Bachelor of Arts and Science

Programs, Courses and University Regulations

2010-2011

Publication Information

Published by

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

Managing Editor
Bonnie Borenstein
Enrolment Services

McGill University reserves the right to make changes to the information contained in this publication - including correcting errors, altering fees, schedules of admission and credit requirements, and revising or cancelling particular courses or programs - without prior notification.

The web version is the most current version of this publication.

Not all courses are offered every year and changes can be made after publication. Always check the Minerv

1 About the Faculties

The B.A. & Sc. is an interdisciplinary degree intended for students who want to pursue simultaneously a program offered by Arts and one offered by Science. The B.A. & Sc. is intended for students with well-defined interdisciplinary interests, and is not meant as a "compromise" between a B.A. and a B.Sc. degree. If you are more interested in Arts, but would like to study some Science, you can do so within the B.A. degree. Similarly, if you are more interested in Science, but would like to study some Arts, you can do so within the B.Sc. degree.

For learn more about the Faculty of Arts, see *Faculty of Arts > About the Faculty of Arts*. To learn more about the Faculty of Science, see *Faculty of Science > About the Faculty of Science*.

2 Programs and Teaching in Arts and in Science

Programs and teaching in Arts are described under *Faculty of Arts > Programs and Teaching in Arts*. Those in Science are described under *Faculty of Science > 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.

3 About the Bachelor of Arts and Science (Undergraduate)

The B.A. & Sc. is an interdisciplinary degree intended for students who want to pursue simultaneously a program offered by Arts and one offered by Science. The B.A. & Sc. is intended for students with well-defined interdisciplinary interests, and is not meant as a "compromise" between a B.A. and a B.Sc. degree. If you are more interested in Arts, but would like to study some Science, you can do so within the B.A. degree. Similarly, if you are more interested in Science, but would like to study some Arts, you can do so within the B.Sc. degree.

3.1 Location

853 Sherbrooke Street West
Montreal, Quebec H3A 2T6
Canada

Telephone: 514-398-4210
Faculty websites: *www.mcgill.ca/arts* and *www.mcgill.ca/science*
Degree website: *www.mcgill.ca/science/sousa/basc*

Science Office for Undergraduate Student Advising (SOUSA)
Website: *www.mcgill.ca/science/sousa*

The Science Office for Undergraduate Student Advising (SOUSA) of the Faculty of Science and the Office of the Director of Advising Services of the Faculty of Science are located in Dawson Hall, Rooms 110 and 115. The SOUSA Office serves students in the B.A. & Sc. and B.Sc. degrees.

3.2 Administrative Officers

For a listing of administrative officers in the Faculty of Arts, refer to *Faculty of Arts > Administrative Officers* and for those in the Faculty of Science, refer to *Faculty of Science > Administrative Officers*. Note that the Director of Advising Services, 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:

B.A. & Sc. Program Administration Committee (PAC)	
Bruce A. Arndtsen; B.A.(Car. College), Ph.D.(Stan.)	**Chemistry**
PP	**Economics**

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

If you are readmitted after interrupting your studies for a period of five consecutive years or more, you may be required to complete a minimum of 60 credits and satisfy the requirements of a program. In this case, a new GPA will be calculated. The Director of Advising Services, Science, in consultation with the appropriate department, may approve a lower minimum for students who had completed 60 credits or more before interrupting their studies.

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

5.2 Residency Requirement

T

MATH 141	(4)	Calculus 2
MATH 151	(4)	Calculus B

A Linear Algebra course:

MATH 133	(3)	Linear Algebra and Geometry

SCIENCE

At least three foundational science courses:

One or more of Biology or Chemistry:

* Note: CHEM 120 is not open to students who have taken CHEM 115.

BIOL 111	(3)	Principles: Organismal Biology
BIOL 112	(3)	Cell and Molecular Biology
CHEM 120*	(4)	General Chemistry 2

One of General Chemistry:

CHEM 110	(4)	General Chemistry 1
CHEM 115	(4)	Accelerated General Chemistry: Giants in Science

One of Mechanics:

PHYS 101	(4)	Introductory Physics - Mechanics
PHYS 131	(4)	Mechanics and Waves

One of Electromagnetism:

Note: PHYS 101 is a prerequisite for PHYS 102; and PHYS 131 is a prerequisite for PHYS 142.

