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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: <http://www.mcgill.ca/science>

Student Affairs Office Website:

<http://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.)  
**Associate Dean (Academic and Student Affairs)**

MARTIN GRANT, B.Sc.(P.E.I.), M.Sc., Ph.D.(Tor.)  
**Associate Dean (Research)**

JOSIE D'AMICO **Assistant to the Dean**

SHARON BEZEAU, B.A.(Tor.), M.A.(C'dia) **Recorder and Chief Invigilator**

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 email, 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; fulfillment of the minimum requirements does not guarantee acceptance. Admission criteria are described under "**Admission Requirements**" beginning on [page 13](#).

There are also two Diploma programs offered in Science. The Diploma in Environment, a 30-credit program available to holders of a B.Sc. or B.A. or equivalent, is described in the section on the McGill School of Environment, [page 505](#). The Diploma in Meteorology is a one-year program available to holders of a degree in Mathematics, Engineering, Physics and other appropriate disciplines who wish to qualify for a professional career in Meteorology. For more information, see Atmospheric and Oceanic Sciences, [page 373](#). 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 12.29](#) and the Faculty of Education [section 5.1.3](#).

A Bachelor of Software Engineering program (subject to Ministry of Education Approval) will be offered jointly with the Faculty of Engineering; see the Department of Electrical and Computer Engineering in the Faculty of Engineering section, [page 218](#).

#### 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 (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 13](#).

For information about inter-faculty transfers, please refer to the General University Information and Regulations, [section 3.17](#) on [page 31](#), as well as the relevant information posted on the Student Affairs Office Website at <http://www.mcgill.ca/artscisao>, 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 misap-

prehension 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 ([section 3.1](#))

Residency ([section 3.2](#))

CGPA ([section 3.3](#))

Time Limit for the Completion of the Degree ([section 3.4](#))

Program Requirements ([section 3.5](#))

Course Requirements ([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.

Normally, Quebec students who have completed the Diplôme d'études collégiales (DEC) or equivalent diploma are admitted to a three-year program requiring the completion of 90 credits. Quebec students with a DEC 'en sciences' have normally completed the equivalent of, and are therefore exempt from, the basic science courses in Biology, Chemistry, Mathematics and Statistics, and Physics.

Students from outside Quebec 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, 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 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 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 semesters each of calculus, general chemistry, and general physics, and one semester of biology.

Students who have completed 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 requirements. 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 Internet, <http://www.mcgill.ca/artsandscience>.

#### 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 in two subjects that can constitute the Science component of the Concurrent B.Sc./B.Ed. Program. For more information about this joint degree, please consult [section 3.5.5](#).

*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 Minors, and Minor Concentrations that are approved for Science students, please refer to [section 11.8](#).

#### 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

This program was designed to provide students with the opportunity to obtain both a Bachelor of Science degree and a Bachelor of Education degree after a minimum of 135 credits of study. In the B.Sc. component, students must major in one of the following subject combinations: Mathematics and Physics, Mathematics and Chemistry, Chemistry and Physics, Biology and Chemistry, Biology and Geography, Biology and Mathematics. For more information about this program, students should refer to [section 12.29](#) and to the Faculty of Education [section 5.1.3](#).

#### 3.5.6 Internship Program for Engineering and Science (YES)

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 (refer to [section 11.7](#)). Students from other departments are also eligible to apply for an internship year, but this will not be part of their degree designation. For program details, students should refer to the Faculty of Engineering [section 2.9](#).

#### 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. Please see the School section on [page 491](#) of this Calendar.

#### 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, will offer a Bachelor of Software Engineering program (subject to Ministry of Education approval). 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 section, [page 218](#).

The School of Computer Science will also offer a B.Sc. Major program in Software Engineering (subject to Ministry of Education approval). For details of the B.Sc. Major, students should refer to the Faculty of Science [section 12.8](#). 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.

