.(Tor.)
Kaleem Siddiqi; B.Sc.(Lafayette), M.Sc., Ph.D.(Brown)
Carl Tropper; B.Sc.(McG.), Ph.D.(Brooklyn Poly.)

Assistant Professors
Mathieu Blanchette; B.Sc., M.Sc.(Montr.), Ph.D.(Wash.)
David Bryant; B.Sc., Ph.D.(U. of Canterbury)
Xiao-Wen Chang; B.Sc., M.Sc.(Nanjing), Ph.D.(McG.)
Michael Trevor Hallett; B.Sc.(Queen’s), Ph.D.(Victoria)
Betina Kemme; B.Sc., M.Sc.(University of Erlangen-Nuremberg, Germany), Ph.D.(ETH, Zurich)
Jörg Kienzle; Eng.Dip, Ph.D.(Swiss Fed. IT)
Allison Klein; B.A.(Stanford), M.A., Ph.D.(Prin.)
Michael Langer; B.Sc.(McG.), M.Sc.(U. Toronto), Ph.D.(McG.)
Muthucumaru Maheswaran, B.Sc.(U. Peradeniya), M.Sc., Ph.D.(Purdue)

Brigitte Pienkla B.Sc. (Technical University of Darmstadt, Germany), M.Sc. (Technical University of Darmstadt, Germany), Ph.D. (Carnegie Mellon University)
The study of computer science encompasses everything from pure theory to hands-on applications including the analysis of algorithms, programming languages, compilers, databases, operating systems, robotics, computer vision, artificial intelligence and computational biology.

The School currently operates a general purpose computing facility to support teaching, a large undergraduate workstation laboratory and seven dedicated laboratories for research in computational geometry and robotics, parallel processing, compilers, concurrent programming, software engineering, database systems, mobile robotics, and cellular automata.

The teaching facility consists of a network of over 140 Pentium III and IV workstations running FREEBSD, FreeBSD 4.6, Linux (Red Hat 8.0), and Windows 2000. The facility also includes several compute engines including 3 SUN sparc20 servers, 2 SUN Ultrasparc and 2 SUN Enterprise 250s. Dialup access is provided through the Computing Centre along with PPP network connections. For introductory courses most work is completed using the Windows 2000 workstations and computer engines. All other courses use UNIX as a development environment.

The School of Computer Science offers a Majors program and an Honours program through the Faculty of Science, and a Minor program through the Faculties of Science and Engineering. The School also offers Major and Minor Concentrations through the Faculty of Science and Engineering. Special programs involving Computer Science are also available in the Faculties of Management, Engineering, and Music.

Software Engineering Programs

The School offers a B.Sc. Major in Software Engineering, see page320.

The School, jointly with the Department of Electrical and Computer Engineering, offers a Bachelor of Software Engineering (B.S.E.) program. The B.S.E. is offered through the Faculty of Engineering and details can be found under the Department of Electrical and Computer Engineering. Some graduate courses in Computer Science are available to suitably qualified senior undergraduates. The School also offers graduate research studies leading to M.Sc. and Ph.D. degrees. For further details, consult the Graduate and Postdoctoral Studies Calendar.

The School's courses are available as electives to Engineering students. Engineering students interested in a Minor in Computer Science should consult “Computer Science Courses and Minor Program” on page227 in the Faculty of Engineering section.

Internship Year for Engineering and Science (IYES)

IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see “IYES: Internship Year for Engineering and Science” on page205.

The following programs are also available with an Internship component:

- Major in Computer Science
- Honours in Computer Science

Students intending to pursue a Major in Computer Science or Software Engineering should have a reasonable mathematical background and should have completed MATH140 (or MATH150), MATH141 (or MATH151) and MATH133, or their CEGEP equivalents. These three mathematics courses should have been completed with at least an average of B-. A background in computer science is not necessary as students may start their studies with the introductory course COMP202. However, taking COMP202 in the Freshman Year, or completing an equivalent course in CEGEP, would be an asset and allows students to take more advanced courses earlier in their program.

More information about the admission process and the programs is available at www.cs.mcgill.ca.

MINOR IN COMPUTER SCIENCE (24 credits)

The Computer Science Minor may be taken in conjunction with any program in the Faculties of Science and Engineering (with the exception of other programs in Computer Science). Students must obtain approval from the Adviser of their main program. Approval must be given by the School of Computer Science for the particular selection of courses to be credited towards the Computer Science minor. This should be done before registering for the final term of studies. All courses must be passed with a grade of C or better.

Students may receive credit towards their Computer Science minor by taking certain approved courses outside the School of Computer Science. These courses must have a high computer science content. A student will not be permitted to receive more than six credits from such courses. These courses must be approved by the School of Computer Science in advance.

If a student's Major program requires Computer Science courses, up to six credits of Computer Science courses may be used to fulfill both Major and Minor requirements.

Required Courses (12 credits)

- COMP202 (3) Introduction to Computing 1
- COMP203 (3) Introduction to Computing 2
- COMP206 (3) Introduction to Software Systems
- COMP302 (3) Programming Languages and Paradigms

Complementary Courses (12 credits)

selected from:

- COMP251 (3) Data Structures and Algorithms
- COMP273 (3) Introduction to Computer Systems
- COMP303 (4) Programming Techniques
- COMP304 (3) Object-oriented Design
- COMP310 (3) Computer Systems and Organization
- COMP330 (3) Theoretical Aspects: Computer Science
- COMP335 (3) Software Engineering Methods
- COMP350 (3) Numerical Computing
- COMP360 (3) Algorithm Design Techniques
- COMP409 (3) Concurrent Programming
- COMP410 (3) Mobile Computing
- COMP412 (3) Software for E-commerce
- COMP420 (3) Files and Databases
- COMP421 (3) Database Systems
- COMP423 (3) Data Compression
- COMP424 (3) Topics: Artificial Intelligence 1
- COMP426 (3) Automated Reasoning
- COMP433 (3) Personal Software Engineering
- COMP435 (3) Basics of Computer Networks
- COMP462 (3) Computational Biology Methods
- COMP480 (3) Intro to Probabilistic Analysis Algorithms
- COMP505 (3) Advanced Computer Architecture
- COMP506 (3) Advanced Analysis of Algorithms
- COMP507 (3) Computational Geometry
COMP520 (4) Compiler Design
COMP522 (4) Modelling and Simulation
COMP523 (3) Language-based Security
COMP524 (3) Theoretical Foundations of Programming Languages
COMP526 (3) Probabilistic Reasoning and AI
COMP533 (3) Object-Oriented Software Development
COMP534 (3) Team Software Engineering
COMP535 (3) Computer Networks 1
COMP537 (3) Internet Programming
COMP538 (3) Person-Machine Communication
COMP540 (3) Matrix Computations
COMP557 (3) Fundamentals of Computer Graphics
COMP558 (3) Fund. of Computer Vision
COMP560 (3) Graph Algorithms and Applications
COMP563 (3) Molecular Evolution Theory
COMP564 (3) Computational Gene Regulation
COMP566 (3) Discrete Optimization 1
COMP567 (3) Discrete Optimization 2
COMP573 (3) Microcomputers
COMP575 (3) Fundamentals of Distributed Algorithms
COMP577 (3) Distributed Database Systems

* Note: COMP 251 is a prerequisite for many of the other complementary courses.

MINOR IN COMPUTATIONAL MOLECULAR BIOLOGY
(24 credits)
Computational molecular biology is the subdiscipline of bioinformatics that is located at the intersection of computer science and molecular biology. The focus of this area is on techniques for managing and analyzing molecular sequence data. This program will provide undergraduate students in the biological sciences with the skills from computer science to solve computational problems arising in molecular biology and genomics and will provide students with the necessary skills to build software tools from these algorithms.

The Minor in Computational Molecular Biology is not open to students in Computer Science or Joint Computer Science programs.

Required Courses (24 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP251 (3) Data Structures and Algorithms
COMP360 (3) Algorithm Design Techniques
COMP462 (3) Computational Biology Methods
COMP560 (3) Graph Algorithms and Applications
COMP563 (3) Molecular Evolution Theory
COMP564 (3) Computational Gene Regulation
MATH240 (3) Discrete Structures 1

FACULTY PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE, see page329 under Mathematics and Statistics.

FACULTY PROGRAM IN MATHEMATICS, STATISTICS AND COMPUTER SCIENCE, see page329 under Mathematics and Statistics.

MAJOR IN COMPUTER SCIENCE (60 credits)
Freshman Program students interested in Computer Science should try to take COMP202 if possible, but it is not required for entry to the Major. A student entering with insufficient programming background may take COMP202 but it will not count for program credit.

Required Courses (42 credits)
COMP250 (3) Introduction to Computer Science
COMP251 (3) Data Structures and Algorithms
COMP206 (3) Introduction to Software Systems
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP330 (3) Theoretical Aspects: Computer Science
COMP350 (3) Numerical Computing
COMP360 (3) Algorithm Design Techniques
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra
MATH240 (3) Discrete Structures 1
MATH323 (3) Probability Theory
MATH340 (3) Discrete Structures 2

Complementary Courses (18 credits)
15 credits from:
COMP303 (4) Programming Techniques
COMP304 (3) Object-oriented Design
COMP306 (3) Software Engineering Methods
COMP361 (3) Systems Development Project
COMP409 (3) Concurrent Programming
COMP410 (3) Mobile Computing
COMP412 (3) Software for E-commerce
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP423 (3) Data Compression
COMP424 (3) Topics: Artificial Intelligence 1
COMP426 (3) Automated Reasoning
COMP433 (3) Basics of Computer Networks
COMP462 (3) Computational Biology Methods
COMP490 (3) Intro to Probabilistic Analysis Algorithms
COMP505 (3) Advanced Computer Architecture
COMP506 (3) Advanced Analysis of Algorithms
COMP507 (3) Computational Geometry
COMP520 (4) Compiler Design
COMP522 (4) Modelling and Simulation
COMP523 (3) Language-based Security
COMP524 (3) Theoretical Foundations of Programming Languages
COMP525 (3) Formal Verification
COMP526 (3) Probabilistic Reasoning and AI
COMP531 (3) Theory of Computation
COMP533 (3) Object-Oriented Software Development
COMP534 (3) Team Software Engineering
COMP535 (3) Computer Networks 1
COMP537 (3) Internet Programming
COMP538 (3) Person-Machine Communication
COMP540 (3) Matrix Computations
COMP547 (3) Cryptography and Data Security
COMP557 (3) Fundamentals of Computer Graphics
COMP558 (3) Fundamentals of Computer Vision
COMP560 (3) Graph Algorithms and Applications
COMP563 (3) Molecular Evolution Theory
COMP564 (3) Computational Gene Regulation
COMP566 (3) Discrete Optimization 1
COMP567 (3) Discrete Optimization 2
COMP573 (3) Microcomputers
COMP575 (3) Fundamentals of Distributed Algorithms
COMP577 (3) Distributed Database Systems
ECSE323 (3) Digital System Design
ECSE426 (3) Microprocessor Systems
ECSE531 (3) Real Time Systems
ECSE548 (3) Introduction to VLSI Systems

3 credits from Mathematics selected from:
MATH242 (3) Analysis 1
MATH243 (3) Analysis 2
MATH244 (3) Analysis 3
or any 300-level or above Mathematics course (excluding MATH338, MATH323, MATH340)

JOINT MAJOR IN MATHEMATICS AND COMPUTER SCIENCE, see page330 under Mathematics and Statistics.
MAJOR IN SOFTWARE ENGINEERING (69 credits)

Required Courses (60 credits)

COMP202 (3) Introduction to Computing
COMP206 (3) Introduction to Software Systems
COMP250 (3) Introduction to Computer Science
COMP251 (3) Data Structures and Algorithms
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP304 (3) Object-oriented Design
COMP330 (3) Theoretical Aspects: Computer Science
COMP360 (3) Algorithm Design Techniques
COMP361 (3) Systems Development Project
ECSE321 (3) Introduction to Software Engineering
ECSE427 (3) Operating Systems
ECSE428 (3) Software Engineering Practice
ECSE429 (3) Software Validation
ECSE495 (3) Software Engineering Design Project
MATH223 (3) Linear Algebra
MATH240 (3) Discrete Structures 1
MATH260 (3) Intermediate Calculus
MATH323 (3) Probability Theory
MATH324 (3) Statistics

Complementary Courses (9 credits)

selected from the following:

COMP303 (4) Programming Techniques
COMP335 (3) Software Engineering Methods
COMP350 (3) Numerical Computing
COMP409 (3) Concurrent Programming
COMP410 (3) Mobile Computing
COMP412 (3) Software for E-commerce
COMP420 (3) Files and Databases
COMP421 (3) Database Systems
COMP424 (3) Topics: Artificial Intelligence 1
COMP433 (3) Personal Software Engineering
COMP435 (3) Basics of Computer Networks
COMP505 (3) Advanced Computer Architecture
COMP520 (4) Compiler Design
COMP522 (4) Modelling and Simulation
COMP523 (3) Language-based Security
COMP525 (3) Formal Verification
COMP526 (3) Probabilistic Reasoning and AI
COMP533 (3) Object-Oriented Software Development
COMP535 (3) Computer Networks 1
COMP537 (3) Internet Programming
COMP547 (3) Cryptography and Data Security
COMP558 (3) Fundamentals of Computer Vision
COMP560 (3) Graph Algorithms and Applications
COMP566 (3) Discrete Optimization 1
COMP575 (3) Fundamentals of Distributed Algorithms
COMP577 (3) Distributed Database Systems
ECSE200 (3) Fundamentals of Electrical Engineering
ECSE210 (3) Circuit Analysis
ECSE291 (2) Electrical Measurement Laboratory
ECSE303 (3) Signals and Systems 1
ECSE304 (3) Signals and Systems 2
ECSE322 (3) Computer Engineering
ECSE323 (5) Digital Systems Design
ECSE404 (3) Control Systems
ECSE411 (3) Communications Systems
ECSE420 (3) Parallel Computing
ECSE421 (3) Embedded Systems
ECSE422 (3) Fault Tolerant Computing
ECSE424 (3) Human-Computer Interaction
ECSE425 (3) Computer Organization and Architecture
ECSE426 (3) Microprocessor Systems
or COMP557 (3) Fundamentals of Computer Graphics

HONOURS IN COMPUTER SCIENCE (72 credits)

Honours students must maintain a CGPA of 3.00 and must have at least this average upon graduation as well.

Required Courses (45 credits)

COMP206 (3) Introduction to Software Systems
COMP250 (3) Introduction to Computer Science
COMP252 (3) Algorithms and Data Structures
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP330 (3) Theoretical Aspects: Computer Science
COMP350 (3) Numerical Computing
COMP362 (3) Honours Algorithm Design
COMP400 (3) Technical Project and Report
COMP426 (3) Modelling and Simulation
COMP435 (3) Basics of Computer Networks

Complementary Courses (27 credits)

24 credits from Major Program in Computer Science
complementary courses in Computer Science, 12 credits of which must be taken at the 500 level.
3 credits above the 300 level from Major Program in Computer Science complementary courses in Mathematics.

JOINT MAJOR IN PHYSICS AND COMPUTER SCIENCE, see page 339 under Physics.
12.9 Earth and Planetary Sciences (EPSC)

Frank Dawson Adams Building, Room 238
3450 University Street
Montreal, QC H3A2A7
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Fax: (514) 398-4680
E-mail: carol.matthews@mcmill.ca
Website: www.eps.mcgill.ca

Chair — Alfonso Mucci

Emeritus Professors
Wallace H. MacLean; B. Geol. Eng. (Colorado Sch. of Mines), M.Sc. (Appl.), Ph.D. (M.C.G.)
Eric W. Mountjoy; B.A.Sc. (U.B.C.), Ph.D. (Tor.) (William E. Logan Emeritus Professor of Geology)
Colin W. Steel; B.Sc. (McM.), M.S., Ph.D. (Yale), F.R.S.C.

Professors
Jafar Arkani-Hamed; B.Eng. (Tehran), Ph.D. (M.I.T.)
Don M. Francis; B.Sc. (McG.), M.Sc. (U.B.C.), Ph.D. (M.I.T.)
(Dawson Professor of Geology)
Andrew J. Hynes; B.Sc. (Tor.), Ph.D. (Cantab.) (William E. Logan Professor of Geology)
Olivia G. Jensen; B.Sc., M.Sc., Ph.D. (U.B.C.)
Robert F. Martin; B.Sc. (Ott.), M.S. (Penn State), Ph.D. (Stan.)
Alfonso Mucci; B.Sc., M.Sc. (Montr.), Ph.D. (Miami)
A.E. (Willy) Williams-Jones; B.Sc., M.Sc. (Natal), Ph.D. (Queen’s)

Associate Professors
Don Baker; B.A. (Chic.), Ph.D. (Penn.)
Bruce Hart; B.A. (McM.), M.Sc. (U.Q. à Rimouski), Ph.D. (W. Ont.)
Jeanne Paquette; B.Sc., M.Sc. (McG.), Ph.D. (Stonybrook)
John Stix; AB (Dart.), M.Sc., Ph.D. (Tor.)
Hojatollah Vali; B.Sc., M.Sc., Ph.D. (Munich) (Director, Electron Microscopy Centre)

Assistant Professor
Mairi Best; B.Sc. (Laurentian), Ph.D. (Chic.)

The domain of Earth and Planetary Sciences includes the solid Earth and its hydrosphere and extends to the neighbouring terrestrial planets. It is a multidisciplinary field in which the principles of chemistry, physics, and mathematics are applied to the rich problems of the real world in order to understand how planets like the Earth work; in the past, the present, and the future.

Career opportunities are many and varied for graduates in the Earth and Planetary Sciences. There is presently a demand for graduates with expertise in many disciplines of the Earth Sciences. Our students are recruited for employment in the petroleum and mining industries, and in the environmental sector. During the summer months undergraduate students are generally able to obtain employment from industry or government agencies, providing them with both financial benefits and first-hand geoscientific experience. Career opportunities in planetary science are presently limited to universities and research organizations.

The Department has a full-time staff of 13 professors and one faculty lecturer. There are approximately 50 graduate and 60 undergraduate students. Classes are therefore small at all levels, resulting in an informal and friendly atmosphere throughout the Department in which most of the faculty and students interact on a first-name basis. Emphasis is placed equally on quality teaching and research providing undergraduate students with a rich and exciting environment in which to explore and learn.

The undergraduate curriculum is designed to provide both a rigorous foundation in the physical sciences and the flexibility to create an individualized program in preparation for careers in industry, teaching, or research. In addition to the Major and Honours undergraduate programs, the Department also offers a Joint Major in Physics and Geophysics which provides a rigorous mathematics and physics preparation and a geological background in the geosciences.

The Minor in Earth and Planetary Sciences offers Science students from other departments the opportunity to obtain exposure to the Earth Sciences, while the Minor in Geochemistry is oriented towards Chemistry Major students who want to see the application of chemistry to problems in the Earth and Planetary Sciences.

Students interested in any of the programs should inquire at Room 238, Frank Dawson Adams Building, (514) 398-6767, or should consult the Undergraduate Director, Don Baker, Room 310, Frank Dawson Adams Building, (514) 398-7485, if they do not have an adviser.

A Science Major Concentration in Earth, Atmospheric and Ocean Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Earth, Atmospheric and Ocean Sciences” on page 171 for details.

MINOR IN EARTH AND PLANETARY SCIENCES (18 credits)

Required Courses (7 credits)
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology

Complementary Courses (11 credits)
EPSC201 (3) Understanding Planet Earth
or EPSC233 (3) Earth and Life History

8 credits selected from:
EPSC203 (3) Structural Geology 1
EPSC231 (2) Field School 1
EPSC243 (3) Environmental Geology
EPSC394 (3) Invertebrate Paleontology
EPSC350 (3) Tectonics
EPSC451 (3) Hydrothermal Mineral Deposits
EPSC452 (3) Mineral Deposits 2
EPSC542 (3) Chemical Oceanography
EPSC561 (3) Ore-forming Processes 1
EPSC562 (3) Ore-forming Processes 2
BIOL52 (3) Vertebrate Evolution

Other Earth and Planetary Sciences courses may be substituted with permission.

MINOR IN GEOCHEMISTRY (25 credits)

Required Courses (10 credits)
EPSC201 (3) Understanding Planet Earth
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology

Complementary Courses (15 credits)
15 credits selected from:
EPSC220 (3) Principles of Geochemistry
EPSC243 (3) Environmental Geology
EPSC501 (3) Crystal Chemistry
EPSC519 (3) Isotope Geology
EPSC542 (3) Chemical Oceanography
EPSC545 (3) Low-Temperature Geochemistry
EPSC561 (3) Ore-forming Processes 1
EPSC562 (3) Ore-forming Processes 2

MAJOR IN EARTH AND PLANETARY SCIENCES (66 credits)

Undergraduate Director: Don Baker, FD Adams, Room 310, (514) 398-7485

U1 Required Courses (27 credits)
EPSC203 (3) Structural Geology 1
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology
EPSC220 (3) Principles of Geochemistry
EPSC231 (2) Field School 1
EPSC233 (3) Earth and Life History
EPSC312 (3) Spectroscopy of Minerals
MATH133 Vectors, Matrices and Geometry.

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH133 Vectors, Matrices and Geometry.
U2 and/or U3 Required Courses (24 credits)
EPSC320 (3) Elementary Earth Physics
EPSC334 (3) Invertebrate Paleontology
EPSC350 (3) Tectonics
EPSC423 (3) Igneous Petrology
EPSC445 (3) Metamorphic Petrology
EPSC452 (3) Mineral Deposits 2
EPSC455 (3) Sedimentary Geology
EPSC519 (3) Isotope Geology

Complementary Courses (15 credits)
3 credits, one of:
EPSC331 (3) Field School 2
EPSC341 (3) Field School 3

plus 12 credits (4 courses) chosen from the following:
EPSC330 (3) Earthquakes and Earth Structure
EPSC425 (3) Geophysical Applications
EPSC451 (3) Hydrothermal Mineral Deposits
EPSC501 (3) Crystal Chemistry

U1 Required Courses (27 credits)
EPSC203 (3) Structural Geology
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology
EPSC220 (3) Principles of Geochemistry
EPSC231 (2) Field School 1
EPSC233 (3) Earth and Life History
EPSC312 (3) Spectroscopy of Minerals
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH133 Vectors, Matrices and Geometry.

U2 and/or U3 Required Courses (33 credits)
EPSC320 (3) Elementary Earth Physics
EPSC335 (3) Tectonics
EPSC423 (3) Igneous Petrology
EPSC445 (3) Metamorphic Petrology
EPSC452 (3) Mineral Deposits 2
EPSC455 (3) Sedimentary Geology
EPSC480D1 (3) Honours Research Project
EPSC480D2 (3) Honours Research Project
EPSC519 (3) Isotope Geology
MATH314 (3) Advanced Calculus
MATH315 (3) Ordinary Differential Equations

Complementary Courses (15 credits)
3 credits, one of:
EPSC331 (3) Field School 2
EPSC341 (3) Field School 3

plus 12 credits (4 courses) chosen from the following:
EPSC330 (3) Earthquakes and Earth Structure
EPSC334 (3) Invertebrate Paleontology
EPSC425 (3) Geophysical Applications
EPSC451 (3) Hydrothermal Mineral Deposits
EPSC501 (3) Crystal Chemistry

Note: Courses at the 300 or higher level in other departments in the Faculties of Science and Engineering may also be used as complementary credits, with the permission of the Director of Undergraduate Studies.

HONOURS IN PLANETARY SCIENCES (81 credits)
CGPA ≥ 3.20

U1 Required Courses (27 credits)
EPSC203 (3) Structural Geology
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology
EPSC220 (3) Principles of Geochemistry
EPSC231 (2) Field School 1
EPSC233 (3) Earth and Life History
EPSC312 (3) Spectroscopy of Minerals
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra

Note: Students who have not had the following course or its equivalent in CEGEP or the Freshman Program may be required to take MATH133 Vectors, Matrices and Geometry.

U2 and/or U3 Required Courses (42 credits)
EPSC320 (3) Elementary Earth Physics
EPSC330 (3) Earthquakes and Earth Structure
EPSC350 (3) Tectonics
EPSC423 (3) Igneous Petrology
EPSC480D1 (3) Honours Research Project
EPSC480D2 (3) Honours Research Project
EPSC519 (3) Isotope Geology
MATH314 (3) Advanced Calculus
MATH315 (3) Ordinary Differential Equations
PHYS340 (3) Electricity and Magnetism

Complementary Courses (12 credits)
3 credits, one of:
PHYS251 (3) Classical Mechanics 1
PHYS230 (3) Dynamics of Simple Systems

plus 9 credits (3 courses) chosen from the following:
EPSC334 (3) Invertebrate Paleontology
EPSC425 (3) Sediments to Sequences
EPSC435 (3) Geophysical Applications
12.11 Experimental Medicine (EXMD)

Lady Meredith House, Room 101
E-mail: experimental.medicine@mcgill.ca
Website: www.medicine.mcgill.ca/EXPMED/expmed1.html

Experimental Medicine is a division of the Department of Medicine. There are no B.Sc. programs in Experimental Medicine, but the EXMD courses listed in the Courses section of this Calendar are considered as courses taught by the Faculty of Science.

12.12 Geography (GEOG)

Burnside Hall, Room 705
805 Sherbrooke Street West
Montreal, QC H3A2K6
Telephone: (514) 398-4951 or 398-4111
Fax: (514) 398-7437
Website: www.geog.mcgill.ca

Chair — G.O. Ewing
Emeritus Professor
B.J. Garnier; M.A.(Cantab.)

Professors
P.G. Brown; B.A.(Haverford), M.A., Ph.D.(Col.) (joint appoint. with McGill School of Environment and Natural Resource Sciences)
T.R. Moore; B.Sc.(Swansea), Ph.D.(Aberd.)
N.T. Roulet; B.Sc., M.Sc.(Trent), Ph.D.(McM.) (on leave 2005)
G.W. Wenzel; M.A.(Manit.), Ph.D.(McG.)

Associate Professors
O.T. Coomes; B.Sc.(U.Vic.), M.A.(Tor.), Ph.D.(Wis.)
G.O. Ewing; M.A.(Glas.), M.A., Ph.D.(McM.)
M.F. Lapointe; B.Sc., M.Sc.(McG.), Ph.D.(Br.Col.)
T.C. Meredith; B.E.S.(Wat.), M.Sc., Dip.Cons.(Lond.), Ph.D.(Camb.)
L. Müller-Wille; Dr.phil.(Münster)
W.H. Pollard; B.A., M.Sc.(Guelph), Ph.D.(Ott.)

Assistant Professors
K.D. Mok; B.E.S., B. Math.(Wat.), M. Pl.(Queen’s), Ph.D.(Tor.)
G. Peterson; B.A.Sc. M.Sc. (Wat.), Ph.D. (Florida)
N.A. Ross; B.A., M.A.(Queen’s), Ph.D.(McM.)
J.W. Seaquist; B.Sc. (Tor.), Ph.D.(Lund)
R. Sengupta; B.Sc.(Bombay), M.Sc.(Indian IT Mumbai), M.S., Ph.D.(S.Illinois-Carbondale) (joint appoint. with McGill School of Environment)
I.B. Strachan; B.Sc.(Tor.), M.Sc., Ph.D.(Queen’s) (cross appoint. with Natural Resource Sciences)
S. Turner; B.Soc.Sci., M.Soc.Sc.(Waikata), Ph.D.(Hull)
J. Wiles; B.A., M.A. (Otago), Ph.D. (Queen’s)

The Department of Geography offers programs in both Arts and Science. All B.A. programs in Geography (including Urban Systems) can be found in the Faculty of Arts entry “Geography (GEOG)” on page101.

Geography is the study of physical environments and human habitats. It deals with people and places. It covers issues such as global warming and climate change, regional economic disparities, urban transportation, native land claims and permafrost problems. Both a physical and a social science, it provides a unique opportunity to obtain a broad exposure to modes of analyzing the many environmental and locational problems of contemporary society.

The World Commission on Environment and Development has identified the evidence and possible consequences of currently widespread land use practices which cannot be sustained. Geography is an integrative discipline concerned with the relations between culture systems and resource bases. Students interested in understanding, or working towards the resolution of, the envi-
The Minor in GIS is designed to provide students in the Faculty of Science with an overview of basic elements of geography at the introductory and advanced level. This Minor permits no overlap with any other programs.

**Required Courses** (12 credits)
- GEOG203 (3) Environmental Systems
- GEOG216 (3) Geography of the World Economy
- GEOG217 (3) The Canadian City
- GEOG302 (3) Environmental Management 1

**Complementary Courses** (6 credits)
6 credits of Geography courses at the 300 and 400 level.

The Minor in Geography is designed to provide students in the Faculty of Science with an overview of basic elements of geography at the introductory and advanced level.

**Required Courses** (12 credits)
- GEOG201 (3) Introductory Geo-Information Science
- GEOG306 (3) Raster Geo-Information Science
- GEOG308 (3) Principles of Remote Sensing
- GEOG372 (3) Running Water Environments

**B.Sc. MAJOR IN GEOGRAPHICAL INFORMATION SYSTEMS** (18 credits)

The Minor in GIS is designed to provide students in the Faculty of Science who have an interest in GIS with a basic, but comprehensive, knowledge of concepts and methods relating to the analysis of geospatial data.

**Required Courses** (15 credits)
- GEOG201 (3) Introductory Geo-Information Science
- GEOG306 (3) Raster Geo-Information Science
- GEOG307 (3) Socioeconomic Applications of GIS
- GEOG308 (3) Principles of Remote Sensing
- GEOG506 (3) Perspectives on Geographic Information Analysis

**Complementary Course** (3 credits)
one course to be chosen from:
- ATOC 414 (3) Applications of Remote Sensing
- COMP 420 (3) Files and Databases
- COMP 557 (3) Fundamentals of Computer Graphics
- GEOG 535 (3) Remote Sensing and Interpretation
- GEOG 551 (3) Environmental Decisions
- URBP 505 (3) Geographic Information Systems

*Note prerequisites

**B.Sc. MAJOR IN GEOGRAPHY** (58 credits)
The Major is designed to provide a coverage of the main elements of physical geography.

**Required Courses** (22 credits)
- GEOG201 (3) Introductory Geo-Information Science
- GEOG203 (3) Environmental Systems
- GEOG216 (3) Geography of the World Economy
- GEOG217 (3) The Canadian City
- GEOG272 (3) Earth’s Changing Surface
- GEOG302 (3) Environmental Management 1
- GEOG351 (3) Quantitative Methods

**Complementary Courses** (36 credits)
3 credits of statistics*, one of:
- BIOL 373 (3) Biometry
- GEOG 306 (3) Raster Geo-Information Science
- GEOG 308 (3) Principles of Remote Sensing

12 credits from systematic physical geography:
- GEOG 305 (3) Soils and Environment
- GEOG 321 (3) Climatic Environments
- GEOG 322 (3) Environmental Hydrology
- GEOG 350 (3) Ecological Biogeography
- GEOG 372 (3) Running Water Environments

3 credits from field courses:
- GEOG 495 (3) Field Studies - Physical Geography
- GEOG 496 (3) Geographical Excursion
- GEOG 497 (3) Ecology of Coastal Waters
- GEOG 499 (3) Subarctic Field Studies

(Field course availability is determined each year in February.)

15 credits from approved courses in Geography, or elsewhere in the Faculty of Science, or in the Faculty of Engineering; at least 9 credits of which are to be taken outside Geography. Students may also include any courses that are not already counted towards the GIS techniques or the systematic physical geography requirements. Admission to 500-level courses in Geography requires the instructor's permission. It is not advisable to take more than one 500-level course in a term.

**Geography Approved Course List – Majors and Honours**
- GEOG 404 (3) Environmental Management 2
- GEOG 501 (3) Modelling Environmental Systems
- GEOG 505 (3) Global Biogeochmestry
- GEOG 506 (3) Perspectives on Geographic Information Analysis
- GEOG 522 (3) Advanced Environmental Hydrology
- GEOG 523 (3) Advanced Climatology
- GEOG 535 (3) Remote Sensing and Interpretation
- GEOG 536 (3) Geocology
- GEOG 537 (3) Advanced Fluvial Geomorphology
- GEOG 550 (3) Quaternary Paleoecology

**B.Sc. HONOURS IN GEOGRAPHY** (66 credits)
The Honours program is designed to provide specialized systematic training in physical geography. Honours students are required to achieve better than a B- in all courses counted towards their program. In addition, Honours Students must complete a 6-credit research paper. Honours students are encouraged to participate in 500-level seminars with graduate students, but it is not advisable to take more than one in a term.
In addition to the Faculty requirement that Honours students maintain a minimum CGPA and program GPA of at least 3.00, students who enter a Geography Honours Program on or after September 2004 must achieve at least a B in all required program courses.

**Required Courses** (24 credits)
- GEOG201 (3) Introductory Geo-Information Science
- GEOG203 (3) Environmental Systems
- GEOG272 (3) Earth’s Changing Surface
- GEOG302 (3) Environmental Management 1
- GEOG351 (3) Quantitative Methods
- GEOG381 (3) Geographic Thought and Practice
- GEOG491D1 (3) Honours Research
- GEOG491D2 (3) Honours Research

**Complementary Courses** (42 credits)
- 6 credits of introductory courses, two of:
  - GEOG210 (3) Global Places and Peoples
  - GEOG216 (3) Geography of the World Economy
  - GEOG217 (3) The Canadian City
- 3 credits of statistics*, one of:
  - BIOL373 (3) Biometry
  - GEOG202 (3) Statistics and Spatial Analysis
- MATH203 (3) Principles of Statistics 1
- PSYC204 (3) Introduction to Psychological Statistics
- SOC350 (3) Statistics in Social Research
* Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 3.6.1 “Course Overlap”
- 3 credits from GIS techniques:
  - GEOG306 (3) Raster Geo-Information Science
  - GEOG308 (3) Principles of Remote Sensing
- 12 credits from systematic physical geography:
  - GEOG305 (3) Soils and Environment
  - GEOG321 (3) Climatic Environments
  - GEOG322 (3) Environmental Hydrology
  - GEOG350 (3) Ecological Biogeography
  - GEOG372 (3) Running Water Environments
- 3 credits from field courses:
  - GEOG495 (3) Field Studies - Physical Geography
  - GEOG496 (3) Geographical Excursion
  - GEOG497 (3) Ecology of Coastal Waters
  - GEOG499 (3) Subarctic Field Studies
- 15 credits from approved courses - in Geography, or elsewhere in the Faculty of Science or the Faculty of Engineering; at least 9 credits of which are to be taken outside Geography. Students may also include any courses that are not already counted towards the GIS techniques or the systematic physical geography requirements. Admission to 500-level courses in Geography requires the instructor’s permission. It is not advisable to take more than one in a term.

**AFRICAN FIELD STUDY SEMESTER**

**Note:** The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

The African Field Study Semester (AFSS) is a McGill University activity that has links with the Canadian Field Study in Africa Program (CFSIA). The AFSS provides one term of integrated field study in East Africa, with emphasis on environmental conservation. Students investigate challenges of sustaining biological diversity and social justice in African environments subject to cultural change, economic development and environmental stress. Cultural and ecological variation is examined in highland, montane, rangeland, desert, riverine, salt and fresh water lake, coastal, and urban settings.

McGill students will be selected for entry to this program based on the following criteria: academic standing, CGPA of 2.70 or higher, reference letters, and the applicant's academic and career aims. The AFSS is intended for students in their final two years. Although the AFSS is not a degree program (such as a Minor or Concentration), its 15 credits constitute a full single-term credit load that can be counted towards certain McGill degrees with the permission of program advisors.

**Students from other universities** are eligible to apply to the CFSIA and must also meet the criteria for admission to McGill as a Visiting Student. Please see the website for details.

The AFSS comprises 15 credits of field study courses. Two courses (6 credits) in the natural and social sciences provide interdisciplinary academic context for field study. The other 9 credits are taken from course offerings in two thematic areas and Special Topics.

Program revisions are under consideration for the academic year 2004-05. Visit the AFSS Website www.mcgill.ca/africa, or go to www.mcgill.ca (Course Calendars) in July for details.

**Required Courses** (6 credits)
- ANTH315 (3) Society/Culture: East Africa
- NRSC300 (3) Natural History: East Africa

**Complementary Courses** (9 credits)
- 3-9 credits from thematic areas:
  - Area A - Biodiversity and conservation in Africa
    - BIOL328 (3) Biological Diversity in Africa
    - NUTR403* (3) Nutrition in Society
    - WILD420 (3) Ornithology
    - WILD421* (3) Wildlife Conservation
    * Offered on a rotational basis, at least 3 credits annually
  - Area B - Environment and development in Africa
    - ANTH416 (3) Environment/Development Africa
    - GEOG404* (3) Environmental Management
    - GEOG408* (3) Geography of Development Policy
    * Offered on a rotational basis, at least 3 credits annually
- 0-6 credits, special topics
  - AFR1480 (3) Special Topics
  - AFR1481 (3) Special Topics
  - ENVR380 (3) Topics in Environment 1
  - ENVR480 (3) Topics in Environment 2
  - INTD490 (3) Development Field Research

Or other program Special Topics courses, with permission of instructor and an AFSS advisor.

Students may take Special Topics in the MSE, in African Studies, or in Development Studies, or in their home departments, with permission of their program advisor and an AFSS advisor.

In addition to the regular McGill fees, students will be required to pay the additional costs associated with delivering the courses in the field. These costs include airfare, local travel, all food and accommodation, special admission fees for parks and museums as well as other field costs. Airfares and currency fluctuations determine the amount of this charge. The 2004 trip cost $14,000. The actual cost for 2005 will be determined by September 2004. For the 2005 AFSS, students must submit, by April 30, 2004, a letter of intent, a CV, a copy of their transcript and two reference letters to June Connolly in the Geography Department office, Room 705, Burnside Hall. Depending on space, there will be a second intake with a deadline date of October 1, 2004.

**PANAMA FIELD STUDY SEMESTER,** see page393 under the McGill School of Environment for details.

**Geography courses of most interest to Science students:**
- GEOG199 FYS: Geo-Environments
- GEOG201 Introductory Geo-Information Science
- GEOG203 Environmental Systems
- GEOG205 Global Change: Past, Present and Future
- GEOG272 Earth’s Changing Surface
- GEOG290 Local Geographical Excursion
- GEOG303 Environmental Management 1
- GEOG305 Soils and Environment
- GEOG306 Raster Geo-Information Science
12.13 Immunology Interdepartmental Honours

Students must obtain a U1 GPA or a U2 CGPA of 3.30 for admission to this enrolment-limited program. U1 students should inform the program adviser of their intent to enter the Honours Immunology Program during their U1 winter term and confirm their intention in writing by April 1. U2 or U3 students can apply for admission at any time.

For graduation in the Honours program, the student must complete a minimum of 90 credits, and achieve a CGPA of not less than 3.30. The five immunology courses (MIMM314, BIOC503, MIMM414, PHGY419D1/D2, PHGY513) must all be passed with a grade not less than "B".

Students who do not maintain Honours standing must transfer their registration to a program in one of the three participating Departments.

Apply to Dr. M. G. Baines, Microbiology and Immunology, Malcolm.Baines@McGill.ca, (514) 398-4443 or (514) 398-3928 or Dr. Wayne S. Lapp, Physiology, Wayne.Lapp@McGill.ca, (514) 398-4322 or (514) 398-4328.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL200 (3)</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>BIOC222 (3)</td>
<td>Cell Biology and Metabolism</td>
</tr>
<tr>
<td>CHEM203 (3)</td>
<td>Physical Chemistry/Biological Sciences 1</td>
</tr>
<tr>
<td>CHEM222 (4)</td>
<td>Introductory Organic Chemistry 2</td>
</tr>
<tr>
<td>PHGY209 (3)</td>
<td>Mammalian Physiology 1</td>
</tr>
<tr>
<td>PHGY350 (3)</td>
<td>Introductory Microbiology</td>
</tr>
</tbody>
</table>

U1 Complementary Courses (6 credits)

3 credits selected from:
- ANAT214 (3) Systematic Human Anatomy
- BIOC503 (3) Introduction to Dynamic Histology
- MIMM211 (3) Introductory Microbiology
- PHGY210 (3) Mammalian Physiology 2

U2 Required Courses (15 credits)

- BIOC311 (3) Metabolic Biochemistry
- BIOC312 (3) Biochemistry of Macromolecules
- MIMM314 (3) Immunology
- BIOC300D1 (3) Laboratory in Biochemistry
- BIOC300D2 (3) Laboratory in Biochemistry
- MIMM386D1 (3) Laboratory in Microbiology and Immunology
- MIMM386D2 (3) Laboratory in Microbiology and Immunology

U2 Complementary Courses (9 credits)

one of:
- ANAT261 (4) Introduction to Dynamic Histology
- MIMM211 (3) Introductory Microbiology
- PHGY210 (3) Mammalian Physiology 2

plus two courses, 6 credits, selected from:
- ANAT265 (3) Cell Biology: Secretory Process
- BIOL300 (3) Molecular Biology of the Gene
- BIOC314 (3) Molecular Biology of Oncogenes
- CHEM302 (3) Introductory Organic Chemistry 3
- MATH222 (3) Calculus 3
- MATH315 (3) Ordinary Differential Equations
- or BIOC309 (3) Mathematical Models in Biology
- MIMM323 (3) Microbial Physiology
- MIMM324 (3) Fundamental Virology
- PATH300 (3) Human Disease
- PHAR300 (3) Drug Action
- PHAR301 (3) Drugs and Disease
- PHAR303 (3) Principles of Toxicology
- PHGY311 (3) Intermediate Physiology 1
- PHGY312 (3) Intermediate Physiology 2
- PHGY313 (3) Intermediate Physiology 3
- PHGY314 (3) Integrative Neuroscience

U3 Required Courses (18 credits)

- BIOC503 (3) Immunochemistry
- MIMM414 (3) Advanced Immunology
- PHGY419D1 (4.5) Project and Seminar in Immunology
- PHGY419D2 (4.5) Project and Seminar in Immunology
- PHGY513 (3) Cellular Immunology

U3 Complementary Courses (6 credits)

6 credits selected from:
- BIOL520 (3) Gene Activity in Development
- BIOC404 (3) Biophysical Chemistry
- BIOC450 (3) Protein Structure and Function
- BIOC454 (3) Nucleic Acids
- BIOC458 (3) Membranes and Cellular Signaling
- or ANAT458 (3) Membranes and Cellular Signaling
- MIMM413 (3) Parasitology
- MIMM465 (3) Bacterial Pathogenesis
- MIMM466 (3) Viral Pathogenesis
- MIMM509 (3) Inflammatory Processes
- PHAR503 (3) Drug Design and Development 1
- PHAR504 (3) Drug Design and Development 2
- PHGY531 (3) Topics in Applied Immunology
12.14 Kinesiology for Science Students

The Minor in Kinesiology is designed to provide students in B.Sc. programs with basic but comprehensive knowledge of scientific bases of human physical activity and its relationship with health and well-being.

Students registered in the Minor in Kinesiology for Science Students may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor, all courses must be completed with a grade of C or better.

MINOR IN KINESIOLOGY FOR SCIENCE STUDENTS

(18 credits)

[This program is under revision - some course numbers have been/will be changed. Contact the Department or go www.mcgill.ca (Course Calendars) in July for details.]

Required Courses (9 credits)

EDKP206 (3) Biomechanics of Human Movement
EDKP391 (3) Ergo-physiology
EDKP492 (3) Psychology of Motor Performance

Complementary Courses (9 credits)

three of the following courses:

EDKP261 (3) Motor Development
EDKP330 (3) Physical Activity and Health
EDKP485 (3) Exercise Pathophysiology 1
EDKP495 (3) Scientific Principles of Training
EDKP496 (3) Adapted Physical Activity
EDKP498 (3) Sport Psychology
EDKP550 (3) Analyzing Instructional Behaviors
EDKP553 (3) Physiological Assessment: Sport
EDKP556 (3) Biomechanical Assessment

Note: Some courses have prerequisites, for details please refer to the Faculty of Education course listings.