PHYS 102	(4)	Introductory Physics - Electromagnetism
PHYS 142	(4)	Electromagnetism and Optics

ARTS

At least three Arts courses (or 9 credits) to be chosen in two of the following three categories: Humanities, Languages and Social Sciences.

A maximum of two courses (or 6 credits) may be chosen from one category, and no more than two courses (or 6 credits) can be taken in any one department.

Note: No course may fulfil the requirements for more than one program, including the B.A. & Sc. Freshman Program.

Humanities (Literature and Civilization):

Courses selected from the following subjects:

Art History and Communications Studies (ARTH and COMS)

Classics (CLAS)

East Asian Studies (EAST)

English (ENGL)

French Language and Literature (FREN)

German Studies (GERM)

Hispanic Studies (HISP)

Islamic Studies (ISLA)

Italian studies (ITAL)

Jewish Studies (JWST)

Philosophy (PHIL)

Religious Studies (RELG)

Russian Studies (RUSS)

Languages:

Courses may be taken in this category to improve language skills.

Languages include:

Classics (Latin, Ancient Greek or Modern Greek) (CLAS)

East Asian Studies (Chinese, Japanese, Korean) (EAST)

English as a Second Language (ESLN)

French as a Second Language (FRSL)

French Language and Literature (FREN)

German Studies (GERM)

Hispanic Studies (Spanish) (HISP)

Islamic Studies (Arabic, Persian, Turkish, Urdu) (ISLA)

Italian (ITAL)

Jewish Studies (Hebrew, Yiddish) (JWST)

Russian and Slavic Studies (Polish, Russian, Armenian, Czech) (RUSS)

Social Sciences:

Courses selected from the following subjects:

Anthropology (ANTH)

Economics (ECON)

History (HIST)

Linguistics (LING)

Political Science (POLI)

Sociology (SOCI)

Advanced Standing/Transfer Credits

Students who have completed the Diploma of Collegial Studies, Advanced Placement exams, Advanced Levels, the International Baccalaureate, the French Baccalaureate, or McGill placement examinations may receive exemption and/or credit for all or part of the Mathematics and foundational science courses as well as exemption from all or part of the Arts courses requirement of the Freshman Program. Similarly, students who have completed courses at other universities or colleges may receive exemptions and/or credits.

Advanced Placement Examination results with a score of 4 or 5 must be declared by the student at the time of initial registration at the University.

For more information about advanced standing, please consult: http://www.mcgill.ca/students/courses/plan/transfer/. Students must carefully select their mathematics and science Freshman courses so that they have all the required prerequisites for their intended Departmental Programs.

5.5 Departmental Programs

If you are pursuing a B.A. & Sc., other than those registered in the Freshman Program, you are required to have an approved program (Multi-track, Honours, Joint Honours, Interfaculty), and to select your courses in each term with a view to timely completion of your degree and program requirements. You must complete one of the program streams described below.

In all cases, the degree also includes a

5.5.1 Multi-Track System

To recognize the diversity of student backgrounds and interests and the multiple routes to understanding provided by a modern university, the Faculties of Arts and of Science offer a 90-credit multi-track system that includes a Major Concentration in one faculty complemented by either a Major Concentration or two Minors/Minor Concentrations in the other faculty and that may be completed in one of the following ways:

Options

- Arts Major Concentration (36 credits) + Science Major Concentration (36-38 credits) (see *section 9: Overview of Programs Offered* for a list of programs open to students in the B.A. & Sc.)
- Major Concentration in Arts or Science (36-38 credits) + two Minors/Minor Concentrations in the other faculty (2 x 18 credits = 36 credits)

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, you 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 fulfil the requirements for more than one program.

Definitions

- *Units:* academic departments or administrative equivalents.
- *Programs:* lists of required and complementary courses (including university level prerequisites for required courses) prepared and maintained by units.
- *Major Concentration:* a program of 36-38 credits taken from a unit's course offerings.
- *Minor Concentration:* a program of 18 credits taken from a unit's course offerings. 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.

5.5.2 Honours Program

Honours programs demand a high degree of specialization, and require you to satisfy specific departmental and Faculty Honours requirements while maintaining good academic standing. They are designed to prepare you for graduate study. Students in the B.A. & Sc. who complete an approved Honours program must also complete an approved Minor Concentration or a Minor in the Faculties of Arts or of Science. You must complete at least 30 credits in the Faculty of Arts and at least 30 in the Faculty of Science as part of your Honours program and your Minor Concentration or Minor program. See *section 9.3: Honours Programs* for a list of available programs.