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 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, CEGEP, at another university or elsewhere. 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 CHEM XYZ and PHYS XYZ, Chemistry students would take CHEM XYZ and the Physics students would take PHYS XYZ. 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: AEMA 310, BIOL 373, ECON 227D1/ECON 227D2D, ECON 257D1/ECON 257D2, EPSC 215, GEOG 202, MATH 203, MGCR 271, PSYC 204, SOCI 350.
2. Credit will be given for ONLY ONE of the following intermediate statistics courses: AEMA 411, ECON 227D1/ECON 227D2D, ECON 257D1/ECON 257D2, GEOG 351, MATH 204, MGCR 272, PSYC 305, SOCI 461.
3. Students in Mathematics or Computer Science programs, and students who have already received credit for MATH 324 will NOT receive credit for any of the following: AEMA 310, AEMA 411, BIOL 373, ECON 227D1/ECON 227D2D, ECON 257D1/ECON 257D2, EPSC 215, MATH 203, MATH 204, MGCR 271, MGCR 272, PSYC 204, PSYC 305, SOCI 350.
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 Science (Academic and Student Affairs), except for students in the B.Sc. Major in Environment, who may take required statistics courses in the Faculty of Agriculture and Environmental Sciences necessary to satisfy their program requirements.

### 3.6.2 Project Courses

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 Internet, <http://www.mcgill.ca/artscisao>. 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. Request for permission to take courses that are not on either list should be addressed to the Associate Dean.

The regulations are as follows:

- except for Music performance courses, courses taught in other faculties *and* specifically listed in the Arts or Science section are considered as courses taught in Arts or Science;

- restrictions apply to Music courses, even those listed in the Arts or Science section of the printed Calendar, unless the courses are part of a Minor in Music;
- 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 McGill School of Environment 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.
- students taking the Minor in Management may take 21 credits of courses outside of the Faculties of Arts and of Science;
- the 18-credit limit applies to students taking the Minor in Nutrition; equivalent courses in Science should be taken instead of courses in the Faculty of Agriculture and Environmental Sciences.

### 3.6.4 Courses taken under the Satisfactory/Unsatisfactory Option

Students may take one elective course per term that is to be graded under the Satisfactory/Unsatisfactory Option, to a maximum of 10% of 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, students should consult the General University Information [section 4.9](#).

### 3.6.5 Courses in English as a Second Language (ESL)

ESL courses are open to Science students under the regulations specified by the English and French Language Centre.

### 3.6.6 Auditing of Courses

No auditing of courses is permitted at McGill.

### 3.6.7 Course Credit Weight

The credit assigned to a particular course should reflect the amount of effort it demands of the student. Normally, one credit will represent three hours total work per week for one semester - including a combination of lecture hours, other contact hours, such as laboratory periods, tutorials, and problem periods, as well as personal study time.

## 4 Advising

Fall-term advising for newly admitted students takes place during the week prior to the beginning of classes. Students who are 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. Quebec students with a DEC 'en sciences' have normally taken the equivalent of and are therefore exempt from the 100-level basic science courses in Biology, Chemistry, Mathematics and Statistics, and Physics. Such students may also be exempt from some 200-level courses. Students with satisfactory results in International Baccalaureate, French Baccalaureate, and Advanced Placement tests may also be exempt from some or all of the basic sciences courses. 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 upon acceptance from the Admissions, Recruitment and Registrar's Office, as well as to the three-year program information posted on the Internet, <http://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 four-year program information on the Internet, <http://www.mcgill.ca/artscisao>.

Advising for all returning students takes place in March for the coming academic year. For more information, students should refer to the information on <http://www.mcgill.ca/artscisao>.

Advising is also available by email. The address is [adviser.artsci@mcgill.ca](mailto: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, students should refer to the General University Information and Regulations [section 3](#), *Welcome to McGill*, to the First-Year Student information on the Student Affairs website, <http://www.mcgill.ca/artscisao>, and to the Minerva website, <http://www.mcgill.ca/minerva-students>.