12.15 Management Minor Program

The Minor in Management allows Science students to include courses in their undergraduate program that will help prepare them for a career in management. Also available to Science students is the Minor in Technological Entrepreneurship for Science Students, see page 349.

Acceptance to the program is both competitive and restricted. At the time of application, a CGPA greater than 2.50 is required and at least one course (MGCR211) toward the Minor program must have been completed with a grade of C or better.

Application procedures will be announced in September. Please consult Ron Critchley, Student Adviser, Faculty of Management Student Affairs Office, Bronman 176, for details.

Students who are not formally registered for the Minor but who nevertheless complete all its requirements may apply to have the Minor approved during their last term.

Students registered in the Minor in Management may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor in Management, all courses must be completed with a grade of C or better.

MINOR IN MANAGEMENT (24 credits)

Required Courses (9 credits)

MGCR211 (3) Introduction to Financial Accounting
MGCR293 (3) Managerial Economics
MATH203 (3) Principles of Statistics 1

or its equivalent as authorized by the Faculty of Science.

Students majoring in certain programs, for example in Mathematics, cannot take MATH203 but must take MATH324 instead. (Note: Credit given for statistics courses is subject to certain restrictions, see Faculty Degree Requirements, section 3.6.1 “Course Overlap.”)

Complementary Courses (15 credits)

3 credits from:

MGCR213 (3) Introduction to Management Accounting
MGCR341 (3) Finance 1
MGCR382 (3) International Business

3 credits from:

MGCR222 (3) Introduction to Organizational Behaviour
MGCR320 (3) Managing Human Resources
MGCR352 (3) Marketing Management 1

3 credits from:

MGCR360 (3) Social Context of Business
MGCR373 (3) Operations Research 1
MGCR423 (3) Organizational Policy

6 credits from:

any approved 300- or 400-level Management courses for which the prerequisites, if any, have been met.

Note: B.Sc. students must not take MGCR331, ORGB420, ORGB429 or any INSY course.

12.16 Mathematics and Statistics (MATH)

Burnside Hall, Room 1005
805 Sherbrooke Street West
Montreal, QC H3A 2K6
Telephone: (514) 398-3800
Fax: (514) 398-3899
Website: www.math.mcgill.ca

Chair — Kohur GowriSankaran

Emeritus Professors

Michael Barr; A.B., Ph.D.(Penn.) (Peter Redpath Emeritus Professor of Pure Mathematics)
Marta Bunge; M.A., Ph.D.(Penn.)
Jal R. Choksi; B.A.(Cantab.), Ph.D.(Manc.)
Joachim Lambek; M.Sc., Ph.D.(McG.), F.R.S.C. (Peter Redpath Emeritus Professor of Pure Mathematics)
Arak M. Mathai; M.Sc.(Kerala), M.A., Ph.D.(Tor.)
Sherwin A. Maslowe; B.Sc.(Wayne State), M.Sc., Ph.D.(Calif.)
William O.J. Moser; B.Sc.(Manit.), M.A.(Minn.), Ph.D.(Tor.)
V. V. Sheshadri; B.Sc., M.Sc.(Madras), Ph.D.(Oklahoma)
John C. Taylor; B.Sc.(Acad.), M.A.(Queen’s), Ph.D.(McM.)

Professors

William J. Anderson; B.Eng., Ph.D.(McG.)
William G. Brown; M.A.(Col.), B.A., Ph.D.(Tor.)
Henri Darmon; B.Sc.(McG.), Ph.D.(Harv.), F.R.S.C.
Stephan W. Drury; M.A., Ph.D.(Cantab.)
Kohur GowriSankaran; B.A., M.A.(Madras), Ph.D.(Bombay)
Jacques C. Hurtubise; B.Sc.(Montr.), Ph.D.(Oxon.)
John C. Taylor; B.Sc.(Acad.), M.A.(Queen’s), Ph.D.(McM.)

(Names in italics are Canada Research Chairs)

Michael Makkai; M.A., Ph.D.(Bud.) (Peter Redpath Professor of Pure Mathematics)

Michael Makkai; M.A., Ph.D.(Bud.) (Peter Redpath Professor of Pure Mathematics)

Charles Roth; M.Sc.(McG.), Ph.D.(Hebrew)
Karl Peter Russell; V.Dipl.(Hamburg), Ph.D.(Calif.)
George Schmidt; B.Sc.(Natal), M.Sc.(S.A.), Ph.D.(Stan.)
George P.H. Styan; M.A., Ph.D.(Col.)
Luc Vinet; B.Sc., M.Sc., Ph.D.(Montr.), Doctorat 3e cycle (Paris VI) (joint appoint. with Physics)

David Wolfson; M.Sc.(Natal), Ph.D.(Purdue)
Keith J. Worsley; B.Sc., M.Sc., Ph.D.(Auckland), F.R.S.C. (James McGill Professor)

Jian-Ju Xu; B.Sc., M.Sc.(Beijing), M.Sc., Ph.D.(Renss.)
Sanjo Zlobec; M.Sc.(Zagreb), Ph.D.(Northwestern)

(Names in italics are Canada Research Chairs)

Peter Bartello; B.Sc.(Tor.), M.Sc., Ph.D.(McG.) (joint appoint. with Atmospheric and Oceanic Sciences)
Faculty of Science

Eyal Z. Goren; B.A., M.S., Ph.D.(Hebrew)
Dmitry Jakobson; B.Sc. (M.I.T.), Ph.D.(Princeton) (William Dawson Scholar)
Vojkan Jaksic; B.S.(Belgrade), Ph.D.(Caltech)
Wilbur Jonsson; M.Sc. (Manit.), Dr. Der. Nat(Tubingen)
Antony Humphries; B.A., M.A.(Cambridge), Ph.D.(Bath)
Ivo Klemes; B.Sc.(Tor.), Ph.D.(Cal. Tech.)
John P. Labute; B.Sc.(Windsor), M.A., Ph.D.(Harv.)
James G. Loyer; B.A.(St.M.), M.Sc., Ph.D.(S.Fraser).
Roger Rigelhof; B.Sc.(Sask.), M.Sc.(Wat.), Ph.D.(McM.)
Neilve G.F. Sancho; B.Sc., Ph.D.(Bell.)
John A. Toth; B.Sc., M.Sc.(McM.), Ph.D.(M.I.T.) (William Dawson Scholar)

Assistant Professors
Masoud Asgharian; B.Sc.(Shahid Beheshti), M.Sc., Ph.D.(McG.)
David Bryant; B.Sc.Hons, Ph.D.(Canterbury) (joint appoint. with Computer Science)
Martin J. Gander; M.S.(ETH), M.S., Ph.D.(Stan.)
Dietmar Leisen; B.Sc.(Mainz), M.Sc., Ph.D.(Bonn) (joint appoint. with Management)
Nilima Nigam; B.Sc.(I.I.T., Bombay), M.S., Ph.D.(Delaware)
Jonathan Pila; B.Sc.Hons.(Melbourne); Ph.D.(Stanford)
Russell Steele; B.S., M.S.(Carnegie Mellon), Ph.D.(Wash.)
Alain Vandaal; B.Sc., M.Sc.(McGill), Ph.D.(Auckland)
Adrian Vetta; B.Sc., M.Sc. (London School of Economics), Ph.D. (M.I.T)
Daniel T. Wise; B.A.(Yeshiva), Ph.D.(Princ.)

Assistant Professor (Special Category)
Vera Rosta; M.Sc., Ph.D.(Lorand Eotvos, Budapest)

Associate Members
Luc P. Devroye (Computer Science), P.R.L. Duttileau (Plant Science), Leon Glass (Physiology), Jean-Louis Goffin (Management), James A. Hanley (Epidemiology & Biostatistics), Lawrence Joseph (Epidemiology & Biostatistics), Michael Mackey (Physiology), Lawrence A. Mysak (A Q.S.), Prakash Panangaden (Computer Science), James O. Ramsay (Psychology), George Alexander Whitmore (Management)

Adjunct Professors
Donald A. Dawson; B.Sc., M.Sc.(McG.), Ph.D.(M.I.T.)
Victor Havin; M.Sc., Ph.D.(Leningrad)
M. Ram Murty; B.Sc.(Car.), Ph.D.(M.I.T.), F.R.S.C.
Robert A. Seely; B.Sc.(McG.), Ph.D.(Cantab)

Faculty Lecturers
Jose A. Correa; M.Sc.(Wat.), Ph.D.(Carleton)
Axel Hundemer; M.Sc., Ph.D.(Munich)

Mathematics has evolved to a discipline which is mainly characterized by its method of proof, its concern for a progressive broadening of its concepts, and by the search for mathematical entities and operations that represent aspects of reality. It is a subject which is pursued by many for its own sake, and regarded as part of the mainstream of human culture. Mathematics pervades modern society with an impact which, already immense, is rapidly growing.

The two principal divisions of mathematics are pure mathematics and applied mathematics. The pure mathematician is interested in abstract mathematical structures and in mathematics as an intellectual enterprise. The primary concern may not be with its utilitarian aspects or with the present needs of science and technology, although many problems in pure mathematics have developed from the sciences.

The applied mathematician is more interested in how mathematics can be used to study some aspects of the world. Mathematicians are engaged in the creation, study and application of advanced mathematical methods relevant to scientific problems. Statistical science and methodology today is concerned with phenomena in which there is a background of uncertainty arising from inherent variability and the investigator is obliged to arrive at decisions from limited data. A key tool in statistics is probability.

Some of the fields in which pure mathematicians work are algebra, analysis, geometry, topology, number theory and foundations. Applied mathematics which once referred to the application of mathematics to such disciplines as mechanics and fluid dynamics, has currently assumed a much broader meaning and embraces such diverse fields as communication theory, theory of optimization, theory of games and numerical analysis.

Mathematics offers many vocational possibilities. Such fields as teaching, computing, applied statistics and actuarial science offer opportunities for B.Sc. graduates. Opportunities to do original research in pure and applied mathematics are available in universities and research institutions. Employment is to be found in financially or technologically oriented business firms. The Department of Mathematics and Statistics through its various programs attempts to provide courses to suit the diverse interests within mathematics and statistics.

The Honours Program in Mathematics demands of the student a talent for abstraction in addition to a high level of competence in the use of mathematical tools. This program is intended for students who plan to work in an area where mathematical innovations may be needed. It is almost essential for students contemplating a career in mathematical research.

The Major Program involves the same subjects as the Honours Program but is less demanding in terms of abstraction. It is designed primarily for students who will need mathematical tools in their work but whose creative activity will involve applications of mathematics to other areas. Within the framework of the Mathematics Major, various combinations of courses are suggested to meet the needs of different students. These include course suggestions for secondary school teachers, careers in management, and for careers in industry, government or actuarial sciences.

It is possible for Major students to include a number of Honours courses in their programs. This will be an advantage for those students who plan to use their mathematics in graduate studies.

Students interested in a less intensive mathematics program linked to other disciplines are advised to consider the available Faculty Programs.

In planning their programs students are advised to seriously consider developing some depth in another discipline – preferably one for which mathematics has some relevance and use. Mathematics has been closely linked to areas such as computer science, physics and engineering but has recently come to play an increasingly important role in fields such as biology, linguistics, management and psychology. Students should consider completing the requirements for Minor programs such as those available in Cognitive Science, Computer Science and Statistics.

Students considering programs in Mathematics and Statistics should contact the Department to arrange for academic advising.

The student’s attention is called to the fact that a B.Com. degree with a Major in Mathematics is available from the Faculty of Management. In addition the Faculty of Music offers the B.Mus. degree with Honours in Theory with Mathematics Option.

Internship Year for Engineering and Science (IYES)
IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see “IYES: Internship Year for Engineering and Science” on page 205.

The following programs are also available with an Internship component:
- Major in Mathematics
- Honours in Mathematics
- Honours in Applied Mathematics
- Honours in Probability and Statistics
- Joint Majors in Mathematics and Computer Science
- Joint Honours in Mathematics and Computer Science

Note: Students entering a program listed below which has MATH222 (Calculus 3) as a required course and who have successfully completed a course equivalent to MATH222 prior to coming to McGill are given exemption from taking MATH222, but must replace it with a Complementary Mathematics course in the program of at least 3 credits.
MINOR IN MATHEMATICS (24 credits)
The Minor may be taken in conjunction with any primary program in the Faculty of Science (other than programs in Mathematics). Students should declare their intention to follow the Minor in Mathematics at the beginning of the penultimate year and should obtain approval for the selection of courses to fulfill the requirements for the Minor from the Departmental Chief Adviser (or delegate).
It is strongly recommended that students in the Minor Program take MATH323. The remaining credits may be freely chosen from the required and complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material. Alternatively up to six credits may be allowed for appropriate courses from other departments.

All courses counted towards the Minor must be passed with a grade of C or better.

Generally no more than six credits of overlap are permitted between the Minor and the primary program. However, with an approved choice of substantial courses the overlap restriction may be relaxed to nine credits for students whose primary program requires 60 credits or more and to 12 credits when the primary program requires 72 credits or more.

Required Courses (9 credits)
MATH222 (3) Calculus 3
MATH223* (3) Linear Algebra
MATH315 (3) Ordinary Differential Equations
*MATH223 may be replaced by MATH235 and MATH236. In this case the complementary credit requirement is reduced by three.

Complementary Courses (15 credits)
To be selected from the required and complementary courses for Majors and Honours students in Mathematics, with MATH323 strongly recommended; alternatively up to 6 credits may be allowed for appropriate courses from other departments.

MINOR IN STATISTICS (24 credits)
The Minor may be taken in conjunction with any primary program in the Faculty of Science. Students should declare their intention to follow the Minor in Statistics at the beginning of the penultimate year and must obtain approval for the selection of courses to fulfill the requirements for the Minor from the Departmental Chief Adviser (or delegate).

All courses counted towards the Minor must be passed with a grade of C or better. Generally no more than six credits of overlap are permitted between the Minor and the primary program. However, with an approved choice of substantial courses the overlap restriction may be relaxed to nine credits for students whose primary program requires 60 credits or more and to 12 credits when the primary program requires 72 credits or more.

Required Courses (15 credits)
MATH222 (3) Calculus 3
MATH223* (3) Linear Algebra
MATH323 (3) Probability Theory
MATH324 (3) Statistics
MATH423 (3) Regression and Analysis of Variance
*MATH223 may be replaced by MATH235 and MATH236. In this case the complementary credit requirement is reduced by three.

Complementary Courses (9 credits)
selected from:
CHEM593 (3) Statistical Mechanics
GEOG351 (3) Quantitative Methods
MATH447 (3) Stochastic Processes
MATH523 (4) Generalized Linear Models
MATH525 (4) Sampling Theory and Applications
MATH556 (4) Mathematical Statistics 1
MATH557 (4) Mathematical Statistics 2
PHYS362 (3) Statistical Mechanics
PHYS559 (3) Advanced Statistical Mechanics
SOC1004 (3) Quantitative Methods 1
SOC1005 (3) Quantitative Methods 2
No more than 6 credits may be taken outside the Department of Mathematics and Statistics.
Further credits (if needed) may be freely chosen from the required and complementary courses for Majors and Honours students in Mathematics, with the obvious exception of courses that involve duplication of material.

FACULTY PROGRAMS
Programs linking mathematics and other disciplines are available. With careful selection of courses in U1, it is possible to transfer to a Major program in Mathematics in U2. Except where otherwise noted these Faculty Programs lead to a B.Sc. degree. Students interested in any of these Faculty Programs should consult the Department of Mathematics and Statistics for an adviser.

FACULTY PROGRAM IN BIOLOGY AND MATHEMATICS, see page 309 under Biology.

FACULTY PROGRAM IN CHEMISTRY AND MATHEMATICS, see page 316 under Chemistry.

FACULTY PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE (54 credits)
Required Courses (48 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP206 (3) Introduction to Software Systems
COMP251 (3) Data Structures and Algorithms
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP330 (3) Theoretical Aspects: Computer Science
COMP420 (3) Files and Databases
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra
MATH240 (3) Discrete Structures 1
MATH315 (3) Ordinary Differential Equations
MATH317 (3) Numerical Analysis
MATH323 (3) Probability Theory
MATH324 (3) Statistics

Complementary Courses (6 credits)
selected from:
MATH314 (3) Advanced Calculus
MATH318 (3) Mathematical Logic
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH330 (3) Discrete Structures 2
MATH407 (3) Dynamic Programming
MATH417 (3) Mathematical Programming

FACULTY PROGRAM IN MATHEMATICS, STATISTICS AND COMPUTER SCIENCE (54 credits)
Required Courses (33 credits)
COMP202 (3) Introduction to Computing 1
COMP203 (3) Introduction to Computing 2
COMP206 (3) Introduction to Software Systems
COMP251 (3) Data Structures and Algorithms
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra
MATH240 (3) Discrete Structures 1
MATH315 (3) Ordinary Differential Equations
MATH323 (3) Probability Theory
MATH324 (3) Statistics
MATH423 (3) Regression and Analysis of Variance
Complementary Courses (21 credits)
at least 3 credits selected from:
MATH314 (3) Advanced Calculus
MATH317 (3) Numerical Analysis
MATH318 (3) Mathematical Logic
MATH319 (3) Partial Differential Equations
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH340 (3) Discrete Structures 2
MATH407 (3) Dynamic Programming
MATH417 (3) Mathematical Programming

at least 6 credits in Statistics selected from:
MATH329 (3) Theory of Interest
MATH447 (3) Stochastic Processes
MATH523 (4) Statistics
MATH525 (4) Sampling Theory and Applications

at least 6 credits in Computer Science selected from:
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP420 (3) Files and Databases

FACULTY PROGRAM IN MATHEMATICS, CHEMISTRY AND PHYSICS (56 credits)

Required Courses (47 credits)
CHEM201 (3) Modern Inorganic Chemistry 1
CHEM204 (3) Physical Chemistry/Biological Sciences 1
CHEM212 (4) Introductory Organic Chemistry 1
CHEM214 (3) Physical Chemistry/Biological Sciences 2
CHEM222 (4) Introductory Organic Chemistry 2
MATH222 (3) Calculus 3
MATH223 (3) Linear Algebra
MATH235 (3) Basic Algebra
MATH236 (3) Linear Algebra
MATH242 (3) Analysis 1
MATH243 (3) Real Analysis
MATH314 (3) Advanced Calculus
MATH315 (3) Ordinary Differential Equations
MATH316 (3) Functions of a Complex Variable
MATH317 (3) Numerical Analysis
MATH318 (3) Mathematical Logic
MATH324 (3) Statistics
MATH326 (3) Nonlinear Dynamics and Chaos
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH329 (3) Theory of Interest
MATH338 (3) History and Philosophy of Mathematics
MATH340 (3) Discrete Structures 2
MATH346 (3) Number Theory
MATH347 (3) Partial Differential Equations
MATH348 (3) Topics in Geometry
MATH407 (3) Dynamic Programming
MATH417 (3) Mathematical Programming
MATH423 (3) Regression and Analysis of Variance
MATH424 (3) Analysis 2
MATH430 (3) Mathematical Finance
MATH447 (3) Stochastic Processes
MATH523 (4) Generalized Linear Models
MATH525 (4) Sampling Theory and Applications

Complementary Courses (9 credits)
3 credits in Physics, 200 level or higher
6 credits in Mathematics, Chemistry or Physics, chosen in consultation with the adviser.

MAJOR IN MATHEMATICS (54 credits)

Students entering the Major program are normally expected to have completed MATH133, MATH140 and MATH141 or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 54 credits of required courses.

Major students who have done well in MATH242 and MATH235 are urged to consider, in consultation with their adviser and the instructors concerned, entering the Honours stream by registering for MATH251 and MATH255.

Guidelines for Selection of Courses in the Major Program

The following informal guidelines should be discussed with the student’s adviser. Where appropriate, Honours courses may be substituted for equivalent Major courses. Students planning to pursue graduate studies are encouraged to make such substitutions.

Students interested in computer science are advised to choose courses from the following: MATH317, MATH318, MATH327, MATH328, MATH340, MATH407, MATH417 and to complete the Computer Science Minor.

Required Courses (27 credits)
MATH222 (3) Calculus 3
MATH235 (3) Basic Algebra
MATH236 (3) Linear Algebra
MATH242 (3) Analysis 1
MATH243 (3) Real Analysis
MATH314 (3) Advanced Calculus
MATH315 (3) Ordinary Differential Equations
MATH316 (3) Functions of a Complex Variable
MATH324 (3) Advanced Calculus

Complementary Courses (27 credits)
21 credits selected from the following list, with at least 6 credits selected from:
MATH317 (3) Numerical Analysis
MATH324 (4) Probability Theory
MATH325 (4) Sampling Theory and Applications

the remainder of the 21 credits to be selected from:
MATH318 (3) Mathematical Logic
MATH319 (3) Partial Differential Equations
MATH320 (3) Differential Geometry
MATH326 (3) Nonlinear Dynamics and Chaos
MATH327 (3) Matrix Numerical Analysis
MATH328 (3) Computability and Mathematical Linguistics
MATH329 (3) Theory of Interest
MATH338 (3) History and Philosophy of Mathematics
MATH339 (3) Foundations of Mathematics
MATH346 (3) Number Theory
MATH347 (3) Partial Differential Equations
MATH407 (3) Dynamic Programming
MATH417 (3) Mathematical Programming
MATH423 (3) Regression and Analysis of Variance
MATH424 (3) Analysis 2
MATH430 (3) Mathematical Finance
MATH447 (3) Stochastic Processes
MATH523 (4) Generalized Linear Models
MATH525 (4) Sampling Theory and Applications

Additional credits in Mathematics or related disciplines selected in consultation with the adviser.

JOINT MAJOR IN MATHEMATICS AND COMPUTER SCIENCE (72 credits)

Required courses (51 credits)
COMP206 (3) Introduction to Software Systems
COMP250* (3) Introduction to Computer Science
COMP251 (3) Data Structures and Algorithms
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP330 (3) Theoretical Aspects: Computer Science
COMP360 (3) Algorithm Design Techniques
MATH222 (3) Calculus 3
MATH235 (3) Basic Algebra
MATH236 (3) Linear Algebra
MATH242 (3) Analysis 1
HONOURS PROGRAMS
The minimum requirement for entry into the Honours program is that the student has completed with high standing the following courses: MATH133, MATH140, MATH141, or their equivalents.

In addition, a student who has not completed the equivalent of MATH222 must take it in the first term without receiving credits towards the credits required in the Honours program.

Students who transfer to Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

To remain in an Honours program and to be awarded the Honours degree, the student must maintain a 3.00 GPA in the required and complementary Mathematics courses of the program, as well as an overall CGPA of 3.00.

HONOURS IN MATHEMATICS (60 credits)
Required Courses (45 credits)
MATH235 (3) Basic Algebra
MATH242 (3) Analysis 1
MATH248* (3) Advanced Calculus 1
MATH251 (3) Algebra 2
MATH255 (3) Analysis 2
MATH325 (3) Ordinary Differential Equations
MATH354 (3) Analysis 3
MATH355 (3) Analysis 4
MATH356 (3) Probability
MATH357 (3) Statistics
MATH370 (3) Algebra 3
MATH371 (3) Algebra 4
MATH375 (3) Differential Equations
MATH380 (3) Differential Geometry
MATH466 (3) Complex Analysis
* MATH314 may be substituted for MATH248 if MATH222 had to be taken in the Fall.

Complementary Courses (15 credits)
15 credits selected from:
MATH350 (3) Graph Theory and Combinatorics
MATH376 (3) Chaos and Nonlinear Dynamics
MATH377 (3) Number Theory
MATH387 (3) Honours Numerical Analysis
MATH397 (3) Matrix Numerical Analysis
MATH470 (3) Honours Project (highly recommended)
MATH480 (3) Independent Study in Mathematics
MATH487 (3) Mathematical Programming
MATH488 (3) Set Theory

Honours-level courses from related disciplines:
COMP250* (3) Introduction to Computer Science
COMP252 (3) Algorithms and Data Structures
*COMP250 may be preceded by COMP202

Other courses with the permission of the Department.

HONOURS IN APPLIED MATHEMATICS (68 credits)
Aside from seeking to develop a sound basis in Applied Mathematics, one of the objectives of the program is to kindle the students' interest in possible areas of application. The extra-mural courses are included to ensure that the student has some appreciation of the scope of Applied Mathematics and is familiar with at least one of the diverse areas in which applications can be found.

Required Courses (39 credits)
COMP252 (3) Algorithms and Data Structures
COMP250* (3) Introduction to Computer Science
MATH235 (3) Basic Algebra
MATH242 (3) Analysis 1
MATH248 (3) Advanced Calculus 1
MATH251 (3) Algebra 2
MATH255 (3) Analysis 2
MATH325 (3) Ordinary Differential Equations
MATH356 (3) Probability
MATH357 (3) Statistics
MATH375 (3) Differential Equations
MATH387 (3) Honours Numerical Analysis
MATH466 (3) Complex Analysis
or MATH249 (3) Advanced Calculus 2
*COMP250 may be preceded by COMP202

Complementary Courses (29 credits)
at least 6 credits selected from:
MATH350 (3) Graph Theory and Combinatorics
MATH354 (3) Analysis 3
MATH355 (3) Analysis 4
MATH370 (3) Algebra 3
MATH371 (3) Algebra 4
MATH380 (3) Differential Geometry

at least 9 credits selected from:
MATH376 (3) Chaos and Nonlinear Dynamics
MATH397 (3) Matrix Numerical Analysis
MATH470 (3) Honours Project
MATH487 (3) Mathematical Programming
MATH490 (3) Mathematics of Finance
MATH523 (4) Generalized Linear Models
MATH525 (4) Sampling Theory and Applications
MATH555 (4) Fluid Dynamics
MATH556 (4) Mathematical Statistics 1
MATH557 (4) Mathematical Statistics 2
MATH581 (4) Applied Partial Differential Equations 2
MATH590 (4) Fluid Dynamics
MATH591 (4) Mathematical Statistics 3
MATH592 (4) Mathematical Statistics 4

and the following, for which half credit only may be counted:
MATH407 (3) Dynamic Programming
MATH423 (3) Regression and Analysis of Variance
MATH447 (3) Stochastic Processes

12 credits of extra-mural courses:
chosen in consultation with the student's adviser from approved
courses in other departments. A list of such courses is available
from the Department of Mathematics and Statistics. Student initia-
tive is encouraged in suggesting other courses that fulfill the inten-
tions of this section as described above. Such suggestions must
receive departmental approval. They must be in a field related to
Applied Mathematics such as Atmospheric and Oceanic Science,
Biology, Biochemistry, Chemistry, Computer Science, Earth and
Planetary Science, Economics, Engineering, Management, Phys-
ics, Physiology and Psychology. At least 3 credits must be chosen
from a single department other than Computer Science.

HONOURS IN PROBABILITY AND STATISTICS (63 credits)

Required Courses (45 credits)

COMP250* (3) Introduction to Computer Science
MATH235 (3) Basic Algebra
MATH242 (3) Analysis 1
MATH248 (3) Advanced Calculus 1
MATH251 (3) Algebra 2
or MATH247 (3) Linear Algebra
MATH255 (3) Analysis 2
MATH354 (3) Analysis 3
MATH355 (3) Analysis 4
MATH356 (3) Probability
MATH357 (3) Statistics
MATH423 (3) Regression and Analysis of Variance
MATH524 (3) Generalized Linear Models
MATH556 (4) Mathematical Statistics 1
MATH557 (4) Mathematical Statistics 2

*COMP250 may be preceded by COMP202

Complementary Courses (18 credits)

selected from:
MATH251 (3) Algebra 2
MATH261 (3) Ordinary Differential Equations
MATH264 (3) Graph Theory and Combinatorics
MATH275 (3) Differential Equations
MATH380 (3) Differential Geometry
MATH387 (3) Honours Numerical Analysis
MATH397 (3) Matrix Numerical Analysis
MATH466 (3) Complex Analysis
MATH470 (3) Honours Project
MATH490 (3) Mathematics of Finance
MATH525 (3) Mathematical Statistics 1
MATH526 (3) Mathematical Statistics 2
MATH556 (4) Mathematical Statistics 1
MATH557 (4) Mathematical Statistics 2
MATH558 (4) Advanced Probability Theory 1
MATH559 (4) Advanced Probability Theory 2

with at least 3 credits for the following courses having no honours
version:
MATH204 (3) Principles of Statistics 2
MATH407 (3) Dynamic Programming
MATH447 (3) Stochastic Processes

JOINT HONOURS IN MATHEMATICS AND COMPUTER
SCIENCE (72 credits)

Students must consult an Honours adviser in both departments.

Required Courses (42 credits)

COMP206 (3) Introduction to Software Systems
COMP250* (3) Introduction to Computer Science
COMP252 (3) Algorithms and Data Structures
COMP273 (3) Introduction to Computer Systems
COMP302 (3) Programming Languages and Paradigms
COMP310 (3) Computer Systems and Organization
COMP330 (3) Theoretical Aspects: Computer Science
COMP362 (3) Honours Algorithm Design
MATH235 (3) Basic Algebra
MATH242 (3) Analysis 1
MATH248 (3) Advanced Calculus 1
MATH251 (3) Algebra 2
MATH255 (3) Analysis 2
MATH350 (3) Graph Theory and Combinatorics

* Students with no basic knowledge of any high level
programming language (e.g. Fortran, Basic, Pascal, C, C++,
Java) are advised to take COMP202 before COMP250. In this
case COMP202 counts as an elective.

Complementary Courses (30 credits)

18 credits in Mathematics,

MATH354 (3) Analysis 3
MATH355 (3) Analysis 4
MATH356* (3) Probability
MATH370 (3) Algebra 3
MATH371 (3) Algebra 4
MATH387 (3) Honours Numerical Analysis

with at least 12 credits selected from:

MATH356 (3) Probability
MATH355 (3) Analysis 4
MATH380 (3) Differential Equations
MATH371 (3) Algebra 4
MATH387 (3) Honours Numerical Analysis

The remaining credits selected from honours courses given by
the Department of Mathematics and Statistics.

12 credits in Computer Science, selected from:

COMP304 (3) Programming Techniques
COMP305 (3) Object-Oriented Design
COMP335 (3) Software Engineering Methods

400-level and 500-level Computer Science courses with the
exception of COMP431.

JOINT HONOURS IN MATHEMATICS AND PHYSICS, see
page 340 under Physics.

12.17 Microbiology and Immunology (MIMM)

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Chair — Greg J. Matlashewski

Emeritus Professor

Eddie C.S. Chan; M.A.(Texas), Ph.D.(Maryland)

Professors

Nicolai H. Acheson; A.B.(Harv.), Ph.D.(Rockefeller)
Zafer Ali-Khan; B.Sc.(Bilar), M.Sc.(Karachi), Ph.D.(Tulane)
Malcolm G. Baines; B.Sc., M.Sc., Ph.D.(Queen's)
James W. Coulton; B.Sc.(Tor.), M.Sc.(Calg.), Ph.D.(W.Ont.)
John Hiscott; B.Sc., M.Sc., J.W.Ont. , Ph.D.(N.Y.)
Greg Matlashewski; B.Sc. (C'dia), Ph.D. (Ott.)
Robert A. Murgita; B.Sc.(Me.), M.S.(Vt.), Ph.D.(McG.)
Trevor Owens; B.Sc., M.Sc.(McG.), Ph.D.(Ott.)
Mark A. Wainberg; B.Sc.(McG.), M.Sc., Ph.D.(Col.)

Associate Professors

Albert Berghuis; M.Sc.(The Netherlands), Ph.D.(Br.Col.)
Dalius J. Briedis; B.A., M.D.(Johns H.)

Assistant Professors

Benoit Cousineau; B.Sc., M.Sc., Ph.D.(Montr.)
Sylvie Fournier; Ph.D.(Montr.)
Gregory T. Marczenksi; B.Sc., Ph.D.(Illinois)
Andrew Mouland; Ph.D.(McG.)
Martin Olivier; B.Sc.(Montr.), Ph.D.(McG.)
Ciriaco Piccirillo; B.Sc., Ph.D.(McG.)

Associate Members

Institute of Parasitology: Gaeton Faubert, Armando Jardim,
PaulaRibeiro, Terence Spithill
Division of Experimental Medicine: Clement Couture
Microbiology & Immunology: LawrenceKleiman
Medicine: Marcel Behr, AndreDascal, SabahHussain,
VivianLoo, J.DickMaclean, JackMendelson, MarkA.Miller,
Microbiology is the study of microorganisms such as bacteria, viruses, unicellular eukaryotes, and parasites. Microorganisms play an important role in human and animal disease, food production (bread, cheese, wine), decay and spoilage, contamination and purification of water and soil. Microbiologists study these tiny, self-replicating machines to understand the basic principles of life: growth, metabolism, cell division, control of gene expression, response to environmental stimuli. Microbiologists are also concerned with controlling or harnessing microorganisms for the benefit of people, by isolating antibiotics or producing vaccines to protect against disease, and by developing and perfecting microorganisms for industrial uses.

Immunology is the study of the molecular and cellular basis of host resistance and immunity to external agents such as pathogenic microorganisms. Immunologists study the mechanisms by which the body recognizes foreign antigens, generates appropriate antibodies to an enormously diverse spectrum of antigens, and sequesters and kills invading microorganisms. Their discoveries lead to vaccination against disease, transplants, allergies, cancer, autoimmune diseases and immunodeficiency diseases such as AIDS. Antibodies may soon be used in conjunction with antibiotics or chemical agents as specific "magic bullets" to diagnose disease and attack microbes and cancers.

The disciplines of microbiology and immunology are natural partners in research, and both fields use the modern methods of cell biology, molecular biology and genetics to study basic life processes. The members of the Department of Microbiology and Immunology perform research on microbial physiology and genetics, microbial pathogenesis, molecular virology, cellular and molecular immunology, and parasitology. Students registered in the Department therefore are exposed to these related areas and receive an excellent background in basic biology and chemistry as well as in the more applied areas of biotechnology and medicine. Many opportunities exist for careers in basic or applied microbiology and immunology, medical microbiology, environmental microbiology, and biotechnology. They include positions in industry (pharmaceutical and biotechnology), hospitals, universities, and government (environment, public health, and energy).

A degree in microbiology also provides an excellent basis for entering professional and postgraduate programs in medicine, dentistry, the veterinary sciences, research, and education.

Notes on admission to Microbiology and Immunology programs. Please note that enrolment in Microbiology and Immunology programs is limited to a total of 120 students per year. Students seeking admission to the Faculty, Majors and Honours programs must have completed BIOL111, BIOL112, CHEM110 or CHEM111, CHEM120 or CHEM121, MATH112, MATH139 or MATH140, MATH141, PHYS101 and PHYS102 or their equivalent with an overall average of at least of B (70%). Students transferring may hold admission with a B average up to the maximum program capacity of 120 students. Applicants not admitted will be placed on a waiting list and will be considered should vacancies occur. Application deadline for U0 or transfer students from other departments and faculties is April 21. Students who want to transfer to Microbiology and Immunology should consider taking MIMM211 as a complementary course.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see "Biomedical Sciences" on page 170 for details.

FACULTY PROGRAM IN MICROBIOLOGY AND IMMUNOLOGY (57 credits)
The Faculty Program is intended to offer a basic education in microbiology and immunology to undergraduate students who wish greater flexibility to choose a substantial number of courses from other departments or faculties within the University.

U1 Required Courses (18 credits)
BIOL200 (3) Molecular Biology
BIOL201 (3) Cell Biology and Metabolism or BIOC212 (3) Molecular Mechanisms of Cell Function
BIOL202 (3) Basic Genetics
CHEM212 (4) Introductory Organic Chemistry
MIMM211 (3) Introductory Microbiology
MIMM212 (2) Laboratory in Microbiology

U1, U2 or U3 Required Course (3 credits)
BIOL373 (3) Biological Sciences or MATH203 (3) Principles of Statistics or PSYC204 (3) Introduction to Psychological Statistics

U2 Required Courses (15 credits)
MIMM314 (3) Immunology
MIMM323 (3) Microbial Physiology
MIMM324 (3) Fundamental Virology
MIMM365D (3) Laboratory in Microbiology and Immunology
MIMM366D (3) Laboratory in Microbiology and Immunology

U3 Complementary Courses (6 credits)
6 credits selected from:
MIMM377 (3) Applied Microbiology and Immunology
MIMM413 (3) Parasitology
MIMM414 (3) Advanced Immunology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis
MIMM509 (3) Inflammatory Processes

U1, U2 or U3 Complementary Courses (15 credits)
15 credits selected from:
ANAT261 (4) Introduction to Dynamic Histology
ANAT262 (3) Introductory Molecular and Cell Biology
ANAT365 (3) Cell Biology: Secretory Process
ANAT458 (3) Membranes and Cellular Signalling or BIOC458 (3) Membranes and Cellular Signalling
BIOC311 (3) Metabolic Biochemistry
BIOC312 (3) Biochemistry of Macromolecules
BIOC450 (3) Protein Structure and Function
BIOC454 (3) Nucleic Acids
BIOL300 (3) Molecular Biology of the Gene
BIOL314 (3) Molecular Biology of Oncogenes
BIOT505 (3) Selected Topics in Biotechnology
CHEM203 (3) Survey of Physical Chemistry or CHEM204 (3) Physical Chemistry/Biological Sciences 1
CHEM222 (4) Introductory Organic Chemistry 2
CHEM302 (3) Introductory Organic Chemistry 3
EXMD504 (3) Biology of Cancer
MIMM387 (3) Applied Microbiology and Immunology
MIMM413 (3) Parasitology
MIMM414 (3) Advanced Immunology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis
MIMM509 (3) Inflammatory Processes
PATH300 (3) Human Disease
PHAR300 (3) Drug Action
PHAR301 (3) Drugs and Diseases
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2

MAJOR IN MICROBIOLOGY AND IMMUNOLOGY (67 credits)

The Major Program is designed for students who want to acquire a substantial background in microbiology and immunology and related disciplines (chemistry, biology, biochemistry) which will prepare them for professional schools, graduate education, or entry into jobs in industry or research institutes.

U1 Required Courses (25 credits)

CHEM222 (4) Introductory Organic Chemistry 2
CHEM203 (3) Survey of Physical Chemistry
or CHEM204 (3) Physical Chemistry/Biological Sciences 1

U1, U2 or U3 Required Statistics Courses (3 credits)

as for the Faculty Program

U2 Required Courses (21 credits)

BIOC311 (3) Metabolic Biochemistry
BIOC312 (3) Biochemistry of Macromolecules

U3 Required Courses (9 credits)

MIMM413 (3) Parasitology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis

Complementary Courses (9 credits)

9 credits selected from:

ANAT261 (4) Introduction to Dynamic Histology
ANAT262 (3) Introductory Molecular and Cell Biology
ANAT458 (3) Membranes and Cellular Signaling
or BIOC458 (3) Membranes and Cellular Signaling
ANAT365 (3) Cell Biology: Secretory Process
BIOC450 (3) Protein Structure and Function
BIOC454 (3) Nucleic Acids
BIOC455 (3) Neurochemistry
BIOC458 (3) Membranes and Cellular Signaling
MIMM387 (3) Applied Microbiology and Immunology
MIMM414 (3) Advanced Immunology
MIMM509 (3) Inflammatory Processes
PATH300 (3) Human Disease
PHAR300 (3) Drug Action
PHAR301 (3) Drugs and Diseases

Honours in Microbiology and Immunology (73 required credits)

The Honours Program is designed to offer, in addition to the substantial background given by the Major Program, a significant research experience in a laboratory within the Department during the U3 year. Students are prepared for this independent research project by following an advanced laboratory course in U2. This Program is intended to prepare students for graduate study in microbiology and immunology or related fields, but could also be chosen by students intending to enter medical research after medical school, or intending to enter the job market in a laboratory research environment.

Students intending to apply to Honours must follow the Major Program in U1 and U2 and must obtain a CGPA of at least 3.30 at the end of their U2 year. For graduation in Honours, students must pass all required courses with a C or better, and achieve a sessional GPA of at least 3.30 in the U3 year.

U1 Required Courses (25 credits)

as for the Major Program

U1, U2 or U3 Required Statistics Courses (3 credits)

as for the Faculty Program

U2 Required Courses (21 credits)

as for the Faculty program, plus

BIOC311 (3) Metabolic Biochemistry
BIOC312 (3) Biochemistry of Macromolecules

U3 Required Courses (9 credits)

MIMM413 (3) Parasitology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis

Complementary Courses (9 credits)

9 credits selected from:

ANAT261 (4) Introduction to Dynamic Histology
ANAT262 (3) Introductory Molecular and Cell Biology
ANAT458 (3) Membranes and Cellular Signaling
or BIOC458 (3) Membranes and Cellular Signaling
ANAT365 (3) Cell Biology: Secretory Process
BIOC450 (3) Protein Structure and Function
BIOC454 (3) Nucleic Acids
BIOC455 (3) Neurochemistry
MIMM387 (3) Advanced Immunology
MIMM509 (3) Inflammatory Processes
PHAR300 (3) Drug Action
PHAR301 (3) Drugs and Diseases

Honours in Microbiology and Immunology (73 required credits)

The Honours Program is designed to offer, in addition to the substantial background given by the Major Program, a significant research experience in a laboratory within the Department during the U3 year. Students are prepared for this independent research project by following an advanced laboratory course in U2. This Program is intended to prepare students for graduate study in microbiology and immunology or related fields, but could also be chosen by students intending to enter medical research after medical school, or intending to enter the job market in a laboratory research environment.

Students intending to apply to Honours must follow the Major Program in U1 and U2 and must obtain a CGPA of at least 3.30 at the end of their U2 year. For graduation in Honours, students must pass all required courses with a C or better, and achieve a sessional GPA of at least 3.30 in the U3 year.

U1 Required Courses (25 credits)

as for the Major Program

U1, U2 or U3 Required Statistics Courses (3 credits)

as for the Faculty Program

U2 Required Courses (21 credits)

as for the Faculty program, plus

BIOC311 (3) Metabolic Biochemistry
BIOC312 (3) Biochemistry of Macromolecules

U3 Required Courses (9 credits)

MIMM413 (3) Parasitology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis

Complementary Courses (9 credits)

9 credits selected from:

ANAT261 (4) Introduction to Dynamic Histology
ANAT262 (3) Introductory Molecular and Cell Biology
ANAT458 (3) Membranes and Cellular Signaling
or BIOC458 (3) Membranes and Cellular Signaling
ANAT365 (3) Cell Biology: Secretory Process
BIOC450 (3) Protein Structure and Function
BIOC454 (3) Nucleic Acids
BIOC455 (3) Neurochemistry
MIMM387 (3) Advanced Immunology
MIMM509 (3) Inflammatory Processes
PHAR300 (3) Drug Action
PHAR301 (3) Drugs and Diseases

Honours in Microbiology and Immunology (73 required credits)

The Honours Program is designed to offer, in addition to the substantial background given by the Major Program, a significant research experience in a laboratory within the Department during the U3 year. Students are prepared for this independent research project by following an advanced laboratory course in U2. This Program is intended to prepare students for graduate study in microbiology and immunology or related fields, but could also be chosen by students intending to enter medical research after medical school, or intending to enter the job market in a laboratory research environment.

Students intending to apply to Honours must follow the Major Program in U1 and U2 and must obtain a CGPA of at least 3.30 at the end of their U2 year. For graduation in Honours, students must pass all required courses with a C or better, and achieve a sessional GPA of at least 3.30 in the U3 year.