To choose the Honours option, you must meet the GPA/CGPA requirements set out in *University Regulations and Information > Graduation Honours: Honours and First-Class Honours*.

5.5.3 Joint Honours Program

If you want to study at the Honours level in two disciplines, you can combine a Joint Honours program component from an Arts discipline with one from a Science discipline; see *section 9.4: 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 choose the Joint Honours option, you must meet the GPA/CGPA requirements set out in *University Regulations and Information > Graduation Honours: Honours and First-Class Honours*.

5.5.4 Interfaculty Program

An Interfaculty 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. See *section 9.2: Interfaculty Programs* for a list of approved programs. Students in the B.A. & Sc. who complete an approved Interfaculty program must also complete an approved Minor Concentration or a Minor in the Faculties of Arts or of Science. You must complete at least 30 credits in the Faculty of Arts and at least 30 in the Faculty of Science as part of your Interfaculty program and your Minor Concentration or Minor program.

5.6 Course Requirements

All required and complementary courses used to fulfil program requirements, including the Freshman Program, must be completed with a grade of C or better. If you fail to obtain a satisfactory grade in a required course, you 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, you 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, you must appeal to the Director of Advising Services, Science, for permission to take the course a third time. If permission is denied by the Director of Advising Services and/or by the Committee on Student Standing of the Faculty of Science, on appeal, you must withdraw from the program. If the failed course is a complementary course required by the program, you may choose to replace it with another appropriate complementary course. If you choose 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 you repeat 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 a list of all programs available to B.A. & Sc. students, see *section 9: Overview of Programs Offered*.

For a list of the required and complementary integrative courses, see *section 9.6*

Interfaculty Programs

Environment

In contrast to other Environment programs offered through the McGill School of Environment, the B.A. & Sc. Interfaculty Environment Program does not have predefined themes and is intended for students who have a specific goal and want to define their own theme by choosing courses that help them

Students are warned not to make travel arrangements to leave Montreal prior to the scheduled end of any examination period.

9 Overview of Programs Offered

- *Major Concentrations*; see *section 9.1: Major Concentrations*
- *Interfaculty Programs*; see *section 9.2: Interfaculty Programs*
- *Honours Programs*; see *section 9.3: Honours Programs*
- *Joint Honours Programs*; see *section 9.4: Joint Honours Programs*
- *Minor Concentrations or Minors*; see *section 9.5: Minor Concentrations or Minors*
- *Integrative Courses*; see *section 9.6: Integrative Courses*

9.1 Major Concentrations

9.1.1 Faculty of Arts

The Arts Major Concentrations available to B.A. & Sc. students are listed here and are described in detail under the *Faculty of Arts* section of this publication. Since the B.A. & Sc. degree requires a certain number of credits in the Arts and in the Sciences, there are special requirements for B.A. & Sc. students. To be counted as an Arts Major Concentration, the program must include at least 30 credits of Arts courses. Similarly, to be counted as a Science Major Concentration, the program must include at least 30 credits of Science courses.

For example, a student completing the 36-credit African Studies Major Concentration in Arts must complete at least 30 of those credits in Arts courses and at most 6 credits in Science courses.

African Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration African Studies (36 credits)*

Anthropology; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Anthropology (36 credits)*

Art History; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Art History (36 credits)*

Canadian Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Canadian Studies (36 credits)*

Classics; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Classics (36 credits)*

East Asian Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration East Asian Studies (36 credits)*

Economics; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Economics (36 credits)*

English – Cultural Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration English – Cultural Studies (36 credits)*

English – Drama and Theatre; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration English – Drama and Theatre (36 credits)*

English – Literature; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration English – Literature (36 credits)*

Geography; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Geography (36 credits)*

Geography (Urban Systems); see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Geography - Urban Systems (36 credits)*

German Language and Literature; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration German Studies - Language and Literature (36 credits)*

German Literature and Culture; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration German Studies - Literature and Culture (36 credits)*

German Studies, Contemporary; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Contemporary German Studies (36 credits)*

Hispanic Languages; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Hispanic Studies - Languages (36 credits)*

Hispanic Literature and Culture; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Hispanic Studies - Literature and Culture (36 credits)*

History; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration History (36 credits)*

International Development Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration International Development Studies (36 credits)*

Italian Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Italian Studies (36 credits)*

Jewish Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Major Concentration Jewish Studies (36 credits)*

Langue et littératur

9.3 Honours Programs

There are two Honours programs available to B.A. & Sc. students:

- The Honours Program in Environment is described in detail in this publication under *McGill School of Environment > Honours Program in Environment*.
- The Honours Program in Cognitive Science is described in detail in *section 10.6: Cognitive Science*.

