

## 6 Bachelor of Arts and Science

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### 6.1 The Faculties

#### 6.1.1 Location

853 Sherbrooke Street West  
Montreal, QC H3A 2T6  
Canada

Telephone: (514) 398-4210  
Faculty Websites: [www.mcgill.ca/arts](http://www.mcgill.ca/arts) and  
[www.mcgill.ca/science](http://www.mcgill.ca/science)  
Degree Website: [www.mcgill.ca/artscisao/basc](http://www.mcgill.ca/artscisao/basc)

Student Affairs Office

Website: [www.mcgill.ca/artscisao](http://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.

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#### 6.1.2 Administrative Officers

For a listing of administrative officers in the Faculty of Arts, refer to [section 5.1.2 "Administrative Officers"](#), and for those in the Faculty of Science, refer to [section 12.1.2 "Faculty Administrative Officers"](#). 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 Arndtsen; B.A.(Car.), Ph.D.(Stan.)	<b>Chemistry</b>
André Costopoulos; B.A.(McG.), M.A.(Montr.), Ph.D.(Oulu)	<b>Anthropology</b>
Morton J. Mendelson; B.Sc.(McG.), A.M., Ph.D.(Harv.)	<b>Associate Dean (Academic), Faculty of Science</b>
Gregory Mikkelson; M.S., Ph.D.(Chic.)	<b>Philosophy &amp; McGill School of Environment</b>
Timothy R. Moore; B.Sc.(Swansea), Ph.D.(Aberd.)	<b>Geography</b>
Enrica Quaroni; B.A., Ph.D.(McG.)	<b>Associate Dean (Student Affairs), Faculty of Arts</b>

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#### 6.1.3 Programs and Teaching in Arts and in Science

Programs and teaching in Arts are described in [section 5.1.3 "Programs and Teaching in Arts"](#). Those in Science are described in [section 12.1.3 "Programs and Teaching in Science"](#). The two faculties jointly offer the B.A. & Sc., so students pursuing that degree are at home in both Arts and Science.

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#### 6.1.4 Student Affairs Office

The Student Affairs Office 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](http://www.mcgill.ca/artscisao).

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## 6.2 Degree Admission Requirements

For information about admission requirements to the B.A. & Sc., please refer to "[General Admission and Documentation Requirements](#)", see [section 3.5](#).

For information about inter-faculty or inter-degree transfers, please refer to "[Inter-Faculty Transfer](#)", [section 4.3.11](#), as well as to the relevant information posted on the Student Affairs Office Website at [www.mcgill.ca/artscisao](http://www.mcgill.ca/artscisao) and in the Student Affairs Office.

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## 6.3 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](#)", [section 6.3.1](#)

"[Residency](#)", [section 6.3.2](#)

"[Cumulative Grade Point Average \(CGPA\)](#)", [section 6.3.3](#)

"

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](http://www.mcgill.ca/artscisao).

### 6.3.5.2 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 "Integrative Courses", section 6.11.6, plus electives (12-15 credits).

### 6.3.5.3 Multi-Track System

To recognise 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 "Programs in the B.A. & Sc.", section 6.11, 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 good academic standing. They are designed to prepare students for graduate study.

At the time of publishing this Calendar, no honours programs had been approved for the B.A. & Sc. However, students should consult [www.mcgill.ca/artscisao/basc](http://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 section 5.11.4 "Joint Honours Programs" 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 two Science Joint Honours Components had been approved (Mathematics and Psychology). Students should consult [www.mcgill.ca/artscisao/basc](http://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 had been approved. Students should consult [www.mcgill.ca/artscisao/basc](http://www.mcgill.ca/artscisao/basc) for an up-to-date list of B.A. & Sc. programs.

### 6.3.6 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 section 5.12 "Academic Programs".

For descriptions of B.A. & Sc. Science programs that are available to Science students, see section 12.12 "Academic Programs".

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" in section 14.3. (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](http://www.mcgill.ca/artscisao/basc) for an up-to-date list of B.A. & Sc. programs.)

### 6.3.6.1 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.

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 "Course Overlap", section 12.3.6.1

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.

### 6.3.6.2 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.**

### 6.3.6.3 Distance Education Courses

1. A maximum of 6 credits of courses taught through distance education may be used towards the B.A. & Sc. degree at McGill.
2. Courses taught through distance education from institutions other than McGill will be approved as transfer credits under the following conditions:
  - a. the course is given by a government-accredited, degree-granting institution acceptable to McGill;
  - b. the course counts for credit towards degrees granted at the institution giving the course;
  - c. prior approval for the course is obtained from the Arts and Science Student Affairs Office.