U1 Required Courses (25 credits)

as for the Major Program

U1, U2 or U3 Required Statistics Courses (3 credits)

as for the Faculty Program

U2 Required Courses (21 credits)

as for the Faculty program, plus

BIOC311 (3) Metabolic Biochemistry
BIOC312 (3) Biochemistry of Macromolecules

U3 Required Courses (9 credits)

MIMM413 (3) Parasitology
MIMM465 (3) Bacterial Pathogenesis
MIMM466 (3) Viral Pathogenesis

Complementary Courses (9 credits)

9 credits selected from:

ANAT261 (4) Introduction to Dynamic Histology
ANAT262 (3) Introductory Molecular and Cell Biology
ANAT458 (3) Membranes and Cellular Signaling
or BIOC458 (3) Membranes and Cellular Signaling
ANAT365 (3) Cell Biology: Secretory Process
BIOC450 (3) Protein Structure and Function
BIOC454 (3) Nucleic Acids
BIOC455 (3) Neurochemistry
MIMM387 (3) Advanced Immunology
MIMM509 (3) Inflammatory Processes
PHAR300 (3) Drug Action
PHAR301 (3) Drugs and Diseases

Honours in Microbiology and Immunology (73 required credits)

The Honours Program is designed to offer, in addition to the substantial background given by the Major Program, a significant research experience in a laboratory within the Department during the U3 year. Students are prepared for this independent research project by following an advanced laboratory course in U2. This Program is intended to prepare students for graduate study in microbiology and immunology or related fields, but could also be chosen by students intending to enter medical research after medical school, or intending to enter the job market in a laboratory research environment.

Students intending to apply to Honours must follow the Major Program in U1 and U2 and must obtain a CGPA of at least 3.30 at the end of their U2 year. For graduation in Honours, students must pass all required courses with a C or better, and achieve a sessional GPA of at least 3.30 in the U3 year.

12.18 Music

Strathcona Music Building
555 Sherbrooke Street West
Montreal, QC H3A 1E3
Telephone: (514) 398-4433 or 3928, malcolm.baines@mcgill.ca

Department of Theory — Brian Cherny (Chair)
Department of Performance — Douglas McNabney (Chair)
Adviser (B.A./B.Sc. Music programs) — B. Minorgan (514)398-4535, ext. 6333

SCIENCE MINOR IN MUSIC TECHNOLOGY (24 credits)

[Program registration done by Student Affairs Office]

Enrolment in the Minor in Music Technology program is highly restricted. Application forms will be available from the Department of Theory Office of the Faculty of Music (Room E235, Strathcona Music Building, 555 Sherbrooke Street West) from February 1, 2004 and must be completed and returned to that office by May 15,
2004. No late applications will be accepted and no students will be admitted to the Minor in January.

Students will be selected on the basis of their previous background or experience in music technology and/or sound recording, their computer programming skills, their expressed interest in the program, and their Cumulative Grade Point Average. Successful applicants will be notified June 1, 2004.

**Required Courses** (24 credits)
- MUHL342 (3) History of Electroacoustic Music
- MUMT202 (3) Fundamentals of New Media
- MUMT203 (3) Introduction to Digital Audio
- MUMT301 (3) Music and the Internet
- MUMT302 (3) New Media Production 1
- MUMT303 (3) New Media Production 2
- PHYS224 (3) Physics and Psychophysics of Music
- PHYS225 (3) Musical Acoustics

Science students are eligible to take the Arts Minor Concentration in Music, see page 127.

Music courses listed as MUAR (see Faculty of Arts Courses) are considered to be Arts courses. All other Music courses are considered by the Faculty of Science to be courses outside of Arts and Science (see section 3.6.3 “Courses outside the Faculties of Arts and Science” for the relevant regulations).

**MINOR IN NEUROSCIENCE** (24 credits)

[Additions to the Area course lists are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

The Minor in Neuroscience is a program designed for undergraduate students interested in how the nervous system functions. The program consists of courses from the departments of Anatomy and Cell Biology (ANAT), Biochemistry (BIOC), Biology (BIOL), Neurology and Neurosurgery (NEUR), Pharmacology and Therapeutics (PHAR), Physiology (PHGY), Psychiatry (PSYT), and Psychology (PSYC). The Minor is composed of 24 credits, 18 of which must be selected from two of the five topic areas listed below.

Twelve credits of the 18 must be at the 400/500 level and from at least two different departments. A maximum of 6 credits can be counted both for the student’s primary program and for the Minor in Neuroscience, where appropriate.

**All course selections for the Minor in Neuroscience must be approved by the Program Coordinator.**

Students should very carefully check the Calendar for restrictions for the following four courses: ANAT321, BIOL 306, PHGY 314, PSYC 308.

**Complementary Courses** (24 credits)

6 credits selected from:
- ANAT321 (3) Circuitry of the Human Brain
- NEUR310 (3) Cellular Neurobiology
- PSYC308 (3) Behavioural Neuroscience 1
- BIOL306 (3) Cellular Neurobiology
- PHGY311 (3) Intermediate Physiology 1
- PSYC511 (3) Intermediate Physiology 1

18 additional credits:
- 9 credits each from 2 of the 5 areas listed below, 6 credits in each area must be from 400- or 500-level courses

**Neurobiology and Behaviour**
- BIOL306 (3) Neurobiology and Behaviour
- BIOL389 (3) Laboratory in Neurobiology
- BIOL530 (3) Neural Basis of Behaviour
- BIOL531 (3) Neurobiology Learning Memory
- PHGY311 (3) Intermediate Physiology 1
- PHGY556 (3) Topics in Systems Neuroscience
- PSYC318 (3) Behavioural Neuroscience 2
- PSYC427 (3) Sensorimotor Behaviour
- PSYC505 (3) The Psychology of Pain
- PSYC522 (3) Neurochemistry and Behaviour
- PSYT500 (3) Advances: Neurobiology of Mental Disorders

**Molecular and Developmental Neurobiology**
- ANAT321 (3) Circuitry of the Human Brain
- BIOC455 (3) Neurochemistry
- BIOL532 (3) Developmental Neurobiology Seminar
- BIOL588 (3) Molecular/Cellular Neurobiology
- NEUR310 (3) Cellular Neurobiology
- PHGY311 (3) Intermediate Physiology 1
- PHGY451 (3) Advanced Neurophysiology

**Neurophysiology**
- ANAT322 (3) Neuroendocrinology
- BIOL389 (3) Laboratory in Neurobiology
- BIOL531 (3) Neurobiology Learning Memory
- BIOL588 (3) Molecular/Cellular Neurobiology
- PHGY311 (3) Intermediate Physiology 1
- PHGY451 (3) Advanced Neurophysiology
- PHGY520 (3) Ion Channels
- PHGY556 (3) Topics in Systems Neuroscience
- PSYC427 (3) Sensorimotor Behaviour

**Neuropsychology**
- ANAT321 (3) Circuitry of the Human Brain
- ANAT322 (3) Neuroendocrinology
- BIOL306 (3) Neurobiology and Behaviour
- PSYC311 (3) Human Cognition and the Brain
- PSYC318 (3) Behavioural Neuroscience 2
- PSYC410 (3) Special Topics in Neuropsychology
- PSYC470 (3) Memory and Brain
- PSYC505 (3) The Psychology of Pain
- PSYC522 (3) Neurochemistry and Behaviour
- PSYC526 (3) Advances in Visual Perception

**Neuropharmacology**
- ANAT321 (3) Circuitry of the Human Brain
- BIOC455 (3) Neurochemistry
- BIOL588 (3) Molecular/Cellular Neurobiology
- PHAR300 (3) Drug Action
- PHAR301 (3) Drug and Disease
- PHAR562 (3) General Pharmacology 1
- PHGY311 (3) Intermediate Physiology 1
- PHGY451 (3) Advanced Neuphysiology
- PHGY520 (3) Ion Channels
12.21 Nutrition (NUTR)

The School of Dietetics and Human Nutrition offers a Minor in Human Nutrition, see page 363, which can be taken by Science students. NUTR307 is considered as a course taught by the Faculty of Science and is offered simultaneously on both campuses.

12.22 Pathology (PATH)

There are no B.Sc. programs in Pathology, but the PATH course listed in the Courses section of this Calendar is considered as one taught by the Faculty of Science.

12.23 Pharmacology and Therapeutics (PHAR)

McIntyre Medical Building
3655 Promenade Sir-William-Osler
Montreal, QC H3G 1Y6
Telephone: (514) 398-3623
Website: www.pharma.mcgill.ca

Chair — Hans Zingg
Emeritus Professor
Theodore Sourkes; Ph.D.(Cornell)

Professors
Guillermina Almazan; Ph.D.(McG.)
Radan Capek; M.D., Ph.D.(Prague)
Paul B.S. Clarke; M.A.(Cantab.), Ph.D.(Lond.)
Brian Collier; B.Sc., Ph.D.(Leeds)
A. Claudio Cuello; M.D.(Buenos Aires), M.A., D.Sc.(Oxon.)
F.R.S.C.
Barbara Hales; M.Sc.(Phil. Coll. of Pharmacy and Science), Ph.D.(McG.)
Peter J. McLeod; M.D.(Manit.), F.R.C.P.(C.)
Alfredo Ribeiro-da-Silva; M.D., Ph.D.(Oporto)
John B. Richardson; B.Sc., M.D.C.M., L.M.C.C., F.R.C.P., Ph.D.(McG.)
Bernard Robaire; B.A.(Calif.), Ph.D.(McG.) (James McGill Professor)

Associate Professors
Barbara Esplin; M.D.(Warsaw)
Dusica Maysinger; Ph.D.(Los Angeles)
Stanley Nattel; B.Sc., M.D.,C.M. (McG.)
Ante L. Padjen; M.D., M.Sc., D.Sc.(Zagreb)
H. Uri Saragovi; Ph.D.(Miami)
Betty I. Sasyriuk; B.S.P., Ph.D.(Man.)
Jacquetta Tasler; M.D.C.M., Ph.D.(McG.)
Edith A. Zorychta; B.Sc.(F.X.), M.Sc., Ph.D.(McG.)

Assistant Professor
Derek Bowie; B.Sc., Ph.D.(Lond.)

Associate Members
Moulay Alaoui-Jamali; Ph.D.(Sorbonne)
Gerald Batist; M.D.,C.M.(McG.)
Giovanni Di Battista; B.Sc., Ph.D.(Montr.)
Pierre Fiset; M.D.(Laval), F.R.C.P.S.(C.)
Serge Gauthier; M.D.(Montr.)
Roger Prichard; B.Sc., Ph.D.(N.S.W.)
Remi Quirion; M.Sc., Ph.D.(Sher.)
Allan Tenenhouse; B.Sc., M.D.,C.M., Ph.D.(McG.)

Adjunct Professors
Sylvain Chemtob; M.D.(Montr.), Ph.D.(McG.)

Yves De Koninck; Ph.D.(McG.)
Lorella Garofalo; Ph.D.(McG.)
Terrence Hébert; M.Sc.(Windsor), Ph.D.(Toronto)
Jennifer M.A. Laird; Ph.D. (Bristol)
Joseph Mancini; M.Sc., Ph.D.(McG.)
Kathleen Metters; Ph.D.(London)

Pharmacology is the science which deals with all aspects of drugs and their interactions with living organisms. Thus, it involves the physical and chemical properties of drugs, their biochemical and physiological effects, mechanisms of action, pharmacokinetics, and therapeutic and other uses. Since the word “drug” encompasses all chemical substances that produce an effect on living cells, it is evident that pharmacology is a very extensive subject. Pharmacology is a multidisciplinary science. It has developed its own set of principles and methods to study the mode of the action of drugs, but it has also utilized many techniques and approaches from various disciplines including biochemistry, physiology, anatomy and molecular biology, as well as others. Pharmacology encompasses a number of different areas such as neuropharmacology, molecular biology, reproductive pharmacology, endocrine pharmacology, receptor pharmacology, cardiovascular pharmacology, toxicology, developmental pharmacology, autonomic pharmacology, biochemical pharmacology, and therapeutics.

Training in pharmacology is conducted at both the undergraduate and graduate levels. Because of its breadth, students may be attracted to the subject from a variety of viewpoints; this includes those completing a Bachelor’s degree in any number of basic science disciplines, such as biology, zoology, chemistry, physics, biochemistry, microbiology, anatomy and physiology. At the undergraduate level, seven lecture courses are offered. A course involving research projects in pharmacology is also available to provide the student with the opportunity to get first-hand experience in a pharmacology research laboratory. These courses provide students with knowledge concerning the actions of drugs on living systems and insight into approaches to basic pharmacological research.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Biomedical Sciences” on page 170 for details.

MINOR IN PHARMACOLOGY (24 credits)

The Minor in Pharmacology is intended for students registered in a complementary B.Sc. program who are interested in a focused introduction to specialized topics in pharmacology to prepare them for professional schools, graduate education, or entry into jobs in industry or research institutes. Students should declare their intent to enter the Minor in Pharmacology at the beginning of their U2 year. They must consult with, and obtain the approval of, the Coordinator for the Minor Program in the Department of Pharmacology and Therapeutics.

All courses in the Minor Program must be passed with a minimum grade C or better. Generally, no more than 6 credits of overlap are permitted between the Minor and the primary program.

Required Courses (9 credits)

PHAR300 (3) Drug Action
PHAR562 (3) General Pharmacology 1
PHAR563 (3) General Pharmacology 2

Complementary Courses (15 credits)

3 credits, one of:
BIOL200 (3) Molecular Biology
BIOL201 (3) Cell Biology and Metabolism
BIOC212 (3) Molecular Mechanisms of Cell Function

3 credits, one of:
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2

9 credits, chosen from
PHAR301 (3) Drugs and Diseases
PHAR303 (3) Principles of Toxicology

The School of Dietetics and Human Nutrition offers a Minor in Human Nutrition, see page 363, which can be taken by Science students. NUTR307 is considered as a course taught by the Faculty of Science and is offered simultaneously on both campuses.
PHAR503 (3) Drug Design and Development 1
PHAR504* (3) Drug Design and Development 2
PHAR599 (6) Research Projects in Pharmacology
* can be taken with PHAR503 only.

12.24 Physics (PHYS)

Rutherford Physics Building, Room 108
3600 University Street
Montreal, QC H3A 2T8

Telephone: (514) 398-6485
Fax: (514) 398-8434
E-mail: secretaria@physics.mcgill.ca
Website: www.physics.mcgill.ca

Chair — M. Grant
Emeritus Professors
M.P. Langleben; B.Sc., M.Sc., Ph.D. (McG.), F.R.S.C.
Tommy S.K. Mark; B.Sc., M.Sc., Ph.D. (McG.) (William C.
Macdonald Emeritus Professor of Physics)
E.R. Pounder; B.Sc., Ph.D. (McG.), F.R.S.C. (William C.
Macdonald Emeritus Professor of Physics)
Douglas G. Stairs; B.Sc., M.Sc. (Queen’s), Ph.D. (Harv.) (William C.
Macdonald Emeritus Professor of Physics)
Martin J. Zuckermann; M.A., D.Phil. (Oxon.), F.R.S.C. (William C.
Macdonald Emeritus Professor of Physics)

Post-Retirement
Andreas F. Contogouris; B.A. (Athens), Ph.D. (C’nell)
John E. Crawford; B.A., M.A. (Tor.), Ph.D. (McG.)
Jonathan K.P. Lee; B.Eng., M.Sc., Ph.D. (McG.)

Professors
Jean Barrette; B.Sc., M.Sc., Ph.D. (Montr.)
Cliff Burgess; B.Sc. (Waterloo), Ph.D. (Texas) (James McGill Professor)
François Corriiveau; B.Sc. (Laval), M.Sc. (U.B.C.),
DocleurSc.Nat. (Zurich)
Subal Das Gupta; B.A., M.Sc. (Calic.), Ph.D. (McM.) (William C.
Macdonald Professor of Physics)
Nicholas DeTakacsy; B.Sc., M.Sc. (Montr.), Ph.D. (McG.)
Charles Gale; B.Sc. (Ott.), M.Sc., Ph.D. (McG.)
Martin Grant; B.Sc. (P.E.I.), M.Sc., Ph.D. (Tor.) (James McGill Professor)
Hong Guo; B.Sc. (Sichuan), M.Sc., Ph.D. (Pitt.)
David Hanna; B.Sc. (McG.), M.A., Ph.D. (Harv.)
Richard Harris; B.A., Oxon. D.Phil. (Sus.)
Harry C.S. Lam; B.Sc. (McG.), Ph.D. (M.I.T.) (E. Rutherford
Professor of Physics)
Shaun Lovejoy; B.A. (Cantab.), Ph.D. (McG.)
Robert B. Moore; B.Eng., M.Sc., Ph.D. (McG.)
Popat M. Patel; B.Sc., M.Sc. (Manc.), Ph.D. (Harv.)
Dominic H. Ryan; B.A., Ph.D. (Trin.Coll.)
John O. Strom-Olsen; B.A., M.S., Ph.D. (Cantab.)
Mark Sutton; B.Sc., M.Sc., Ph.D. (Tor.)
Jorge Vinals; B.Sc., M.Sc., Ph.D. (Barcelona)
Luc Vinet; B.Sc., M.Sc., Ph.D. (Montr.), Doctorat 3e cycle (Paris VI)
(joint appoint. with Mathematics & Statistics)

Associate Professors
James M. Cline; B.Sc. (Calif.), M.Sc., Ph.D. (Cal Tech.)
Peter Grutter; Dipl., Ph.D. (Base) (William Dawson Scholar)
Victoria Kaspi; B.Sc. (McG.), M.A., Ph.D. (Princ.) (Canada
Research Chair)
Kenneth J. Ragan; B.Sc. (Alta.), Ph.D. (Geneva)

Assistant Professors
Roland Bennwitz; Dipl., Ph.D. (Freie Universität Berlin)
Aashish Clerk; B.Sc. (Toronto), Ph.D. (Cornell)
Michael Hikle; B.Sc., M.Sc., Ph.D. (Geneva)
Maria Killoli; B.Sc. (New Brunswick), M.Sc., Ph.D. (Montr.),
Ph.D. (Memorial)
Sangyong Jeon; B.Sc. (Seoul), M.Sc., Ph.D. (Wash.)
Guy Moore; B.Sc. (Calif.), Ph.D. (Prin.)

Steve Robertson; B.Sc., (Calgary), M.Sc., (Victoria), Ph.D. (Victoria)
Bob Rutledge; B.Sc., (Southern California), Ph.D. (MIT)
Andreas Warburton; B.Sc. (Vic.), M.Sc., Ph.D. (Tor.)
Paul Wiseman; B.Sc. (St. F.X.), Ph.D. (W. Ont.) (joint appoint. with
Chemistry)

Lecturers
Z. Aftounian; B.Sc., M.Sc. (Cairo), Ph.D. (McM.)
F. Buchinger; M.Sc., Dr. (Mainz)

Associate Members
R. Davies (Atmospheric & Oceanic Sciences),
B. C. Eu (Chemistry), G. Fallone (Radiation Oncology),
M. Mackey (Physiology), E. Podgorsak (Radiation Oncology),
D. Ronis (Chemistry)

Curator (Rutherford Museum and McPherson Collection)
Jean Barrette; B.Sc., M.Sc., Ph.D. (Montr.)

Physics is in many ways the parent of the other natural sciences and
discovers and laws continually affect their development.
Its range and scope extend in space and time from subnuclear
particles to the universe itself. The subfields of physics such as
mechanics, thermodynamics, electricity, atomic physics and quant-
tum mechanics, to mention but a few, permeate all other scientific
disciplines. People trained in physics are employed in industry,
government, and educational systems where they find many chal-
lenge as teachers, researchers, administrators and in the rapidly
developing area of scientific business.
The two main undergraduate programs in Physics at McGill are the
Honours and the Major. The Honours program is highly special-
ized and the courses are very demanding. This program is appro-
priate for students who wish to make an in-depth study of the
subject in preparation for graduate work and an academic or pro-
fessional career in physics. The Joint Honours in Mathematics and
Physics is an even more specialized and demanding program,
tended for students who wish to develop a strong basis in both
mathematics and physics in preparation for graduate work and a
professional or academic career. Although the program is opti-
mized for theoretical physics, it is broad enough and strong
enough to prepare students for further study in either experimental
physics or mathematics. High standing in CEGEP or Freshman-
year mathematics and physics is a requirement for admission to the
Honours programs.
The Major program, on the other hand, offers a broad training in
classical and modern physics and yet leaves room for the student
to take a meaningful sequence of courses in other areas. It is
intended primarily for students who wish to pursue careers in fields
for which physics provides a basis. However this program also pro-
vides a preparation for graduate studies, especially if a student
chooses, in consultation with the departmental adviser, a number
of Honours Physics courses in the U2 and U3 years.
There are also a number of other Major programs: Atmospheric
Sciences and Physics, Physics and Computer Science, Physics
and Geophysics, and Physiology and Physics, offered jointly with
other departments, and a Minor program in Electrical Engineering,
available only to students in the Physics Major program. In addi-
tion, there is a Minor in Physics, a Faculty program in Physics and
a Joint Faculty program in Mathematics, Chemistry and Physics,
which provide a broad base for students less interested in a speci-
fied education.
For those interested in a career as a high school science
teacher, the concurrent program leading to both a B.Sc. and a
B.Ed. degree provides several physics options. These combine
physics courses from the Major and Minor programs with courses
from either Biology or Chemistry and with Education courses. (For
details, see the Science for Teachers section.)
Students from outside of the Province of Quebec will ordinarily
register in the Science Freshman program. Physics offers two
sequences of courses for this program: they are described below.
The list of pre- and co-requisites is not absolute. In many cases
permission of the Department may be sought to have a specific
prerequisite waived. The procedure is to ask the professor in
charge of the course to review the request for such a waiver. The

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prerequisites of the 100-level courses are described in the following section entitled Science Freshman Program.

Students interested in any of the Physics programs should contact the Department for an Adviser.

Internship Year for Engineering and Science (IYES)

IYES is a pre-graduate work experience program available to eligible students and normally taken between their U2 and U3 years. For more information, see “IYES: Internship Year for Engineering and Science” on page 205 under Faculty of Engineering.

The following programs are also available with an Internship component:
- Faculty Program in Physics
- Major in Physics
- Honours in Physics
- Joint Honours Program in Physics and Chemistry
- Joint Honours Program in Physics and Mathematics
- Joint Faculty Program in Physics, Chemistry and Physics
- Joint Major Program in Atmospheric Science and Physics
- Joint Major Program in Physics and Computer Science
- Joint Major Program in Physics and Geophysics

A Science Major Concentration in Physics is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Physics (PHYS)” on page 172 for details.

SCIENCE FRESHMAN PROGRAM

Students entering McGill with a Quebec CEGEP profile in Science will normally begin their programs in Physics with courses at the 200 level.

Students without this profile will normally take courses PHYS131 and PHYS142 if they have previously taken physics at the high school level and will be taking differential calculus concurrently with PHYS131 and integral calculus concurrently with PHYS142. Those students who have not previously taken physics at the high school level and who intend to do programs in the Biological Sciences may instead take courses PHYS101 and PHYS102. All students are expected to have reasonable fluency in algebra, geometry and trigonometry at the high school level. If this is not the case, then MATH112 should be taken concurrently with PHYS101. Those for whom this is not necessary are advised to take MATH139 concurrently with PHYS101.

MINOR IN PHYSICS (18 credits)

The 18-credit Minor permits no overlap with any other programs. It contains no Mathematics courses, although many of the courses in it have Math pre- or co-requisites. It will, therefore, be particularly appropriate to students in Mathematics, but it is also available to any Science student with the appropriate mathematical background.

Students in certain programs (e.g., the Major in Chemistry) will find that there are courses in the Minor which are already part of their program, or which they may not take for credit because of a substantial overlap of material with a course or courses in their program. After consultation with an adviser, such students may complete the Minor by substituting any other physics course(s) from the Major or Honours Physics programs.

Required Course (3 credits)
- PHYS257 (3) Experimental Methods 1

Complementary Courses (15 credits)
15 credits to be selected as follows:
- PHYS230 (3) Dynamics of Simple Systems
- PHYS231 (3) Topics in Classical Mechanics
- PHYS232 (3) Heat and Waves
- PHYS233 (3) Thermal and Statistical Physics
- PHYS256 (3) Experimental Methods 2
- PHYS241 (3) Signal Processing
- PHYS271 (3) Quantum Physics
- PHYS260 (3) Modern Physics and Relativity
- PHYS284 (3) Introductory Astrophysics
- PHYS285 (3) Musical Acoustics

- PHYS340 (3) Electricity and Magnetism
- or PHYS350 (3) Electromagnetism

FACULTY PROGRAM IN PHYSICS (54 credits)

Required Courses (36 credits)
- MATH222 (3) Calculus 3
- MATH223 (3) Linear Algebra
- MATH314 (3) Advanced Calculus
- MATH315 (3) Ordinary Differential Equations
- PHYS230 (3) Dynamics of Simple Systems
- PHYS232 (3) Heat and Waves
- PHYS257 (3) Experimental Methods 1
- PHYS258 (3) Experimental Methods 2
- PHYS259 (3) Experimental Methods 3
- PHYS333 (3) Thermal and Statistical Physics
- PHYS340 (3) Electricity and Magnetism
- PHYS346 (3) Modern Physics
- PHYS446 (3) Quantum Physics

Complementary Courses (18 credits)
At least 3 credits selected from:
- PHYS241 (3) Signal Processing
- PHYS343 (3) Optics
- PHYS349 (3) Laboratory in Modern Physics
- the remainder selected from:
  - COMP202 (3) Introduction to Computing
  - EPSC320 (3) Elementary Earth Physics
  - MATH316 (3) Functions of a Complex Variable
  - MATH317 (3) Numerical Analysis
  - MATH319 (3) Partial Differential Equations
  - PHYS331 (3) Topics in Classical Mechanics
  - PHYS339 (3) Measurements Laboratory in General Physics
  - PHYS342 (3) Electromagnetic Waves

FACULTY PROGRAM IN MATHEMATICS, CHEMISTRY AND PHYSICS, see page 330 under Mathematics and Statistics.

MAJOR IN PHYSICS (60 credits)

U1 Required Courses (21 credits)
- MATH222 (3) Calculus 3
- MATH223 (3) Linear Algebra
- PHYS230 (3) Dynamics of Simple Systems
- PHYS232 (3) Heat and Waves
- PHYS241 (3) Signal Processing
- PHYS256 (3) Experimental Methods 1
- PHYS257 (3) Experimental Methods 2

U2 Required courses (24 credits)
- MATH314 (3) Advanced Calculus
- MATH315 (3) Ordinary Differential Equations
- PHYS328 (3) Electronics
- PHYS331 (3) Topics in Classical Mechanics
- PHYS333 (3) Thermal and Statistical Physics
- PHYS339 (3) Measurements Laboratory in General Physics
- PHYS340 (3) Electricity and Magnetism
- PHYS342 (3) Electromagnetic Waves

U3 Required Courses (15 credits)
- PHYS343 (3) Optics
- PHYS346 (3) Modern Physics
- PHYS349 (3) Laboratory in Modern Physics
- PHYS446 (3) Quantum Physics
- PHYS449 (3) Majors Research Project

JOINT MAJOR IN PHYSICS AND GEOPHYSICS (68 credits)

The Joint Major program in Physics and Geophysics provides a firm basis for graduate work in Geophysics and related fields as well as a sound preparation for those who wish to embark on a career directly after the B.Sc.
The Joint Major in Physics and Computer Science is designed to give motivated students the opportunity to combine the two fields in a way that will distinguish them from the graduates of either field by itself. The two disciplines complement each other, with physics providing an analytic problem-solving outlook and basic understanding of nature, while computer science enhances the ability to make practical and marketable applications, in addition to having its own theoretical interest. Graduates of this program may be able to present themselves as being more immediately useful than a pure physics major, but with more breadth than just a programmer. They will be able to demonstrate their combined expertise in the Special Project course which is the centrepiece of the final year of the program.

**U1 Required Courses** (29 credits)
- COMP250 (3) Introduction to Computer Science
- MATH222 (3) Calculus 3
- MATH223 (3) Linear Algebra
- MATH315 (3) Ordinary Differential Equations
- PHYS230 (3) Dynamics of Simple Systems
- PHYS257 (3) Experimental Methods 1
- PHYS258 (3) Experimental Methods 2

**U2 Required Courses** (18 credits)
- EPSC320 (3) Elementary Earth Physics
- EPSC350 (3) Geodynamics and Geomagnetism
- MATH314 (3) Advanced Calculus
- MATH315 (3) Ordinary Differential Equations
- PHYS257 (3) Experimental Methods 1
- PHYS258 (3) Experimental Methods 2

**U3 Required Courses** (21 credits)
- COMP360 (3) Algorithm Design Techniques
- MATH323 (3) Probability Theory
- PHYS331 (3) Topics in Classical Mechanics
- PHYS339 (3) Measurements Laboratory in General Physics
- PHYS340 (3) Electricity and Magnetism
- PHYS446 (3) Quantum Physics
- PHYS489 (3) Special Project

**JOINT MAJOR IN PHYSIOLOGY AND PHYSICS**, see page 342 under Physiology. This program provides a firm basis for graduate work in bio-physics and other interdisciplinary fields involving the physical and biological sciences.

**HONOURS IN PHYSICS** (78 credits)
Students entering this program for the first time should have high standing in mathematics and physics. In addition, a student who has not completed the equivalent of MATH222 must take it in the first term without receiving credits toward the 78 credits required in the Honours program.

A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in the Honours program the following year, or graduate with the Honours degree, except with the permission of the Department.

**U1 Required Courses** (27 credits)
- MATH247 (3) Linear Algebra
- MATH248 (3) Advanced Calculus 1
- MATH249 (3) Advanced Calculus 2
- MATH325 (3) Ordinary Differential Equations
- PHYS241 (3) Signal Processing
- PHYS251 (3) Classical Mechanics
- PHYS257 (3) Experimental Methods 1
- PHYS258 (3) Experimental Methods 2
- PHYS260 (3) Modern Physics and Relativity

**U2 Required Courses** (24 credits)
- MATH325 (3) Ordinary Differential Equations
- PHYS253 (3) Thermal Physics
- PHYS350 (3) Electromagnetism
- PHYS353 (3) Quantum Physics
- PHYS357 (3) Quantum Physics
- PHYS362 (3) Statistical Mechanics
- PHYS451 (3) Classical Mechanics
- PHYS457 (3) Quantum Physics

**U3 Required Courses** (6 credits)
- PHYS451 (3) Quantum Mechanics
- PHYS452 (3) Electromagnetic Waves

**U3 Complementary Courses** (21 credits)
6 credits selected from:
- PHYS459 (3) Honours Research Project
- PHYS469 (3) Laboratory in Modern Physics 2

15 credits selected from:
- PHYS459 (3) Honours Research Thesis
- PHYS469 (3) Laboratory in Modern Physics 2

or other 3-credit course approved by the Department of Physics.
JOINT HONOURS IN MATHEMATICS AND PHYSICS
(81 credits)
This is a specialized and demanding program intended for students who wish to develop a strong basis in both Mathematics and Physics in preparation for graduate work and a professional or academic career. Although the program is optimized for theoretical physics, it is broad and strong enough to prepare students for further study in either experimental physics or in mathematics.

The minimum requirement for entry into the program is completion with high standing of the usual CEGEP courses in physics and in mathematics. In addition, a student who has not completed the equivalent of MATH222 must take it in the first term without receiving credits toward the 81 credits required in the Joint Honours program.

A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in this Joint Honours program the following year, or graduate with the Joint Honours degree, except with permission of both Departments.

The student will have two advisers, one from Mathematics and the other from Physics.

U1 Required Courses (27 credits)
MATH235 (3) Basic Algebra
MATH248 (3) Advanced Calculus 1
MATH249 (3) Advanced Calculus 2
MATH325 (3) Ordinary Differential Equations
PHYS241 (3) Signal Processing
PHYS251 (3) Classical Mechanics 1
PHYS257 (3) Experimental Methods 1
PHYS258 (3) Experimental Methods 2
PHYS260 (3) Modern Physics and Relativity

U1 Complementary Course (3 credits)
3 credits selected from:
MATH251 (3) Algebra 2
MATH247 (3) Linear Algebra

U2 Required Courses (27 credits)
MATH242 (3) Analysis 1
MATH255 (3) Analysis 2
MATH375 (3) Differential Equations
PHYS253 (3) Thermal Physics
PHYS350 (3) Electromagnetism
PHYS357 (3) Quantum Physics
PHYS362 (3) Statistical Mechanics
PHYS451 (3) Classical Mechanics
PHYS457 (3) Quantum Physics

U3 Required Courses (12 credits)
MATH354 (3) Analysis 3
MATH380 (3) Differential Geometry
PHYS352 (3) Electromagnetic Waves
PHYS359 (3) Laboratory in Modern Physics

U3 Complementary Courses (12 credits)
3 credits selected from:
MATH370 (3) Algebra 3
MATH355 (3) Analysis 4
6 credits selected from:
PHYS479 (3) Honours Research Project
PHYS514 (3) General Relativity
PHYS551 (3) Quantum Theory
PHYS521 (3) Astrophysics
PHYS557 (3) Nuclear Physics
PHYS558 (3) Solid State Physics
PHYS559 (3) Advanced Statistical Mechanics
PHYS562 (3) Electromagnetic Theory
PHYS567 (3) Particle Physics
3 credits in Honours Mathematics

JOINT HONOURS IN PHYSICS AND CHEMISTRY
(80 credits)
This is a specialized and demanding program intended primarily, although not exclusively, for students with a theoretical bias who are interested in working in fields of study at the crossroads of physical chemistry and physics. The program will prepare students for either theoretical or experimental graduate work in departments where there is an emphasis on such cross-disciplinary areas as condensed matter physics, chemical physics, or material science.

A student whose average in the required and complementary courses in any year falls below a GPA of 3.00, or whose grade in any individual required or complementary course falls below a C (in both the final examination and supplemental examination if taken), may not register in this Joint Honours program the following year, or graduate with the Joint Honours degree, except with permission of both Departments.

U1 Required Courses (28 credits)
CHEM213 (3) Introductory Physical Chemistry
CHEM273 (1) Chemical Kinetics
MATH247 (3) Linear Algebra
MATH248 (3) Advanced Calculus 1
MATH249 (3) Advanced Calculus 2
MATH325 (3) Ordinary Differential Equations
PHYS241 (3) Signal Processing
PHYS251 (3) Classical Mechanics 1
PHYS257 (3) Experimental Methods 1
PHYS258 (3) Experimental Methods 2

U2 Required Courses (26 credits)
CHEM212 (4) Introductory Organic Chemistry 1
CHEM281 (3) Inorganic Chemistry 1
CHEM355 (3) Molecular Properties and Structure 2
CHEM363 (2) Physical Chemistry Laboratory 1
CHEM365 (2) Statistical Thermodynamics
COMP208 (3) Computers in Engineering
PHYS253 (3) Thermal Physics
PHYS350 (3) Electromagnetism
PHYS357 (3) Quantum Physics
PHYS457 (3) Quantum Physics

U3 Required Courses (14 credits)
CHEM393 (2) Physical Chemistry Laboratory 2
CHEM455 (3) Introductory Polymer Chemistry
CHEM556 (3) Advanced Quantum Mechanics
PHYS352 (3) Electromagnetic Waves
PHYS558 (3) Solid State Physics

U3 Complementary Courses (12 credits)
(with at least 3 credits in Chemistry and 3 credits in Physics)
3 credits selected from:
CHEM593 (3) Statistical Mechanics
PHYS559 (3) Advanced Statistical Mechanics
9 credits selected from:
CHEM480 (3) Research Project
and CHEM490 (3) Research Project
CHEM531 (3) Chemistry of Inorganic Materials
CHEM575 (3) Chemical Kinetics
CHEM585 (3) Colloid Chemistry
MATH375 (3) Differential Equations
PHYS434 (3) Optics
PHYS451 (3) Classical Mechanics
PHYS469 (3) Laboratory in Modern Physics 2
PHYS479 (3) Honours Research Project
PHYS562 (3) Electromagnetic Theory

MINOR IN ELECTRICAL ENGINEERING
(23 or 25 credits)
[Program registration done by Student Affairs Office]
The Minor program does not carry professional recognition. Only students who satisfy the requirements of the Major in Physics are eligible for this Minor. Students registered for this option cannot count PHYS241 towards the requirements of the Major in Phys-
ics, and should replace this course by another Physics or Mathematics course. Students who select ECSE334 in the Minor cannot count PHYS328 towards the requirements of the Major in Physics, and should replace this course by another Physics or Mathematics course.

**Required Courses** (17 or 19 credits)

- ECSE200 (3) Fundamentals of Electrical Engineering
- ECSE210 (3) Circuit Analysis
- ECSE219 (2) Electrical Measurements Laboratory
- ECSE303 (3) Signals and Systems 1
- ECSE305 (3) Probability and Random Sigs. 1 or ECSE334 (5) Introduction to Microelectronics
- ECSE339 (3) Introduction to Electronics

**Complementary Courses** (6 credits)

12.25 Physiology (PHGY)

McIntyre Medical Sciences Building, Room 1021
3655 Promenade Sir-William-Osler
Montreal, QC H3G 1Y6
Telephone: (514) 398-4316
Fax: (514) 398-7452
Website: www.medicine.mcgill.ca/physio

**Chair** — Alvin Shrier

*Emeritus Professors*

G. Melvill Jones; B.A., M.A., M.B., B.Ch., M.D. (Canb.)
Kresimir Krnjevic; O.C., B.Sc., Ph.D., M.B., Ch.B., Edin., F.R.S.C.

*Professors*

Thomas M.S. Chang; B.Sc., M.D., C.M., Ph.D., (McG.), F.R.C.P.(C)
Monroe W. Cohen; B.Sc., Ph.D., (McG.)
Ellis J. Cooper; B.Eng.; Sir G.Wms., M.Sc. (Surrey), Ph.D. (McM.)
Mony M. Frojmovic; B.Sc., Ph.D., (McG.)
Leon Glass; B.S. (Brooklyn), Ph.D. (Chic.) (Isadore Rosenfeld Professor of Cardiology)
Phil Gold; C.C., B.Sc., M.Sc., Ph.D., M.D., C.M. (McG.), F.R.C.P.(C), F.R.S.C. (joint appoint. with Medicine)
David Goldtzman; B.Sc., M.D., C.M. (McG.) (Antoine G. Massabki Professor of Medicine) (joint appoint. with Medicine)
John Hanrahan; Ph.D. (U.B.C.)
Wayne S. Lapp; M.S.A., Tor., Ph.D. (McG.)
Mortimer Levy; B.Sc., M.D., C.M., Ph.D., M.C., Ph.D., (McG.) (joint appoint. with Medicine)
Michael Mackey; B.A., Ph.D. (Wash.) (Joseph Morley Drake Professor of Physiology)
Jacapo P. Mortola; M.D. (Milan)
John Orlovski; B.Sc. (McG.), M.Sc., Ph.D. (Queen’s) (James McGill Professor)
Premysl Ponka; M.D., Ph.D. (Prague)
Alvin Shrier; B.Sc. (C’dia), Ph.D. (Dal.) (Hosmer Professor of Physiology)
Douglas G.D. Watt; M.D., Ph.D. (McG.)

*Assistant Professors*

Julie Desbarats; Ph.D. (McG.)
Peter Swain; Ph.D. (Univ. London)

*Assistant Professor (Part Time)*

Anne Marie Lauzon; B.Sc., M.Sc., Ph.D. (McG.)

*Associate Professors*

Kathleen Cullen; B.Sc. (Brown), Ph.D. (Chicago) (William Dawson Scholar)
Riaz Farooki; B.Sc., M.Sc. (M.I.T.), Ph.D. (Tufts)
Mladen Glavinovic; B.Sc. (Zagreb), M.Sc. (Tor.), Ph.D. (McG.)
Michael Guevara; B.Sc., M.Eng., Ph.D. (McG.)
Sheldon Magder; M.D. (Tor.) (joint appoint. with Medicine)
Ursula Stochaj; Ph.D. (Cologne)
Teresa Tripenbach; M.D., Ph.D. (Warsaw)
Ann Wechsler; B.A. (Tor.), M.Sc., Ph.D. (McG.)
John White; B.Sc., M.Sc. (Car.), Ph.D. (Harv.)

**Associate Professor (Part Time)**

Nicole Bernard; B.Sc. (McG.), Ph.D. (Duke)

**Associate Members**

Anaesthesia: Steven Backman
Biomedical Engineering: Robert E. Kearney, Satya Prakash, Tomoko Takano
Dentistry: James Lund
Neurology & Neurosurgery: Massimo Avoli, Charles Bourque, Saït Carbonetto, Pierre Drapeau, Daniel Guilton, Michael Rasmisky
Ophthalmology: Curtis Baker
Otolaryngology: Bernard Segal
Pediatrics: Immunella Moss, Charles Rohicke
Psychiatry: Bernardo Dubrovsky, Christina Gianoulakis

**Adjunct Professors**

Roy Caplan, Montreal
Terence Hebert, Montreal
James Henry, London (ON)
John Milton, Chicago
Serge Rossignol, Montreal
Malmur R.I. Sairam, Montreal

Physiology has its roots in many of the basic sciences including biology, chemistry, mathematics, and physics. Physiology overlaps with other biomedical sciences such as anatomy, biochemistry, pathology and pharmacology, and with psychology and biomedical engineering, and is one of the prime contributors of basic scientific knowledge to the clinical medical sciences. Members of the Department of Physiology at McGill are engaged in studies dealing with molecules, single cells, or entire systems in a variety of vertebrates, including man. A wide range of interest and expertise is represented, including cardiovascular, respiratory, gastrointestinal and renal physiology, the physiology of exercise, neurophysiology, endocrinology, immunology, biophysics and biomathematics. Some faculty members have formal or informal links with the departments of mathematics, physics, electrical engineering, and chemistry, and with clinical departments (medicine, surgery, pediatrics, neurology, obstetrics, psychiatry, anesthesia), reflecting and reinforcing the close ties between physiology and other disciplines.

Graduates at the B.Sc. level have found rewarding careers in teaching, in secondary schools and CEGEPs, government service, and laboratory technical assistance, such as in pharmaceutical houses, hospitals, and institutions of higher learning. Moreover, physiology provides an excellent background for medicine, dentistry or other postgraduate work, in such fields as physiology, experimental medicine, pharmacology, biochemistry or physiological psychology.

The programs offered in Physiology differ in their orientation but they all have a common core of material covering cardiovascular, respiratory, gastrointestinal and renal physiology, neurophysiology, endocrinology and immunology. The specified U1 courses are identical for all programs except the Joint Major Programs in Physiology and Physics, Physiology and Mathematics, and the Joint Honours Program in Immunology and thus afford the student maximal flexibility before deciding on a particular program to follow in U2 and U3.

Academic advising is compulsory. All new students to the Department, Freshman and CEGEP, must see an adviser upon entering the program. Contact the Student Affairs Officer at (514) 398-3869 for more information.

Returning students are required to consult with their advisers during the advising period for returning students, and regularly throughout the year. It is important that graduating students have
their record checked by their adviser at the beginning of their final year.

PLEASE NOTE: Complementary courses are not electives. The difference between Complementary courses and Required courses is that Complementary courses are defined as offering an element of choice, however small that choice may be. Students may choose from the two (or more) courses specified within Complementary Course segments of a program description, but ONLY from those. For further information, refer to “Course Terminology” on page 403.

A Science Major Concentration in Biomedical Sciences is available to students pursuing the B.A. & Sc. degree. This Major Concentration is described in the Bachelor of Arts and Science section of the Calendar; see “Biomedical Sciences” on page 170 for details.

FACULTY PROGRAM IN PHYSIOLOGY (55 credits)

If not previously taken, CHEM212 Introductory Organic Chemistry 1 must be completed in addition to the 55 program credits.