Students interested in an Honours degree should also consider the Joint Honours Programs; see *section 9.4: Joint Honours Programs*.

9.4 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).

9.4.1 Faculty of Arts

The Arts Joint Honours components available to B.A. & Sc. students are listed here and are described in detail under the *Faculty of Arts* section of this publication.

Anthropology; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Anthropology (36 credits)*

Art History; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Art History (36 credits)*

Canadian Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Canadian Studies (36 credits)*

Classics; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honour*

Religious Studies - Western Religions; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Religious Studies - Western Religions (36 credits)*

Russian; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Russian (36 credits)*

Sociology; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Sociology (36 credits)*

Women's Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Women's Studies (36 credits)*

9.4.2 Faculty of Science

There are currently only two Science Joint Honours components available to B.A. & Sc. students, which are listed here and are described in detail under the *Faculty of Arts* section of this publication.

Mathematics; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Mathematics (36 credits)*

Psychology; see *Faculty of Arts > Bachelor of Arts (B.A.) - Joint Honours Component Psychology (36 credits)*

9.5 Minor Concentrations or Minors

9.5.1 Faculty of Arts

The Arts Minor Concentrations available to B.A. & Sc. students are listed here and are described in detail under the *Faculty of Arts* section of this publication. Since the B.A. & Sc. degree requires a certain number of credits in the Arts and in the Sciences, there are special requirements for B.A. & Sc. students. To be counted as an Arts Minor or Minor Concentration, the program must include at least 15 credits of Arts courses. Similarly, to be counted as a Science Minor or Minor Concentration, the program must include at least 15 credits of Science courses.

For 0 0 1 213.24 514.963 Tm(s)Tj1 0 0 99ince Mino 424.16R2 'edits of

German Literature and Culture in Translation; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration German Literature and Culture in Translation (18 credits)*

Hispanic Languages; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Hispanic Languages (18 credits)*

Hispanic Literature and Culture; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Hispanic Literature and Culture (18 credits)*

History; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration History (18 credits)*

History and Philosophy of Science; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration History and Philosophy of Science (18 credits)*

International Development Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration International Development Studies (18 credits)*

International Relations; see *Faculty of Arts > Political Science (POLI) >Bachelor of Arts (B.A.) - Minor Concentration International Relations (18 credits)*

Islamic Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Islamic Studies (18 credits)*

Italian Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Italian Studies (18 credits)*

Jewish Law; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Jewish Law (18 credits)*

Jewish Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Jewish Studies (18 credits)*

Langue et littérature françaises – Critique littéraire; see *Faculty of Arts > Bachelor of Arts (B.A.) - Concentration mineure langue et littérature françaises – Critique littéraire (18 crédits)*

Langue et littérature françaises – Études et pratiques littéraires; see *Faculty of Arts > Bachelor of Arts (B.A.) - Concentration mineure langue et littérature françaises – Études et pratiques littéraires (18 crédits)*

Langue et littérature françaises – Langue française; see *Faculty of Arts > Bachelor of Arts (B.A.) - Concentration mineure langue et littérature françaises – Langue française (18 crédits)*

Langue et littérature françaises – Langue française et traduction; see *Faculty of Arts > Bachelor of Arts (B.A.) - Concentration mineure langue et littérature françaises – Langue française et traduction (18 crédits)*

Langue et littérature françaises – Traduction; see *Faculty of Arts > Bachelor of Arts (B.A.) - Concentration mineure langue et littérature françaises – Traduction (18 crédits)*

Linguistics; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Linguistics (18 credits)*

Middle East Languages; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Middle East Languages (18 credits)*

Middle East Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Middle East Studies (18 credits)*

North American Studies; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration North American Studies (18 credits)*

Philosophy; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Philosophy (18 credits)*

Philosophy and Western Religions; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Philosophy and Western Religions (18 credits)*