Returning students register at the end of April and in May for the coming academic year. For detailed information about registration, students should refer to the General University Information and Regulations [section 3](#), and to the information on <http://www.mcgill.ca/artscisao>, and to the Minerva website, <http://www.mcgill.ca/minerva-students>.

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 exceptional extenuating circumstances that affected their academic performance may appeal to the Associate Dean of Science for readmission. For more information, students should consult the Student Affairs Office, Dawson Hall, or read the information on <http://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 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, <http://www.mcgill.ca/artscisao>, or the Minerva website, <http://www.mcgill.ca/minerva-students>.

See [section 11](#) 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.

#### 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. Students who register for more than one will be obliged to withdraw from all but one of them. Please consult the departmental listings for course descriptions and availability.

ATOC 199 FYS: Weather, Climate, History (see Atmospheric and Oceanic Sciences)

CHEM 199 FYS: Why Chemistry? (see Chemistry)

GEOG 199 FYS: Geo-Environment (see Geography)

The First-Year Seminars offered by the Faculty of Arts are also open to Science students. For a complete listing, please consult [Arts section 5.2.1](#).

### 5.3 Registration for Graduation

Students in their final year must indicate their expected date of graduation on Minerva and must verify this date on verification forms. 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 (Academic and 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 semester;
- 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 supplementals);
- 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. 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. Please consult the General University Information [section 4.8](#) for more information about grading and credit.

## 7 Examinations

Students should refer to the General University Information [section 5](#) for information about final examinations and deferred examinations.

The exam schedules are posted 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 web site for more information, <http://www.mcgill.ca/artscisao>.

## 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 supplementals totalling more than 8 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; the instructor will announce the arrangements to be used for the course by the end of the change of course 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.

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 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 particular 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 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, 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 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.

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 semester, 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 12.29 "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; 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.

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](#).

## 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 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 to be considered;
- students must be in the top 10% of the Faculty's graduating students;
- 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 <http://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  
 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  
 Chemistry (Bio-organic option)  
 Chemistry (Environmental Chemistry option)  
 Chemistry (Materials)  
 Chemistry and Physics for Teachers – see Science for Teachers.  
 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  
 Mathematics and Chemistry for Teachers – see Science for Teachers.  
 Mathematics and Physics for Teachers – see Science for Teachers.  
 Microbiology and Immunology – application required, see departmental entry for information.  
 Physics  
 Physiology  
 Psychology  
 Software Engineering (subject to Ministry of Education approval) – 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

### 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.

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**11.7 Internship Programs – Internship Year For Engineering And Science (IYES)**

The following programs are also available with an Internship component. For more information, please see [section 2.9](#) in the Faculty of Engineering section.

**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 Honours Program in Physics & Mathematics  
Joint Faculty Program in Mathematics, Chemistry & Physics  
Joint Major Program in Atmospheric Science & Physics  
Joint Major Program in Physics & Geophysics

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**11.8 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 – Littres  
Langue et littérature françaises – Littres 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  
Political Science  
Québec Studies  
Religious Studies – Scriptures and Interpretation  
Religious Studies – World Religions  
Russian  
Sociology  
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 – Littres  
Langue et littérature françaises – Littres 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 Studies  
Linguistics, Applied  
Linguistics, Theoretical  
Middle East Studies  
Middle East Languages – see Middle East Studies.  
Music  
North American Studies  
Philosophy  
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  
Religious Studies – World Religions  
Religious Studies – Scriptural Languages  
Russian – see Russian and Slavic Studies.  
Russian Civilization – see Russian and Slavic Studies.  
Social Studies of Medicine  
Sociology  
Spanish Literature and Culture – see Hispanic Studies.  
Spanish-American Literature and Culture – see Hispanic Studies.  
Women's Studies

The Faculty of Science is divided into four parts. The remaining sections can be accessed from the Table of Contents at the beginning of this section (page 359) or from Undergraduate Programs Calendar Front Page.