Required Courses (34 credits)

BIOL200 (3) Molecular Biology
BIOL202 (3) Basic Genetics
BIOL301 (4) Cell and Molecular Laboratory
CHEM222 (4) Introductory Organic Chemistry 2
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2
PHGY212D1 (1) Introductory Physiology Laboratory
PHGY212D2 (1) Introductory Physiology Laboratory
PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience

Complementary Courses (21 credits)

6 credits selected from:
BIOL201 (3) Cell Biology and Metabolism
or BIOL212 (3) Molecular Mechanisms of Cell Function
BIOL373 (3) Biometry
or BIOL309 (3) Mathematical Models in Biology

6 credits selected from upper level physiology courses – see approved list in Department.

9 credits selected from upper level science courses – see approved list in Department.

MAJOR IN PHYSIOLOGY (64-65 credits)

The Major Program includes, in addition to some intensive studies in Physiology, a strong core content of related biomedical sciences. Admission to the Major Program will be in U2, upon completion of the U1 required courses, and in consultation with the student’s advisor. If not previously taken, CHEM212 Introductory Organic Chemistry 1 must be completed in addition to the 64-65 program credits.

U1 Required Courses (18 credits)

BIOL200 (3) Molecular Biology
BIOL202 (3) Basic Genetics
CHEM222 (4) Introductory Organic Chemistry 2
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2
PHGY212D1 (1) Introductory Physiology Laboratory
PHGY212D2 (1) Introductory Physiology Laboratory

U2 and U3 Required Courses (19 credits)

PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience
BIOL301 (4) Cell and Molecular Laboratory
BIOL311 (3) Metabolic Biochemistry

Complementary Courses (27-28 credits)

12-13 credits selected from:
BIOL201 (3) Cell Biology and Metabolism
or BIOL212 (3) Molecular Mechanisms of Cell Function
BIOL373 (3) Biometry
or BIOL309 (3) Mathematical Models in Biology
CHEM203 (3) Survey of Physical Chemistry
or CHEM204 (3) Physical Chemistry/Biological Sciences 1
PHGY209 (3) Mammalian Physiology 1
or PHGY210 (3) Mammalian Physiology 2
PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience

JOINT MAJOR IN PHYSIOLOGY AND MATHEMATICS (77 credits)

U1 Required Courses (14 credits)

PHGY212D (1) Introductory Physiology Laboratory
PHGY212D2 (1) Introductory Physiology Laboratory
MATH222 (3) Calculus 3
MATH247 (3) Linear Algebra
or MATH223 (3) Linear Algebra
BIOL200 (3) Molecular Biology
BIOL309 (3) Mathematical Models in Biology

U1 Complementary Courses (15 credits)

9 credits selected from:
BIOL201 (3) Cell Biology and Metabolism
or BIOL212 (3) Molecular Mechanisms of Cell Function
BIOL373 (3) Biometry
or BIOL309 (3) Mathematical Models in Biology

6 credits selected from:
MATH248 (3) Advanced Calculus 1
or MATH314 (3) Advanced Calculus
MATH325 (3) Ordinary Differential Equations
or MATH315 (3) Ordinary Differential Equations

U2 Required Courses (24 credits)

MATH242 (3) Analysis 1
MATH243 (3) Real Analysis
MATH323 (3) Probability Theory
MATH326 (3) Nonlinear Dynamics and Chaos
PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience

U2 or U3 Required Courses (6 credits)

MATH437 (3) Mathematical Methods in Biology
PHYS413 (3) Physical Basis of Physiology

U3 Required Courses (18 credits)

BMDE519 (3) Analysis of Biomedical Systems & Signals
MATH319 (3) Partial Differential Equations
MATH324 (3) Statistics
PHGY461D1 (4.5) Experimental Physiology
PHGY461D2 (4.5) Experimental Physiology

JOINT MAJOR IN PHYSIOLOGY AND PHYSICS (80 credits)

This program provides a firm foundation in physics, mathematics and physiology. It is appropriate for students interested in applying methods of the physical sciences to problems in physiology and allied biological sciences.

U1 Required Courses (17 credits)

MATH222 (3) Calculus 3
PHGY212D (1) Introductory Physiology Laboratory
PHGY212D2 (1) Introductory Physiology Laboratory
PHYS230 (3) Dynamics of Simple Systems
PHYS232 (3) Heat and Waves
PHYS257 (3) Experimental Methods 1
PHYS258 (3) Experimental Methods 2

U1 Complementary Courses (9 credits)
MATH223 (3) Linear Algebra
or MATH247 (3) Linear Algebra
PHGY209 (3) Mammalian Physiology 1
and PHGY210* (3) Mammalian Physiology 2
or PHGY201 (3) Human Physiology: Control Systems
and PHGY202 (3) Human Physiology: Body Functions
* The corequisite BIOL200, BIOL201 is waived for this program.

U2 Required Courses (21 credits)
MATH326 (3) Nonlinear Dynamics and Chaos
PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience
PHYS328 (3) Electronics
PHYS339 (3) Measurements Laboratory in General Physics

U2 Complementary Course (6 credits)
MATH315 (3) Ordinary Differential Equations
or MATH325 (3) Ordinary Differential Equations
MATH314 (3) Advanced Calculus
or MATH248 (3) Advanced Calculus 1

U2 or U3 Required Courses (6 credits)
MATH437 (3) Mathematical Methods in Biology
PHYS413 (3) Physical Basis of Physiology

U3 Required Courses (21 credits)
BMDE519 (3) Analysis of Biomedical Systems and Signals
PHGY461D1 (4.5) Experimental Physiology
PHGY461D2 (4.5) Experimental Physiology
PHYS333 (3) Thermal and Statistical Physics
PHYS340 (3) Electricity and Magnetism
PHYS446 (3) Quantum Physics

HONOURS IN PHYSIOLOGY (75 credits)
All admissions to the Honours program will be in U2, and the student must have a U1 GPA of 3.30, with no less than a B in PHGY209 and PHGY210. Admission to U3 requires a U2 CGPA of 3.20 with no less than a B in U2 Physiology courses. Decisions for admission to U3 will be heavily influenced by student standing in U2 courses.

The Department reserves the right to restrict the number of entering students in the Honours program. Students who do not maintain Honours standing may transfer their registration to the Major Program in Physiology.

The deadline to apply to the Honours Program is June 1. Application forms are available in Mcintyre 1021. Students should include in their letters telephone numbers where they can be reached during the last week of August. Students are responsible for picking up their letters of decision in McIntyre 1021 no later than one week before classes start.

Graduation: To graduate from the Honours Physiology Program the student will have a CGPA of 3.20 with a mark no less than a B in all Physiology courses.

If not previously taken CHEM212 Introductory Organic Chemistry 1 must be completed in addition to the 75 program credits.

Required Courses (60 credits)
ANAT261 (4) Introduction to Dynamic Histology
BIOC311 (3) Metabolic Biochemistry
BIOL200 (3) Molecular Biology
BIOL202 (3) Basic Genetics
BIOL301 (4) Cell and Molecular Laboratory
CHEM222 (4) Introductory Organic Chemistry 2
PHGY209 (3) Mammalian Physiology 1
PHGY210 (3) Mammalian Physiology 2

PHGY212D1 (1) Introductory Physiology Laboratory
PHGY212D2 (1) Introductory Physiology Laboratory
PHGY311 (3) Intermediate Physiology 1
PHGY312 (3) Intermediate Physiology 2
PHGY313 (3) Intermediate Physiology 3
PHGY314 (3) Integrative Neuroscience
PHGY351 (3) Research Techniques: Physiology
PHGY359D1 (3) Tutorial in Physiology
PHGY359D2 (3) Tutorial in Physiology
PHGY459D1 (3) Physiology Seminar
PHGY459D2 (3) Physiology Seminar
PHGY461D1 (4.5) Experimental Physiology
PHGY461D2 (4.5) Experimental Physiology

Complementary Courses (15 credits)
9 credits selected from:
BIOL201 (3) Cell Biology and Metabolism
or BIOL212 (3) Molecular Mechanisms of Cell Function
BIOL373 (3) Biometry
or BIOL309 (3) Mathematical Models in Biology
CHEM203 (3) Survey of Physical Chemistry
or CHEM204 (3) Physical Chemistry/Biological Sciences 1
6 credits selected from upper level physiology courses – see approved list in Department.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY, see page 326. This program is offered by the Departments of Biochemistry, Microbiology and Immunology, and Physiology. Physiology students interested in the program should contact Dr. W.S. Lapp.

12.26 Psychiatry (PSYT)
There are no B.Sc. programs in Psychiatry, but the PSYT courses listed in the Courses section of this Calendar are administered by the Faculty of Science and are not considered as courses outside of Arts and Science.

12.27 Psychology (PSYC)
Stewart Biological Sciences Building, Room W8/1
1205 Avenue Docteur Penfield
Montreal, QC, H3A1B1
Telephone: (514) 398-6100
Fax: (514) 398-4896
E-mail: info@psych.mcgill.ca
Website: www.psych.mcgill.ca

Chair — K.B.J. Franklin
Emeritus Professors
Albert S. Bregman; M.A.(Tor.), Ph.D.(Yale)
Virginia I. Douglas; B.A.(Qu.), M.A., M.S.W., Ph.D.(Mich.)
Wallace E. Lambert; M.A.(Colgate), Ph.D.(N.Carolina), F.R.S.C.
A.A.J. Marley; B.Sc.(Birm.), Ph.D.(Penn.)
Ronald Melzack; M.Sc., Ph.D.(McG.), F.R.S.C. (E.P. Taylor Emeritus Professor of Psychology)
Peter M. Milner; B.Sc.(Leeds), M.Sc., Ph.D.(McG.)

Professors
Frances E. Aboud; B.A.(Tor.), M.A., Ph.D.(McG.)
Irving M. Binik; B.A.(N.Y.U.), B.H.L.(Jewish Theological Seminary), M.A., Ph.D.(Penn.)
Blaine Ditto; B.S.(Iowa), Ph.D.(Ind.)
Keith B.J. Franklin; B.A., M.A.(Auck.), Ph.D.(Lond.)
Fred H. Genesee; B.A.(W.Ont.), M.A., Ph.D.(McG.)
Jeffrey S. Mogil; B.Sc.(Tor.), Ph.D.(UCLA) (E.P. Taylor Professor of Psychology and the Canada Research Chair in Genetics of Pain)
Debbie S. Moskowitz; B.S.(Kirkland), M.A., Ph.D.(Cl.)
YurikoOshima-Takane; B.A., M.A.(Tokyo), Ph.D.(McG.)
David J. Ostry; B.A.Sc., M.A.Sc., Ph.D.(Tor.)

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Faculty of Science

Caroline Palmer; B.Sc.(Univ. of Michigan, Ann Arbor), Ph.D.(McG.)
M. McRae; B.Sc., Ph.D. (McGill) (The Canada Research Chair in Cognitive Neuropsychology of Performance)
Michael Petrides; B.Sc., M.Sc.(Lond.), Ph.D.(Cantab.)
Robert O. Pihl; B.A.(Lawrence, Ph.D.Ariz.)
James O. Ramsay; B.Ed.(Alta.), Ph.D.(Prin.)
Barbara B. Sherwin; B.A., M.A., Ph.D.(C'dia) (James McGill Professor)
Thomas R. Shultz; B.A.(Minn.), Ph.D.(Yale)
Yoshio Takane; B.L., M.A.(Tokyo), Ph.D.(N.Carolina)
Donald M. Taylor; B.A., M.A., Ph.D.(W.Ont.)
Norman M. White; B.A.(McG.), M.S., Ph.D.(Pitt.)
David C. Zuroff; B.A.(Harv.), M.A., Ph.D.(Conn.)

Associate Professors
A.G. Baker; B.A.(U.B.C.), M.A., Ph.D.(Dal.)
Evans S. Balaban; B.A.(Michigan State), Ph.D.(Rockefeller)
Mark Baldwin; B.A.(Tor.), M.A., Ph.D.(Waterloo)
Avi Chaudhuri; B.Sc., M.Sc.(Tor.), Ph.D.(Berk.) (James McGill Professor)
Don C. Donderi; B.A., B.Sc.(Chic.), Ph.D.(C'nell)
Richard F. Koestner; B.A., Ph.D.(Roch.)
John Lydon; B.A.(Notre Dame), M.A., Ph.D.(Wat.)
James C. Macdougall; B.A.(Car.), M.A., Ph.D.(McG.) (part-time)
Morton J. Mendelsohn; B.Sc., Ph.D.(Mcg.), A.M., Ph.D.(Harv.)
Gillian A. Oldrici; B.A.(Wellesley), M.A., Ph.D.(Harv.) (William Dawson Scholar)

Assistant Professors
John R.Z. Abela; B.A.(Brown), M.A., Ph.D.(Penn.)
IanF. Bradley; B.Sc., M.Sc.(Tor.), Ph.D.(Wat.) (part-time)
Moon-Ho Ho; B.Sc., M.Phil.(Chinese Univ. of Hong Kong), M.S., Ph.D.(Illinois)
Baerbel Knaeuper; Diploma, Dr. phil. (U. of Mannheim), Dr. phil. habil. (Free Uni. Berlin)
Daniel J. Levitin; A.B.(Stan.), M.S., Ph.D.(Oregon) (Bell Professor of Psychology and E-Commerce)
Karim Nader; B.Sc., Ph.D.(Tor.)
Zeev Rosberger; B.Sc.(McG.), M.A., Ph.D.(C'dia) (part-time)
Debra Titeoun; B.A.(NY), M.A., Ph.D.(SUNY, Binghamton)

Lecturers
Nicole Allard; B.A.(W.Ont.), M.A.(Guelph), M.Ed.(McG.)
Rhonda Amseil; B.Sc., M.Sc.(McG.)

Associate Members
Clinical Research Institute of Montreal: Terrance J.Coderre
Douglas Hospital: HowardSteiger
Montreal Neurological Institute: MarilynJones-Gotman, BrendaPal, Thomas Sossin, Viviane Szykias,
RobertZatorre

Psychiatry: FrancesAbbott
Vision Research Unit (Ophthalmology): CurtisBaker,
RobertHess, FrederickA.Kingdom, KathleenMullien

Adjunct Professors
S. Bergeron; B.Sc. (U. of Montreal), Ph.D. (McG.)
M. Bruck; B.A.(Wheaton), M.A., Ph.D.(McG.)
S. Burstein; B.Sc.(McG.), M.A., Ph.D.(Wat.)
F. Cramer-Azima; B.A.(Queen's), M.A. (Cornell), Ph.D.(Mont.)
P. Delise; B.Sc., M.Ps., Ph.D.(Montr.)
C. Garson; B.A., C'dia, Ph.D.(McG.)
P. Greigire; B.A. (College St. Marie), B.Ph., L.Ph., Ph.D. (Montr.)
A. Ho; B.Sc.(New Jersey), M.A. (New York), Ph.D.(Harv.)
A. Anthony; B.A. (McG.), M.A. (Northwestern), Ph.D. (Michigan)
M. Shapiro; B.A.(Colly), M.A., Ph.D.(North.)
S. Sooman; B.A. (McG.), M.A.(Guelph), Ph.D.(C'dia)
M. Spevack; B.Sc.(McG.), M.A.(Dal.), Ph.D.(McG.)
A. Surkis; Ph.D.(Montr.)

Part-time Appointments
Jorge Armony; B.Sc. (Buenos Aires), M.Sc., Ph.D. (NYU)
Veronique BOBOT; B.A(McG.), M.A., Ph.D.(Ariz.)
Judith LeGallais; B.A., M.A., Ph.D. (McG.)
Martin LePage; B.A. (C'dia), Ph.D. (UQAM)
Marco Leyton; B.Sc.(Memorial), M.A., Ph.D.(Conn.)

Sonia Lupien; B.Sc., M.Sc., Ph.D.(Mont.)
Shelley McColl; B.Sc. (Orens), M.Sc. (Dalhousie), Ph.D. (McG.)
Zbigniew Piesczewski; M.A., Ph.D.(U of Poznan)
Steven Stolten; B.A.(C'dia), M.A.(U. Toronto), Ph.D.(McG.)

The Department of Psychology offers programs in both Arts and Science. All B.A. programs in Psychology can be found in the Faculty of Arts entry “Psychology (PSYC)” on page 139.

Psychology is the scientific study of mind and behaviour. It is both a social and a biological science. As a social science, psychology studies social interactions. As a biological science, it regards humans as the product of evolution and so studies them in biological perspective, comparing and contrasting human behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of human and animal behaviour, and outside the laboratory by systematic observation of the behaviour of humans and animals. The aim is to formulate general principles of perception, learning, motivation, cognition and social psychology that are relevant to different aspects of human life. Experimentation, laboratory techniques, observational procedures, measurement, and statistical methods are important tools of the psychologist.

Psychology has many interdisciplinary aspects. The study of psychological problems often involves knowledge drawn from other disciplines such as biology, psychology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why humans think and behave as they do.

Although a number of undergraduate courses in psychology have applied implications, applied training is not the purpose of the undergraduate curriculum. Its purpose is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.Sc. or B.A. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Quebec the minimum requirement for membership in the Order of Psychologists, the professional association governing the work of psychologists in the province, is an M.A. or M.Sc. degree, or other equivalent degree. All students planning to practise in the Province of Quebec will be examined on their proficiency in French before being admitted to the professional association. Undergraduate courses in psychology may prove of considerable value to students planning careers in professional fields other than psychology. These include but are not restricted to medicine, education, social work, human communication sciences, or business and industry.

Students who are interested in psychology as a career must pursue graduate studies. Persons who hold graduate degrees in psychology, usually the Ph.D., may find employment in universities, research institutes, hospitals, community agencies, government departments, large corporations, or may act as self-employed consultants. At the graduate level, psychology has many specialized branches including social psychology, physiological psychology, experimental psychology, clinical psychology, child psychology, industrial psychology, community psychology, educational psychology, and others.

Requirements for admission to graduate studies in psychology vary from one university to another and from one country to another. Nonetheless, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided that sufficiently high grades are obtained. During the U2 year, undergraduate students are strongly advised to verify the admission requirements of various graduate programs. This is to ensure that sufficient time is available for stu-
students to complete all necessary requirements for admission to their preferred graduate programs.

The essential differences between the Honours and the Major program are an emphasis on research methodology courses and practice in the Honours program, and that higher academic standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

INFORMATION MEETINGS FOR NEW STUDENTS
All new students entering the Psychology undergraduate program are required to attend a Information Meeting prior to registration. Students who have been accepted into a Bachelor of Science program in Psychology must attend the meeting on August 25, 2004 at 13:00. The meeting will be held in Room S1/4 of the Stewart Biological Sciences Building. Students accepted into a Bachelor of Arts program must attend a separate information meeting. For details, consult the Psychology program listing in the Faculty of Arts section. At this meeting, Nicole Allard, the Academic Adviser, will explain the requirements of the Department's programs. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. After this meeting students will make appointments for individual advising sessions, during which they will fill out their Study Plan form for registration.

Entering students must bring their letter of acceptance and a copy of their collegial transcript(s). They will also need this Calendar and a preliminary Class Schedule. Students will also find the Psychology Department Handbook helpful. It contains more detailed descriptions of psychology courses, as well as providing guidelines for how students might pursue particular areas of interest. The Handbook is available on the Department Website, www.psych.mcgill.ca/ugrad/ugradhm.htm

Students entering the Psychology program in January are encouraged to call the academic advisor, Nicole Allard, in December to clarify their course selections.

MINOR IN PSYCHOLOGY (24 credits)
A Minor program in Psychology is available to students registered in any B.Sc. program (other than Psychology). This program is intended to complement a student’s primary field of study by providing a focused introduction to specialized topics in psychology. A separate Minor Concentration exists for students registered in a program in the Faculty of Arts. Please consult the Psychology listing in the Faculty of Arts section for more information.

The Minor program for Science students requires the completion of 24 credits, of which no more than 6 may overlap with the primary program. All courses in the Minor must be passed with a minimum grade of C. A prerequisite to the program is PSYC204 or equivalent, see section 3.6.1 "Course Overlay".

Complementary Courses (24 credits)

- at least 3, but no more than 6, credits selected from: PSYC211 (3) Intro Behavioural Neuroscience
  - PSYC212 (3) Perception
  - PSYC213 (3) Cognition
  - PSYC215 (3) Social Psychology
- 18-21 credits selected from among Psychology courses at the 300 level or above

FACULTY, MAJOR, HONOURS PROGRAMS IN PSYCHOLOGY

Recommended Background
It is expected that most students who enter a Major, Honours or Faculty Program in Psychology will have taken introductory psychology, biology and statistics at the collegiate level. Recommended CEGEP courses include: Psychology 350-101 or 350-102 or equivalent, Biology CEGEP objective 00UK, 00XU or equivalent. Statistics (Mathematics) 201-307 or 201-337 or equivalent. Students must obtain a minimum grade of 75% in their CEGEP level statistics course. In the first year those students who have not taken the recommended collegiate level statistics course, or those who have obtained a grade below 75%, must take Psychology PSYC204. Those who have not taken the recommended collegiate level biology must take BIOL111 or BIOL112, and those who have not taken Introductory Psychology in college must take PSYC100.

Course Groups: List A and List B
The study of psychology covers many fields. To develop a breadth of understanding, students are expected to obtain knowledge beyond the introductory level in two or more areas of psychology. To ensure this requirement is met, Psychology courses are divided into two lists. List A covers the areas of behavioural neuroscience, cognition and quantitative methods. List B covers social, health and developmental psychology.

List A (Behavioural Neuroscience, Cognition and Quantitative Methods)
PSYC301 (3) Learning
PSYC308 (3) Behavioural Neuroscience 1
PSYC310 (3) Human Intelligence
PSYC311 (3) Human Cognition and the Brain
PSYC317 (3) Genes and Behaviour
PSYC318 (3) Behavioural Neuroscience 2
PSYC334 (3) Computer Simulation - Psychological Processes
PSYC335 (3) Formal Models: Psychological Processes
PSYC336 (3) Measurement of Psychological Processes
PSYC340 (3) Psychology of Language
PSYC341 (3) The Psychology of Bilingualism
PSYC342 (3) Hormones and Behaviour
PSYC352 (3) Laboratory in Cognitive Psychology
PSYC353 (3) Laboratory in Human Perception
PSYC403 (3) Modern Psychology in Historical Perspective
PSYC406 (3) Psychological Tests
PSYC410 (3) Special Topics in Neuropsychology
PSYC413 (3) Cognitive Development
PSYC427 (3) Sensorimotor Behaviour
PSYC451 (3) Human Factors Research and Techniques
PSYC470 (3) Memory and Brain
PSYC472 (3) Scientific Thinking and Reasoning
PSYC503 (3) Computational Psychology
PSYC505 (3) The Psychology of Pain
PSYC510 (3) Statistical Analysis of Tests
PSYC522 (3) Neurochemistry and Behaviour
PSYC526 (3) Advances in Visual Perception
PSYC529 (3) Music Cognition
PSYC531 (3) Structural Equation Models
PSYC532 (3) Cognitive Science
PSYC536 (3) Correlational Techniques
PSYC541 (3) Multilevel Modelling

List B (Social, Health and Developmental Psychology)
PSYC304 (3) Child Development
PSYC316 (3) Psychology of Deafness
PSYC331 (3) Inter-Group Relations
PSYC332 (3) Introduction to Personality
PSYC333 (3) Personality and Social Psychology
PSYC337 (3) Introduction: Abnormal Psychology 1
PSYC338 (3) Introduction: Abnormal Psychology 2
PSYC343 (3) Language Acquisition in Children
PSYC351 (3) Research Methods in Social Psychology
PSYC408 (3) Principles of Cognitive Behaviour Therapy
PSYC412 (3) Deviations: Child Development
PSYC414 (3) Social Development
PSYC416 (3) Advanced Topics in Child Development
PSYC429 (3) Health Psychology
PSYC436 (3) Human Sexuality and its Problems
PSYC471 (3) Human Motivation
PSYC473 (3) Social Cognition and the Self
PSYC474 (3) Interpersonal Relationships
PSYC491D1 (3) Advanced Study: Behavioural Disorders
PSYC491D2 (3) Advanced Study: Behavioural Disorders
PSYC511 (3) Infant Competence
PSYC530 (3) Applied Topics in Deafness
PSYC533 (3) International Health Psychology
PSYC305 (3) Statistics for Experimental Design
PSYC215 (3) Social Psychology
PSYC211 (3) Intro Behavioural Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC212 (3) Perception
PSYC211 (3) Intro Behavioural Neuroscience
Note: PSYC100 may be taken as a corequisite with these basic courses.

Complementary Courses (42 credits)
6 credits in Psychology from List A
6 credits in Psychology from List B
6 credits in Psychology at the 300 level or above
6 credits in Psychology 400 or 500 level
18 approved credits, at least 9 of which are at the 300 level or above

B.Sc. MAJOR IN PSYCHOLOGY (54 credits)
Students majoring in Psychology must obtain a minimum grade of C in all 54 credits of the program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one).

U1 Required Courses (12 credits)
PSYC211 (3) Intro Behavioural Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC215 (3) Social Psychology
Note: PSYC100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC305 (3) Statistics for Experimental Design

Complementary Courses (39 credits)
6 credits in Psychology from List A
6 credits in Psychology from List B
6 credits in Psychology at the 300 level or above
9 credits in Psychology 400 or 500 level
12 credits at the 300 level or above in one of the following disciplines: Psychology (PSYC), Anatomy and Cell Biology (ANAT), Biology (BIOL), Biochemistry (BIOC), Chemistry (CHEM), Computer Science (COMP), Mathematics (MATH), Physiology (PHGY), Psychiatry (PSYT).

B.Sc. HONOURS IN PSYCHOLOGY (54 credits)
Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of their U2 year, and the two-year sequence of Honours courses continues through U3.

Admission to Honours is selective. Students with a cumulative grade point average of 3.00 or better are eligible to apply; since enrolment is limited the usual GPA for admission to this program is 3.50 (based on a 27-30 graded credit program over two terms). Students must complete the following courses in their U1 year to be eligible to apply to the Honours Program: PSYC204, PSYC211, PSYC212, PSYC213 and PSYC215. Students who have been exempted from PSYC204 due to previous courses completed in CEGEP are advised to complete PSYC305 in their U1 year. Once in the Honours Program, the student must obtain a GPA of 3.00 in the U2 year in order to continue in the program for U3. Students in the Honours Program are required to complete a minimum of 27 graded credits per academic year.

Applications can be obtained from the Undergraduate Office of the Department of Psychology. Room N7/9A, Stewart Biological Sciences Building. The applications must be completed and returned to the Undergraduate Office by August 15 for September admission and by December 1 for January admission. Candidates will be advised of the Department's decision through a notice posted in front of the Undergraduate Advisor's Office, N7/9, before classes begin in September or in January.

Students should note that awarding of the Honours degree will depend on both cumulative grade point average and a minimum grade of B on PSYC380D1/PSYC380D2, PSYC482, PSYC483. "First Class Honours" is awarded to students who obtain a minimum cumulative grade point average of 3.50 and a minimum CGPA of 3.50 in the three Honours courses of which 9 out of 12 credits received at least an A grade. "Honours" is awarded to students with a minimum cumulative grade point average of 3.00 and a minimum program GPA of 3.00 on each of the three Honours courses. Moreover, the awarding of the Honours degree normally requires completion of two full years of study. U2 and U3, in the Psychology Department. Students with particularly strong academic records may be admitted for the U3 year only on the basis of their marks and research experience. These students must complete all honours program requirements.

U1 Required Courses (12 credits)
PSYC211 (3) Intro Behavioural Neuroscience
PSYC212 (3) Perception
PSYC213 (3) Cognition
PSYC215 (3) Social Psychology
Note: PSYC100 may be taken as a corequisite with these basic courses.

U1 or U2 Required Course (3 credits)
PSYC305 (3) Statistics for Experimental Design

U2 Required Courses (6 credits)
PSYC380D1 (3) Honours Research Project and Seminar
PSYC380D2 (3) Honours Research Project and Seminar

U3 Required Courses (6 credits)
PSYC482 (3) Advanced Honours Seminar 1
PSYC483 (3) Advanced Honours Seminar 2

Complementary Courses (27 credits)
6 credits to be selected from:
PSYC481D1 (3) Honours Thesis Research
PSYC481D2 (3) Honours Thesis Research
PSYC492 (3) Special Topics Seminar 1
PSYC493 (3) Special Topics Seminar 2
PSYC495 (3) Psychology Research Project 2
PSYC496 (3) Seniors Honours Research 2
PSYC497 (3) Seniors Honours Research 2

Any Psychology course at the 500 level.
6 credits in Psychology from List A
6 credits in Psychology from List B
9 credits at the 300 level or above selected from: Anatomy and Cell Biology (ANAT), Biochemistry (BIOC), Biology (BIOL), Chemistry (CHEM), Computer Science (COMP), Mathematics (MATH), Physiology (PHGY), Psychiatry (PYST), Psychology (PSYC).

* Please see Faculty Regulations concerning Project Courses, section 3.6.2.

12.28 Science for Teachers

Rutherford Physics Building
3600 University Street
Montreal, QC, H3A 2T8
Fax: (514) 398-8434
E-mail: bscbed@physics.mcgill.ca

Coordinator - Science — R. Harris
Coordinator - Education — M. Schwartz

The training and certification of school teachers has traditionally been the responsibility of the Faculty of Education and normally requires the completion of a Bachelor of Education.

The Faculties of Education and of Science have introduced a number of measures to make the B.Ed. degree as accessible as possible to Science students, subject to Ministry of Education regulations. Two of these measures are the Minor in Education for Science Students and the Concurrent B.Sc./B.Ed. programs.

The Concurrent B.Sc./B.Ed. is intended as a very rigorous but rewarding alternative to taking the B.Sc. and the B.Ed. in sequence. The Concurrent program is specifically designed to train teacher/scientists. The program is rigidly structured and closely integrated so as to satisfy the academic requirements of both degrees.

Concurrency is an essential characteristic of the B.Sc./B.Ed.; it is not intended that the Science and Education components be taken separately and then combined. Normally students will be admitted to both components of the Concurrent Program simultaneously, but it is possible for Science students to opt into this program at any time during their B.Sc. program. However, because this is a concurrent program, both degrees must be granted at the same Convocation. It will not be possible to receive one degree first, and the other subsequently.

Students in the Concurrent Program may apply to transfer to either a conventional B.Sc. or a conventional B.Ed program. To do so, they must submit a Faculty Transfer Application to the appropriate Student Affairs Office. The decision will be based on their grades in the relevant component of the Concurrent Program. Students who do transfer to a conventional program may not transfer back to the Concurrent Program.

Students who receive an F or J in an Education Field Experience course are placed in unsatisfactory standing. Although they may complete their term, they are required to withdraw from the Concurrent Program. However, they may apply to transfer to a conventional B.Sc. program as outlined above.

To be admitted, candidates must satisfy the admission requirements of both faculties.

Students who wish to be registered in the Concurrent Program must contact one of the coordinators through the Student Affairs Office of either faculty.

MINOR IN EDUCATION FOR SCIENCE STUDENTS (18 credits)

Program Adviser —
Student Affairs Office, Faculty of Education
www.mcgill.ca/edu-sao/minors

This Minor allows Science students to develop or explore an interest in Education without committing themselves to completing a B.Ed. degree. Only a few students are prepared to commit to a teaching career at the start of university, but many students see it as a viable option toward the end of their B.Sc. program. At that time, Science students who have taken this Minor in Education will have completed a substantial number of the necessary credits for the B.Ed. degree. Students whose B.Sc degree also substantially matches the content of one of the concurrent B.Sc./B.Ed. programs (see below) are likely eligible for the maximum number of 60 Advanced standing credits, as specified in the Faculty of Education section “Advanced Standing/Transfer Credits” on page 177.

The 18 credits for the Minor are the same courses approved by the Faculty of Science as Education electives within the Concurrent B.Sc./B.Ed.

Required Courses (12 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEC402</td>
<td>Media, Technology and Education</td>
</tr>
<tr>
<td>EDEM405</td>
<td>Policy issues in Quebec Education</td>
</tr>
<tr>
<td>EDPE300</td>
<td>Educational Psychology</td>
</tr>
<tr>
<td>EDP1309*</td>
<td>Exceptional Students</td>
</tr>
</tbody>
</table>

Students should consult the Program Adviser for clarification on the prerequisite for EDP1309.

Complementary Courses (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDER400</td>
<td>Philosophical Foundations of Education</td>
</tr>
<tr>
<td>EDER398</td>
<td>Philosophy of Catholic Education</td>
</tr>
<tr>
<td>EDEC410</td>
<td>Multi-Cultured/Multi-Racial Class</td>
</tr>
<tr>
<td>EDER464</td>
<td>Intercultural Education</td>
</tr>
<tr>
<td>EDEE441</td>
<td>First Nations and Inuit Education</td>
</tr>
</tbody>
</table>

CONCURRENT B.Sc./B.Ed. PROGRAM

Students entering the Concurrent B.Sc./B.Ed. Program in September 2004 will follow the program described below. Students registered in the Concurrent B.Sc./B.Ed. Program before September 2004 should refer to the program described in the 2003-04 Undergraduate Programs Calendar.

This program has been designed to provide students with the opportunity to attain a Bachelor of Science degree and a Bachelor of Education degree after 135 credits of study (165 credits for students who have not completed the basic sciences).

The two components of the Concurrent Program are the B.Ed. Secondary Program and one of the B.Sc. programs for teachers. These two components are described in what follows, including an identification of the elements that are counted towards the requirements of both degrees. These provisions are exceptional and apply exclusively to the Concurrent Program.

The following Science components have been approved for the Concurrent Program:
- biology, with chemistry
- biology, with physics
- chemistry, with biology
- chemistry, with physics
- physics, with biology
- physics, with chemistry
- mathematics.

Bachelor of Education Secondary Program (120 credits)

The aim of this B.Ed. is to prepare teachers for the secondary school level through a program of academic studies and professional studies centred on school-based practicum components supported by courses in pedagogy, curriculum and educational foundations. In the case of the Concurrent Program, the academic component must be chosen from those listed above.

See the Faculty of Education for a full description of the “Bachelor of Education Secondary Program” on page 187. In summary, it consists of the following:

Academic components (54 credits): in the present case these courses will be selected from the B.Sc. components of the Concurrent Program, and will count towards both degrees.
Professional components (60 credits): these include professional seminars, field experiences, foundation courses, pedagogy courses, and pedagogical support courses.

Pedagogy courses for the Concurrent program must include EDES370 Teaching General Science and EDEC335 Teaching Secondary Science, or, if Mathematics is the academic component chosen, EDES353 Secondary School Mathematics 1 and EDEC 338 Secondary School - Mathematics 2.

The following 18 credits can be included as electives in the B.Sc. component of the Concurrent program, and will count towards both degrees: EDEC402, EDEM405, EDPI309, EDPE300, either EDER400 or EDER398, and one of EDEC410, EDPE300, or EDER309.

Electives (6 credits).

Bachelor of Science Major or Major Concentration with a Minor for Teachers (120 credits)

These B.Sc. programs, with the exception of the Major in Mathematics, are designed specifically as the Science component of the Concurrent B.Sc./B.Ed. Program. The general structure of these B.Sc. programs is as follows:

Basic sciences (30 credits). Quebec students with a DCS in Science are granted 30 credits advanced standing and will have normally completed the equivalent of, and are therefore exempt from, the basic science courses in biology, chemistry, mathematics and statistics, and physics. Students with satisfactory results in International Baccalaureate, French Baccalaureate and Advanced Levels, and Advanced Placement tests may be exempt from some or all of the basic science courses.

Required and complementary courses (54-70 credits).

The details of these programs are given below. Note that 54 of these credits can be counted towards the academic component of the B.Ed. program, but only for students in the Concurrent Program.

Elective courses (20-36 credits). These are electives from the B.Sc. perspective, but they must be suitably chosen if the student wishes to complete the Concurrent Program with the minimum of 135 credits. The following Education courses can count towards both the B.Sc. and the B.Ed. components of the Concurrent Program.

EDEC402 (3) Media, Technology and Education
EDEC410 (3) Multi-Cultured/Multi-Racial Class
EDER464 (3) Intercultural Education
EDEE441 (3) First Nations and Inuit Education
EDEM405 (3) Policy issues in Quebec Education
EDPE300 (3) Educational Psychology
EDPI309 (3) Exceptional Students
EDER400 (3) Philosophical Foundations of Education
EDER398 (3) Philosophy of Catholic Education

MAJOR CONCENTRATION IN BIOLOGY WITH A MINOR IN CHEMISTRY FOR TEACHERS (69 or 70 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN BIOLOGY - CELL/ MOLECULAR OPTION on page170 or the 37 credits of the MAJOR CONCENTRATION IN BIOLOGY - ORGANISMAL OPTION on page170, and the 18 credits of the MINOR IN CHEMISTRY on page316, as well as the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL210 (3) Perspectives of Science
CHEM381 (3) Inorganic Chemistry 2
MATH203 (3) Principles of Statistics 1
MATH222 (3) Calculus 3
CHEM150 (3) World of Chemistry: Food
CHEM160 (3) World of Chemistry: Technology
CHEM170 (3) World of Chemistry: Drugs
CHEM180 (3) World of Chemistry: Environment

MAJOR CONCENTRATION IN BIOLOGY WITH A MINOR IN PHYSICS FOR TEACHERS (69 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN BIOLOGY on page171, the 24 credits of the MINOR IN PHYSICS on page338, and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL210 (3) Perspectives of Science
MATH203 (3) Principles of Statistics 1
MATH222 (3) Calculus 3

MAJOR CONCENTRATION IN CHEMISTRY WITH A MINOR IN PHYSICS FOR TEACHERS (69 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN CHEMISTRY on page171, the 18 credits of the MINOR IN PHYSICS on page338, and the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL210 (3) Perspectives of Science
MATH203 (3) Principles of Statistics 1
MATH222 (3) Calculus 3

MAJOR CONCENTRATION IN PHYSICS WITH A MINOR IN BIOLOGY FOR TEACHERS (69 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN PHYSICS on page172, the 24 credits of the MINOR IN BIOLOGY on page309, and the 9 credits of Science courses listed below.

Additional Science courses (9 credits)
BIOL210 (3) Perspectives of Science
MATH203 (3) Principles of Statistics 1

MAJOR CONCENTRATION IN PHYSICS WITH A MINOR IN CHEMISTRY FOR TEACHERS (69 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN PHYSICS on page172, the 18 credits of the MINOR IN CHEMISTRY on page316, and the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
BIOL210 (3) Perspectives of Science
CHEM381 (3) Inorganic Chemistry 2
MATH203 (3) Principles of Statistics 1
CHEM150 (3) World of Chemistry: Food
CHEM160 (3) World of Chemistry: Technology
CHEM170 (3) World of Chemistry: Drugs
CHEM180 (3) World of Chemistry: Environment

If this program is selected, the student is required to complete the following Education courses in Professional seminars, field experiences, foundation courses, pedagogy courses, and pedagogical support courses.

EDPE300, either EDER400 or EDER398, and one of EDEC410, EDPE300, or EDER309.

MAJOR CONCENTRATION IN PHYSICS WITH A MINOR IN CHEMISTRY FOR TEACHERS (69 credits)

This program includes the 36 credits of the MAJOR CONCENTRATION IN PHYSICS on page172, the 18 credits of the MINOR IN CHEMISTRY on page316, and the 15 credits of Science courses listed below.

Additional Science courses (15 credits)
CHEM150 (3) World of Chemistry: Food
CHEM160 (3) World of Chemistry: Technology
CHEM170 (3) World of Chemistry: Drugs
CHEM180 (3) World of Chemistry: Environment

plus 3 credits, one additional Physics course approved by the Physics Department.
MAJOR IN MATHEMATICS FOR TEACHERS (54 credits)
This program includes the 54 credits of the MAJOR IN MATHEMATICS on page 330. Students taking the Major in Mathematics as part of the Concurrent Program are required to include the following courses as part of the Major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP202*</td>
<td>3</td>
<td>Introduction to Computing 1</td>
</tr>
<tr>
<td>MATH324</td>
<td>3</td>
<td>Statistics</td>
</tr>
<tr>
<td>MATH338</td>
<td>3</td>
<td>History and Philosophy of Mathematics</td>
</tr>
<tr>
<td>MATH348</td>
<td>3</td>
<td>Topics in Geometry</td>
</tr>
<tr>
<td>* or equivalent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.29 Technological Entrepreneurship for Science Students
Science students who wish to become entrepreneurs or to enter small to medium-sized companies in the high technology sector will find within this Minor a set of six (6) courses that cover relevant management concepts and skills.

Also available to Science students is the Minor in Management, see page 327.

Acceptance to the program is both competitive and restricted. Application procedures will be announced in September. Please consult Ron Critchley, Student Adviser, Faculty of Management Student Affairs Office, Bronfman 176, for details.

Students registered in the Minor in Technological Entrepreneurship for Science Students may not take additional courses outside the Faculties of Arts and of Science.

To obtain the Minor, all courses must be completed with a grade of C or better.

Please note: the courses must be taken sequentially over five terms, as follows: ACCT210, MARKT360 and either MGCR320 or ORGB321, BUSA465, MGPO562, BUSA466.

MINOR IN TECHNOLOGICAL ENTREPRENEURSHIP FOR SCIENCE STUDENTS (18 credits)

Required Courses (15 credits)
- ACCT210 (3) Accounting for Managers
- MRKT360 (3) Marketing of Technology
- BUSA465 (3) Technological Entrepreneurship
- MGPO562 (3) Seminar in Organizational Strategy
- BUSA466 (3) Technological Entrepreneurship Project

Complementary Courses (3 credits)
one of the following courses:
- MGCR320 (3) Managing Human Resources
- ORGB321 (3) Leadership
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   1.3 Programs and Academic Units
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   5.8 Academic Credit Transfer
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   5.12 Graduate Courses Available to Undergraduates
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   8.2 Entrance Requirements – FMT
   8.3 Registration – FMT
   8.4 Program Outline
   8.5 Academic Rules and Regulations – FMT
      8.5.1 Sessional Dates
      8.5.2 Last Day for Withdrawal or Course Additions
      8.5.3 Academic Standing
      8.5.4 Handbook on Student Rights and Responsibilities
      8.5.5 Institutional Policy on the Evaluation of Student Achievement
   8.6 Fees and Expenses – FMT
      8.6.1 Fees
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The Faculty

Mission statement: 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.

1.1 Location
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC 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 in Sainte-Anne-de-Bellevue at the western end of Montreal Island. Served by public transport (MUCTC bus and train), it is easily reached from the McGill Downtown Campus and from Dorval (Pierre Elliott Trudeau) International Airport. A McGill intercampus shuttle bus service is also available.

1.2 Administrative Officers
Deborah J.I. Buszard; B.Sc.,(Bath), Ph.D.(Lond.) Dean, Faculty of Agricultural and Environmental Sciences, and Associate Vice-Principal (Macdonald Campus)

William H. Hendershot; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(U.B.C.) Associate Dean (Academic)

Eric R. Norris; B.S.A.(Tor.), M.Sc.(Guelph), Ph.D.(Mich.St.) Associate Dean (Student Affairs)

Marcel J. Couture; B.Sc,(Agr.)(McG.), M.Sc.(Guelph) Associate Dean (Community Relations)

Diane E. Mather; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Guelph) Associate Dean (Research)

Gary O’Connell; B.Com.(C’dia) Director, Administrative Services

Suzanne Higgins; B.A.(Mcg.) Manager, Admissions and Student Affairs

William R. Ellyett; B.A.(Sir G. Wms.), B.Ed.(Phys.Ed.)(McG.) Director of Athletics

Philip Lavio; Dip.Agr., B.Sc.(Agr.)(McG.) Manager, Macdonald Campus Farm

Gitte Legault Manager, Campus Housing

Peter D.L. Knox; B.Sc.(Agr.)(McG.) Supervisor, Property Maintenance

1.3 Programs and Academic Units
The Faculty of Agricultural and Environmental Sciences and the School of Dietetics and Human Nutrition offer B.Sc., M.Sc. and Ph.D. programs in the areas of study of: Agricultural Sciences, Biological Sciences, Bioresource Engineering, Environmental Sciences, Food Science, and Nutritional Sciences. Also offered are a Diploma in Environmental Agriculture and in Entrepreneurship, and a Graduate Certificate in Biotechnology.