Political Economy; see *Faculty of Arts > Political Science (POLI) > Bachelor of Arts (B.A.) - Minor Concentration Political Economy (18 credits)*

Political Science; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Political Science (18 credits)*

Political Science: Canada/Quebec; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Political Science Canada/Quebec (18 credits)*

Political Theory; see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Political Theory (18 credits)*

Politics, Law and Society; see *Faculty of Arts > Political Science (POLI) > Bachelor of Arts (B.A.) - Minor Concentration Politics, Law and Society (18 credits)*

Quebec Studies

9.5.2 Faculty of Science

The Science Minors (M) or Minor Concentrations (MC) available to B.A. & Sc. students are listed here and are described in detail either under the *Faculty of Science* (S) or *Faculty of Arts* (A), or *Bachelor of Arts & Science* (AS) section of this publication as indicated.

Atmospheric Science (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Atmospheric Science (18 credits)*

Biology – Cell/Molecular (MC-AS); see *Bachelor of Arts & Science > Bachelor of Arts and Science (B.A. & Sc.) - Minor Concentration Biology - Cell/Molecular (19 credits)*

Biology – Organismal (MC-AS); see *Bachelor of Arts & Science > Bachelor of Arts and Science (B.A. & Sc.) - Minor Concentration Biology - Organismal (19 credits)*

Chemistry (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Chemistry (18 credits)*

Computer Science (MC-A); see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration in Computer Science (18 credits)*

Environment (M-S); see *McGill School of Environment > Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) or Bachelor of Science (B.Sc.) - Minor Environment (18 credits)*

Geographic Information Systems (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Geographic Information Systems (18 credits)*

Geography (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Geography (18 credits)*

Geology (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Geology (18 credits)* (*previously named Earth and Planetary Sciences*)

Interdisciplinary Life Sciences (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Interdisciplinary Life Sciences (24 credits)*

Mathematics (MC-A); see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Mathematics (18 credits)*

Physics (M-S); see *Faculty of Science > Bachelor of Science (B.Sc.) - Minor Physics (18 credits)*

Psychology (MC-A); see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Psychology (18 credits)*

Statistics (MC-A see Mathematics & Statistics); see *Faculty of Arts > Bachelor of Arts (B.A.) - Minor Concentration Statistics (18 credits)*

9.6 Integrative Courses

9.6 Tmrsi17 Integrative Courses 8.1 Tfle(Ag)T01 Tm(edits)) 0 02j/F1 8.1 8.y 1 185.886 356.271 Tm(se)Tjj/F) /F1 8.1 8.1 Tm(9.6.1)Tj/F1 8/F1 8.1 8.1 17.52 697.

9.6.1 Required Integrative Course

Arts & Science Integrative Topics

BIOL 210	(3)	Perspectives of Science
		Beha

SOCI 234	(3)	Population and Society
SOCI 235	(3)	Technology and Society
SOCI 338	(3)	Introduction to Biomedical Knowledge
SOCI 390	(3)	Gender and Health
SOCI 508	(3)	Medical Sociology and Social Psychiatry
SOCI 525	(3)	Health Care Systems in Comparative Perspective

As a substitute, students can fulfil the requirement for a complementary integrative course by conducting library or empirical research that integrates the components of their program as a 3- or 6-credit independent study course, thesis course, or research course, with approval of the Director of Advising Services, Science.

10 Academic Programs

The B.A. & Sc. is an interdisciplinary degree intended for students who want to pursue simultaneously a program offered by Arts and one offered by Science. The overall objective is to provide a broad education spanning substantive areas in the two faculties so that students can learn diverse content and varied methods of inquiry.

10.1 Required Integrative Course

BASC 201 *Arts & Science Integrative Topics* is a required course in the B.A. & Sc., normally taken in U1. It introduces students to a variety of interdisciplinary topics that exemplify the benefits of applying scholarship from Arts and Science to a problem. It also provides students in the degree with a common experience and a reference group.

10.2 Programs in Arts or in Science

All B.A. & Sc. Arts programs are described in detail under the *Faculty of Arts* section of this publication. B.A. & Sc. Science programs that are open to B.A. students (i.e., programs in Computer Science, Mathematics and Statistics, and Psychology as well as some in Geography) are described under the *Faculty of Arts* section. Science Minors that are open to B.A. & Sc. students are described under the *Faculty of Science* section. B.A. & Sc. Science programs that are open only to B.A. & Sc. students are described under *Bachelor of Arts and Science*.