3. The combined total of regular course credits and distance education course credits may not exceed the permitted maximum number of credits per term according to the regulations for the B.A. & Sc.
4. Courses taught through distance education may not be used to complete program requirements, except on an individual basis when serious, documented circumstances warrant it. In such cases, prior approval must be obtained from the student's program adviser and the Associate Dean (Student Affairs) of the Faculty of Science.

### 6.3.6.4 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 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 section 4.3.5 "Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option".

### 6.3.6.5 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 B.A. & Sc. may take a maximum of 12 credits, including academic writing courses for non-anglophones.

### 6.3.6.6 Auditing of Courses

No auditing of courses is allowed at McGill University.

tration" in section 4.3, *Welcome to McGill*, the Student Affairs Website, [www.mcgill.ca/artscisao](http://www.mcgill.ca/artscisao), and the Minerva Website, [www.mcgill.ca/minerva](http://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 refer to "Registration" in section 4.3, the information at [www.mcgill.ca/artscisao](http://www.mcgill.ca/artscisao) and the Minerva Website, [www.mcgill.ca/minerva](http://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 re-register. However, students who can provide proof of extenuating circumstances that affected their academic performance may appeal to the Associate Dean (Student Affairs) of Science for readmission. For more information, students should consult the Student Affairs Office, or the Student Affairs Website, [www.mcgill.ca/artscisao](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 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 for further information.

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### 6.5.1 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](http://www.mcgill.ca/artscisao),



## **6.9 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

## 6.10 Awards and Honorary Designations

### 6.10.1 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 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.

### 6.10.2 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.

### 6.10.3 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;
- students must have a CGPA that is greater than the mean of the minimum CGPAs required for students in the Faculties of Arts and of Science to be placed on their respective Dean's Honour Lists;
- 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;
- students must have a sessional GPA (i.e., combined GPA for the Fall and Winter terms) that is greater than the mean of the minimum sessional GPAs required for students in the Faculties of Arts and of Science to be placed on their respective Dean's Honour Lists.

### 6.10.4 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](http://www.mcgill.ca). No application is required except in the case of the Moysse Travelling Scholarships.

## 6.11 Programs in the B.A. & Sc.

### 6.11.1 Major Concentrations

#### 6.11.1.1 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  
 East Asian Studies  
 Economics  
 English - Cultural Studies  
 English - Drama and Theatre  
 English - Literature  
 Geography  
 Geography (Urban Systems)  
 German Language and Literature  
 German Literature and Culture  
 German Studies, Contemporary  
 Hispanic Languages  
 Hispanic Literature and Culture  
 History  
 Humanistic Studies  
 International Development Studies  
 Italian Civilization  
 Italian Language and Literature  
 Jewish Studies  
 Langue et littérature françaises - Lettres  
 Langue et littérature françaises - Lettres et traduction  
 Langue et littérature françaises - Linguistique du français  
 Latin-American Studies  
 Linguistics  
 Middle East Studies  
 Music  
 North American Studies  
 Philosophy  
 Philosophy and Western Religions  
 Political Science  
 Quebec Studies  
 Russian  
 Scriptures and Interpretations - see Religious Studies  
 Sociology  
 Women's Studies  
 World Religions - see Religious Studies

#### 6.11.1.2 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 Faculty of Arts (A) section of the Calendar as indicated.

Biology - Cell/Molecular Option (AS)  
 Biology - Organismal Option (AS)  
 Biomedical Sciences (AS)  
 Chemistry (AS)  
 Computing, Foundations of (A)  
 Earth, Atmosphere and Ocean Sciences (AS)  
 Geography - Physical Geography Option (AS)  
 Mathematics (A)  
 Physics (AS)  
 Psychology (A)



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### **6.11.2 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.

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### **6.11.3 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.

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### **6.11.4 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 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).

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### 6.11.6 Integrative Courses

#### 6.11.6.1 Required Integrative Course

All students pursuing a B.A. & Sc. must take BASC 201, normally in U1.