The Faculty is comprised of eight academic units: the School of Dietetics and Human Nutrition; the departments of Agricultural Economics, Animal Science, Bioresource
The Faculty of Agricultural and Environmental Sciences is also one of the three faculties in partnership with the McGill School of Environment.

The School of Dietetics and Human Nutrition offers programs in dietetics and nutrition, the former leading to membership in various professional associations. 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 Institute of Parasitology offers graduate programs leading to M.Sc. and Ph.D. degrees as well as a non-thesis M.Sc.(A) in Biotechnology and a Graduate Certificate in Biotechnology. Major areas of research include the molecular biology, immunology, and population biology of parasites and their hosts and the biochemical pharmacology of antiparasite drugs. The underlying orientation of all research is to apply relevant modern biological techniques to reduce parasite transmission and to improve methods of diagnosis and control. The research background and activities of the staff encompass many disciplines applied to the study of host-parasite interactions of protozoa and helminth parasites of humans, fowl, stock and other animals, as well as cancer biology. The Institute has been designated by the Quebec Government as a Centre for Host-Parasite Interactions.

### 1.3.1 Internship Opportunities and Co-op Experience

All students in agricultural programs have the opportunity to participate in a summer-long Internship on a farm or related agricultural enterprise. Students who register in the Agricultural Sciences Internship Program benefit from two summers of Internship experience, one on a farm and the other in industry, in research, or with an accredited agrologist.

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 a minimum 12 weeks’ duration where the student is exposed to the main areas of operation of the employer. Each work placement is unique, and the student benefits from a program developed by both the employer and the instructor exclusively for that individual student.

Students who register for a Co-op experience benefit from practical learning arising from work-term employment in a meaningful job situation. Students also benefit from the non-tangible learning experience arising from the increased responsibilities required to obtain and successfully complete the work term.

### 1.3.2 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, please see ‘Exchange Programs’ on page 52.

### 1.4 Macdonald Campus Facilities

**Morgan Arboretum**

The Morgan Arboretum has over 245 hectares of managed and natural woodlands and tree plantations used for environmental research and teaching in a wide range of courses. Groups of all the Canadian native trees and many useful and important exotics are also present. The Arboretum features three self-guided interpretation trails, 20 kilometres of wooded trails, a variety of forest ecosystems, soil and water conservation projects, forest operations such as plantation management, timber harvesting and maple syrup production, and related forestry-wildlife ecological activities.

A nature interpretation program is offered.

**Macdonald Campus Library**

Located in the Barton Building, Macdonald Campus Library’s collection encompasses a wide variety of resources in agriculture, food and animal science, nutrition, entrepreneurship, the environment, ecology, plant science, and biotechnology. The library is a depository for many print and electronic government publications.

All computers provide access to the online catalogue (MUSE), databases, electronic journals and resources, as well as the Internet. In the electronic classroom, students can do research, write papers, and save documents. The library is a wireless zone allowing students to use laptops that have wireless network interface cards. There are designated areas in the library that allow laptops to connect to the McGill server and Internet via VPN (Virtual Private Network). Students can request articles or books through the interlibrary loan service. For their convenience the forms are available online. Reference service is available to assist users in obtaining necessary print or electronic resources, and a comprehensive library instruction service is provided throughout the year.

For further information about Macdonald Campus Library visit the website at www.mcgill.ca/macdonald-library or feel free to drop by.

**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 also be arranged by calling (514) 398-7914.

**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 related to the environment: climate change and rural development. 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.

## 2 Summary of Academic Programs

### 2.1 Outline of Academic Programs

Programs leading to five degrees are offered on the Macdonald Campus, with Majors associated with each degree. In addition, Certificates are offered in Ecological Agriculture and in Entrepreneurship.

*Note:* To reflect the increase in non-agricultural programs offered by the Faculty, the degree designation Bachelor of Science in Agricultural Biotechnology Option, B.Sc.(Agr.) was recently changed to Bachelor of Science in Agricultural and Environmental Sciences, B.Sc.(Agr.Env.Sc.).

#### 2.1.1 Major Programs

**Bachelor of Science in Agricultural and Environmental Sciences - B.Sc.(Agr.Env.Sc.)**

This is a three-year, 90-credit program (or 96 credits for the Agricultural Sciences Internship program), following the Diploma of Collegiate Studies and leading to professional qualification in Agricultural Science or in one of its related specialized branches in Biological Science, Environmental Science or Renewable Resources. 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 MAJOR, see page 357

<table>
<thead>
<tr>
<th>Program</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agribusiness Option</td>
<td>15</td>
</tr>
<tr>
<td>Agricultural Systems Option</td>
<td>15</td>
</tr>
<tr>
<td>Natural Resource Economics Option</td>
<td>15</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences Majors, see page 365</td>
<td>15</td>
</tr>
<tr>
<td>General Option</td>
<td>15</td>
</tr>
<tr>
<td>Ecological Agriculture Option</td>
<td>15</td>
</tr>
<tr>
<td>International Option</td>
<td>15</td>
</tr>
<tr>
<td>Soils Option</td>
<td>15</td>
</tr>
<tr>
<td>Agricultural Biotechnology Option</td>
<td>15</td>
</tr>
</tbody>
</table>
2.1.4 Diploma Programs
Certificate in Entrepreneurship, see page 358.

2.1.3 Certificate Programs
Minor in Human Nutrition, see page 363.
Environmental Engineering Minor, see page 361.
Minor in Environment, see page 379, under McGill School of Environment.
Minor in Ecological Agriculture, see page 364.
Minor in Agricultural Engineering, see page 361.
Minor in Agricultural Economics, see page 358.

2.1.1 "Major Programs". Further information on all programs is given under the McGill School of Environment. A list of the B.Sc.(Ag.Env.Sc.) Domains is given under section 2.1.1 "Major Programs". Further information on all programs is given under the McGill School of Environment.

Other Environmental Programs at Macdonald Campus
A number of other integrated environmental science programs are also offered on the Macdonald Campus. The objective of these interdepartmental programs is to provide the student with a well-rounded training in a specific interdisciplinary subject as well as the basis for managing the natural resource. The programs include:
Agricultural Economics Major, Natural Resource Economics Option, see page 358
Applied Zoology Major, see page 368
Botanical Science Major, see page 369
Environmental Biology Major, see page 369
Microbiology Major, see page 369
Resource Conservation Major, see page 369
Wildlife Biology Major, see page 370

Bachelor of Science in Food Science - B.Sc.(F.Sc.)
This is a three-year (90-credit) program following the Diploma of Collegial Studies in Sciences and leading to professional qualification in both Bioresource Engineering and Agricultural Sciences.

Bachelor of Science in Food Science - B.Sc.(F.Sc.)
This is a three-year (90-credit) program following the Diploma of Collegial Studies in Sciences and leading to professional qualification in Food Science.

A number of other integrated environmental science programs are also offered on the Macdonald Campus. The objective of these interdepartmental programs is to provide the student with a well-rounded training in a specific interdisciplinary subject as well as the basis for managing the natural resource. The programs include:
Agricultural Economics Major, Natural Resource Economics Option, see page 358
Applied Zoology Major, see page 368
Botanical Science Major, see page 369
Environmental Biology Major, see page 369
Microbiology Major, see page 369
Resource Conservation Major, see page 369
Wildlife Biology Major, see page 370

3 Application and Admission Requirements
The programs in the Faculty of Agricultural and Environmental Sciences, and the School of Dietetics and Human Nutrition, are normally of three years' duration following the completion of a two-year Quebec post-secondary Collegial program (CEGEP).

Applicants are encouraged to submit applications on-line at www.mcgill.ca/apply.
Please note that the same application is used for all undergraduate programs at McGill and two program choices can be entered.

For information, or to obtain a printed application package for students unable to apply via the Web, contact:
4 Student Information

4.1 Student Services

Students who study on Macdonald Campus may make full use of all McGill Student Services, see page 55. The Office of the Dean of Students, in cooperation with the Faculty of Agricultural and Environmental Sciences, offers students direct access to several services, see Student Services – Macdonald Campus on page 56. Further information can be found via the Faculty Website www.mcgill.ca/macdonald/resources/student services and the Student Services Website www.mcgill.ca/stuserv.

4.2 Macdonald Campus Residences

For more than 90 years, residence life has been an integral part of Macdonald Campus activities. Students may apply for residence in either of two distinctive facilities: Laird Hall, with a capacity of more than 210 students, is arranged on a co-educational basis and provides single and double room accommodation for both undergraduate and graduate students. The EcoResidence, Canada's first ecologically friendly student residence and recent winner of the Prix d'excellence from the Ordre des architectes du Québec, accommodates 100 students in apartment-style living.

For further information, please refer to “University Residences – Macdonald Campus” on page 57 or the Faculty Website, www.mcgill.ca/macdonald/resources/studentservices, or e-mail: residences@macdonald.mcgill.ca.

4.3 Extracurricular Activities

All undergraduate, postgraduate, and Farm Management Technology students are members of the Macdonald Campus Students' Society. The MCSS, through the 19-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, Halloween Party and Winter Carnival. The Cellidith, a student-run bar located in the Centennial Centre, is open every Thursday night.

The Centennial Centre is the students' building and the centre of student life, offering facilities for student activities, such as meeting rooms, a Yearbook room, 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, the Robber’s Roost Campus Bookstore and cafeteria.

4.4 Student Conduct and Discipline

The Associate Vice-Principal (Macdonald Campus) and Dean of the Faculty of Agricultural and Environmental Sciences has jurisdiction over all offenses committed by students registered at Macdonald and over all offenses committed by students on or about the Macdonald Campus. Directors of residences have jurisdiction over all offenses committed in or about their respective residences. The Disciplinary Officer for residence offenses on the Macdonald Campus is the Director, Academic and Administrative Services.

Students found guilty of improper conduct, violation of rules or willful damage to persons or property, shall be liable to discipline as set forth in the Code of Student Conduct and Disciplinary Procedures as printed in the Handbook of Student Rights and Responsibilities. A copy of the Handbook can be found on the Web at www.mcgill.ca/secretariat/documents or obtained from the Student Affairs Office or the Macdonald Campus Student Services Office. The Code specifies that discipline may include: imposition of fines or assessments for damage caused by individuals or groups; posting of security for good behaviour; reprimand; imposition of conduct probation; suspension or expulsion from classes or residence; expulsion from the University.

4.5 Fees

The University reserves the right to make changes without notice in its published scale of tuition, residence and other fees. All certified cheques, money orders, etc., should be drawn to the order of McGill University, and made payable in Canadian funds. Payment of student fees can also be made through any Chartered Bank in Canada.

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.

Tuition Fees

General information on Tuition and other fees will be found under “Fees” on page 44.

Other Expenses

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

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

4.6 Immunization for Dietetics Majors

Students in the Dietetics Major are required to complete the Compulsory Immunization Program for Health Care students prior to registration. Participation in Professional Practices (Stages) in Dietetics will only be permitted for those students who have completed all immunization requirements.

4.7 Language Requirement for Professions

Quebec law requires that candidates seeking admission to provincially-recognized Quebec professional corporations or orders possess 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 “Language Requirements for Professions” on page 54.

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

Students entering university for the first time from schools other than the Quebec CEGEP level will be required to complete the 30 credits listed below before selecting a subject Major.

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>Required Courses - Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.5</td>
<td>AEBI120 General Biology</td>
</tr>
<tr>
<td>3.0</td>
<td>AEMA101 Calculus 1</td>
</tr>
<tr>
<td>3.0</td>
<td>AEPH112 Introductory Physics 1</td>
</tr>
<tr>
<td>0.5</td>
<td>AGRI195* Freshman Seminar 1</td>
</tr>
<tr>
<td>4.0</td>
<td>FDSC230 Organic Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>Required Courses - Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.5</td>
<td>AEMA102 Calculus 2</td>
</tr>
<tr>
<td>4.0</td>
<td>AEPH114 Introductory Physics 2</td>
</tr>
<tr>
<td>4.0</td>
<td>AGRI196* Freshman Seminar 2</td>
</tr>
<tr>
<td>4.0</td>
<td>FDSC110 Inorganic Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>Elective - Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>Elective</td>
</tr>
</tbody>
</table>

AEBI202 Cellular Biology must be substituted for students in programs in the B.Sc.(Nutr.Sc.) degree. ABEN103 Linear Algebra must be substituted for students in the B.Eng.(Bioresource) degree.

Total Credits 30.0

* AGRI195 and AGRI196 are required for all freshmen excluding Dietetics and Nutrition students. 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.

5.2 Academic Advisers

Before registration, all students entering the Faculty must consult with the Academic Adviser of their program for selection and scheduling of required, complementary, and elective courses. The Academic Adviser will normally continue to act in this capacity during the whole of the student’s studies in the Faculty.

5.3 Minimum Credit Requirement

Each student’s minimum credit requirement for the degree is determined at the time of acceptance and is specified in the letter of admission or its attached documentation.

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 – 96 credits for Agricultural Sciences Major Internship Options, 109 credits for Bioresource Engineering, and 115 credits for Dietetics.

Students from outside Quebec who are admitted on the basis of work completed at another institution must be approved by the instructor concerned. Students should consult the Student Affairs Office for further information.

5.5 Academic Standing

All students are required to give satisfactory evidence of mastery of 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 the standing of the student in all the work of the course.

5.6 Examinations

Students should refer to “Examinations” on page 51 for information about final examinations and deferred examinations. Every student has the right to write essays, examinations and theses in English or in French except in courses where knowledge of a language is one of the objects of the course. Oral presentations made as part of course requirements shall be in English.

5.6.1 Reassessments and Rereads

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, students have the right to consult any written submission for which they have received a mark as well as the right to discuss this submission with the examiner.

If, after discussion with the instructor, students request a formal final examination re-read, they must apply in writing to the 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. Students are assessed a fee for formal rereads. Any request to have term work re-evaluated must be made directly to the instructor concerned. Students should consult the Student Affairs Office for further information.

5.6.2 Deferred Examinations

The Faculty offers deferred exams for the Fall and Winter period. Verify date in Calendar of Dates and consult the Student Affairs Office for procedures.

5.7 Credit System

The credit assigned to a particular course reflects the amount of effort it demands of the student. As a guideline, one credit 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 “Credit System” on page 48.

5.8 Academic Credit Transfer

Transfer of credits (maximum of 30) based on courses taken at other institutions before entrance to this Faculty is made by the Admissions Committee prior to entrance.

Transfer of credits may be made for work at other educational institutions during a student’s attendance at McGill University. Permission to apply such credits to a McGill program must be secured by the student before the work is undertaken. Prior Approval forms are available in the Student Affairs Office of the Faculty. Grades obtained in such courses do not enter into calculations of grade point averages (GPA) in this Faculty.

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

Full-time students may, with the written approval of the Student Affairs Office, register for 3 credits, or exceptionally 6 credits, in each term at any university in the province of Quebec. These 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 the degree but the grades obtained will not enter into calculations of GPA in this Faculty. For further details, see “Quebec Inter-University Transfer Agreement (IUT)” on page 53.

5.9 Regulations re Second Academic Programs

While registered in a Major in the Faculty of Agricultural and Environmental Sciences, a student 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 program shall be made to the Associate Dean (Student Affairs) in the Student Affairs Office, 106 Laird Hall. Following are the regulations and procedures for Second Academic Programs:

1. The applicant for a Second Academic Program must be in Satisfactory academic standing with a minimum CGPA of 3.00.
2. The applicant, in consultation with the appropriate authority associated with each program (Academic Adviser, Associate Dean) 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 Programs.
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. Students in the Faculty of Agricultural and Environmental Sciences must obtain prior approval for all proposed Second Academic Programs from their 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 Programs will be initiated before completion of U1 year of the first academic program.
6. The academic standards applicable to each program will be respected.

5.10 Academic Standing

1. When a student's CGPA (or TGPA in the first term of the program) falls below 2.00, the student's academic standing becomes Probationary and withdrawal is advised but not required.
2. Students in Probationary standing may register for no more than 14 credits per term.
3. While in Probationary standing students 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. Failure to meet at least one of these conditions will result in requirement for permanent withdrawal.

5.11 Course Change Information

1. Courses: please refer to “Course Change Period” on page 43 and the Calendar of Dates.
2. Course withdrawal (Transcript notation of “W”): please refer to “Regulations Concerning Withdrawal” on page 43 and the Calendar of Dates.
3. Other changes: Information about changes may be obtained from the Student Affairs Office of the Faculty. Application for changes must be made to the Committee on Academic Standing.

5.12 Graduate Courses Available to Undergraduates

Undergraduates wishing to take such courses must have a cumulative grade point average (CGPA) of at least 3.20.

5.13 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 or Director of the School concerned.

Students may be admonished by a professor or instructor for dishonest or improper conduct or may be reported to the Dean or Director concerned for disciplinary action.

Punctual attendance at all classes, laboratory periods, tests, etc., is expected of all students. Absences are excused only on grounds of necessity or illness, of which proof may be required. Special attention is called to the fact that the completion of all laboratory work is obligatory and the opportunity to make up work missed will be provided only in the case of properly excused absences.

The Faculty has the power to refuse examination to those students who persist in absenting themselves from classes without permission.

Students are requested not to make application for additional leave either before or after holiday periods, as such leaves are granted only in case of illness or other exceptional circumstances.

5.14 Degree Requirements

To be eligible for a B.Eng.(Bioresource), B.Sc.(Agr.Env.Sc.), B.Sc.(F.Sc.), or B.Sc.(Nutr.Sc.) degree, students must have passed, or achieved exemption in, all required and complementary courses of the program. They must have a CGPA of at least 2.00.

They must have completed the minimum credit requirement for the degree as specified in their letter of admission or its attached documentation, see section 5.3 “Minimum Credit Requirement”. At least 60 of these credits must have been taken at McGill.

In addition, students in the Dietetics program must have completed the stages of professional formation.

Students majoring in Bioresource Engineering are also required to have at least 650 hours’ experience in some phase of agricultural engineering work approved by the Bioresource Engineering Department.

5.15 Distinction or Great Distinction

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

• students must have completed a minimum of 60 McGill credits to be eligible;
• for Distinction, the CGPA at graduation must be 3.30 to 3.49;
• for Great Distinction, the CGPA at graduation must be 3.50 or greater.
5.16 Dean’s Honour List
The designation Dean’s Honour List may be awarded to graduating students under the following conditions:

- students must have completed a minimum of 60 McGill credits to be considered;
- students must be in the top 10% of the Faculty’s graduating students.

5.17 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 in the Student Affairs Office, Laird Hall, Room 106 or on the Web at www.mcgill.ca.

6 Academic Programs

6.1 Department of Agricultural Economics
Raymond Building – Room R3-019
Telephone: (514) 398-7820
Fax: (514) 398-8130
Website: www.agrenv.mcgill.ca/agrecon

Chair — John C. Henning
Associate Professors — Laurence Baker, John C. Henning, Paul Thomassin
Assistant Professor — Ka-Yan Diana Mok
Lecturers — Joan Marshall, Marielle Savard

AGRICULTURAL ECONOMICS MAJOR
Increasingly complex economic problems facing the agriculture and food system and our natural environment have intensified the need for specialized knowledge and training in the field of agricultural economics. The curriculum is designed to provide students with the knowledge, analytical and decision-making skills required in a career in agribusiness, resource management, international development, and research. The selection of courses from the agribusiness, agricultural system or natural resource economics options permits a degree of specialization along those lines, in conjunction with the core courses listed below. Graduates are eligible to apply for membership in the Ordre des agronomes du Québec (OAQ) if they fulfill the agronomic course requirements (consult the academic adviser).

Core Required Courses: 39 credits
Core Complementary Courses: 12 credit.

Required Courses: 39 CREDITS
- AGE201 Principles of Microeconomics 3
- AGE202 Principles of Macroeconomics 3
- AGE230 Agricultural and Food Marketing 3
- AGE231 Economic Systems of Agriculture 3
- AGE242 Management Theories and Practices 3
- AGE320 Economics of Agricultural Production 3
- AGE333 Resource Economics 3
- AGE343 Accounting and Cost Control 3
- AGE425 Agricultural Econometrics 3
- AGE430 Agriculture, Food and Resource Policy 3
- AGE440 Advanced Agriculture and Food Marketing 3
- AGE442 Economics of International Agricultural Development 3
- AGE491 Research Seminar in Agricultural Economics 3

Complementary Courses: 12 CREDITS
- One course in introductory statistics course (approved by adviser) 3

plus 9 credits chosen from the following list 9
- ABEN300 (3) Elements of Agricultural Engineering
- ANSC250 (3) Principles of Animal Science
- FDCS200 (3) Introduction to Food Science
- PLNT211 (3) Principles of Plant Science
- SOIL210 (3) Principles of Soil Science

AGRIBUSINESS OPTION
Whether one has interests in agricultural supply, production, marketing, finance, food processing or retailing, professional management skills are the key to success. The agribusiness option prepares students for managerial responsibility by drawing on the resources of both the Faculty of Management and the Faculty of Agricultural and Environmental Sciences. This special partnership provides students with not only a first-class business training but also a specialization in the field of agriculture.

Core Required and Complementary Courses: 51 credits
Option Required and Complementary Courses: 21 credits
Elecitives: to meet the minimum 90-credit requirement for the degree.

Core Required Courses: 9 CREDITS
- AGE201 Principles of Microeconomics 3
- AGE202 Principles of Macroeconomics 3
- AGE230 Agricultural and Food Marketing 3
- AGE231 Economic Systems of Agriculture 3
- AGE232 Management Theories and Practices 3
- AGE320 Economics of Agricultural Production 3
- AGE333 Resource Economics 3
- AGE343 Accounting and Cost Control 3
- AGE345 Entrepreneurial Leadership 3

Option Complementary Courses: 9 CREDITS
- AGEC311 (3) Financial Accounting 1
- AGEC313 (3) Management Accounting 1
- AGEC344 (3) Entrepreneurial Leadership 3
- BUSA364 (3) Business Law 1
- FINE448 (3) Derivatives and Risk Management 3
- MGCR341 (3) Finance 1
- MGCR382 (3) International Business 3
- MKT452 (3) Marketing Research 3
- NUTR446 (3) Applied Human Resources 3

AGRICULTURAL SYSTEMS OPTION
The smooth functioning of the agriculture and food system requires good market analysis and appropriate policy and program development and management in the public sector. Agricultural economists are called upon to perform these tasks, utilizing their knowledge of the economic forces that affect the industry and the methods of analysis to predict the outcome of the numerous changes that occur. The agricultural systems orientation is intended to provide students with a broad understanding of the many dimensions of agriculture and food systems, including economic development, international agriculture, and food and agricultural policy.

Core Required Courses: 21 credits.
Option Required and Complementary Courses: 21 credits.
Elecitives: to meet the minimum 90-credit requirement for the degree.

Core Required Courses: 21 CREDITS
- AGE201 Principles of Microeconomics 3
- AGE202 Principles of Macroeconomics 3
- AGE230 Agricultural and Food Marketing 3
- AGE231 Economic Systems of Agriculture 3
- AGE242 Management Theories and Practices 3
- AGE320 Economics of Agricultural Production 3
- AGE333 Resource Economics 3
- AGE343 Accounting and Cost Control 3
- AGE344 Entrepreneurial Leadership 3
- BUSA364 (3) Business Law 1
- FINE448 (3) Derivatives and Risk Management 3
- MGCR341 (3) Finance 1
- MGCR382 (3) International Business 3
- NUTR446 (3) Applied Human Resources 3

Option Required Courses: 9 CREDITS
- AGEC201 Principles of Microeconomics 3
- AGEC202 Principles of Macroeconomics 3
- AGEC230 Agricultural and Food Marketing 3
- AGEC231 Economic Systems of Agriculture 3
- AGEC242 Management Theories and Practices 3
- AGEC320 Economics of Agricultural Production 3
- AGEC333 Resource Economics 3
- AGEC343 Accounting and Cost Control 3
- AGEC344 Entrepreneurial Leadership 3
- BUSA364 (3) Business Law 1
- FINE448 (3) Derivatives and Risk Management 3
- MGCR341 (3) Finance 1
- MGCR382 (3) International Business 3
- NUTR446 (3) Applied Human Resources 3

Option Complementary Courses: 9 CREDITS
- AGEC311 (3) Financial Accounting 1
- AGEC313 (3) Management Accounting 1
- AGEC344 (3) Entrepreneurial Leadership 3
- BUSA364 (3) Business Law 1
- FINE448 (3) Derivatives and Risk Management 3
- MGCR341 (3) Finance 1
- MGCR382 (3) International Business 3
- NUTR446 (3) Applied Human Resources 3

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 in the Student Affairs Office, Laird Hall, Room 106 or on the Web at www.mcgill.ca.
NATURAL RESOURCE ECONOMICS OPTION

This option integrates biological sciences and environmental decision making with the economics of natural resource use and development. The natural resource economics option is intended to prepare students for careers in the management of natural resources and the analysis of natural resource problems and policies.

Core Required and Complementary Courses: 51 credits.
Option Required and Complementary Courses: 32 credits.
Electives: to meet the minimum 90-credit requirement for the degree.

Option Required Courses: 12
- AEMA306 Mathematical Methods in Ecology 3
- NRC333 Physical and Biological Aspects of Pollution 3
- NRC437 Assessing Environmental Impact 3
- WILD205 Principles of Ecology 3

Option Complementary Courses: 9
- 9 credits chosen from the following list: 9
  - AGE344 (3) Entrepreneurial Leadership
  - AGRI210 (3) Agro-Ecological History
  - ECON405 (3) Natural Resource Economics
  - ENVR203 (3) Knowledge, Ethics and Environment
  - NRS201 (3) Introductory Meteorology
  - NUTR361 (3) Environmental Toxicology
  - WILD415 (3) Conservation Law
  - WILD421 (3) Wildlife Conservation

MINOR IN AGRICULTURAL ECONOMICS

A Minor 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 Minor 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.

General Regulations:
To obtain a Minor in Agricultural Economics, students must:

a) Ensure that their academic record at the University includes a C grade or higher in the courses specified in the course requirements below.

b) Complete a minimum total of 24 credits from the courses given below, of which not more than 6 credits may be counted for both Major and Minor programs. This restriction does not apply to elective courses in the Major program.

Required Courses: 12 credits
Complementary Courses: 12 credits

Required Courses
- AGE200 (3) Principles of Microeconomics
- AGE201 (3) Principles of Macroeconomics
- AGE230 (3) Agricultural and Food Marketing
- AGE231 (3) Economic Systems of Agriculture

Complementary Courses
- Chosen in consultation with the academic adviser for the Minor from the offerings of the Department of Agricultural Economics.
  - AGE242 (3) Management Theories and Practices
  - AGE320 (3) Economics of Agriculture Production
  - AGE331 (3) Farm Business Management
  - AGE333 (3) Resource Economics
  - AGE343 (3) Accounting and Cost Control
  - AGE350 (3) Agricultural Finance
  - AGE425 (3) Agricultural Econometrics
  - AGE430 (3) Agriculture, Food and Resource Policy

AGE440 (3) Advanced Agricultural and Food Marketing
AGE442 (3) Economics of International Development
AGE450 (3) Agriculture Business Management
AGE491 (3) Research Seminar in Agricultural Economics
AGE492 (3) Special Topics in Agricultural Economics

MINOR IN ENTREPRENEURSHIP

Academic Adviser: Robert Oxley

The Minor is concerned with the genesis and development of entrepreneurial activities. It deals with marketing, finance, organization, and policy in the development and expansion of small businesses in the agri-food and environment sectors. This 24-credit Minor will be of interest to students who wish to develop the skills and perspectives necessary to be successful in an entrepreneurial environment, whether it be self-employed in a start-up business or within an established corporation that employs entrepreneurial management strategies.

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 the requirements of the Minor.

General Regulations:
To obtain a Minor in Entrepreneurship, 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 listed below.

b) Complete the 24 credits listed below, of which not more than 6 credits may be counted for the Major and the Minor programs.

Required Courses (24 credits)
- AGE200 (3) Principles of Microeconomics
- AGE230 (3) Agricultural and Food Marketing
- AGE242 (3) Management Theories and Practices
- AGE343 (3) Accounting and Cost Control
- AGE344 (3) Entrepreneurial Leadership
- AGE450 (3) Agriculture Business Management
- AGE453 (3) Venture Capital Opportunities
- NUTR446 (3) Applied Human Resources

CERTIFICATE IN ENTREPRENEURSHIP

Academic Adviser: Robert Oxley

This 30-credit Certificate Program is very similar to the Minor Program and is concerned with the genesis and development of entrepreneurial activities. It deals with marketing, finance, organization, and policy in the development and expansion of small businesses in the agri-food and environment sectors. The Certificate will be of interest to students who already hold a bachelor’s degree and wish to develop the skills and perspectives necessary to be successful in an entrepreneurial environment, whether it be self-employed in a start-up business or within an established corporation that employs entrepreneurial management strategies.

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 in Entrepreneurship are not permitted to register for this program.

General Regulations:
To obtain a Certificate in Entrepreneurship, students must offer a minimum total of 30 credits from the courses as given below.
### ANIMAL SCIENCE MAJOR

**Academic Advisers:** K.M. Wade (U1), K.F. Ng-Kwai-Hang (U2), Urs Kuhnlein, Bruce R. Downey, Kwet Fane Ng Kwai-Hang, Flannan Hayes, Roger B. Buckland, Eduardo R. Chavez, Vilceu Bordignon, René Lacroix (PT), Roger I. Cue, Humberto G. Monardes, Xin Zhao (William Dawson Scholar)

The curriculum in Animal Science involves intensive training in both the basic and applied biological sciences as related to domestic animals and qualifies the graduate for membership in the Ordre des agronomes du Québec and other professional organizations. Graduates generally enter agricultural industries, mainly oriented programs, and to work in most laboratory settings. The program is not intended for students wishing to become professional agrologists.

**Required Courses:** 27 credits

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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANSC250</td>
<td>Principles of Animal Science</td>
<td>3</td>
</tr>
<tr>
<td>ANSC230</td>
<td>Agricultural and Food Marketing</td>
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</tr>
<tr>
<td>ANSC242</td>
<td>Management Theories and Practices</td>
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<td>Special Topics in Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>NUTR446</td>
<td>Applied Human Resources</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Course:** 3 credits

- **one of the following courses:**
  - ENVR201 (3) Society and Environment
  - ENVR203 (3) Knowledge, Ethics and Environment
  - RELG270 (3) Religious Ethics and the Environment

### 6.2 Department of Animal Science

Macdonald Stewart Building - Room MS1-084
Telephone: (514) 398-7794
Fax: (514) 398-7984
E-mail: animal.science@mcgill.ca
Website: www.mcgill.ca/animal

**Chair** — Xin Zhao

**Emeritus Professor** — John E. Moxley

**Professors** — Roger B. Buckland, Eduardo R. Chavez, Bruce R. Downey, Kwet Fane Ng Kwai-Hang, Flannan Hayes, Urs Kuhnlein

**Associate Professors** — Roger I. Cue, Humberto G. Monardes, Leroy E. Philip, Kevin Wade, David Zadworney, Xin Zhao (William Dawson Scholar)

**Assistant Professors** — Vilceu Bordignon, René Lacroix (PT), Arif F. Mustafa, Ciro Ruiz-Feria

**Associate Member** — Ri-Cheng Chian

**Adjunct Professors** — Pierre Lacasse, Daniel Lefebvre, Bruce Murphy

The Department of Animal Science offers Majors in Animal Science and Animal Biology.

### ANIMAL BIOLOGY MAJOR

**Academic Adviser:** H. Monardes

The Animal Biology Major is directed towards students who wish to further their studies in the basic biology of the larger mammals and birds. Successful completion of the program will enable students to qualify in applying to most professional schools in North America, to postgraduate schools in a variety of biological-oriented programs, and to work in most laboratory settings. The program is not intended for students wishing to become professional agrologists.

**Required Courses:** 34 credits

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<th>Credits</th>
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**Complementary Courses:** 6 credits

- One Ethics course: 3 credits
- ENVR203 (3) Knowledge, Ethics and Environment
- RELG270 (3) Religious Ethics and the Environment

**Required Courses:** 24 credits, minimum

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**Complementary Courses:** min. 24 credits

A minimum of 24 credits selected from the following list in consultation with the Academic Adviser:

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**Electives:** selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.
WILD424 (3) Parasitology
or WILD330 (3) Mammalogy

The student may replace up to 12 credits of the complementary courses listed above by choosing, with the student adviser’s approval, any course offerings (300 level or higher) in Anatomy and Cell Biology, Biochemistry, Biology, Microbiology, Immunology, Neurology and Neurosurgery, Pharmacology and Therapeutics, Physiology, and Psychology. Any prerequisites for these courses must be taken as electives.

6.3 Department of Bioresource Engineering

Macdonald Stewart Building – Room MS1-027
Telephone: (514) 398-7773
Fax: (514) 398-8387
E-mail: robert.kok@mcgill.ca
Website: www.mcgill.ca/agreng

Chair — Robert Kok
Emeritus Professor — Robert S. Broughton

Professors — Suzelle Barrington, Robert Kok, Chandra Madramootoo (James McGill Professor), Edward McKeyes, Shiv O. Prasher (James McGill Professor), G.S. Vijaya Raghavan (James McGill Professor)

Associate Professors — Robert B. Bonnell (Brace Centre for Water Resources Management), Eric R. Norris, John D. Shepard

Assistant Professor — Michael O. Ngadi (William Dawson Scholar), Ning Wang

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 for registration as professional engineers in any province of Canada.

Via the appropriate choice of elective course sets, a particular area of study may be emphasized. Principal options are: Bio-Environmental Engineering, Soil and Water Engineering, Food and Bioprocess Engineering, and Agricultural Engineering.

All required courses must be passed with a minimum grade of C, and 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 these Minors can be found in the Faculty of Engineering "Minor Programs and Choice of Electives or Complementary Courses" on page226. To complete a Minor, it is necessary to spend at least one extra term beyond the normal requirements of the B.Eng.(Bioresource) program.

Required Courses: 50 credits
Complementary Courses: 61 credits

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<td>ABEN210 Mechanical Analysis and Design</td>
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<td>ABEN252 Computing for Engineers</td>
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<td>ABEN301 Biomechanics</td>
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<td>ABEN305 Fluid Mechanics</td>
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<td>ABEN327 Bio-Environmental Engineering</td>
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<td>ABEN341 Mechanics of Materials</td>
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<td>MIME310 Engineering Economy</td>
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Complementary Courses: 61

Set A (6 credits):
One of the following: 3
AEMA310 (3) Statistical Methods 1
CIVE302 (3) Probabilistic Systems
MATH323 (3) Probability Theory

One of the following: 3
CHEE315 (4) Heat and Mass Transfer
MECH346 (3) Heat Transfer

Set B - Basic Sciences (9 credits):
9 credits from the following, 3
with at least 3 credits chosen from:
AEBI202 (3) Cellular Biology
FDSC211 (3) Biochemistry 1
MICR230 (3) Microbial World
PLNT201 (3) Comparative Plant Biology
WILD200 (3) Comparative Zoology
WILD205 (3) Principles of Ecology

and the remainder, if any, chosen from:
ANSC250 (3) Principles of Animal Science
FDSC200 (3) Introduction to Food Science
GEOG203 (3) Environmental Systems
NRSC201 (3) Introductory Meteorology
NRSC333 (3) Physical and Biological Aspects of Pollution
NRSC437 (3) Assessing Environmental Impact
NRSC510 (3) Agricultural Micrometeorology
PLNT211 (3) Principles of Plant Science
PLNT300 (3) Cropping Systems
PLNT322 (3) Greenhouse Management
PLNT421 (3) Landscape Plant Materials
SOIL200 (3) Introduction to Earth Science
SOIL210 (3) Principles of Soil Science
SOIL326 (3) Soil Genesis and Classification
SOIL331 (3) Soil Physics
SOIL410 (3) Soil Chemistry

Set C - Social Sciences (9 credits):
One 3-credit course on the impact of technology on society from the following list: 3
CHEE230 (3) Environmental Aspects of Technology
CIVE430 (3) Technology Impact Assessment
CIVE469 (3) Infrastructure and Society
ENVR201 (3) Society and Environment
MIME308 (3) Social Impact of Technology
SOC1235 (3) Technology and Society

Two 3-credit courses in the humanities and social sciences/administrative studies and law/language courses. (Any language course which is deemed by the academic adviser to have a sufficient cultural component or, in the case of the student who is not proficient in a specific language, program credit will be given for the second of two successfully completed, academically approved 3-credit language courses.)

Set D - Engineering (37 credits, minimum):
37 credits (minimum) from the following courses: 37
ABEN214 (3) Geometrics
ABEN217 (3) Hydrology and Water Resources
ABEN314 (3) Agri-Food Buildings
### AGRICULTURAL AND ENVIRONMENTAL SCIENCES – DEPARTMENT OF BIORESOURCE ENGINEERING

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<td>ABEN501</td>
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<td>Simulation and Modelling</td>
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<td>Drainage/Irrigation Engineering</td>
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### ENVIRONMENTAL ENGINEERING MINOR

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, see page 228, is administered by the Faculty of Engineering, Department of Civil Engineering and Applied Mechanics.

### Courses available in the Faculty of Agricultural and Environmental Sciences: (partial listing)

- ABEN322 Organic Waste Management
- ABEN416 Engineering for Land Development
- ABEN518 Bio-Treatment of Wastes
- MICR331 Microbial Ecology
- WILD333 Physical and Biological Aspects of Pollution

### MINOR IN AGRICULTURAL ENGINEERING

[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Academic Adviser: Professor R.B. Bonnell

Engineering systems are now being emphasized in animal and crop production, management and utilization of waste products, production of value-added materials and by-products, protection of natural resources, conservation and management of ecosystems, soil and water decontamination, and the development of new food, fibre and pharmaceutical products. Computer-based systems play a major role in the management of information, and process control in many of the above technologies.

A non-professional Minor in Agricultural Engineering, consisting of 24 credits of Bioresource Engineering courses is available for students registered in the B.Sc.(Agr.Env.Sc.) and B.Sc.(F.Sc.) programs. A total of 18 credits of required Bioresource Engineering courses will emphasize basic engineering applications. Selection of 6 complementary credits from a wide range of Bioresource Engineering courses will allow more focused study in a specific area.

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 in Agricultural Engineering. 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 Engineering Minor. The Academic Adviser of the Agricultural Engineering 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.

### General Regulations

To obtain a Minor in Agricultural Engineering, 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: 18 credits

#### Complementary Courses: 6 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
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<tr>
<td>ABEN252</td>
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</tr>
<tr>
<td>ABEN314</td>
<td>3</td>
<td>Agri-Food Buildings</td>
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<tr>
<td>ABEN324</td>
<td>3</td>
<td>Elements of Food Engineering</td>
</tr>
<tr>
<td>ABEN412</td>
<td>3</td>
<td>Machinery Systems Engineering</td>
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<tr>
<td>ABEN500</td>
<td>3</td>
<td>Advanced Applications: Computing in Agriculture</td>
</tr>
<tr>
<td>ABEN512</td>
<td>3</td>
<td>Soil Cutting and Tillage</td>
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<tr>
<td>ABEN514</td>
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<td>Drain Pipe and Envelope Materials</td>
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<td>ABEN515</td>
<td>3</td>
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<td>ABEN516</td>
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<td>Preparation and Appraisal of Drainage Projects</td>
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<td>ABEN517</td>
<td>3</td>
<td>Drainage Project Contracts</td>
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<tr>
<td>ABEN518</td>
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<td>Bio-Treatment of Wastes</td>
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<tr>
<td>ABEN525</td>
<td>3</td>
<td>Climate Control for Buildings</td>
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<tr>
<td>ABEN530</td>
<td>3</td>
<td>Fermentation Engineering</td>
</tr>
</tbody>
</table>

### 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 www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.

### BARBADOS FIELD STUDY SEMESTER

The Barbados Field Study Semester (BFSS) provides one term of integrated field study for students with an interest in global issues related to natural resource use as affected by socio-economic, management, and physical constraints. Offered at the Bellairs Research Institute in Barbados, this program challenges students to be more effective environmental decision makers, policy makers, urban planners, managers, and auditors. There is a growing need for professionals with such skills at all levels of government, within NGOs, and in the private sector. The overall goal of the BFSS is to equip future leaders to address the complexity of issues associated with the formulation and implementation of organizational strategies compatible with the societal goal of sustainable use and development of our natural resources, with a focus on water.

The BFSS is intended for senior undergraduate students from across the University and students in the School of Urban Planning. Students must apply to participate in the program. Selection will be based on the student’s academic standing and demonstrated interests and involvement in international issues related to natural resource use.
The semester is not a degree program, but credits can be counted toward other McGill degrees with the permission of program advisers.

**BARBADOS FIELD STUDY SEMESTER — offered Fall Term Required Courses (6 credits)**
- AGR1413 (3) Globalization: Issues of Change
- URPB507 (3) Planning and Infrastructure

**Complementary Courses (9 credits)**
one of the following cross-listed courses:
- AGR1452 (3) Water Resources in Barbados
- CIVE452 (3) Water Resources in Barbados

and one of the following cross-listed project courses:
- AGR1519 (6) Sustainable Development Plans
- CIVE519 (6) Sustainable Development Plans
- URPB519 (6) Sustainable Development Plans

Enrolment is limited to 25 students. In addition to the regular McGill fees, students will be required to pay the additional costs associated with delivering the courses in the field. These costs include airfare, accommodation and most food, as well as other field costs. Although airfares and currency fluctuations will determine the amount of this charge, fees for 2004 are expected to be in the neighbourhood of $7,000 Canadian.

The BFSS is offered in the Fall term only. Interested students must submit a letter of intent, CV and a copy of their transcript to
Ms. Susan Gregus by March 15. Further details are available on the Web at www.mcgill.ca/mse/field_study/barbados.

### 6.4 School of Dietetics and Human Nutrition

Macdonald Stewart Building – Room MS2-039

**Telephone:** (514) 398-7840

**Fax:** (514) 398-7739

**E-mail:** dietstage@macdonald.mcgill.ca

**Website:** www.mcgill.ca/dietetics

**Director** — Katherine Gray-Donald

**Emeritus Professor** — Helen R. Neilson

**Professors** — Timothy A. Johns, Peter J. H. Jones, Harriet V. Kuhnlein

**Associate Professors** — Laurie Chan (NSERC Northern Research Chair), Grace Egeland (Canada Research Chair), Katherine Gray-Donald, Kristine G. Koski, Stan Kubow, Louise Thibault, Linda Wykes (William Dawson Scholar)

**Lecturers** — Lynda Fraser (PT), Linda Jacobs Starkey, Maureen Rose, Joane Routhier, Sandy Phillips, Hugues Flouride, Heidi Ritter, Donna Schafers

**Adjunct Professors** — Kevin A. Cockell, Jeffrey S. Cohn, Marie L’Abbeé

**Cross-Appointed Staff** —
- Food Science and Agricultural Chemistry: Selim Kermasha
- Medicine: Louis Beaumier, Franco Carli, Katherine Cianflone, Régine Gougeon, L. John Hoffer, Erroll Marliess, Thomas Schricker, Jean-François Yale
- Parasitology: Marilyn E. Scott
- Psychiatry: Simon Young

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.