For information about where each B.A. & Sc. program is listed, see *section 9*

BIOL 200	(3)	Molecular Biology
BIOL 201	(3)	Cell Biology and Metabolism
BIOL 202	(3)	Basic Genetics
CHEM 212**	(4)	Introductory Organic Chemistry 1

Complementary Courses (6 credits)

Any biology course at the 300-level or higher approved by an adviser.

10.3.2 Bachelor of Arts and Science (B.A. & Sc.) - Minor Concentration Biology - Organismal (19 credits)

The Minor Concentration Biology - Organismal, is restricted to students in the B.A. & Sc. It is a sequence of courses designed to yield a broad introduction to organismal biology.

Advising Note: Students interested in a Biology Minor Concentration must choose either the Cell/Molecular option or the Organismal option, but may not take both. Students interested in a more in-depth program in Biology should consider the Major Concentration.

Students may complete this program with a minimum of 18 credits or a maximum of 19 credits depending if they are exempt from taking CHEM 212 and their choice of complementary course.

Required Courses* (16 credits)

* Required courses taken at CEGEP or else

Complementary Courses (7 credits)

at least 7 credits selected from:

BIOL 306	(3)	Neural Basis of Behaviour
BIOL 313	(3)	Eukaryotic Cell Biology
BIOL 314	(3)	Molecular Biology of Oncogenes
BIOL 370	(3)	Human Genetics Applied
BIOL 373	(3)	Biometry
BIOL 413	(1)	Directed Reading
BIOL 568	(3)	Topics on the Human Genome
BIOL 575	(3)	Human Biochemical Genetics

or other appropriate course at the 300-level or higher with permission of an adviser.

10.3.4 Bachelor of Arts and Science (B.A. & Sc.) - Major Concentration Biology - Organismal (37 credits)

The Major Concentration Biology - Organismal is a planned sequence of courses designed to permit a degree of specialization in organismal biology.

Advising Note: Freshman students should be aware that PHYS 101 and/or PHYS 102 are required for some of the courses in the major and minor concentrations in Biology.

Required Courses* (28 credits)

* 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 3-credit courses from the Complementary Course List. Regardless of the substitution, students must take at least 36 credits in this program.

** Students who have already taken CHEM 212 or its equiv

CHEM 281	(3)	Inorganic Chemistry 1
CHEM 287	(2)	Introductory Analytical Chemistry
CHEM 297	(1)	Introductory Analytical Chemistry Laboratory

Complementary Courses (18 credits)

18 credits selected from:

CHEM 219	(3)	Introduction to Atmospheric Chemistry
CHEM 263	(1)	Introductory Physical Chemistry 2 Laboratory
CHEM 302	(3)	Introductory Organic Chemistry 3
CHEM 307	(3)	Analytical Chemistry of Pollutants
CHEM 334	(3)	Advanced Materials
		Instrumental 0 1 (yTj1 01 01 01 5175 550.261 Tm((3))Tj1 0 0 1 70.55 550.261 Tm(CHE6 307)Tj1 0 0 1 221.9434.53.14

CH5M 302Inor	(3)

Cognitive Science Committee Members:

David Ragsdale (*Neuroscience*)

Debra Titone (*Psychology*)

Please note: New students are required to attend an Information Session held at the end of August. Please consult the cognitive science website in early August for the date and location.

10.6.3 Bachelor of Arts and Science (B.A. & Sc.) - Interfaculty Program Cognitive Science (54 credits)

The Interfaculty Program 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.

Note: B.A. & Sc. students who take Interfaculty programs must take at least 30 credits in Arts and 30 in Science across their interfaculty program and their minor or minor concentration.

Required Course (3 credits)

PSYC 532	(3)	Cognitive Science

Complementary Courses (51 credits)

Credits are selected as follows:

3 credits, one of:

COMP 230	(3)	Logic and Computability
MATH 318	(3)	Mathematical Logic
PHIL 210	(3)	Introduction to Deductive Logic 1

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

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

18 credits chosen from Lists A and/or B in Computer Science, Linguistics, Neuroscience, Philosophy, Psychology and/or Research Courses of which at least 12 credits must be at the 400-level or higher.

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, Neurology, or Physiology. For further information, consult the Cognitive Science website: http://www.mcgill.ca/cogsci.