#### 6.11.6.2 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 Zooarchaeology
- ATOC/EPSC 250 Natural Disasters
- ECON 347 Economics of Climate Change
- ENGC 200 Communications - Pre-Electronic Age
- ENGC 210 History of Communication - Electronic Age
- ENVR 200 The Global Environment
- ENVR 201 Society and Environment
- ENVR 202 The Evolving Earth
- ENVR 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
- MATH328 Computability and Mathematical Linguistics
- MATH330 Mathematical Finance
- MATH338 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
- SOCI225 Medicine & Health in Modern Society

ENGC 200 Communications - Pre-Electronic Age

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#### **6.12.4 Biomedical Sciences**

Major Concentration in Biomedical Sciences - Program Advisers:

Professor Teresa Trippenbach, Department of Physiology  
McIntyre Medical Sciences Building, Room 1116  
E-mail: [teresa.trippenbach@mcgill.ca](mailto: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](mailto:ann.wechsler@mcgill.ca)  
Telephone: (514) 398-43733 Tc l.ca

### 6.12.5 Chemistry (CHEM)

The Department of Chemistry, the discipline, and specific courses are described in the Faculty of Science section of the Calendar.

The Major Concentration in Chemistry is not certified by the Ordre des Chimistes du Québec. Students interested in pursuing a career in Chemistry in Quebec are advised to take an appropriate B.Sc. program in Chemistry. The minimum freshman science requirements in the B.A. & Sc. may not satisfy the introductory science requirements of all medical/dental schools (see [section 6.3.5 "Program Requirements"](#)).

#### MAJOR CONCENTRATION IN CHEMISTRY (36 credits)

The Major Concentration in Chemistry, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed. (see [section 12.12.29 "Science for Teachers"](#)) 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

\* Required courses taken at CEGEP or elsewhere that are not credited toward the B.A. & Sc. or B.Sc./B.Ed. must be replaced by courses from the Complementary Course List equal to or exceeding their credit value. Regardless of the substitution, students must take at least 36 credits in this program.

#### Complementary Courses (18 credits)

18 credits selected from:

CHEM 219	(3)	Introduction to Atmospheric Chemistry
CHEM 302	(3)	Introductory Organic Chemistry 3
CHEM 307	(3)	Analytical Chemistry of Pollutants
CHEM 334	(3)	Advanced Materials
CHEM 363	(2)	Physical Chemistry Laboratory 1
CHEM 367	(3)	Instrumental Analysis 1
CHEM 381	(3)	Inorganic Chemistry 2
CHEM 382	(3)	Organic Chemistry: Natural Products
CHEM 531	(3)	Chemistry of Inorganic Materials
CHEM 571	(3)	Polymer Synthesis
CHEM 582	(3)	Supramolecular Chemistry
CHEM 591	(3)	Bioinorganic Chemistry

18 credits from List A in one of Computer Science, Linguistics, Philosophy, or Psychology.

12 credits from List A in one of the three remaining units.

18 credits, at least 12 at the 400 level or higher, chosen from Lists A and/or B in Computer Science, Linguistics, Philosophy, and/or Psychology.

Note 1: Students are responsible for ensuring that they meet all pre- and corequisites for all their courses.

Note 2: With the permission of the Director of the Cognitive Science program, students may be able to substitute courses in cognate departments, such as Anatomy and Cell Biology, Biology, -rpredits selected from:

### 6.12.6 Cognitive Science

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 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 offered 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)

#### FACULTY PROGRAM IN COGNITIVE SCIENCE (54 credits)

The Faculty Program in Cognitive Science, which is restricted to students in the B.A. & Sc., is a planned sequence of courses designed to permit students to focus on at least two relevant areas of study.

#### Required Course (3 credits)

PSYC532	(3)	Cognitive Science
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#### Complementary Courses (51 credits)

3 credits, one of:

MATH318	(3)	Mathematical Logic
PHIL210	(3)	Introduction to Deductive Logic 1

A new area of study, Neuroscience, is under development for September 2005. See [www.mcgill.ca/artsciao/basc](http://www.mcgill.ca/artsciao/basc) for up-to-date information.

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### 6.12.7 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)

[A minor program revision is under consideration for September 2005. Go to [www.mcgill.ca](http://www.mcgill.ca) (Course Calendars) in July for details.]

The Major Concentration in Earth, Atmosphere and Ocean Sciences, which is restricted to students in the B.A. & Sc. (see [section 12.12.29 "Science for Teachers"](#)), is a planned sequence of courses designed to permit a degree of specialization in these disciplines.

**Required Courses\*** (25 credits)

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### 6.12.8 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

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