**DIETETICS MAJOR**

Academic Advising Coordinator:
Linda Jacobs Starkey, Ph.D., RD, FDC

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 in the province of Quebec. As clinical nutritionists, dietitians may work in health-care settings and food service centres, 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. Postgraduate programs are available to qualified graduates. The duration of the program is three and one-half years.

Successful graduates are qualified for membership in Dietitians of Canada and the Ordre professionnelle de diététistes du Québec. Forty weeks of supervised professional experience in clinical and community nutrition and food service systems management are included.

**Required Courses:** 103 credits

Note: 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.

**Complementary Courses:** 6 credits

**Electives:** 6 credits, selected in consultation with an Academic Adviser, to meet the minimum 115-credit requirement for the degree.

<table>
<thead>
<tr>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Term 1</strong></td>
</tr>
<tr>
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<tr>
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<td>NUTR214</td>
</tr>
<tr>
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<tr>
<td>ABEN251</td>
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<tr>
<td>ANSC234</td>
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<tr>
<td>MCR230</td>
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<td><strong>Summer</strong></td>
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<tr>
<td><strong>Term 4</strong></td>
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<td>NUTR346</td>
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<td><strong>Term 5</strong></td>
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<td>NUTR403</td>
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<td><strong>Term 6</strong></td>
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<tr>
<td>NUTR409*</td>
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<tr>
<td>NUTR436</td>
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</table>
NUTR438  Interviewing and Counselling  2

Term 7  14
NUTR510*  Professional Practice - Stage 4  14

Two Complementary Courses are to be selected from the following, as specified:

3 credits of Human Behavioural Science courses chosen from:
NUTR301  (3) Psychology
or equivalent course from another faculty.

3 credits from the social sciences:
AGEC200  (3) Principles of Microeconomics
AGEC230  (3) Agricultural and Food Marketing
ENVR203  (3) Knowledge, Ethics and Environment
RELG270  (3) Religious Ethics and the Environment
or equivalent courses from another faculty.

Elective Courses:
Two Elective courses should be chosen in consultation with the academic adviser. The following courses most often fit the timetable; elective choice is not limited to these courses.

FDSC200  (3) Introduction to Food Science
FDSC212  (3) Biochemistry Laboratory
FDSC251  (3) Food Chemistry 1
FDSC425  (3) Principles of Quality Assurance
NUTR420  (3) Toxicology and Health Risks
NUTR430  (3) Directed Studies: Dietetics and Nutrition 1
NUTR501  (3) Nutrition in Developing Countries
NUTR511  (3) Nutrition and Behaviour
NUTR512  (3) Herbs, Foods and Phytochemicals

* Successful completion of all component parts of each level of Stage (Professional Practice) in Dietetics courses 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. CPQPA or equivalent course from another faculty. CN with the Dean of the Faculty of Education. 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 at any time if it (Faculty) feels the student has displayed unprofessional conduct or demonstrates incompetence.

A compulsory immunization program exists at McGill which is required for Dietetics students to practice. Students should complete their immunization before arriving at Macdonald Campus; medical/health documentation must be received prior to commencement of Stage.

NUTRITION MAJOR
Academic Advising Coordinator: Kristine G. Koski

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 sciences, communications fields, 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.

Required Courses:  57 credits
All required courses must be passed with a minimum grade of C.

Complementary Courses:  15/16 credits

Electives:  17/18 credits
Selected in consultation with the academic adviser to meet the minimum 90 credits 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.

CREDITS

Required Courses:  57
ABEN251  Microcomputer Applications  3
AEMA310  Statistical Methods  1  3
ANSC234  Biochemistry 2  3
ANSC323  Mammalian Physiology  4
ANSC424  Metabolic Endocrinology  3
FDSC211  Biochemistry 1  3
FDSC212  Biochemistry Laboratory  2
FDSC251  Food Chemistry 1  3
FDSC305  Food Chemistry 2  3
MICR230  Microbial World  3
NUTR207  Nutrition and Health  3
NUTR214  Food Fundamentals  3
NUTR322  Applied Sciences Communication  2
NUTR337  Nutrition Through Life  3
NUTR344  Clinical Nutrition  1  4
NUTR420  Toxicology and Health Risks  3
NUTR450  Research Methods: Human Nutrition  3
NUTR451  Analysis of Nutrition Data  3
NUTR512  Herbs, Foods, and Phytochemicals  3

Complementary Courses:  15/16
One of the following courses:  3
NUTR307  Human Nutrition
or ANSC330  Fundamentals of Nutrition

Nutritional Biochemistry:  13
ANSC551  Carbohydrate & Lipid Metabolism  3
ANSC552  Protein Metabolism & Nutrition  3
CELL204  Genetics  4
PARA438  Immunology  3

Global Nutrition:  12
AGRI340  Principles of Ecological Agriculture  3
NRSC340  Global Perspectives on Food  3
NUTR403  Nutrition in Society  3
NUTR501  Nutrition in Developing Countries  3

Food Function and Safety:  12
FDSC300  Food Analysis  1  3
FDSC315  Food Analysis  2  3
FDSC319  Food Chemistry 3  3
FDSC425  Principles of Quality Assurance  3

Sports Nutrition:  12
ANAT214  Systemic Human Anatomy  3
or EDKP205  Structural Anatomy  3
EDKP391  Ergo-Physiology  3
EDKP495  Scientific Principles of Training  3
NUTR503  Bioenergetics and the Lifespan  3

MINOR IN HUMAN NUTRITION
Academic Adviser:  Linda Wykes

The Minor in 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 obtain a consultation 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 may 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 post-graduate nutrition programs.

**Required Courses:** 6 credits
**Complementary Courses:** 18 or 19 credits

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NUTR337</td>
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<tr>
<td>NUTR450</td>
<td>Research Methods: Human Nutrition</td>
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</tbody>
</table>

**Complementary Courses:** 18 or 19 credits

3 credits in biochemistry, one of:
- ANSC234 (3) Biochemistry 2
- BIOC311 (3) Metabolic Biochemistry

3 or 4 credits in physiology, one of:
- ANSC323 (4) Mammalian Physiology
- PHGY210 (3) Mammalian Physiology 2
- PHGY202 (3) Human Physiology: Body Functions

3 credits in nutrition, one of:
- ANSC330 (3) Fundamentals of Nutrition
- NUTR307 (3) Human Nutrition

8 or 9 credits from the following list:
- ANSC551 (3) Carbohydrate and Lipid Metabolism
- ANSC552 (3) Protein Metabolism and Nutrition
- MIMM314 (3) Immunology
- or PARA438 (3) Immunology
- NUTR403 (3) Nutrition in Society
- NUTR451 (3) Analysis of Nutrition Data
- NUTR436 (2) Nutritional Assessment
- NUTR420 (3) Toxicology and Health Risks
- NUTR512 (3) Herbs, Foods and Phytochemicals
- NUTR501 (3) Nutrition in Developing Countries
- NUTR430 (3) Directed Studies: Dietetics and Nutrition 1
- or NUTR431 (3) Directed Studies: Dietetics and Nutrition 2
- PATH300 (3) Human Disease

**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. Some courses may not be offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.

## 6.5 Department of Food Science and Agricultural Chemistry

Macdonald Stewart Building – Room MS1-034
Telephone: (514) 398-7898
Fax: (514) 398-7977
E-mail: foodscience@macdonald.mcgill.ca
Website: agrenv.mcgill.ca/foodscience

**Chair** — William D. Marshall

**Professors** — Inteaz Alli, William D. Marshall, HosahalliS.Ramaswamy, James P.Smith, FrederikR.vandeVoort

**Associate Professors** — Ashraf A.Ismail, Selim Kermasha, BenjaminK.Simpson, VaroujanYaylayan

**Adjunct Professors** — John W. Austin, Byong H. Lee, YasuoKonishi, Michèle Marcotte, AndréMorin, J.R.JocelynParé

**FOOD SCIENCE MAJOR**

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 and the Institute of Food Technologists. Graduates can also qualify for admission to the Ordre des chimistes du Québec by careful selection of additional courses.

**Required Courses:** 66 credits

**Electives:** 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>ABEN251</td>
<td>Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ABEN324</td>
<td>Elements of Food Engineering</td>
<td>3</td>
</tr>
<tr>
<td>AEMA310</td>
<td>Statistical Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>FDSC200</td>
<td>Introduction to Food Science</td>
<td>3</td>
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<tr>
<td>FDSC211</td>
<td>Biochemistry 1</td>
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<td>FDSC213</td>
<td>Analytical Chemistry 1</td>
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<td>Physical Chemistry</td>
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<td>FDSC410</td>
<td>Flavour Chemistry</td>
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<td>FDSC425</td>
<td>Principles of Quality Assurance</td>
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<td>Food Science Seminar</td>
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<td>FDSC495D2</td>
<td>Food Science Seminar</td>
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<td>MIRC230</td>
<td>Microbial World</td>
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<tr>
<td>MIRC442</td>
<td>Food Microbiology and Sanitation</td>
<td>3</td>
</tr>
<tr>
<td>NUTR207</td>
<td>Nutrition and Health</td>
<td>3</td>
</tr>
</tbody>
</table>

* Students who have not taken CEGEP objective 00XV or equivalent (formerly Chemistry 202) must take Organic Chemistry (FDSC230) as a prerequisite for FDSC211.

The following courses must be taken by students who wish to meet the course requirements for admission to the Ordre des Chimistes du Québec.

- **FDSC212** (2) Biochemistry Laboratory
- **FDSC230** (4) Organic Chemistry
- **FDSC490** (3) Research Project 1
- **FDSC491** (3) Research Project 2
- **FDSC510** (3) Food Hydrocolloid Chemistry
- **FDSC515** (3) Enzyme Thermodynamics/Kinetics
- **FDSC520** (3) Biophysical Chemistry of Food

## 6.6 Interdisciplinary Studies

**Ecological Agriculture Program**
Telephone: (514) 398-7928
Website: www.agrenv.mcgill.ca/agrecon/ecoagr

**MINOR IN ECOLOGICAL AGRICULTURE**

**Academic Adviser:** Professor J. Henning

This Minor program 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 post graduate studies in this field.

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, 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 the requirements of the Minor.

**General Regulations**

To obtain a Minor in Ecological Agriculture, 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:** 9 credits

**Complementary Courses:** 15 credits

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<td>AGRI340</td>
<td>Principles of Ecological Agriculture</td>
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<tr>
<td>AGRI341</td>
<td>Ecological Agriculture Systems</td>
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<td>WILD205</td>
<td>Principles of Ecology</td>
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<td>PLNT434</td>
<td>Weed Biology and Control</td>
<td>3</td>
</tr>
<tr>
<td>PLNT460</td>
<td>Plant Ecology</td>
<td>3</td>
</tr>
<tr>
<td>RELG270</td>
<td>Religious Ethics and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>WILD331</td>
<td>Ethology</td>
<td>3</td>
</tr>
<tr>
<td>WILD375</td>
<td>Issues: Environmental Sciences</td>
<td>3</td>
</tr>
<tr>
<td>WOOD410</td>
<td>The Forest Ecosystem</td>
<td>3</td>
</tr>
</tbody>
</table>

**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.

**Agricultural Sciences Majors**

**Academic Adviser:** Professor J. Henning

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 in Ecological Agriculture are not permitted to register for this program.

**General Regulations**

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

**Required Courses:** 9 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI210</td>
<td>Agro-Ecological History</td>
<td>3</td>
</tr>
<tr>
<td>AGRI340</td>
<td>Principles of Ecological Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGRI341</td>
<td>Ecological Agriculture Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complementary Courses:** 21 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI341</td>
<td>Ecological Agriculture Systems</td>
<td>3</td>
</tr>
<tr>
<td>SOIL335</td>
<td>Soil Ecology and Management</td>
<td>3</td>
</tr>
<tr>
<td>SOIL490</td>
<td>Plan global de fertilisation intégrée</td>
<td>3</td>
</tr>
<tr>
<td>SOIL521</td>
<td>Soil Microbiology and Biochemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

**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. Not all courses are offered every year. For information on available courses, consult Class Schedule at www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.

3. Students using AGRI491D1/AGRI491D2 towards the requirements of the Certificate/Minor are limited to an experience on farms or other enterprises that are either organic, biodynamic, or practicing permaculture. The placement must be approved by the academic adviser for the Certificate/Minor.

4. SOIL521 is an alternate year course.
AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION

Required Courses: 52 credits

Complementary Courses: 19 credits

Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABEN300</td>
<td>Elements of Agricultural Engineering</td>
<td>3</td>
</tr>
<tr>
<td>AEMA310</td>
<td>Statistical Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>AGEC200</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>AGEC231</td>
<td>Economic Systems of Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGRI210</td>
<td>Agro-Ecological History</td>
<td>3</td>
</tr>
<tr>
<td>AGRI220</td>
<td>Professional Practice Seminar 1</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI221</td>
<td>Professional Practice Seminar 2</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI320</td>
<td>Professional Practice Seminar 3</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI321</td>
<td>Professional Practice Seminar 4</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI420</td>
<td>Professional Practice Seminar 5</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI421</td>
<td>Professional Practice Seminar 6</td>
<td>0.5</td>
</tr>
<tr>
<td>AGRI490</td>
<td>Agri-Food Industry Project</td>
<td>3</td>
</tr>
<tr>
<td>ANSC250</td>
<td>Principles of Animal Science</td>
<td>3</td>
</tr>
<tr>
<td>CELL204</td>
<td>Genetics</td>
<td>4</td>
</tr>
<tr>
<td>ENTO352</td>
<td>Control of Insect Pests</td>
<td>3</td>
</tr>
<tr>
<td>FDSC211</td>
<td>Biochemistry 1</td>
<td>3</td>
</tr>
<tr>
<td>MICR230</td>
<td>Microbial World</td>
<td>3</td>
</tr>
<tr>
<td>PLNT211</td>
<td>Principles of Plant Science</td>
<td>3</td>
</tr>
<tr>
<td>PLNT300</td>
<td>Cropping Systems</td>
<td>3</td>
</tr>
<tr>
<td>RELG270</td>
<td>Religious Ethics and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOIL210</td>
<td>Principles of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>SOIL315</td>
<td>Soil Fertility and Fertilizer Use</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives: at least one of:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC323</td>
<td>Mammalian Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PLNT353</td>
<td>Plant Structure and Function</td>
<td>4</td>
</tr>
</tbody>
</table>

Complementary Courses: 19

Required Courses: 61 credits

Complementary Courses: 16 credits

Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEBI202</td>
<td>Cellular Biology</td>
<td>3</td>
</tr>
<tr>
<td>MICR338</td>
<td>Bacterial Molecular Genetics</td>
<td>3</td>
</tr>
<tr>
<td>PARA400</td>
<td>Eukaryotic Cells and Viruses</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses: 16

at least one of:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC323</td>
<td>Mammalian Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PLNT353</td>
<td>Plant Structure and Function</td>
<td>4</td>
</tr>
</tbody>
</table>

Electives: at least one production course in Agricultural Science:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEC331</td>
<td>Farm Business Management</td>
<td>3</td>
</tr>
<tr>
<td>ANSC450</td>
<td>Dairy Cattle Production</td>
<td>3</td>
</tr>
<tr>
<td>ANSC452</td>
<td>Beef Cattle and Sheep Production</td>
<td>3</td>
</tr>
<tr>
<td>ANSC454</td>
<td>Swine Production</td>
<td>3</td>
</tr>
<tr>
<td>ANSC456</td>
<td>Poultry Production</td>
<td>3</td>
</tr>
<tr>
<td>PLNT331</td>
<td>Field Crops</td>
<td>3</td>
</tr>
</tbody>
</table>

plus a minimum of 9 credits chosen from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AEBI306</td>
<td>Experiments in Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>ANSC420</td>
<td>Animal Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>ANSC504</td>
<td>Population Genetics</td>
<td>3</td>
</tr>
<tr>
<td>ANSC508</td>
<td>Tools in Animal Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>BTEC501</td>
<td>Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>BTEC502</td>
<td>Biotechnology Ethics and Society</td>
<td>3</td>
</tr>
<tr>
<td>CELL500</td>
<td>Techniques in Plant Molecular Genetics</td>
<td>3</td>
</tr>
<tr>
<td>CELL501</td>
<td>Plant Molecular Biology and Genetics</td>
<td>3</td>
</tr>
<tr>
<td>FDSC535</td>
<td>Food Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>PLNT424</td>
<td>Cellular Regulation</td>
<td>3</td>
</tr>
<tr>
<td>PLNT535</td>
<td>Plant Breeding</td>
<td>3</td>
</tr>
</tbody>
</table>

AGRICULTURAL SCIENCES MAJOR – AGRICULTURAL BIOTECHNOLOGY OPTION

Required Courses: 73 credits

Complementary Courses: 16 credits

Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGR201D1</td>
<td>Agri-Environment Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR201D2</td>
<td>Agri-Environment Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR301D1</td>
<td>Agrology Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR301D2</td>
<td>Agrology Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses: 19

AGRICULTURAL SCIENCES MAJOR – ECOLOGICAL AGRICULTURE OPTION

Required Courses: 61 credits

Complementary Courses: 16 credits

Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGR201D1</td>
<td>Agri-Environment Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR201D2</td>
<td>Agri-Environment Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR301D1</td>
<td>Agrology Internship</td>
<td>3</td>
</tr>
<tr>
<td>AGR301D2</td>
<td>Agrology Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses: 19

As described for the Agricultural Sciences Major – General Option.
AGRICULTURAL SCIENCES INTERNSHIP MAJOR – ECOLOGICAL AGRICULTURE OPTION (96 credits)

Required Courses: 73 credits
Complementary Courses: 16 to 19
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI340 Principles of Ecological Agriculture 3
AGRI341 Ecological Agriculture Systems 3
WILD205 Principles of Ecology 3

AGRICULTURAL SCIENCES INTERNSHIP MAJOR – INTERNATIONAL AGRICULTURE OPTION (96 credits)

Required Courses: 70 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – ECOLOGICAL AGRICULTURE OPTION (96 credits)

Required Courses: 73 credits
Complementary Courses: 13 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (96 credits)

Required Courses: 70 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – GENERAL OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI411 International Agriculture 3
AGEC442 Economics of International Agricultural Development 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (96 credits)

Required Courses: 70 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (96 credits)

Required Courses: 70 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

AGRICULTURAL SCIENCES MAJOR – INTERNATIONAL AGRICULTURE OPTION (90 credits)

Required Courses: 58 credits
Complementary Courses: 16 credits
Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3
AGRICULTURAL SCIENCES MAJOR – 
SOIL SCIENCE OPTION (90 credits)

[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]

Required Courses: 52 credits

Complementary Courses: 25 credits

Electives: selected in consultation with Academic Adviser, to meet the minimum 90-credit requirement for the degree.

CREDITS

Required Courses: 52

All of the required courses (52 credits) specified for the Agricultural Sciences Major – General Option.

Complementary Courses: 25

at least one of:

AGRI301D2 Agrology Internship 3
AGRI301D1 Agrology Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI201D1 Agri-Environment Internship 3

with the addition of:

Agricultural Sciences Major – Soil Science Option,

Required Courses: 64

SOIL521 (3) Soil Microbiology and Biochemistry
SOIL410 (3) Soil Chemistry
SOIL335 (3) Soil Ecology and Management
SOIL331 (3) Soil Physics
SOIL326 (3) Soil Genesis and Classification
SOIL326 (3) Soil Genesis and Classification
ABEN217 (3) Hydrology and Water Resources
AGRI435 (3) Soil and Water Quality Management

a minimum of 18 credits chosen from the following:

PLNT331 (3) Field Crops

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

Agricultural Sciences Internship Major – Soil Science Option (96 credits)

Required Courses: 64 credits

Complementary Courses: 25 credit.

Electives: selected in consultation with Academic Adviser, to meet the minimum 96-credit requirement for the degree.

CREDITS

Required Courses: 64

All of the required courses (52 credits) specified for the Agricultural Sciences Major – Major Science Option, with the addition of:

AGRI201D1 Agri-Environment Internship 3
AGRI201D2 Agri-Environment Internship 3
AGRI301D1 Agrology Internship 3
AGRI301D2 Agrology Internship 3

Complementary Courses: 25 credits

As described for the Agricultural Sciences Major – Soil Science Option.

6.7 Department of Natural Resource Sciences

Macdonald Stewart Building – Room MS3-040
Telephone: (514) 398-7890
Fax: (514) 398-7990
E-mail: info@nrs.mcgill.ca
Website: www.nrs.mcgill.ca

Chair — Benoît Côté

Emeritus Professors — A. Clark Blackwood, Roger Knowles, Angus F. Mackenzie, Robert A. MacLeod, Peter H. Scheuupp, Robin K. Stewart

Professors — David M. Bird, Peter Brown (joint appoint. with Geography and McGill School of Environment), James W. Fyles (Tomlinson-Fowler Professor of Forest Ecology), William H. Hendershot

Associate Professors — Benoît Côté, Mark A. Curtis, Brian T. Driscoll, Gary B. Dunphy, David J. Lewis, Guy R. Mehuys, Donald F. Niven, Manfred E. Rau, Rodger D. Titman, Terry A. Wheeler, Lyle Whyte

Assistant Professors — Christopher Budde, Murray Humphries, Ian Strachan, Joann Whalen

Faculty Lecturer — Derek Nililgen

Curators — Stephanie Boucher, Christina Idziak

Associate Members — Laurie Chan (School of Dietetics and Human Nutrition), David Green (Redpath Museum), William D. Marshall (Dept. of Food Science and Agricultural Chemistry), Greg T. Matlashewski (Dept. of Microbiology and Immunology), Donald L. Smith (Dept. of Plant Science)

Adjunct Professors — Robert Anderson, Frederick S. Archibald, Suzanne Beauchemin, Dominique Berteaux, Guy Boivin, Jeffrey Cumming, Charles W. Greer, Thomas Herman, Carlos Miguez, Elizabeth Pattey, Husain Sadar, Jean-Pierre Savard, Anton Scheuhammer, Geoffrey Sunahara, Charles Vincent

APPLIED ZOOLOGY MAJOR

Academic Adviser: Professor T. A. Wheeler

The great diversity of animals form the focus of this Major, from the invertebrates, with their many beneficial and pest insects, to vertebrates, including fish and wildlife. The interaction of animals with each other and with human populations is stressed. By careful course selection students may emphasize life in soils or water, entomology, physiology, parasitology or vertebrate biology and ecology. Career opportunities exist in both the public and private sectors in research, program development and implementation, pest control, wildlife management, etc.

Required Courses: 27 credits

Complementary Courses: 36 credits

Electives: to meet the minimum requirement of 90 credits; chosen in consultation with the Academic Adviser.

CREDITS

Required Courses: 27

AEBI202 Cellular Biology 3
AEMA310 Statistical Methods 1 3
CELL204 Genetics 4
FDSC211 Biochemistry 1 3
NRSC491 Scientific Communication 1 3
NRSC492 Scientific Communication 2 1
PLNT201 Comparative Plant Biology 3
WILD200 Comparative Zoology 3
WILD205 Principles of Ecology 3
WILD212 Evolution and Systematics 3

Complementary Courses: 36

36 credits in any combination from List A, B and/or C 36

List A (Animal Diversity)

BIOL327 1 (3) Herpetology
BIOL351 1 (3) The Biology of Invertebrates
MICR230 (3) Microbial World
WILD307 (3) Natural History of Vertebrates
WILD350 (3) Mammalogy
WILD420 (3) Ornithology
WILD424 (3) Parasitology

List B (Entomology)

ENTO330 (3) Insect Biology
ENTO336 (3) Economic Entomology
ENTO352 (3) Control of Insect Pests
ENTO425 (3) Insect Ecology
ENTO440 (3) Systematic Entomology
ENTO515 (3) Parasitoid Behavioural Ecology
ENTO520 (3) Insect Physiology
ENTO535 (3) Aquatic Entomology
ENTO550 (3) Veterinary and Medical Entomology

1 36 credits in any combination from List A, B and/or C 36
List C (Interactions and Applications)  
BIOI331\(^1\) (3) Ecology/Behaviour Field Course  
BIOI465\(^1\) (3) Conservation Biology  
NRSC315 (3) Science of Inland Waters  
NRSC497 (2) Research Project 1  
NRSC498 (3) Research Project 2  
PLNT358 (3) Flowering Plant Diversity  
SOIL335 (3) Soil Ecology and Management  
WILD311 (3) Ethology  
WILD313 (3) Phylogeny and Zoogeography  
WILD401 (4) Fisheries and Wildlife Management  
WILD410 (3) Wildlife Ecology  
\(^1\) Downtown Campus

AFRICAN FIELD STUDY SEMESTER, see page325 under the Department of Geography, Faculty of Science, for details of the 15-credit interdisciplinary AFSS. Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

MACDONALD SUMMER FIELD SEMESTER:  
HUMAN IMPACTS ON THE ENVIRONMENT  
Three courses are available during Summer Session that provide students the opportunity to participate in supervised field research concerning flora and fauna not easily studied at other times of the year, and to apply knowledge from the classroom to environmental issues in the field.  
Common thematic elements include: the linkages between physical, biological and human systems, field research, and human impacts on the environment. Students learn and apply research techniques and analytical skills within a multi-disciplinary, holistic approach.

Summer Term Courses:  
NRSC382 (3) Ecological Monitoring and Analysis  
NRSC383 (3) Land Use: Redesign and Planning  
NRSC384 (3) Field Research Project  
For more information, please consult the McGill Summer Studies Calendar, the Summer Studies Website at www.mcgill.ca/summer, or the Faculty Website at www.agrenv.mcgill.ca/envschool.

ENVIRONMENTAL BIOLOGY MAJOR  
Academic Advisers: Professors I. Strachan (U1), D.J. Lewis(U2), M.E. Rau(U3)  
This program provides scientists with basic knowledge in Biology and strong emphasis in Ecology. As ecologists they will be equipped to investigate the scientific aspects of the relationships between organisms and their environment.

Required Courses: 27 credits  
Complementary Courses: 30 credits  
Electives: To meet the minimum requirement of 90 credits for the degree.

Required Courses:  
AE2202 Cellular Biology 3  
AEMA310 Statistical Methods 1 3  
CELL204 Genetics 4  
FDSC211 Biochemistry 1 3  
NRSC491 Scientific Communication 1 1  
NRSC492 Scientific Communication 2 1  
PLNT201 Comparative Plant Biology 3  
WILD200 Comparative Zoology 3  
WILD205 Principles of Ecology 3  
WILD375 Issues: Environmental Sciences 3  

Complementary Courses:  
a minimum of 30 credits selected from the following list in consultation with the Academic Adviser  
AEMA306 (3) Mathematical Methods in Ecology  
MICR230 (3) Microbial World  
MICR331 (3) Microbial Ecology  
NRSC201 (3) Introductory Meteorology  
NRSC315 (3) Science of Inland Waters  
NRSC333 (3) Physical and Biological Aspects of Pollution  
NRSC437 (3) Assessing Environmental Impact  
NRSC497 (2) Research Project 1  
NRSC498 (3) Research Project 2  
NUTR420 (3) Toxicology and Health Risks  
PLNT358 (3) Flowering Plant Diversity  
PLNT460 (3) Plant Ecology  
SOIL200 (3) Introduction to Earth Science  
SOIL210 (3) Principles of Soil Science  
SOIL335 (3) Soil Ecology and Management  
WILD307 (3) Natural History of Vertebrates  
WILD311 (3) Ethology  
WILD313 (3) Phylogeny and Zoogeography  
WILD401 (4) Fisheries and Wildlife Management  
WILD410 (3) Wildlife Ecology  
WILD475 (3) Desert Ecology  
WOOD410 (3) The Forest Ecosystem  
WOOD420 (3) Environmental Issues: Forestry

MICROBIOLOGY MAJOR  
[Program revisions are under consideration for September 2004. Go to www.mcgill.ca (Course Calendars) in July for details.]
Academic Adviser: Professor D.Niven
Students receive training in fundamental principles and applied aspects of Microbiology. Successful graduates are competent to work in university, government and industrial research laboratories and in the pharmaceutical, fermentation and food industries.

Required Courses: 60 credits  
Electives: To meet the minimum requirement of 90 credits for the degree; chosen in consultation with the Academic Adviser.

Required Courses:  
AEB1202 Cellular Biology 3  
AEMA310 Statistical Methods 1 3  
ANSC400 Eukaryotic Cells and Viruses 3  
CELL204 Genetics 4  
FDSC211 Biochemistry 1 3  
FDSC212 Biochemistry Laboratory 2  
MICR200 Laboratory Methods in Microbiology 3  
MICR320 Microbial World 3  
MICR331 Microbial Ecology 3  
MICR337 Frontiers in Microbiology 1  
MICR338 Bacterial Molecular Genetics 3  
MICR341 Mechanisms of Pathogenicity 3  
MICR442 Food Microbiology and Sanitation 3  
MICR492 Research Project 1 2  
MICR493 Research Project 2 3  
MICR495 Seminar 1 1  
MICR496 Seminar 2 2  
PARA438 Immunology 3  
PLNT201 Comparative Plant Biology 3  
WILD200 Comparative Zoology 3  
WILD205 Principles of Ecology 3  
WILD424 Parasitology 3

RESOURCE CONSERVATION MAJOR  
Academic Adviser: Professor B. Côté
The Major prepares students to deal with problems in integrated resource management and environmental protection with the objective of making optimal use of natural resources under any given set of economic, social and ecological conditions. Students follow a series of required courses and select complementary
courses on physical, biological, soil and aquatic resources from approved lists on each of these themes.

**Required Courses:** 26 credits

**Complementary Courses:** 33 credits

**Electives:** to meet the minimum 90-credit requirement for the degree.

### Complementary Courses: min. 33

#### Required Courses:

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<tr>
<td>or MATH2031</td>
<td>Principles of Statistics 1</td>
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<td>PLNT201</td>
<td>Comparative Plant Biology</td>
<td>3</td>
</tr>
<tr>
<td>or PLNT211</td>
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<td>At least two of the following:</td>
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<tr>
<td>ABEN214</td>
<td>Geomatics</td>
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<tr>
<td>ABEN217</td>
<td>Hydrology and Water Resources</td>
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<tr>
<td>or GEOG3221</td>
<td>Environmental Hydrology</td>
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<tr>
<td>ABEN416</td>
<td>Engineering for Land Development</td>
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<tr>
<td>NRSC301</td>
<td>Introductory Meteorology</td>
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<tr>
<td>NRSC333</td>
<td>Physical and Biological Aspects of Pollution</td>
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<td>AEMA306</td>
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<tr>
<td>BIOL4651</td>
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<tr>
<td>MICR331</td>
<td>Microbial Ecology</td>
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<td>PLNT358</td>
<td>Flowering Plant Diversity</td>
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<tr>
<td>SOIL335</td>
<td>Soil Ecology and Management</td>
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<tr>
<td>WILD401</td>
<td>Fisheries and Wildlife Management</td>
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<tr>
<td>WOOD410</td>
<td>The Forest Ecosystem</td>
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<tr>
<td>At least three of the following:</td>
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<td>AGR1435</td>
<td>Soil and Water Quality Management</td>
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<td>SOIL315</td>
<td>Soil Fertility and Fertilizer Use</td>
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<tr>
<td>SOIL326</td>
<td>Soil Genesis and Classification</td>
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<tr>
<td>SOIL331</td>
<td>Soil Physics</td>
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<tr>
<td>SOIL410</td>
<td>Soil Chemistry</td>
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<tr>
<td>SOIL521</td>
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<td>At least one of the following:</td>
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<td>GEOG2011</td>
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<td>WILD310</td>
<td>Air Photo and Imagery Interpretation</td>
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### Complementary Courses: 27 credits

#### Required Courses:

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<td>PLNT358</td>
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<td>3</td>
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<tr>
<td>WILD200</td>
<td>Comparative Zoology</td>
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<td>WILD205</td>
<td>Principles of Ecology</td>
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<tr>
<td>WILD212</td>
<td>Evolution and Systematics</td>
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<tr>
<td>WILD307</td>
<td>Natural History of Vertebrates</td>
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### Complementary Courses: 27 credits

**Required Courses:** 37 credits

**Electives:** to meet the requirement of 90 credits for the degree.

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<td>CELL204</td>
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<td>NRSC491</td>
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<td>NRSC492</td>
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<td>PLNT201</td>
<td>Comparative Plant Biology</td>
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<td>PLNT358</td>
<td>Flowering Plant Diversity</td>
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<td>WILD200</td>
<td>Comparative Zoology</td>
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<td>WILD205</td>
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<td>WILD212</td>
<td>Evolution and Systematics</td>
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<td>WILD307</td>
<td>Natural History of Vertebrates</td>
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<td>WILD401</td>
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### Complementary Courses: 27 credits

9 credits from List A (Organismal Biology)

<table>
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<td>WILD311</td>
<td>Ethology</td>
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<td>WILD350</td>
<td>Mammalogy</td>
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<td>WILD420</td>
<td>Ornithology</td>
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18 credits from List B (Integration and Applications)

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<td>ANSC323</td>
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<td>BIOL465</td>
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<td>NRSC315</td>
<td>Science of Inland Waters</td>
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<td>NRSC437</td>
<td>Assessing Environmental Impact</td>
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<td>NRSC497</td>
<td>Research Project 1</td>
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<td>NRSC498</td>
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<td>NUTR420</td>
<td>Toxicology and Health Risks</td>
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<td>PLNT460</td>
<td>Plant Ecology</td>
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<tr>
<td>WILD313</td>
<td>Phylogeny and Zoogeography</td>
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<td>WILD382</td>
<td>Fish and Wildlife Propagation</td>
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<td>WILD415</td>
<td>Conservation Law</td>
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<td>WILD421</td>
<td>Wildlife Conservation</td>
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<td>WILD475</td>
<td>Desert Ecology</td>
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<td>WOOD410</td>
<td>The Forest Ecosystem</td>
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<tr>
<td>WOOD441</td>
<td>Integrated Forest Management</td>
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</tbody>
</table>

### Bachelor of Agricultural and Environmental Sciences

6.8 Department of Plant Science

Raymond Building – Room R2-019

Telephone: (514) 398-7851

E-mail: plantscience@macdonald.mcgill.ca

Website: www.mcgill.ca/plant

Chair — Marc Fortin

Emeritus Professors — Ralph H. Estey, William F. Grant, W.E. Sackston, Howard A. Stepler

Professors — Deborah J. Buszard, Pierre Dutilleul, Diane E. Mather, Donald L. Smith, Alan K. Watson

Associate Professors — Danielle J. Donnelly, Marc Fortin (William Dawson Scholar), Suja J.-Hare, Ajamada C. Kushalappa, Katrine A. Stewart, Marcia J. Waterway

Assistant Professors — Jacqueline C. Bede, Sylvie de Blois, Philippe Seguin, Martina V. Stromvik

Faculty Lecturers — Caroline Begg, Serge Lussier, Katherine McCintock, David Wees

Associate Member — Timothy A. Johns (School of Dietetics and Human Nutrition)
The Department of Plant Science administers Majors in Botanical Science and Plant Science, and participates in administering Majors in Agricultural Sciences and the Environmetrics and Food Production and Environment Domains of the McGill School of Environment. (Full descriptions of these Majors are available at www.mcgill.ca/plant/undergraduate.) A minimum of 90 credits is needed to complete each Major. It is recommended that students take organic chemistry prior to entering these Majors.

**BOTANICAL SCIENCE MAJOR**

Academic Adviser: Professor D. J. Donnelly
E-mail: donnelly@nrs.mcgill.ca

The Botanical Science Major offers two options for those interested in working with plants, one emphasizing the ecology of plants and their environment and the other emphasizing the physiology and molecular biology of plants. The Ecology Option emphasizes ecology, conservation, and environmental sciences. The Molecular Option emphasizes molecular genetics, plant improvement, and biotechnology. These two options form bota-nists prepared for exciting careers in the knowledge economy.

Graduates find employment within private industries, government services, consulting, teaching, or go on to do postgraduate research.

These programs can be completed entirely on the Macdonald Campus or one term can be spent taking courses on the Downtown Campus during the final year.

**Required Courses:** 42 credits

**Complementary Courses:** 18 credits, selected from an approved list in consultation with the Academic Adviser; taken in either the Ecology or the Molecular Option.

**Electives:** to meet the minimum requirement of 90 credits for the degree.

**Note:** courses marked with an asterisk (*) are offered on the Downtown Campus.

**Required Courses:**

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<th>Course Title</th>
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<tr>
<td>FDSC211</td>
<td>Biochemistry</td>
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<td>PLNT201</td>
<td>Comparative Plant Biology</td>
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<tr>
<td>PLNT220</td>
<td>Introduction to Vascular Plants</td>
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<td>PLNT221</td>
<td>Introduction to Fungi</td>
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<td>PLNT353</td>
<td>Plant Structure and Function</td>
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<td>PLNT358</td>
<td>Flowering Plant Diversity</td>
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<td>PLNT458</td>
<td>Flowering Plant Systematics</td>
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<td>PLNT460</td>
<td>Plant Ecology</td>
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<tr>
<td>PLNT489</td>
<td>Project Planning and Proposal</td>
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<td>PLNT490</td>
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<td>WILD205</td>
<td>Principles of Ecology</td>
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**CREDITS**

**Complementary Courses**

Either the Ecology Option or the Molecular Option

**Ecology Option:**

at least 12 credits must be chosen from the following:

<table>
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<td>AEMA306</td>
<td>Mathematical Methods in Ecology</td>
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<td>AGRI340</td>
<td>Principles of Ecological Agriculture</td>
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<tr>
<td>*Biol324</td>
<td>Ecological Genetics</td>
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<tr>
<td>*Biol331</td>
<td>Ecology/Behaviour Field Course</td>
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<td>*Biol334</td>
<td>Applied Tropical Ecology</td>
<td>3</td>
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<td>*Biol465</td>
<td>Conservation Biology</td>
<td>3</td>
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<tr>
<td>*Biol483</td>
<td>Stat. Approaches in Ecology and Evolution</td>
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<td>BIOG350</td>
<td>Ecological Biogeography</td>
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<td>MICR331</td>
<td>Microbial Ecology</td>
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<td>NRSC315</td>
<td>Science of Inland Waters</td>
<td>3</td>
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<tr>
<td>NRSC437</td>
<td>Assessing Environmental Impact</td>
<td>3</td>
</tr>
<tr>
<td>WILD415</td>
<td>Conservation Law</td>
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<td>WOOD410</td>
<td>The Forest Ecosystem</td>
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<td>WOOD420</td>
<td>Environmental Issues: Forestry</td>
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the remaining credits, if any, to be chosen from the Molecular Option or the General Complementary Course lists.

**Molecular Option:**

at least 12 credits must be chosen from the following:

<table>
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<th>Course Title</th>
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<td>AEBI306</td>
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<td>ANSC400</td>
<td>Eukaryotic Cells and Viruses</td>
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<td>*Biol301</td>
<td>Laboratory in Molecular and Cellular Biology</td>
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<td>*Biol303</td>
<td>Developmental Biology</td>
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<td>*Biol333</td>
<td>Plant Biotechnology</td>
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<td>BTEC501</td>
<td>Bioinformatics</td>
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<td>FDSC212</td>
<td>Biochemistry Laboratory</td>
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<td>MICR200</td>
<td>Laboratory Methods in Microbiology</td>
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<td>MICR230</td>
<td>Microbial World</td>
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<td>MICR338</td>
<td>Bacterial Molecular Genetics</td>
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<td>Cellular Regulation</td>
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<td>PLNT525</td>
<td>Advanced Micropropagation</td>
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<td>PLNT535</td>
<td>Plant Breeding</td>
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the remaining credits, if any, to be chosen from the Ecology Option or the General Complementary Course lists.

**General Complementary Courses:**

<table>
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<td>NUTR512</td>
<td>Herbs, Foods and Phytochemicals</td>
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<td>Orientation in Plant Science</td>
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<td>PLNT304</td>
<td>Biology of Fungi</td>
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<td>PLNT305</td>
<td>Plant Pathology</td>
<td>3</td>
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<td>PLNT310</td>
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<td>PLNT434</td>
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<td>PLNT450</td>
<td>Special Topics: Plant Science</td>
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<td>SOIL210</td>
<td>Principles of Soil Science</td>
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</tbody>
</table>

**PLANT SCIENCE MAJOR**

Academic Adviser: Professor J. Bede
E-mail: bede@macdonald.mcgill.ca

The Plant Science Major offers intensive training in agricultural plant science. Comprehensive studies are offered in all aspects of biology and production practices related to important crop plant species. Studies include laboratory, greenhouse, and field exposure relating to agronomic, horticultural, or field crop development, production and management.

Graduates are eligible to apply for membership in the Ordre des agronomes du Québec (OAQ) and the Agricultural Institute of Canada (AIC). Graduates rapidly find employment in agricultural industries, government services, extension, consulting, teaching, or go on to do postgraduate research.

**Required Courses:** 49 credits

**Complementary Courses:** 18 credits

**Electives:** Chosen in consultation with the Academic Adviser, to meet the minimum 90-credit requirement for the degree.

**CREDITS**

**Required Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEMA310</td>
<td>Statistical Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>AGEC200</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ANSC250</td>
<td>Principles of Animal Science</td>
<td>3</td>
</tr>
<tr>
<td>CELL204</td>
<td>Genetics</td>
<td>4</td>
</tr>
<tr>
<td>FDSC211</td>
<td>Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>MICR331</td>
<td>Microbial Ecology</td>
<td>3</td>
</tr>
<tr>
<td>PLNT211</td>
<td>Principles of Plant Science</td>
<td>3</td>
</tr>
</tbody>
</table>

McGill University, Undergraduate Programs 2004-2005

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To obtain a Minor in Agricultural Production, 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 8 credits may be counted for both the Major and the Minor programs. This restriction does not apply to elective courses in the Major program.

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 in 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. The Academic Adviser of the Agricultural Production Minor and the Academic Adviser of the Minor in their first year.

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 in 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.

Complementary Courses: 18 credits

at least one of:

- ABEN300 (3) Elements of Agricultural Engineering
- ENTO452 (3) Control of Insect Pests

A minimum of 3 credits selected from the following list:

- AGEC231 (3) Economic Systems of Agriculture
- AGEC320 (3) Economics of Agricultural Production
- AGEC331 (3) Farm Business Management
- AGEC350 (3) Agricultural Finance

plus a minimum of 12 credits selected from the course list given below:

- FDSC310 (3) Post Harvest Fruit and Vegetable Technology
- PLNT215 (1) Orientation in Plant Science
- PLNT220 (1) Introduction to Vascular Plants
- PLNT221 (1) Introduction to Fungi
- PLNT322 (3) Greenhouse Management
- PLNT331 (3) Field Crops
- PLNT341 (1) Horticulture - The Alliums
- PLNT342 (1) Horticulture - Cole Crops
- PLNT343 (1) Horticulture - Root Crops
- PLNT344 (1) Horticulture - Salad Crops
- PLNT345 (1) Horticulture - Solanaceous Crops
- PLNT346 (1) Horticulture - Temperate Fruits
- PLNT347 (1) Horticulture - Small Fruits
- PLNT348 (1) The Brassicas
- PLNT358 (3) Flowering Plant Diversity
- PLNT353 (4) Plant Structure and Function
- PLNT434 (3) Weed Biology and Control
- PLNT495 Seminar 1
- PLNT496 Seminar 2
- SOIL210 Principles of Soil Science
- SOIL315 Soil Fertility and Fertilizer Use

MINOR IN AGRICULTURAL PRODUCTION

Academic Adviser: Professor K. A. Stewart
E-mail: Katrine.Stewart@mcgill.ca

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 in 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.

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 8 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

Complementary Courses: 12 credits

Required Courses:

- AGEC250 (3) Principles of Animal Science
- ANSC450 (3) Dairy Cattle Production
- ANSC452 (3) Beef Cattle and Sheep Production
- ANSC454 (3) Swine Production
- ANSC456 (3) Poultry Production
- PLNT331 (3) Field Crops
- PLNT341 (1) Horticulture - The Alliums
- PLNT342 (1) Horticulture - Cole Crops
- PLNT343 (1) Horticulture - Root Crops
- PLNT344 (1) Horticulture - Salad Crops
- PLNT345 (1) Horticulture - Solanaceous Crops
- PLNT346 (1) Horticulture - Temperate Fruits
- PLNT347 (1) Horticulture - Small Fruits
- PLNT348 (1) The Brassicas

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 www.mcgill.ca/minerva; complete listings can be found in the Courses section of this Calendar.

7 Graduate Programs

Graduate work may be undertaken on the Macdonald Campus, through the Departments of Agricultural Economics, Animal Science, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences, and 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, Graduate Certificate in Biotechnology, and Doctor of Philosophy.

Information on these programs and related fellowships is available from the Student Affairs Office, Macdonald Campus of McGill University, Sainte-Anne de Bellevue, QC H9X3V9.

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

Farm Management and Technology Program
Faculty of Agricultural and Environmental Sciences
P.O. Box 204, Macdonald Campus of McGill
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, Quebec, H9X 3V9
Telephone: (514) 398-7814 Fax: (514) 398-7955
E-mail: fmt@macdonald.mcgill.ca Website: www.mcgill.ca/fmt

Director - Marcel J. Couture
8.1 Program – FMT

The Farm Management and Technology (FMT) program is a three-year academic and practical program 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 Québec.

The educational goals of the program are:
1. to make 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.

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 is spent on a farm other than the home farm where the student learns the many skills and encounters the many problems related to modern commercial agriculture. Students will prepare for this 13-week practicum through a one-week internship during both academic semesters of Year 1. During the second summer, students will be encouraged to acquire additional farm experience away from the home farm. This could be a farm enterprise or another field of activities in the agri-food sector. Students could also choose to spend their second summer on their home farm, where they would be responsible for data collection to be used in their Farm Project and the Agro-Environmental Fertilization Plan. The internships and practicums will enable the students to relate their academic work to the reality of farming.

Finally, courses in English, French, 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 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.

Note: Admission to this program is only in the Fall semester.

8.2 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.Q.
3. All candidates for admission must make arrangements to come to the Macdonald Campus for an interview prior to admission to the program.

Although it is not an entrance requirement, incoming students are strongly encouraged to acquire their driver’s permit (for cars and for farm equipment) before coming to Macdonald Campus. This is both for safety reasons, given that students begin working with farm equipment very early in the program, and because most farmers require that their employees and stagiaires know how to drive both passenger vehicles and farm equipment and possess an appropriate driver’s license.

8.3 Registration – FMT

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

Note: In normal circumstances, individual courses will not be offered with less than five registrants.

8.4 Program Outline

Administrative Unit

FMTP 001 Farm Practice 1
FMTP 011 Farm Practice 2
FMTP 012 Farm Practice 3
FMTP 077 Health and Farm Safety

Agricultural and Biosystems Engineering

FMTP 018 Building Maintenance
FMTP 024 Farm Building Planning
FMTP 014 Machinery Management
FMTP 004 Microcomputing
FMTP 027 Precision Farming
FMTP 021 Soil and Water Conservation
FMTP 003 Soil Preparation
FMTP 019 Tools and Machinery Maintenance

Agricultural Economics

FMTP 023 Agricultural Marketing
FMTP 002 Introduction to Economics
FMTP 010 Farm Business Management 1
FMTP 013 Farm Business Management 2
FMTP 022 Farm Business Management 3
FMTP 025 Farm Project
FMTP 026 Management of Human Resources

Animal Science

FMTP 005 Animal Anatomy and Physiology
FMTP 008 Introduction to Animal Science

English

FMTP 080 English Upgrading
FMTP 084 English for FMT
FMTP 081 Components of Discourse
FMTP 082 Literary Genres
FMTP 083 Literary Themes

French

FMTP 075 Langue française et communication
FMTP 076 French 2

Humanities

FMTP 085 Humanities 1: Knowledge
FMTP 086 Humanities 2: World Views
FMTP 087 Environmental and Organizational Issues

Natural Resource Sciences

FMTP 016 Agro-Environmental Fertilization Plan 1
FMTP 020 Agro-Environmental Fertilization Plan 2
FMTP 009 Soil Fertilization

Physical Education

FMTP 093 Health and Physical Education
FMTP 094 Physical Activity
FMTP 095 Active Living

Plant Science

FMTP 006 Agricultural Botany
FMTP 017 Pesticide Use

ELECTIVE PRODUCTION COURSES

Four production courses are offered 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

FMTP 028 Dairy Heifer Management
FMTP 029 Dairy Herd Management
FMTP 030 Swine and Poultry
FMTP 031 Beef and Sheep

Plant Science category

FMTP 034 Feed Crops
FMTP 035 Industrial Crops
FMTP 033 Greenhouse Crops
FMTP 032 Fruit and Vegetable Crops
COMPLEMENTARY COURSES *
Students must take the following complementary courses to meet the program requirements:

- FMTP 096  Forests, Forestry and Society
- FMTP 097  Landscape Design

* After consultation with their academic adviser, students can substitute complementary courses taken at another collegial institution.

COMPREHENSIVE ASSESSMENT
The objective of this examination is to ensure that students have attained the objectives and standards for every competency in the program. Successful completion of the Comprehensive Assessment is mandatory to obtain the D.E.C. The passing grade will be 60%. The mark stating that the student has successfully completed the Comprehensive Assessment will appear on the student’s transcript. The student who failed the comprehensive assessment will be offered the possibility of another try the following year.

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.Q. Students must take this examination on the date selected by the M.E.Q.

8.5 Academic Rules and Regulations – FMT

8.5.1 Sessional Dates
The number of teaching and examination days is set by the Ministère de l’Education 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.

8.5.2 Last Day for Withdrawal or Course Additions
The last day to make course registration changes for Fall term courses will be September 20.

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

8.5.3 Academic Standing
Attendance in class is compulsory. Students with an 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 semester 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.

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

8.5.5 Institutional Policy on the Evaluation of Student Achievement
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 judgement in a competent, just, and coherent fashion.

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

8.6 Fees and Expenses – FMT

8.6.1 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 printing, the fees were $684.35 for the fall semester and $531.00 for the winter semester.

* 2003-04 fees, subject to change without notice.

8.6.2 Textbooks and Supplies
The cost of textbooks and supplies is estimated at $200.00 per semester.

8.6.3 Financial Assistance
A limited number of loans are granted on the basis of financial need to full-time students who maintain satisfactory academic standing, however, all applicants for McGill aid must apply for maximum government aid or other assistance for which they are eligible.

Applicants must arrange for an interview with a Student Aid Counsellor. During the academic year, the Counsellor visits Macdonald Campus on a regular basis to help students with financial difficulties.

For more information see “Scholarships and Financial Aid” on page 53 or contact the Coordinator at the Student Services Centre, telephone (514) 398-7992. Applications for McGill loans may be obtained from the Coordinator.

8.7 Residence Accommodation – FMT
The Laird Hall Residence has a capacity for more than 210 students. It accommodates undergraduate, graduate, and Farm Management and Technology Program students on the Macdonald Campus. For more information, see “University Residences – Macdonald Campus” on page 57.

9 Instructional Staff
Alli, Intez; B.Sc. (Guyana), M.Sc., Ph.D. (McG.); Professor of Food Science and Agricultural Chemistry
Baker, Laurence; B.B., M.Sc. (Man.), Ph.D. (McG.); Associate Professor of Agricultural Economics
Barrington, Suzelle; B.Sc. (Agr.Eng.), Ph.D. (McG.); Professor of Bioresource Engineering
Bede, Jacqueline; B.Sc. (Calg.), M.Sc., Ph.D. (Tor.); Assistant Professor of Plant Science
Beech, Robin N.; B.Sc. (Nottingham), Ph.D. (Edinburgh); Associate Professor of Parasitology
McGill University, Undergraduate Programs 2004-2005

Agricultural and Environmental Sciences – Instructional Staff

Begg, Caroline; B.Sc.(Agr.)(McG.), M.Sc.(Sask.), Ph.D.(McG.); Faculty Lecturer, Department of Plant Science

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

Blackwood, A. Clark; B.Sc., M.Sc.(Alta.), Ph.D.(Wis.), F.R.S.C.; Emeritus Professor of Microbiology

Bonnell, Robert B.; B.Sc.(C'dia), B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.); Associate Professor of Bioresource Engineering (Brace Associate Professor)

Bordignon, Vilceu; Ag.Tec.(EAPC), D.V.M., M.Sc., Ph.D.; Assistant Professor of Animal Science


Brown, Peter G.; B.A.(Haverford), M.A., Ph.D. (Columbia); Professor of Natural Resource Sciences (joint appoint. with Geography and McGill School of Environment)

Buckland, Roger B.; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Maryland); Professor of Animal Science

Buddle, Christopher; B.Sc.(Guelph), Ph.D.(Alta.); Assistant Professor of Forest Insect Ecology

Busszard, Deborah J.; B.Sc.(Bath), Ph.D.(London); Dean and Professor of Horticulture

Chadee, Kris; B.Sc.(Wpg.), M.Sc.(Manit.), Ph.D.(McG.); Associate Professor of Parasitology

Chan, Laurie H.M.; B.Sc., M.Phil.(Hong Kong), Ph.D.(London); Associate Professor of Dietetics and Human Nutrition (NSERC Northern Research Chair)

Chavez, Eduardo R.; Agr.Eng.(Chile), M.Sc., Ph.D.(Calif.); Professor of Animal Science

Côté, Benoît; B.Sc., Ph.D.(Laval); Associate Professor of Woodland Resources, Chair of Department of Natural Resource Sciences

Couture, Marcel J.; B.Sc.(Agr.)(McG.), M.Sc.(Guelph); Associate Professor of Wildlife Biology

de Blois, Sylvie; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.), Assistant Professor of Plant Science and McGill School of Environment

Donnelly, Danielle J.; B.Sc.(Agr.)(McG.), M.Sc.(U.B.C.), Ph.D.(S.Fraser); Associate Professor of Plant Science

Downey, Bruce R.; D.V.M.(Tor.), Ph.D.(McG.); Professor of Animal Science; Director, Bélair's Research Centre

Driscoll, Brian T.; B.Sc., Ph.D.(McMaster); Associate Professor of Microbiology

Dunphy, Gary B.; B.Sc.(U.N.B.), M.Sc., Ph.D.(Mem.); Associate Professor of Entomology

Dutilleul, Pierre R.; B.Sc., Ph.D.(Belgium); Professor of Statistics

Egeland, Grace M.; B.A.(Luther), Ph.D.(Pittsburg); Associate Professor of Nutrition and Canada Research Council Chair

Ellyett, William R.; B.A.(Sir G. Wm's), B.Ed.(P.E.) (McG.); Faculty Lecturer, Farm Management and Technology Program and Director of Athletics

Enright, Peter; B.Sc.(Agr. Eng.), M.Sc.(McG.); Faculty Lecturer, Bioresources Engineering


Faubert, Gaétan M.; B.Sc.(Sherbrooke), M.Sc.(Mt.), Ph.D.(McG.); Professor of Parasitology

Fortin, Marc G.; B.Sc., M.Sc.(Laval), Ph.D.(McG.); Associate Professor of Plant Science and Chair of Department (William Dawson Scholar)

Fyles, James W.; B.Sc., M.Sc.(Vic.), Ph.D.(Alta.); Professor of Woodland Resources (Tomlinson-Fowler Professor of Forest Ecology)

Georges, Elias; B.Sc., Ph.D.(McG.); Associate Professor of Parasitology

Gougeon, Rejeanne; B.Sc.(Laval), M.Sc.(Col.), Ph.D.(Montr.); Assistant Professor (PT) of Dietetics and Human Nutrition

Grant, William F.; B.A., M.A.(McM.), Ph.D.(Virginia), F.L.S.; Emeritus Professor of Genetics

Gray-Donald, Katherine; B.Sc., Ph.D.(McG.); Associate Professor and Director of School of Dietetics and Human Nutrition

Hayes, J. Flannan; B.Agr.Sc., M.Agr.Sc.(Dub.), Ph.D.(N.C.S.I.); Professor of Animal Science, Acting Chair of Animal Science

Hendershot, William H.; B.Sc.(Tor.), M.Sc.(McG.), Ph.D.(U.B.C.); Associate Dean (Academic), Professor of Soil Science

Henning, John C.; B.Sc., Ph.D.(Guelph); Associate Professor of Agricultural Economics and Chair of Department

Humphries, Murray; B.Sc.(Manit.), Ph.D.(Alta.); Assistant Professor of Wildlife Biology

Ismail, Ashraf A.; B.Sc., Ph.D.(McG.); Associate Professor of Food Science and Agricultural Chemistry

Jabaji-Hare, Suha; B.Sc.(Guelph), Ph.D.(Waterloo); Associate Professor of Plant Science

Jacobs Starkey, Linda; B.Sc.(H.Ec.)(Mt.St.Vin.), M.Sc., Ph.D.(McG.), RD, FDC; Faculty Lecturer, School of Dietetics and Human Nutrition

Jardim, Armando; B.Sc., Ph.D.(U.Vic.); Assistant Professor of Parasitology

Johns, Timothy A.; B.Sc.(McM.), M.Sc.(U.B.C.), Ph.D.(Mich.); Professor of Dietetics and Human Nutrition

Jones, Peter J.; B.Sc.(U.B.C.), M.Sc.(U.B.C.), Ph.D.(Tor.); Professor of Dietetics and Human Nutrition

Kavanagh, Michael J.E.; B.Sc.(Agr.)(McG.); Faculty Lecturer, Farm Management and Technology Program

Kermasha, Selim; B.Sc.(Baghdad), D.Sc.(Nat. Polytch.Inst., Lorraine(Nancy)); Associate Professor of Food Science and Agricultural Chemistry

Knowles, Roger; B.Sc.(Bim.), Ph.D., D.Sc.(London), F.R.S.C.; Emeritus Professor of Microbiology

Kok, Robert; B.E.Sc., Ph.D.(W.Ont.); Professor of Bioresources Engineering and Chair of Department

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

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

Kuhnlein, Harriet V.; B.S.(Penn. St.), M.S.(Oregon), Ph.D.(Calif.Berkeley); Professor of Dietetics and Human Nutrition

Kuhnlein, Urs; B.Sc.(Fed. Inst. of Tech., Zurich), Ph.D.(Geneva); Professor of Animal Science

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

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

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

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

MacLeod, Robert A.; B.A., M.A.(U.B.C.), Ph.D.(Wis.), F.R.S.C.; Emeritus Professor of Microbiology

Madramootoo, Chandra; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.); Professor of Bioresources Engineering and Director, Brace Centre for Water Resources Management (James McGill Professor)

Marshall, E. Joan; B.A.(McG.), M.A.(Toronto), Ph.D.(McG.); Adjunct Professor of Agricultural Economics

Marshall, William D.; B.Sc.(Un.B.), Ph.D.(Mem.); Professor of Food Science and Agricultural Chemistry and Chair of Department

Mather, Diane E.; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Guelph); Associate Dean (Research) and Professor of Plant Science

McClement, Katherine; B.A.(Wellesley), B.Sc.(Agr.)(McG.); Faculty Lecturer, Department of Plant Science

McKyes, Edward; B.Eng., M.Eng., Ph.D.(McG.); F.C.S.A.E.; Professor of Bioresources Engineering
Mehuys, Guy R.; B.Sc., Ing. Agron. (Guelph), Ph.D. (Calif.); Associate Professor of Soil Science
Moffat, Donald: B.Ed. (McG.), Grad Dip in Sports Admin. (Ottawa); Faculty Lecturer (PT), Farm Management and Technology Program and Instructional Coordinator of Athletics
Moh, Ka-Yan Diana; B.Math., B.E.S. (Waterloo), M.Pl. (Queen’s), Ph.D. (Toronto); Assistant Professor of Agricultural Economics (joint appoint. with Geography)
Molé, Christian: B.Sc. (Guelph), B.Sc. (Ottawa); Faculty Lecturer, Farm Management and Technology Program
Monardez, Humberto G.; B.Sc. (Concepcion, Chile), M.Sc., Ph.D. (McG.); Associate Professor of Animal Science
Moxley, John E.; B.Sc. (McG.), Ph.D. (C’nell), F.A.I.C.; Emeritus Professor of Animal Science
Mustafa, Arif F.; B.Sc., M.Sc. (Khartoum), Ph.D. (Sask.); Assistant Professor of Animal Science
Ngadi, Michael O.; B.Eng. (Nigeria), M.A.Sc., Ph.D. (TUNS); Assistant Professor of Bioresource Engineering
Neillson, Helen R.; M.B.E., B.H.S., M.Sc. (McG.), P.Dt.; Emeritus Professor of Food Science
Neilligan, Derek; B.Sc., M.Sc. (C’dia); Faculty Lecturer, Natural Resource Sciences.
Ng Kiwi Hang, Kwe Fane; B.Sc. (Agr.), M.Sc., Ph.D. (McG.); Professor of Animal Science
Niven, Donald F.; B.Sc., Ph.D. (Aber.); Associate Professor of Microbiology
Norris, Eric R.; B.S.A. (Tor.), M.Sc. (Guelph), Ph.D. (Mich. St.); F.C.S.A.E.; Associate Dean (Student Affairs) and Associate Professor of Bioresource Engineering
Phillip, Leroy E.; B.Sc. (Agr.), M.Sc. (McG.), Ph.D. (Guelph); Associate Professor of Animal Science
Phillips, Sandra; B.A. (Queen’s), B.Sc. (F.Sc.), M.Sc. (McG.); Faculty Lecturer (Stage), School of Dietetics and Human Nutrition
Plourde, Hugues; B.Sc. (Nutr. Sci.) (McG.), M.Sc. (Nutr. Sci. (Montr.); Faculty Lecturer, School of Dietetics and Human Nutrition
Prashar, Shiv O.; B.Tech., M.Tech. (Punjab), Ph.D. (U.B.C.); Professor of Bioresource Engineering (James McGill Professor)
Prichard, Roger K.; B.Sc., Ph.D. (N.S.W.); Professor, Institute of Parasitology (James McGill Professor)
Raghavan, G.S. Vijaya; B.Eng. (Bangalore), M.Sc. (Guelph), Ph.D. (Colo. St.); F.A.S.A.E., F.C.S.A.E., F.A.S.M.E.; Professor of Bioresource Engineering (James McGill Professor)
Ramassamy, Hosahalli; B.Sc. (Bangalore), M.Sc. (Mysore), M.Sc., Ph.D. (U.B.C.); Professor of Food Science and Agricultural Chemistry
Rau, Manfred E.; B.Sc., Ph.D. (W. Ont.); Associate Professor of Parasitology in Department of Natural Resource Sciences
Ribeiro, Paula A.; B.Sc., Ph.D. (York); Associate Professor of Parasitology
Ritter, Heidi; B.Sc., M.Sc. (Nutr. Sci.) (McG.); Faculty Lecturer, School of Dietetics and Human Nutrition
Rose, Maureen; B.Sc. (F.Sc.), M.Ed., Ph.D. (McG.); Faculty Lecturer (Stage), School of Dietetics and Human Nutrition
Routhier Joane; B.Sc. (F.Sc.) (McG.); Faculty Lecturer, School of Dietetics and Human Nutrition
Ruiz-Feria, Ciro; B.Sc. (Autonoma Chapingo, Mexico), M.Sc. (Texas A&M), Ph.D. (Arkansas); Assistant Professor of Animal Science
Savard, Marielle; B.Sc. (Agr.), M.Sc. (McG.) Ph.D. (UBC), Faculty Lecturer of Agricultural Economics
Sackston, W. E.; B.S.A. (Man.), M.Sc. (McG.), Ph.D. (Minn.), F.C.P.S., F.A.P.S.; Emeritus Professor of Plant Science
Schaller, Donna; B.Sc., M.Sc. (Nutr. Sci.) (McG.); Faculty Lecturer, School of Dietetics and Human Nutrition
Schuepp, Peter H.; Dipl. Sc. Nat. (Zurich), Ph.D. (Tor.); Emeritus Professor of Agricultural Physics
Scott, Marilyn E.; B.Sc. (U.N.B.), Ph.D. (McG.); Associate Professor of Parasitology
Seguin, Philippe; B.Sc. (Agr.), M.Sc. (McG.), Ph.D. (Minn.); Assistant Professor of Plant Science
Sheppard, John D.; B.Sc. (Eng.), (Guelph), M.E., Sc. (W. Ont.), Ph.D. (McG.); Associate Professor of Bioresource Engineering
Simpson, Benjamin K.; B.Sc. (Univ. Sc. & Tech., Kumasi), Ph.D. (Memorial); Associate Professor of Food Science and Agricultural Chemistry
Smith, Donald L.; B.Sc., M.Sc. (Acad.), Ph.D. (Guelph); Professor of Plant Science
Smith, James P.; B.Sc., M.Sc. (Strathclyde), Ph.D. (Alta.); Professor of Food Science and Agricultural Chemistry
Smith, James M.; B.Sc. (NEPoly.), Ph.D. (McG.); Faculty Lecturer, Institute of Parasitology
Spithill, Terence W.; B.Sc., Ph.D. (Monash U., Australia); Professor of Parasitology, Director Institute of Parasitology and Canada Research Chair in Immunoparasitology
Steppler, Howard A.; B.S.A. (Man.), M.Sc., Ph.D. (McG.); F.A.I.C.; Emeritus Professor of Agronomy
Stevenson, Mary M.; B.A. (Hood College), M.S., Ph.D. (Catholic University of America); Associate Member (PT), Institute of Parasitology
Stewart, Katrine A.; B.Sc. (Agr.) (U.B.C.), Ph.D. (Reading); Associate Professor of Horticulture
Stewart, Robin K.; B.Sc. (Agr.), Ph.D. (Glas.); Emeritus Professor of Entomology
Stickaman, Ian; B.Sc. (Tor.), M.Sc., Ph.D. (Queen’s); Assistant Professor of Agrometeorology
Stromvik, Martina V.; B.A., M.S. (Stockholm), Ph.D. (U.N.B.); Assistant Professor of Plant Science
Thibault, Louise; B.Sc., M.Sc., Ph.D. (Laval); Associate Professor of Dietetics and Human Nutrition
Thomassian, Paul; B.Sc. (Agr.) (McG.), M.S., Ph.D. (Hawaii); Associate Professor of Agricultural Economics
Tilman, Rodger D.; B.Sc. (McG.), M.Sc. (Bishop’s), Ph.D. (U.N.B.); Fellow A.O.U., Associate Professor of Wildlife Biology and Associate Director, Avian Science and Conservation Centre
van de Voort, Frederik R.; B.Sc., M.Sc., Ph.D. (U.B.C.); Professor of Food Science and Agricultural Chemistry
Vickery, Vernon R.; B.Sc. (Agr.), M.Sc., Ph.D. (McG.); Emeritus Curator of the Lyman Entomological Museum and Research Laboratory
Wade, Kevin; B.Agr. Sc., M.Agr.Sc. (Dublin), Ph.D. (C’nell); Associate Professor of Animal Science
Wang, Ning; B.Eng. (E.E.), M.Eng. (I.E.) (A.I.T.), M.Sc. (E.E.), Ph.D. (Kans. St.); Assistant Professor of Bioresource Engineering
Waterway, Marcia J.; B.A. (Calvin Coll.), 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. (U.B.C.), Ph.D. (Sask.); Professor of Agronomy and Director, Phytorum/Biopesticide Quarantine Facility
Wees, David D.; B.Sc. (Agr.), M.Sc. (McG.); Faculty Lecturer, Department of Plant Science
Whalen, Joann; B.Sc. (Agr.) (Dal. – NSAC); M.Sc. (McG.), Ph.D. (Ohio St.); Assistant Professor of Soil Science
Wheeler, Terry; B.Sc. (Memorial), M.Sc., Ph.D. (Guelph); Associate Professor of Entomology and Director of the Lyman Entomological Museum and Research Laboratory
Whitney, Lyle G.; B.Sc. (Regina), Ph.D. (Wat.); Associate Professor of Microbiology
Wykes, Linda; B.Sc., M.Sc., Ph.D. (Toronto); Associate Professor of Dietetics and Human Nutrition (William Dawson Scholar)
Yale, Jean Fauconis; M.D. (Sherbrook); Associate Member, School of Dietetics and Human Nutrition
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
Zhao, Xin; B.Sc., M.Sc. (Nanjing), Ph.D. (C’nell); Associate Professor of Food Science and Chair of Department (William Dawson Scholar)
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## 1. The School

### 1.1 Location

For advising, contact:

Program Coordinator, Mr. Peter Barry
Telephone: (514) 398-4306
Fax: (514) 398-1643
E-mail: info.mse@mcgill.ca

Website: www.mcgill.ca/mse

**Downtown Campus**

3534 University Street
Montreal, QC H3A 2A7
Telephone: (514) 398-2827
Fax: (514) 398-1643

**Macdonald Campus**

Rowles House
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Telephone: (514) 398-7559
Fax: (514) 398-7846

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### 1.2 Administrative Officers

Deborah Buszard; B.Sc.(Bath), Ph.D.(Lond.)
Dean, Faculty of Agricultural and Environmental Sciences

John Hall; B.A.(Oxford), M.A.(Penn St.), Ph.D.(LSE)
Dean, Faculty of Arts

Alan G. Shaver; B.Sc.(Car.), Ph.D.(M.I.T.)
Dean, Faculty of Science

Nigel Roulet; B.Sc., M.Sc.(Trent), Ph.D.(McM.)
Director

Peter Barry; B.Sc.(C'dia), M.Sc.(McG.)
Program Coordinator

### 1.3 Academic Staff

**Professor**

Peter G. Brown; B.A.(Haverford), M.A., Ph.D.(Columbia)
(joint appoint. with Geography and Natural Resource Sciences)

**Associate Professor**


**Assistant Professors**

Sylvie de Blois; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Montr.) (joint appoint. with Plant Science)

Colin Duncan; B.A.(Queen’s), M.A., Ph.D.(York)

Jaye Ellis; B.A.(Calg.), LL.B., B.C.L.(McG.), LL.M.(U.B.C.)
(joint appoint. with Law)

Frédéric Fabry; B.Sc., M.Sc., Ph.D.(McG.) (joint appoint. with Atmospheric and Oceanic Sciences)

Rebecca Hardin; B.A. (Brown), M.Phil., Ph.D.(Yale) (joint appoint. with Anthropology)

Garry Peterson; B.Sc. (Waterloo), M.Sc., Ph.D. (Florida)
(joint appoint. with Geography)

Anthony Ricciardi; B.Sc.(Agr.), M.Sc., Ph.D.(McG.)
(joint appoint. with Redpath Museum)

Raja Sengupta; B.Sc. (Bombay), M.Sc.(I.I.T), Ph.D. (Illinois)
(joint appoint. with Geography)

Lisa Siders; B.A., M.A., Ph.D.(Indiana) (joint appoint. with Religious Studies)

**Associate Members**

Agricultural and Biosystems Engineering: Suzelle Barrington, Robert Bonnell

Agricultural Economics: John Henning

Anthropology: John Galaty, Colin H. Scott

Architecture: Avis Freidman

Atmospheric and Oceanic Sciences: Charles Lin

Avian Science and Conservation Centre: David Bird

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Chemistry: Bill Chan

Civil Engineering and Applied Mechanics: Paddy O’Reilly

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**Associate Professor**


**Assistant Professors**

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Colin Duncan; B.A.(Queen’s), M.A., Ph.D.(York)

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Agricultural and Biosystems Engineering: Suzelle Barrington, Robert Bonnell

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Atmospheric and Oceanic Sciences: Charles Lin

Avian Science and Conservation Centre: David Bird

Biology: Catherine Potvin

Chemistry: Bill Chan

Civil Engineering and Applied Mechanics: Paddy O’Reilly
1.4 Creation of the School

McGill’s Faculties of Agricultural and Environmental Sciences, Arts, and Science have forged a unique approach to the study of environmental relationships through the inter-faculty, trans-disciplinary McGill School of Environment (MSE). The growth of technology, globalizing economies, and rapid increase in population have had significant environmental impacts. These changes have been accompanied by an increasing awareness of the relationship between human activity and the environment. Environmental problems range from local and short-term degradation through to the perturbation observed over the entire globe and for many years. The importance of human-environment relations for environmental and social well-being, and the complexity and conflict involved in environmental analysis and decision making, requires a depth and breadth of knowledge. The MSE has developed its programs with the approach of introducing students to a broad range of ideas early in the program to provide a foundation and an openness upon which more specialized, disciplinary knowledge can be built.

1.5 Goals of the School

The McGill School of Environment has the following goals:

• to provide an exciting and rigorous program that allows for intellectual growth in the comprehension of environmental systems or components of the environment;

• to impart to students an understanding of current environmental concerns;

• to help students gain an understanding of the complexity and conflicts that underlie most environmental problems; and

• to give students an opportunity to apply their knowledge in the analysis of specific, contemporary environmental issues.

2 Admission, Registration and Regulations

2.1 Admission

Students may be admitted to a B.A., B.Sc.(Ag.Env.Sc.), or a B.Sc. program, offered by the MSE on the University’s two campuses: the Macdonald Campus and the Downtown Campus. They register as students within their Faculty of admission and are governed by all rules and regulations of that Faculty.

Students who have already completed a Bachelor or an equivalent degree may be admitted to the Diploma in Environment through any of the three MSE Faculties: Agricultural and Environmental Sciences, Arts, and Science. They register as students within their Faculty of admission and are governed by all rules and regulations of that Faculty relative to the Diploma. Please see “Admission Requirements” on page 13.

2.2 Degree Requirements

To be eligible for a B.A. degree, students must fulfill all the Faculty and program requirements as indicated under Arts “Faculty Degree Requirements” on page 48.

To be eligible for a B.Sc.(Ag.Env.Sc.) degree, students must fulfill all the Faculty and program requirements as indicated under Agricultural and Environmental Sciences “Faculty Information and Regulations” on page 304.

To be eligible for a B.Sc. degree, students must fulfill all the Faculty and program requirements as indicated under Science “Faculty Degree Requirements” on page 246.

To be eligible for the Diploma in Environment, students must fulfill all program requirements as specified in section 8 “Diploma in Environment”.

2.3 Important Information about Program Selection

The MSE uses students’ program selections to identify which students are in the School’s major programs (and, by extension, which students are in the McGill Environmental Students’ Society).

Students in U1 who are unsure of the Domain they want to pursue may register in the Major or Faculty program in Environment without picking a Domain. However, they must pick a Domain in their U2 year.

Note: Students must select a Domain in order to graduate; they cannot graduate without choosing a Domain.

(None of the above applies to students in the Minor or Diploma Programs.)

2.4 Course Numbering System at McGill

The first four characters of a McGill course number refer to the unit offering the course. For example, MSE courses begin with the Subject Code ENVR (formerly 170-). The three numbers following the Subject Code refer to the course itself, with 200-level courses usually taken by U1 students, 300-level by U2 students, and 400-level by U3 students. Senior undergraduate students can also take some 500-level courses, but they should limit themselves to no more than one per term.

2.5 Examination Regulations

Regulations concerning the method of evaluation of any course (including those governing supplemental examinations) are those of the Faculty that offers the course. Students should note that supplemental exams are available for courses taught in the Faculties of Arts, of Science, and of Education, but not for courses taught in the Faculties of Agricultural and Environmental Sciences, of Engineering, or of Management.

Note: All ENVR courses, regardless of where they are taught, are offered only by the Faculty of Science.

2.6 Courses outside the Student’s Faculty

Students in the School’s B.A., B.Sc., and B.Sc.(Ag.Env.Sc.) programs may take courses outside their Faculty according to the regulations of their Faculty of admission. These regulations are not identical:

• Arts students, see Faculty of Arts “Courses outside the Faculties of Arts and of Science” on page 50.

• Science students, see Faculty of Science “Courses outside the Faculties of Arts and Science” on page 248.

• Agricultural and Environmental Sciences students, see Faculty of Agricultural and Environmental Sciences “Minimum Credit Requirement” on page 355.

• Faculty of Science students in particular should be aware that some courses are restricted and cannot be taken for credit. See the Science Student Affairs Website at www.mcgill.ca/artscisao. Check under Departmental Stu-
3 Programs Offered

The McGill School of Environment has developed five programs which are offered on the Downtown and Macdonald campuses. These programs strive to offer the flexibility necessary to deal with the environment through a set of core courses that provide the general knowledge base of the program combined with a progressive series of courses in a trans-disciplinary area of environmental specialization, referred to as a Domain.

The programs are designed to prepare students for further study in environment or discipline-based graduate programs, and for employment in industry, government, and education.

The MSE offers five options for students interested in pursuing environmental studies.

1. **A Minor in Environment** is open to all undergraduate students.
2. **A Faculty Program in Environment leading to a B.A** is open to students meeting the entrance requirements of the Faculty of Arts.
3. **A Major in Environment leading to a B.Sc.(Ag.Env.Sc.)** is open to students meeting the entrance requirements of the Faculty of Agricultural and Environmental Sciences.
4. **A Major in Environment leading to a B.Sc.** is open to students meeting the entrance requirements of the Faculty of Science.
5. **A Diploma in Environment** is available only to students who have already completed a Bachelor or an equivalent degree, and who wish to return to university for further undergraduate study. The Diploma is offered by all three MSE Faculties: Agricultural and Environmental Sciences, Arts, and Science.

4 Minor in Environment

The Minor in Environment is intended to complement an expertise obtained through a Major, Major Concentration or a Faculty Program offered by an academic unit other than the MSE. Students taking the Minor in Environment are exposed to different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie environmental problems.

Students, after consulting with their adviser in their major program or concentration and the MSE Program Coordinator, can declare their intention to do a Minor in Environment.

To obtain a Minor in Environment, students must:

- a. register for the Minor on-line, using Minerva;
- b. submit their program of courses already taken and to be taken for the Minor in Environment to the MSE Program Coordinator for approval;
- c. pass all courses counted towards the Minor with a grade of C or higher;
- d. complete 18 credits from the courses listed below not otherwise counted towards the student’s Major program or concentration or a second Minor program; and
- e. ensure that all the credits specified in (c) above are taken outside the discipline or field of the student’s Major program or concentration.

4.1 Minor Concentration in Environment

This 18-credit Minor is intended for Arts students in the multi-track system.

Adviser: Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306

**Complementary Courses** (18 credits)

12 credits selected from the MSE core courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV200</td>
<td>The Global Environment</td>
</tr>
<tr>
<td>ENV201</td>
<td>Society and Environment</td>
</tr>
<tr>
<td>ENV202</td>
<td>The Evolving Earth</td>
</tr>
<tr>
<td>ENV203</td>
<td>Knowledge, Ethics and Environment</td>
</tr>
<tr>
<td>ENV400</td>
<td>Environmental Thought</td>
</tr>
</tbody>
</table>

6 credits in environmentally related subjects selected with the approval of the program adviser, at least 3 credits must be in natural sciences.

A list of suggested courses is available on the MSE website in “Undergraduate Programs: Minor”. Students are also encouraged to examine the course lists of the various Domains in the Environment Program on the next few pages of the Calendar for courses which interest them.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

4.2 Minor in Environment

This 18-credit Minor is intended for Science and Agricultural and Environmental Science students, but is open to students from other faculties as well, except Arts.

Adviser: Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306

**Complementary Courses** (18 credits)

12 credits selected from the MSE core courses:

<table>
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<tbody>
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<td>ENV200</td>
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<td>ENV400</td>
<td>Environmental Thought</td>
</tr>
</tbody>
</table>

6 credits in environmentally related subjects selected with the approval of the program adviser, at least 3 credits must be in social sciences.

A list of suggested courses is available on the MSE website in “Undergraduate Programs: Minor”. Students are also encouraged to examine the course lists of the various Domains in the Environment Program on the next few pages of the Calendar for courses which interest them.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

5 B.A. Faculty Program in Environment

The B.A. Faculty Program has two components: Core and Domain. Students follow three steps in their degree program.

1. **Core**: The Core consists of four introductory courses and one intermediate-level course where students are exposed to the different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie most environmental problems. Through the Core program students go beyond the confines of their individual views of environment.
2. **Domain:** Domains provide a trans-disciplinary study of a particular theme or component of the environment.

3. **Senior Core and Research:** In the two senior courses of the Core, students will apply the general and specialized knowledge that they have gained in the program to the analysis of some specific, contemporary environmental problems.

To obtain a B.A. Faculty Program in Environment students must:

a. register in a Domain on-line, using Minerva;

b. satisfy the co-/ prerequisites for the program (calculus and a basic science course);

c. pass all courses counted towards the Faculty Program with a grade of C or higher;

d. confirm that their course selection satisfies the required components of the MSE Core and their chosen Domain, and that the complementary courses are approved courses in their chosen Domain; and

e. fulfill all Faculty requirements as specified for the B.A. in the Arts “Faculty Degree Requirements” on page 48, which include meeting the minimum credit requirement as specified in their letter of admission.

**B.A. FACULTY PROGRAM IN ENVIRONMENT** (54 credits)

The B.A. Faculty Program requires, as either a pre- or corequisite for the first year of the program:

3 credits of calculus:
- MATH139 Calculus
  - or MATH140 Calculus 1
  - or equivalent (e.g., CEGEP objective 00UN)

3 credits of basic science chosen from:
- BIOL111 Principles: Organismal Biology (required for the 3 credits of basic science chosen from:
  - MATH139 Calculus (4 credits)
  - or MATH140 Calculus 1
  - or equivalent (e.g., CEGEP objective 00UN)

**Core: Required Courses (18 credits)**

The Core courses are listed below in the Domain descriptions.

**Core: Complementary Course – Senior Research Project (3 credits)**

The research courses are listed in the Domain descriptions.

**Domain (33 credits)**

one MSE Domain selected from those available to students in the B.A. Faculty program.

Currently available:
- Ecological Determinants of Health in Society
- Economics and the Earth’s Environment
- Environment and Development

Each Domain has different requirements which are listed below. Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

5.1 **Ecological Determinants of Health in Society Domain**

This Domain (54 credits including Core) is open only to students in the B.A. Faculty Program in Environment.

Adviser: Professor Tim Johns
E-mail: johns@mcdonald.mcgill.ca
Telephone: (514) 398-7847

An understanding of the interface between human health and environment depends not only on an appreciation of the biological and ecological determinants of health, but equally on an appreciation of the role of social sciences in the design, implementation, and monitoring of interventions. Demographic patterns and urbanization, economic forces, ethics, indigenous knowledge and culture, and an understanding of how change can be effected are all critical if we are to be successful in our efforts to assure health of individuals and societies in the future. Recognizing the key role that nutritional status plays in maintaining a healthy body, and the increasing importance of infection as a health risk linked intimately with the environment, this domain prepares students to contribute to the solution of problems of nutrition and infection by tying the relevant natural sciences to the social sciences.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

**Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)**

**Prerequisite or Corequisite Courses for Program**
- MATH139 (4 credits)
  - or MATH140 (3 credits)
  - Calculus 1
  - or equivalent (e.g., CEGEP objective 00UN)
- BIOL111 (3 credits)
  - Principles: Organismal Biology
  - or AEBI120 (3 credits)
  - General Biology (M)
  - or equivalent (e.g., CEGEP objective 00UK or equivalent)

**NOTE:** Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Program prerequisites or co-requisites listed above.

**Core: Required Courses (18 credits)**
- ENVR200 (3 credits)
  - The Global Environment
- ENVR201 (3 credits)
  - Society and Environment
- ENVR202 (3 credits)
  - The Evolving Earth
- ENVR203 (3 credits)
  - Knowledge, Ethics and Environment
- ENVR301 (3 credits)
  - Environmental Research Design
- ENVR400 (3 credits)
  - Environmental Thought

**Core: Complementary Course – Senior Research Project (3 credits)**
- AGRIS19 (6 credits)
  - Sustainable Development Plans (in Barbados)
- ENVR401 (3 credits)
  - Environmental Research
- ENVR451 (6 credits)
  - Research in Panama (in Panama)
- ENVR466 (6 credits)
  - Research in Atlantic Canada (at Bay of Fundy)

*Only 3 credits will be applied to the program; extra credits will count as electives.*

**Domain: Required Courses (6 credits)**
- PARA410 (3 credits)
  - Environment and Infection (M)
- SOC1234 (3 credits)
  - Population and Society

**Domain: Complementary Courses (27 credits)**

12 credits of Fundamentals (maximum 3 credits from any one category):
- Health and Pollution
  - ANTH277 (3 credits)
  - Medical Anthropology
- NRSC333 (3 credits)
  - Physical and Biological Aspects of Pollution (M)
- Economics
  - AGE200 (3 credits)
  - Principles of Microeconomics (M)
- ECON208 (3 credits)
  - Microeconomic Analysis and Applications
- Nutrition
  - NUTR200 (3 credits)
  - Contemporary Nutrition
  - NUTR207 (3 credits)
  - Nutrition and Health (M)
- Statistics
  - AEMA310 (3 credits)
  - Statistical Methods 1 (M)
  - MATH203 (3 credits)
  - Principles of Statistics
- SOC1230 (3 credits)
  - Statistics in Social Research
  - AEMA310 (3 credits)
  - Principles of Statistics
- SOC390 (3 credits)
  - Statistics in Social Research
  - or equivalent

9 credits from List A (maximum 3 credits from any one category):
- Hydrology and Climate
  - ABEN217 (3 credits)
  - Hydrology and Water Resources (M)
- GEOG321 (3 credits)
  - Climatic Environments
- GEOG322 (3 credits)
  - Environmental Hydrology
This Domain educates students in the fundamentals of economics and Earth sciences. The fundamentals of economics are provided, as is their application to the effects of economic choices on Earth’s environment. Examples of these applications include the economic effects of public policy towards resource industries and methods of waste disposal, and the potential effects of global warming on the global economy. Students also learn of minerals, rocks, soils, and waters which define much of Earth’s environment and how these materials interact with each other and with the atmosphere. Courses in specific subdisciplines of Earth sciences combined with courses presenting a global vision of how the Earth and its environment operate provide the student with the necessary knowledge of geologic processes. Examples of this knowledge include the effects of mineral and energy extraction on the environment and how industrial waste interacts with solids and liquids in the environment. The Earth science and economics studies merge in the final year when the students apply what they have learned in the Domain to current environmental issues.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Prerequisite or Corequisite Courses for Program
3 credits of calculus:
MATH139 Calculus or MATH140 Calculus 1 or equivalent (e.g., CEGEP objective 00UN)

3 credits of basic science chosen from:
BIOL111Principles: Organismal Biology or CHEM110 General Chemistry 1 or PHYS101 Introductory Physics - Mechanics or their equivalents (e.g., CEGEP objectives: Biology 00UK, Chemistry 00UL, Physics 00UR).

NOTE: Students are required to take a maximum of 34 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits)
AGRI15 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama (in Panama)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (16 credits)
ECO1230D1 (3) Microeconomic Theory
ECO1230D2 (3) Microeconomic Theory
ECO405 (3) Natural Resource Economics
EPSC210 (3) Introductory Mineralogy
EPSC212 (4) Introductory Petrology

Domain: Complementary Courses (17 credits)
3 credits of ecology:
BIOL308 (3) Ecological Dynamics
WILD205 (3) Principles of Ecology (M)

3 credits of statistics:
AEMA310 (3) Statistical Methods 1 (M)
GEOG202 (3) Statistics and Spatial Analysis
5.3 Environment and Development Domain

This Domain (54 credits including Core) is open only to students in the B.A. Faculty Program in Environment.

Adviser: Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306

The quest for sustainable paths to economic development requires scholars and practitioners to transcend the boundaries of traditional disciplines. This Domain offers students sufficient depth and breadth of study to acquire a strong grasp of current theories, concepts, and approaches to environment and development. It prepares them for graduate study in interdisciplinary programs (e.g., development studies or environmental studies) as well as in integrative social sciences (e.g., anthropology, geography, etc.).

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an *(M).* (Core Required courses are offered on both campuses.)

**Prerequisite or Corequisite Courses for Program**

<table>
<thead>
<tr>
<th>3 credits of calculus:</th>
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<tr>
<td>MATH139 Calculus</td>
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<td>or equivalent (e.g., CEGEP objective 00UN)</td>
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<table>
<thead>
<tr>
<th>3 credits of basic science chosen from:</th>
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<tbody>
<tr>
<td>BIOL111 Principles: Organismal Biology</td>
</tr>
<tr>
<td>or CHEM110 General Chemistry 1</td>
</tr>
<tr>
<td>or PHYS101 Introductory Physics - Mechanics</td>
</tr>
<tr>
<td>or their equivalents (e.g., CEGEP objectives: Biology 00UK, Chemistry 00UL, Physics 00UR)</td>
</tr>
</tbody>
</table>

**NOTE:** Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or equivalent in this program. This includes Core and Required courses.

**Core: Required Courses** (18 credits)

- ENVR200 (3) The Global Environment
- ENVR201 (3) Society and Environment
- ENVR202 (3) The Evolving Earth
- ENVR203 (3) Knowledge, Ethics and Environment
- ENVR301 (3) Environmental Research Design
- ENVR400 (3) Environmental Thought

**Core: Complementary Course – Senior Research Project** (3 credits*)

- AGRIS19 (6) Sustainable Development Plans (in Barbados)
- ENVR401 (3) Environmental Research
- ENVR451 (6) Research in Panama (in Panama)
- ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

**Domain: Required Courses** (12 credits)

- ANTH339 (3) Ecological Anthropology
- ECON313 (3) Economic Development 1
- ECON314 (3) Economic Development 2
- GEOG302 (3) Environmental Management 1

**Domain: Complementary Courses** (21 credits)

3 credits of microeconomics:

- AGEC200 (3) Principles of Microeconomics *(M)*
- ECON208 (3) Microeconomic Analysis and Applications

3 credits of statistics:

- AEMA310 (3) Statistical Methods 1 *(M)*
- GEOG202 (3) Statistics and Spatial Analysis
- MATH203 (3) Principles of Statistics 1

3 credits of economics:

- AGECC200 (3) Principles of Microeconomics *(M)*
- ECON208 (3) Microeconomic Analysis and Applications
- AGECC200 (3) Principles of Microeconomics *(M)*

6 credits of advanced development courses:

- ANTH418 (3) Environment and Development
- GEOG408 (3) Geography of Development
- GEOG410 (3) Geography of Underdevelopment: Current Problems

3 credits of natural sciences:

- AGRIS550 (3) Sustained Tropical Agriculture (in Panama)
- BIOL465 (3) Conservation Biology
- BIOL535 (3) Neotropical Environments (in Panama)
- GEOG305 (3) Soils and Environment
- GEOG322 (3) Environmental Hydrology
- NUTR403 (3) Nutrition in Society *(M)*
- NUTR501 (3) Nutrition in Developing Countries *(M)*
- PARA410 (3) Environment and Infection *(M)*

3 credits of social sciences:

- AGEC333 (3) Economic Development *(M)*
- AGEC442 (3) Economics of International Development *(M)*
- ANTH439 (3) Property and Land Tenure
- PARA410 (3) Environment and Infection *(M)*
- ECON326 (3) Ecological Economics
- ECON403 (3) Natural Resource Economics
- ENVR465 (3) Environment and Social Change (at Bay of Fundy)
- GEOG201 (3) Introductory Geo-Information Science
- GEOG300 (3) Human Ecology in Geography
- GEOG331 (3) Urban Social Geography
- GEOG404 (3) Environmental Management 2 (in Panama or Africa)
- GEOG408 (3) Geography of Development
GEOG496 (3) Regional Geographical Excursion (in Barbados)
GEOG498 (3) Humans in Tropical Environments (in Panama)
GEOG510 (3) Humid Tropical Environments
GEOG551 (3) Environmental Decisions
INTD497 (3) Research Seminar on International Development
MGPO440 (3) Strategies for Sustainability
POLI445 (3) IPE: North-South Relations
POLI472 (3) Developing Areas/ Social Movements
SOCI565 (3) Social Change in Panama (in Panama)

6 Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc.

Students in the Faculty of Agricultural and Environmental Sciences B.Sc.(Ag.Env.Sc.) program and students in the Faculty of Science B.Sc. program can register in the Major in Environment.

The Major has two components: Core and Domain. Students follow three steps in their degree program.

1. Core: The Core consists of four introductory courses and one intermediate-level course where students are exposed to the different approaches, perspectives, and world views that will help them gain an understanding of the complexity and conflicts that underlie most environmental problems. Through the Core program students go beyond the confines of their individual views of environment.

2. Domain: Domains provide a trans-disciplinary study of a particular theme or component of the environment.

3. Senior Core and Research: In the two senior courses of the Core, students will apply the general and specialized knowledge that they have gained in the program to the analysis of some specific, contemporary environmental problems.

To obtain a Major in Environment, students must:

a. register in a Domain, on-line using Minerva;

b. pass all courses counted towards the Major with a grade of C or higher;

c. confirm that their course selection satisfies the required components of the MSE Core and their chosen Domain, and that the complementary courses are approved courses in their chosen Domain; and

d. fulfill all Faculty requirements as specified by the faculty in which they are registered: for the B.Sc. (Ag.Env.Sc.) refer to Agricultural and Environmental Sciences “Faculty Information and Regulations” on page 304; for the B.Sc. refer to Science “Faculty Degree Requirements” on page 246. This includes meeting the minimum credit requirement as specified in their letter of admission.

MAJOR PROGRAM IN ENVIRONMENT (57 to 66 credits – depending upon Domain selected)

Core: Required Courses (18 credits)
The Core courses are listed below in the Domain descriptions.

Core: Complementary Course – Senior Research Project (3 credits)
The research courses are listed in the Domain descriptions.

Domain (36 to 45 credits – depending upon Domain selected)
one MSE Domain selected from those available to students in the Major.

Currently available for B.Sc.(Ag.Env.Sc.) or B.Sc.: Biodiversity and Conservation (42 credits)
Ecological Determinants of Health – Population Stream or Cellular Stream (42 credits)
Environmetrics (42 credits)
Food Production and Environment (42 credits)

Land Surface Processes and Environmental Change (42 credits)
Renewable Resource Management (42 credits)
Water Environments and Ecosystems
Physical Stream or Biological Stream (36 - 39 credits)

Currently available for B.Sc. only (see section 7 “Major in Environment – B.Sc.”):

Atmospheric Environment and Air Quality (39 credits)
Earth Sciences and Economics (45 credits)

Each Domain has different requirements which are listed below. Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

6.1 Biodiversity and Conservation Domain

This Domain (63 credits including Core) is open only to students in the B.Sc (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Advisers:
Professor Graham Bell
E-mail: graham.bell@mcgill.ca
Telephone: (514) 398-4086 ext. 4087

Professor David Green
E-mail: david.m.green@mcgill.ca
Telephone: (514) 398-4086 ext. 4088

This Domain links the academic study of biological diversity with the applied field of conservation biology. The study of biological diversity, or ‘biodiversity’, lies at the intersection of evolution with ecology and genetics, combining the subdisciplines of evolutionary ecology, evolutionary genetics and ecological genetics. It has two main branches, the creation of diversity and the maintenance of diversity. Both processes are governed by a general mechanism of selection acting over different scales of space and time. This gives rise to a distinctive set of principles and generalizations that regulate rates of diversification and levels of diversity, as well as the abundance or rarity of different species. Conservation biology constitutes the application of these principles in the relevant social and economic context to the management of natural systems, with the object of preventing the extinction of rare species and maintaining the diversity of communities. As the impact of industrialization and population growth on natural systems has become more severe, conservation has emerged as an important area of practical endeavour.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits *)
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama (in Panama)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.
Domain: Required Courses (9 credits)
9 credits, basic courses in the biological principles of diversity, systematics, and conservation:
- BIOL304 (3) Evolution
- BIOL305 (3) Animal Diversity
- BIOL465 (3) Conservation Biology

Domain: Complementary Courses (33 credits)
6 credits of ecology and statistics:
- BIOL308 (3) Ecological Dynamics
- or WILD205 (3) Principles of Ecology (M)
- BIOL373 (3) Biometry
- or AEMA310 (3) Statistical Methods 1 (M)

9 credits, interface between science, policy and management:
- ANTH418 (3) Environment and Development
- or ECON208 (3) Microeconomic Analysis and Applications
- or ECON225 (3) Economics of the Environment
- or GEOG302 (3) Environmental Management 1
- or GEOG408 (3) Geography of Development
- or GEOG410 (3) Geography of Underdevelopment: Current Problems

3 credits of field courses:
- BIOL331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)
- or BIOL334 (3) Applied Tropical Ecology (in Barbados)
- or BIOL553 (3) Neotropical Environments (in Panama)
- or GEOG495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
- or GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy)
- or GEOG499 (3) Subarctic Field Studies (in Schefferville)
- or WILD475 (3) Desert Ecology (in Arizona)

6 credits of general scientific principles:
- ABEN430 (3) GIS for Bioresource Management (M)
- or GEOG306 (3) Raster Geo-Information Science
- or BIOL324 (3) Ecological Genetics
- or BIOL341 (3) History of Life
- or BIOL432 (3) Marine Biology
- or BIOL505 (3) Diversity and Systematics Seminar
- or GEOG272 (3) Earth's Changing Surface
- or GEOG321 (3) Climatic Environments
- or GEOG350 (3) Ecological Biogeography
- or MICR331 (3) Microbial Ecology (M)
- or NRSC437 (3) Assessing Environmental Impact (M)
- or PLNT460 (3) Plant Ecology (M)
- or WILD313 (3) Phylogeny and Zoogeography (M)
- or WILD375 (3) Issues: Environmental Sciences (M)
- or WILD410 (3) Wildlife Ecology (M)
- or WOOD410 (3) The Forest Ecosystem (M)
- or WOOD420 (3) Environmental Issues: Forestry (M)

(3 credits of social science:
- AGEC333 (3) Resource Economics (M)
- ANTH339 (3) Ecological Anthropology
- ANTH416 (3) Environment/Development: Africa (in Africa)
- ECON326 (3) Ecological Economics
- ENVR465 (3) Environment and Social Change (at Bay of Fundy)
- or GEOG404 (3) Environmental Management 2 (in Panama)
- or GEOG498 (3) Humans in Tropical Environments (in Panama)
- or GEOG510 (3) Humid Tropical Environments
- or WILD415 (2) Conservation Law (M)

(1 additional credit of complementary courses must be taken.)
- or WILD421 (3) Wildlife Conservation (M)

6 credits, organisms and diversity:
- BIOL327 (3) Herpetology
- BIOL335 (3) Marine Mammals (at Bay of Fundy)
- BIOL350 (3) Insect Biology and Control
- BIOL358 (3) Canadian Flora
- or PLNT358 (3) Flowering Plant Diversity (M)
- or ENTO352 (3) Control of Insect Pests (M)
- or ENTO440 (3) Systematic Entomology (M)
- or ENVR540 or (3) Ecology of Species Invasions
- or BIOC540 (3) Environmental Health
- or ENVR301 (3) Environmental Research Design

6.2 Ecological Determinants of Health Domain

This Domain (63 credits including Core) is open only to students in the B.Sc. (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Tim Johns
E-mail: johns@macdonald.mcgill.ca
Telephone: (514) 398-7947

This Domain considers the interface between the environment and human well-being, with particular focus on the triad that ties human health to the environment through the elements of food and infectious agents. Each of these elements is influenced by planned and unplanned environmental disturbances.

For example, agricultural practices shift the balance between beneficial and harmful ingredients of food. Use of insecticides presents dilemmas with regard to the environment, economics and human health. The distribution of infectious diseases is influenced by the climatic conditions that permit vectors to coexist with man, by deforestation, by urbanization, and by human interventions ranging from the building of dams to provision of potable water.

In designing interventions that aim to prevent or reduce infectious contaminants in the environment, or to improve food production and nutritional quality, not only is it important to understand methods of intervention, but also to understand social forces that influence how humans respond to such interventions.

Students in the Population Stream will gain a depth of understanding at an ecosystem level that looks at society, land and population health. Students in the Cellular Stream will explore the interactions in more depth, at a physiological level.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Ecological Determinants of Health Domain – Cellular Stream

This Domain (63 credits) is open only to students in the B.Sc. (Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
- ENVIR200 (3) The Global Environment
- ENVIR201 (3) Society and Environment
- ENVIR202 (3) The Evolving Earth
- ENVIR203 (3) Knowledge, Ethics and Environment
- ENVIR301 (3) Environmental Research Design
ABEN322 (3) Organic Waste Management
NRSC510 (3) Agricultural Micrometeorology
GEOG322 (3) Environmental Hydrology
GEOG321 (3) Climatic Environments
Hydrology and Climate

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:

CHEE230 (3) Environmental Aspects of Technology
GEOG302 (3) Environmental Management 1
WILD437 (3) Assessing Environmental Impact (M)

Pest Management

BIOL350 (3) Insect Biology and Control
ENTO352 (3) Control of Insect Pests (M)
PLNT361 (3) Pest Management and the Environment (M)

Pollution Control and Management

ABEN518 (3) Bio-Treatment of Wastes (M)
CHEM307 (3) Analytical Chemistry of Pollutants
NRSC333 (3) Physical and Biological Aspects of Pollution (M)

Ecology

BIOL432 (3) Limnology
BIOL465 (3) Conservation Biology
BIOL553 (3) Neotropical Environments (in Panama)
GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy)
MICR331 (3) Microbial Ecology (M)
PLNT304 (3) Biology of Fungi (M)
PLNT460 (3) Plant Ecology (M)
WILD410 (3) Wildlife Ecology (M)
WOOD410 (3) The Forest Ecosystem (M)

ECOLOGICAL DETERMINANTS OF HEALTH DOMAINS

DOWNTOWN AND MACDONALD

Domain: Required Courses (6 credits)
PARA410 (3) Environment and Infection (M)
SOCI234 (3) Population and Society

Domain - Cellular Stream: Complementary Courses
(36 credits)

18 credits of Fundamentals, maximum of 3 credits from any one category:

Toxicology
NUTR420 (3) Toxicology and Health Risks (M)
PHAR303 (3) Principles of Toxicology

Cellular Biology
AEBI202 (3) Cellular Biology (M)
ANSC234 (3) Biochemistry 2 (M)

Genetics
BIOC202 (3) Basic Genetics
CELL204 (4) Genetics (M)

Molecular Biology
BIOC200 (3) Molecular Biology
FDSC211 (3) Biochemistry 1 (M)

Statistics
AEMA310 (3) Statistical Methods 1 (M)
MATH203 (3) Principles of Statistics 1 or equivalent

Nutrition
ANSC330 (3) Fundamentals of Nutrition (M)
NUTR307 (3) Human Nutrition (Video conference Downtown and Macdonald)

12 credits chosen from Human Health, maximum of 3 credits from any one category:

Immunology and Pathogenicity
MICR341 (3) Mechanisms of Pathogenicity (M)
MIMM314 (3) Immunology
PARA438 (3) Immunology (M)
PATH300 (3) Human Disease

Infectious Disease
MIMM324 (3) Fundamental Virology
MIMM413 (3) Parasitology
PARA400 (3) Eucaryotic Cells and Viruses (M)
WILD424 (3) Parasitology (M)

Nutrition
NUTR403 (3) Nutrition in Society (M)
NUTR512 (3) Herbs, Foods and Phytochemicals (Video conference Downtown and Macdonald)

Drugs and Hormones
ANSC424 (3) Metabolic Endocrinology (M)
PHAR300 (3) Drug Action

Physiology
ANSC323 (4) Mammalian Physiology (M)
PHGY209 (3) Mammalian Physiology 1

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:

Hydrology and Climate
ABEN217 (3) Hydrology and Water Resources (M)
GEOG321 (3) Climatic Environments
GEOG322 (3) Environmental Hydrology
NRSC510 (3) Agricultural Micrometeorology (M)

Techniques and Management
ABEN322 (3) Organic Waste Management (M)

CHEE230 (3) Environmental Aspects of Technology
GEOG302 (3) Environmental Management 1
WILD437 (3) Assessing Environmental Impact (M)

Pest Management

BIOL350 (3) Insect Biology and Control
ENTO352 (3) Control of Insect Pests (M)
PLNT361 (3) Pest Management and the Environment (M)

Pollution Control and Management

ABEN518 (3) Bio-Treatment of Wastes (M)
CHEM307 (3) Analytical Chemistry of Pollutants
NRSC333 (3) Physical and Biological Aspects of Pollution (M)

Ecology

BIOL432 (3) Limnology
BIOL465 (3) Conservation Biology
BIOL553 (3) Neotropical Environments (in Panama)
GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy)
MICR331 (3) Microbial Ecology (M)
PLNT304 (3) Biology of Fungi (M)
PLNT460 (3) Plant Ecology (M)
WILD410 (3) Wildlife Ecology (M)
WOOD410 (3) The Forest Ecosystem (M)

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits)
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)
ENVR451 (6) Research in Panama (in Panama)
ENVR301 (3) Environmental Research Design

Domain - Population Stream: Complementary Courses
(3 credits)

18 credits of Fundamentals, maximum of 3 credits from each category:

INFECTIOUS DISEASE
MIMM324 (3) Fundamental Virology
MIMM413 (3) Parasitology
PARA400 (3) Eucaryotic Cells and Viruses (M)
WILD424 (3) Parasitology (M)

NUTRITION
NUTR403 (3) Nutrition in Society (M)
NUTR512 (3) Herbs, Foods and Phytochemicals (Video conference Downtown and Macdonald)

DRUGS AND HORMONES
ANSC424 (3) Metabolic Endocrinology (M)
PHAR300 (3) Drug Action

PHYSIOLOGY
ANSC323 (4) Mammalian Physiology (M)
PHGY209 (3) Mammalian Physiology 1

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:

HYDROLOGY AND CLIMATE
ABEN217 (3) Hydrology and Water Resources (M)
GEOG321 (3) Climatic Environments
GEOG322 (3) Environmental Hydrology
NRSC510 (3) Agricultural Micrometeorology (M)

TECHNIQUES AND MANAGEMENT
ABEN322 (3) Organic Waste Management (M)

CHEE230 (3) Environmental Aspects of Technology
GEOG302 (3) Environmental Management 1
WILD437 (3) Assessing Environmental Impact (M)

Pest Management

BIOL350 (3) Insect Biology and Control
ENTO352 (3) Control of Insect Pests (M)
PLNT361 (3) Pest Management and the Environment (M)

Pollution Control and Management

ABEN518 (3) Bio-Treatment of Wastes (M)
CHEM307 (3) Analytical Chemistry of Pollutants
NRSC333 (3) Physical and Biological Aspects of Pollution (M)

Ecology

BIOL432 (3) Limnology
BIOL465 (3) Conservation Biology
BIOL553 (3) Neotropical Environments (in Panama)
GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy)
MICR331 (3) Microbial Ecology (M)
PLNT304 (3) Biology of Fungi (M)
PLNT460 (3) Plant Ecology (M)
WILD410 (3) Wildlife Ecology (M)
WOOD410 (3) The Forest Ecosystem (M)
6.3 Environmetrics Domain

This Domain (63 credits including Core) is open only to students in the B.Sc.(Agr.Env.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Dutilleul
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Telephone: (514)398-7851 ext. 7870

In view of the crucial need for sound study design and appropriate statistical methods for analyzing environmental changes and their impacts on humans and various life forms and their ecological relationships, this program is intended to provide students with a strong background in the use of statistical methods of data analysis in environmental sciences.

Graduates will be capable of effectively participating in the design of environmental studies and adequately analyzing data for use by the environmental community. Accordingly, the list of courses for the Environmetrics Domain is composed primarily of statistics courses and mathematically oriented courses with biological and ecological applications. The list is completed by general courses that refine the topics introduced in the MSE core courses by focusing on the ecology of living organisms, soil sciences or water resources, and impact assessment. These courses should allow the students to understand their interlocutors and be understood by them in their future job. Students can further develop their background in applied or mathematical statistics and their expertise in environmental sciences by taking complementary courses along each of two axes: statistics and mathematics, and environmental sciences. An internship is also offered to students to provide them with preliminary professional experience.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)

ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits*)

AGRI159 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama (in Panama)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domains: Required Course (6 credits)

AGRI403 (3) Environmetrics Stage (internship) (M)
AEMA414 (3) Temporal and Spatial Statistics (M)

Domain: Complementary Courses (36 credits, minimum)

15 credits from:

WILD205 (3) Principles of Ecology (M)
or
BIOL308 (3) Ecological Dynamics
MIME308 (3) Social and Economic Impacts of Technology
or
NRSC437 (3) Assessing Environmental Impact (M)
trying to minimize environmental damage. When negative effects due to agricultural activities do occur, they are not usually the classic point source effects that we have come to associate with industry or large cities. Rather, the effects are over extremely large land areas cumulating, perhaps, in pollution of river systems or lakes some distance away. As world populations grow, and as diets change, potentially negative interactions between agricultural systems and other facets of the environment will become more frequent. In the same way, urban sprawl will make conflicts between agriculture and urbanites more common.

With a judicious choice of courses, graduates of this Domain may be eligible to apply for membership in the Ordre des agronomes du Québec (OAQ) and the Agricultural Institute of Canada (AIC). See the MSE website for details at www.mcgill.ca/mse: BSc Programs: Food Production and Environment Domain.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

Prerequisite or Corequisite Courses for Domain
FDSC211 (3) Biochemistry 1 (M)
or BIOL112 (3) Cell and Molecular Biology
or CEGEP equivalent (e.g., CEGEP objective 00UX)
FDSC230 (4) Organic Chemistry (M)
or CHEM212 (4) Introductory Organic Chemistry 1
or CEGEP equivalent (e.g., CEGEP objective 00XY)

NOTE: Students are required to take a maximum of 34 credits at the 200 level and a minimum of 15 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits)
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (9 credits)
AGRI210 (3) Agro-Ecological History (M)
PLNT211 (3) Principles of Plant Science (M)
PLNT300 (3) Cropping Systems (M)

Domain: Complementary Courses (33 credits)
15 or 16 credits of Basic Sciences:
AGRI310 (3) Statistical Methods 1 (M)
or BIO303 (3) Principles of Statistics 1
or equivalent
AGRI340 (3) Principles of Ecological Agriculture (M)
or ANSC250 (3) Principles of Animal Science (M)
BIOL202 (3) Basic Genetics
or CELL204 (4) Genetics (M)
GEOG305 (3) Soils and Environment
or SOIL210 (3) Principles of Soil Science (M)
WILD205 (3) Principles of Ecology (M)
or BIOL308 (3) Ecological Dynamics

12 credits of Applied Sciences:
AGRI217 (3) Hydrology and Water Resources (M)
or GEOG322 (3) Environmental Hydrology

AGRI322 (3) Organic Waste Management (M)
6.5 Land Surface Processes and Environmental Change Domain

This Domain (63 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: (Before September 2004) Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306
(September 2004 and after) Professor Michel Lapointe
E-mail: lapointe@geog.mcgill.ca
Telephone: (514) 398-4959

The thin soil layer on the planet’s land surfaces controls the vital inputs of water, nutrients and energy to terrestrial and freshwater aquatic ecosystems. Widespread occurrences around the globe of desertification, soil erosion, deforestation and land submergence over water reservoirs indicate that this dynamic system is under increasing pressure from population growth and changes in climate and land uses. Production of key green-house gases (water vapour, CO₂ and methane) is controlled by complex processes operating at the land surface, involving climate change feedbacks that need to be fully understood, given current global warming trends.

The program introduces students to the interacting physical and biogeochemical processes at the atmosphere-lithosphere interface, which fashion land surface habitats and determine their biological productivity and response to anthropogenic or natural environmental changes. Through an appropriate selection of courses, students can prepare for graduate training in emerging research areas such as earth system sciences, environmental hydrology and landscape ecology.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits) ENVR200 (3) The Global Environment ENVR201 (3) Society and Environment ENVR202 (3) The Evolving Earth ENVR203 (3) Knowledge, Ethics and Environment ENVR301 (3) Environmental Research Design ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project (3 credits)
AGRI519 (6) Sustainable Development Plans (in Barbados) ENVR401 (3) Environmental Research ENVR451 (6) Research in Panama (in Panama) ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Course (3 credits)
GEOG203 (3) Environmental Systems

Domain: Complementary Courses (39 credits)
3 credits of statistics chosen from:
AEMA310 (3) Statistical Methods 1 (M)
GEOG202 (3) Statistics and Spatial Analysis MATH203 (3) Principles of Statistics 1

3 credits of ecology chosen from:
BIOL308 (3) Ecological Dynamics
WILD205 (3) Principles of Ecology (M)

3 credits of weather and climate chosen from:
ATOC215 (3) Oceans, Weather and Climate
NRSC201 (3) Introductory Meteorology (M)

9 credits of fundamental land surface processes chosen from:
GEOG272 (3) Earth’s Changing Surface
or SOIL200 (3) Introduction to Earth Science (M)
GEOG305 (3) Soils and Environment
or SOIL326 (3) Soil Genesis and Classification (M)
GEOG321 (3) Climatic Environments
GEOG322 (3) Environmental Hydrology
or ABEN217 (3) Hydrology and Water Resources (M)

3 credits of environment and resource management chosen from:
AGRI435 (3) Soil and Water Quality Management (M)
AGRI550 (3) Sustained Tropical Agriculture (in Panama)
BIOL465 (3) Conservation Biology
CHEE230 (3) Environmental Aspects of Technology
CIVE225 (4) Environmental Engineering
GEOG302 (3) Environmental Management 1
GEOG404 (3) Environmental Management 2 (in Panama)
NRSC437 (3) Assessing Environmental Impact (M)

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6.6 Renewable Resource Management Domain

This Domain (63 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Professor Joann Whalen
E-mail: whalenj@nrs.mcgill.ca
Telephone: (514) 398-7943

Renewable resource management is an emerging field that focuses on the ecosystem structures and processes required to deliver, to humanity, essential goods and services such as food, clean water and air, nutrient resources, and the maintenance of natural ecosystems to continue to supply human needs in perpetuity.

The Renewable Resource Management domain provides students with an understanding of: 1) the interactions between physical and biological factors that determine the nature and dynamics of populations and entities in the natural environment; 2) the ways in which ecosystems can be managed to meet specific goals for the provision of goods and services; 3) the economic and social factors that determine how ecosystems are managed; 4) the ways in which management of natural resources can affect the capability of natural ecosystems to continue to supply human needs in perpetuity; and 5) the approaches and technologies required to monitor and analyze the dynamics of natural and managed ecosystems.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required Courses are offered on both campuses.)

Prerequisite or Corequisite Courses for Domain
FDSC211  (3) Biochemistry 1 (M)
or BIOL112  (3) Cell and Molecular Biology
or CEGEP equivalent (e.g., CEGEP objective 00XU)
FDSC230  (4) Organic Chemistry (M)
or CHEM212  (4) Introductory Organic Chemistry 1
or CEGEP equivalent (e.g., CEGEP objective 00KV)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses, but does not include the Domain prerequisites or corequisites listed above.

Core: Required Courses (18 credits)
ENVR200  (3) The Global Environment
ENVR201  (3) Society and Environment
ENVR202  (3) The Evolving Earth
ENVR203  (3) Knowledge, Ethics and Environment
ENVR301  (3) Environmental Research Design
ENVR400  (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits*)
AGRI519  (6) Sustainable Development Plans (in Barbados)
ENVR401  (3) Environmental Research
ENVR451  (6) Research in Panama (in Panama)
ENVR466  (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Complementary Courses (42 credits)
9 credits basic principles of ecosystem processes and diversity
WILD200  (3) Comparative Zoology (M)
or BIOL305  (3) Animal Diversity
or PLNT201  (3) Comparative Plant Biology (M)
WILD205  (3) Principles of Ecology (M)
or BIOL308  (3) Ecological Dynamics
GEOSG305  (3) Soils and Environment
or SOIL310  (3) Principles of Soil Science (M)

6 credits statistics and GIS methods
ABEN430  (3) GIS for Bioresource Management (M)
or GEOSG201  (3) Introductory Geo-Information Science
AEMA310  (3) Statistical Methods 1 (M)
or BIOL373  (3) Biometry

6 credits advanced ecosystem components
PLNT358  (3) Flowering Plant Diversity (M)
or BIOL358  (3) Canadian Flora
BIOL553  (3) Neotropical Environments (in Panama)
SOIL326  (3) Soil Genesis and Classification (M)
WILD307  (3) Natural History of Vertebrates (M)

6 credits advanced ecological processes
ABEN217  (3) Hydrology and Water Resources (M)
or GEOSG322  (3) Environmental Hydrology

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6.7 Water Environments and Ecosystems Domain

This Domain is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

To educate students in both the ecological and physical facets of the water environment, this Domain offers two streams, with students choosing one or the other facet.

Those electing the biological stream will concentrate on the mechanisms regulating the different forms of life in water bodies. They will acquire, as well, a good understanding of the physical mechanisms controlling water properties.

Students interested in studying the transport and transformation mechanisms of water on the planet, from rivers to the oceans and atmosphere, will select the physical stream. They will acquire, as well, a solid background in the biological processes taking place in water bodies.

Graduates of this Domain are qualified to enter the work force or to pursue advanced studies in fields such as marine biology, geography, physical oceanography and atmospheric science.

Water Environments and Ecosystems Domain – Biological Stream

This Domain (57 credits including Core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

Adviser: Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required Courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 30 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits)
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama (in Panama)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)
* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Course (3 credits)
ATOC215 (3) Oceans, Weather and Climate

Domain: Complementary Courses (33 credits)
6 credits chosen from:
ABEN217 (3) Hydrology and Water Resources (M)
or GEOG322 (3) Environmental Hydrology
WILD205 (3) Principles of Ecology (M)
or BIOL308 (3) Ecological Dynamics
3 credits of math and statistics from:
AEMA202 (3) Intermediate Calculus (M)
AEMA310 (3) Statistical Methods 1 (or equivalent) (M)
MATH203 (3) Principles of Statistics 1
MATH222 (3) Calculus 3
3 credits chosen from:
BIOL331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)
GEOG495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy) or an equivalent aquatic field course
3 credits chosen from:
AGEC333 (3) Resource Economics (M)
ANTH339 (3) Ecological Anthropology
ANTH418 (3) Environment and Development
ECON225 (3) Economics of the Environment
ECON326 (3) Ecological Economics
ENVR465 (3) Environmental and Social Change (at Bay of Fundy)
GEOG404 (3) Environmental Management 1 (in Panama)
GEOG498 (3) Humans in Tropical Environments (in Panama)
POLI345 (3) International Organization
POLI466 (3) Public Policy Analysis
SOCI565 (3) Social Change in Panama (in Panama)
18 credits, minimum, from lists A and B below

List A, 9 to 12 credits chosen from:
AGRI435 (3) Soil and Water Quality Management (M)
BIOL432 (3) Limnology
BIOL441 (3) Biological Oceanography
BIOL442 (3) Marine Biology
BIOL465 (3) Conservation Biology
BIOL553 (3) Neotropical Environments (in Panama)
BIOL570 (3) Advanced Seminar in Evolution
ENTO535 (3) Aquatic Entomology (M)
ENVR540 (3) Ecology of Species Invasions
BIOL540 (3) Principles of Soil Science (M)
Domain – Required Courses (3 credits*)

Core: Complementary Course – Senior Research Project

3 credits of statistics or calculus:
- AEMA310 (3) Statistical Methods 1 (or equivalent) (M)
- AEMA202 (3) Intermediate Calculus (M)
- MATH203 (3) Principles of Statistics 1
- MATH222 (3) Calculus 3

ATOCR205 (3) Principles of Ecology (M)
- BIOL308 (3) Ecological Dynamics
- ABEN217 (3) Hydrology and Water Resources (M)
- GEOG322 (3) Environmental Hydrology

12 credits chosen from:
- ABEN430 (3) GIS for Bioresource Management (M)
- GEOG306 (3) Raster Geo-Information Science
- ABEN416 (3) Engineering for Land Development (M)
- ABEN506 (3) Advances in Drainage Management (M)
- ABEN509 (3) Hydrologic Systems and Modelling (M)
- GEOG522 (3) Advanced Environmental Hydrology
- AEMA205 (3) Differential Equations (M)
- MATH315 (3) Ordinary Differential Equations
- AEPH510 (3) Agricultural Micrometeorology (M)
- AGRI435 (3) Soil and Water Quality Management (M)
- ATOCR308 (3) Principles of Remote Sensing
- GEOG308 (3) Principles of Remote Sensing
- ATOCR309 (3) Weather Radars and Satellites
- ATOCR586 (3) Ocean Physics
- CIVE323 (3) Hydrology and Water Resources
- EPSG549 (3) Hydrogeology
- GEOG201 (3) Introductory Geo-Information Science
- GEOG537 (3) Advanced Fluvial Geomorphology
- GEOG505 (3) Soils and Environment
- SOIL210 (3) Principles of Soil Science (M)

6 credits chosen from:
- BIOL432 (3) Limnology
- BIOL441 (3) Biological Oceanography
- NRSC315 (3) Science of Inland Waters (M)
- BIOL442 (3) Marine Biology
- BIOL465 (3) Conservation Biology
- BIOL553 (3) Neotropical Environments (in Panama)
- GEOG350 (3) Ecological Biogeography
- GEOG505 (3) Global Biogeochecmistry
- WILD401 (4) Fisheries and Wildlife Management (M)

3 credits of field courses
- GEOG495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)
- GEOG497 (3) Ecology of Coastal Waters (at Bay of Fundy)

MSE – MAJOR IN ENVIRONMENT – B.Sc.

7 Major in Environment – B.Sc.

In addition to the selection of Domains available to students in the Major program in either the Faculty of Science or the Faculty of Agricultural and Environmental Sciences, see section 6 “Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc.,” students in the Faculty of Science program can choose from one of the two Domains limited to Science students only:
- Atmospheric Environment and Air Quality, or
- Earth Sciences and Economics.

Refer to section 6 “Major in Environment – B.Sc.(Ag.Env.Sc.) and B.Sc.” for the general guidelines and regulations which apply to all Domains in the Major in Environment program.

7.1 Atmospheric Environment and Air Quality Domain

This Domain (60 credits including Core) is open only to students in the B.Sc. Major in Environment program in the Faculty of Science.
The rapid expansion of industrialization has been accompanied with a host of environmental problems, many, if not most, involving the atmosphere. Some problems are of a local nature, such as air pollution in large urban centres, while others are global, or at least reach areas far removed from industrial activities.

The emphasis in this Domain is on the mechanisms of atmospheric flow and on atmospheric chemistry. Courses examine how the atmosphere transports pollution, lifting it to great heights into the stratosphere or keeping it trapped near the ground, moving it around the globe or imprisoning it locally, or how it simply cleanses itself of the pollution through rainfall. The Domain also gives students the training required to understand the important chemical reactions taking place within the atmosphere, as well as the knowledge necessary to measure and analyze atmospheric constituents.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 31 credits at the 200 level and a minimum of 12 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)

ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Core: Complementary Course – Senior Research Project
(3 credits)*
AGRI519 (6) Sustainable Development Plans (in Barbados)
ENVR401 (3) Environmental Research
ENVR451 (6) Research in Panama (in Panama)
ENVR466 (6) Research in Atlantic Canada (at Bay of Fundy)

* Only 3 credits will be applied to the program; extra credits will count as electives.

Domain: Required Courses (18 credits)

ATOC214 (3) Introduction: Physics of the Atmosphere
ATOC215 (3) Oceans, Weather and Climate
ATOC219 (3) Introduction to Atmospheric Chemistry
CHEM219 (3) Introduction to Atmospheric Chemistry
ATOC308 (3) Principles of Remote Sensing
or GEOG308 (3) Principles of Remote Sensing
ATOC315 (3) Water in the Atmosphere
CHEM307 (3) Analytical Chemistry of Pollutants

Domain: Complementary Courses (21 credits)

6 credits from:

CHEM257D1 (2) Introductory Analytical Chemistry
CHEM257D2 (2) Introductory Analytical Chemistry
or FDSC213 (3) Analytical Chemistry 1 (M)
MATH222 (3) Calculus 3
or AEMA202 (3) Intermediate Calculus (M)

3 credits from:

MATH203 (3) Principles of Statistics 1
or AEMA310 (3) Statistical Methods 1 (M)

9 credits of math or physical science (at least 6 credits of which are at the 300 level or above):

ATOC309 (3) Weather Radars and Satellites
ATOC412 (3) Atmospheric Dynamics
ATOC419 (3) Advances in Chemistry of Atmosphere
or CHEM419 (3) Advances in Chemistry of Atmosphere

ATOC540 (3) Synoptic Meteorology 1
CHEE230 (3) Environmental Aspects of Technology
CHEM273 (1) Chemical Kinetics
CHEM377 (3) Instrumental Analysis 2
CIVE225 (4) Environmental Engineering
COMP208 (3) Computers in Engineering
GEOG505 (3) Global Biogeochemistry
MATH223 (3) Linear Algebra
MATH315 (3) Ordinary Differential Equations
or AEMA205 (4) Differential Equations (M)
NRSC333 (3) Physical and Biological Aspects of Pollution (M)

NRSC510 (3) Agricultural Micrometeorology (M)

3 credits of social science:

ANTH206 (3) Environment and Culture
ANTH418 (3) Environment and Development
CMPL580 (3) Environment and the Law

ECON225 (3) Economics of the Environment
ECON347 (3) Economics of Climate Change
ENVR465 (3) Environment and Social Change (in Bay of Fundy)

GEOG302 (3) Environmental Management 1
GEOG404 (3) Environmental Management 2 (in Panama or in Africa)

GEOG498 (3) Humans in Tropical Environments (in Panama)
POLI466 (3) Public Policy Analysis
RELG270 (3) Religious Ethics and the Environment

7.2 Earth Sciences and Economics Domain

This Domain (66 credits including Core) is open only to students in the B.Sc. Major in Environment program in the Faculty of Science.

Adviser: Professor Don Baker
Telephone: (514) 398-7485
E-mail: donb@eps.mcgill.ca

This Domain includes the fundamentals of each discipline. Students learn of minerals, rocks, soils, and waters and how these materials interact with each other and with the atmosphere. Fundamental economic theory and the economic effects of public policy towards resource industries, methods of waste disposal, and the potential effects of global warming on the global economy are also explored.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

Courses offered at Macdonald Campus are marked with an (M). (Core Required courses are offered on both campuses.)

NOTE: Students are required to take a maximum of 34 credits at the 200 level and a minimum of 15 credits at the 400 level or higher in this program. This includes Core and Required courses.

Core: Required Courses (18 credits)

ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth

2004-2005 Undergraduate Programs, McGill University
8 Diploma in Environment

Adviser: Mr. Pete Barry, MSE Program Coordinator
E-mail: info.mse@mcgill.ca
Telephone: (514) 398-4306

The Diploma is designed for students with an undergraduate degree who wish to enrich or reorient their training, supplementing their specialization with additional undergraduate level course work. The Diploma requires 30 credits of full-time or part-time studies at McGill; it may be started in either January or September. The Diploma is a one-year program if taken full-time.

Students holding a B.Sc. or a B.A. degree or equivalent in good standing, will be permitted to register for the Diploma through the Faculty of Agricultural and Environmental Sciences, the Faculty of Arts, or the Faculty of Science, provided they are otherwise acceptable for admission to the University.

Students must have a grade of C or higher in all courses for the Diploma.

DIPLOMA IN ENVIRONMENT (30 credits)

Required Courses (18 credits)
ENVR200 (3) The Global Environment
ENVR201 (3) Society and Environment
ENVR202 (3) The Evolving Earth
ENVR203 (3) Knowledge, Ethics and Environment
ENVR301 (3) Environmental Research Design
ENVR400 (3) Environmental Thought

Complementary Courses (12 credits)
3 credits must be taken with the approval of the program adviser in an area outside of the student’s previous degree (e.g., those with a B.A. or equivalent degree must take 3 credits in the natural sciences; those with a B.Sc. or equivalent degree must take 3 credits in the social sciences). A list of suggested courses is available from the program adviser, and on the MSE website in “Undergraduate Programs: Diploma”.

9 credits must be taken in an area of focus chosen by the student with the approval of the program adviser. At least 6 credits must be taken at the 400 level or higher.

Course descriptions and prerequisites can be found in the Courses section. The most up-to-date information on courses being offered this academic year is available on Class Schedule at www.mcgill.ca/minerva.

9 Field Studies

9.1 African Field Study Semester

The Department of Geography, Faculty of Science, coordinates the 15-credit interdisciplinary African Field Study Semester, see page325. Note: The AFSS will only be offered in 2004-05 pending approval by the Dean of Science.

9.2 Barbados Field Study Semester

The Department of Bioresource Engineering, Faculty of Agricultural and Environmental Sciences, coordinates the 15-credit interdisciplinary Barbados Field Study Semester, offered in the fall term. For more information, see the Department of Bioresource Engineering, see page360.

9.3 Panama Field Study Semester

Website: www.mcgill.ca/mse/field_study/panama

This program is a joint venture between McGill University and the Smithsonian Tropical Research Institute (STRI) in Panama.

Hands-on experience is gained through a research project organized around multidisciplinary environmental issues. The nature of these projects will centre on practical environmental problems/questions important for Panama. Students will form a team that will work with Panamanian institutions (NGO, governmental or research).

There is one week of transition and 12 weeks of course attendance in Panama. Field trips will be integrated into each of the courses offered.

Offered: Winter Term.
Location: Offered at Smithsonian Tropical Research Institute (STRI) in Panama.

Enrolment Limit: 25 students.

Fees: Approximately $4,000 CDN – excludes regular McGill fees, airfare, food, and insurance; includes lodging.
Quebec residents may be eligible for a financial subsidy from the Ministry of Education, see “Quebec Government Awards for Quebec Residents” on page 37.


Application Details: Students must submit a letter of intent, CV, and copy of their transcript to: Susan Gabe, Biology Undergraduate Office, Stewart Biology Building, Room W4/8, Downtown Campus. E-mail: susan.gabe@mcgill.ca. Telephone: (514) 398-7045.

Prerequisites: HISP218 Spanish Language Elementary or equivalent proficiency, and MATH203 Principles of Statistics 1 or equivalent. A GPA of 3.00 and higher is recommended. The program is aimed at undergraduate students in their final year.

PANAMA FIELD STUDY SEMESTER – offered Winter Term
(15 credits)

Required Courses (9 credits)
BIOL553 (3) Neotropical Environments
ENVR451 (6) Research in Panama

Complementary Courses (6 credits)
One of the following sets:

Offered in Winter 2005 –
GEOG404 (3) Environmental Management 2
SOCI565 (3) Social Change in Panama

Offered in Winter 2006 –
AGRI550 (3) Sustained Tropical Agriculture
GEOG498 (3) Humans in Tropical Environments

9.4 Macdonald Campus Summer Field Study
Human Impacts on the Environment

Courses are available during Summer Session that provide students the opportunity to participate in supervised field research concerning flora and fauna not easily studied at other times of the year, and to apply knowledge from the classroom to environmental issues in the field. Common thematic elements include: the linkages between physical, biological and human systems, field research, and human impacts on the environment. Students learn and apply research techniques and analytical skills within a multi-disciplinary, holistic approach.

For more information, see “Macdonald Summer Field Semester: Human Impacts on the Environment” on page 318 under the Faculty of Agricultural and Environmental Sciences, the Faculty Website at www.mcgill.ca/macdonald/programs, the 2004 Summer Studies Calendar or their Website at www.mcgill.ca/summer.