Computer Science

List A:

COMP 206	(3)	Introduction to Software Systems
COMP 250	(3)	Introduction to Computer Science
COMP 251	(3)	Data Structures and Algorithms
COMP 302	(3)	Programming Languages and Paradigms
COMP 424	(3)	Artificial Intelligence
COMP 527	(3)	Logic and Computation
MATH 240	(3)	Discrete Structures 1

List B:

COMP 280	(3)	History and Philosophy of Computing
COMP 330	(3)	Theoretical Aspects: Computer Science

Algorithm Design Techniques

PHIL 370	(3)	Problems in Analytic Philosophy
PHIL 415	(3)	Philosophy of Language
PHIL 419	(3)	Epistemology
PHIL 441	(3)	Philosophy of Science 2
PHIL 506	(3)	Seminar: Philosophy of Mind
PHIL 507	(3)	Seminar: Cognitive Science

List B:

PHIL 410	(3)	Advanced Topics in Logic 1
PHIL 411	(3)	Topics in Philosophy of Logic and Mathematics
PHIL 421	(3)	Metaphysics
PHIL 470	(3)	Topics in Contemporary Analytic Philosophy
PHIL 474	(3)	Phenomenology
PHIL 510	(3)	Seminar: Advanced Logic 2
PHIL 511	(3)	Seminar: Philosophy of Logic and Mathematics
PHIL 519	(3)	Seminar: Epistemology
PHIL 521	(3)	Seminar: Metaphysics
PHIL 560	(3)	Seminar: 17th Century Philosophy

Psychology

List A/B:

ANTH 440	(3)	Cognitive Anthropology
MUMT 250	(3)	Music Perception and Cognition
PSYC 212	(3)	Perception
PSYC 213	(3)	Cognition
PSYC 301	(3)	Animal Learning & Theory
PSYC 304	(3)	Child Development
PSYC 305	(3)	Statistics for Experimental Design
PSYC 311	(3)	Human Cognition and the Brain
PSYC 315	(3)	Computational Psychology
PSYC 316	(3)	Psychology of Deafness
PSYC 317	(3)	Genes and Behaviour
PSYC 318	(3)	Behavioural Neuroscience 2
PSYC 340	(3)	Psychology of Language
PSYC 341	(3)	The Psychology of Bilingualism
PSYC 352	(3)	Cognitive Psychology Laboratory
PSYC 353	(3)	Laboratory in Human Perception
PSYC 410	(3)	Special Topics in Neuropsychology
PSYC 413	(3)	Cognitive Development
PSYC 470	(3)	Memory and Brain
PSYC 473	(3)	Social Cognition and the Self
PSYC 522	(3)	Neurochemistry and Behaviour

PSYC 529	(3)	Music Cognition
PSYC 537	(3)	Advanced Seminar in Psychology of Language
PSYC 545	(3)	Topics in Language Acquisition
PSYC 561	(3)	Methods: Developmental Psycholinguistics

Neuroscience

List A/B:

* Students select either PHGY 311 or BIOL 306 but not both.

ANAT 321	(3)	Circuitry of the Human Brain
BIOL 306*	(3)	Neural Basis of Behaviour
BIOL 514	(3)	Neurobiology Learning and Memory
BIOL 530	(3)	Advances in Neuroethology
BIOL 588	(3)	Advances in Molecular/Cellular Neurobiology
NEUR 310	(3)	Cellular Neurobiology
NSCI 200	(3)	Introduction to Neuroscience 1
NSCI 201	(3)	Introduction to Neuroscience 2
PHGY 311*	(3)	Channels, Synapses & Hormones
PHGY 314	(3)	Integrative Neuroscience
PHGY 520	(3)	Ion Channels
PHGY 556	(3)	Topics in Systems Neuroscience
PSYC 311	(3)	Human Cognition and the Brain
PSYC 317	(3)	Genes and Behaviour
PSYC 318	(3)	Behavioural Neuroscience 2
PSYC 410	(3)	Special Topics in Neuropsychology
PSYC 502	(3)	Psychoneuroendocrinology
PSYC 522	(3)	Neurochemistry and Behaviour

Research Courses

COGS 401	(6)	Research Cognitive Science 1
COGS 402	(6)	Research Cognitive Science 2

10.6.4 Bachelor of Arts and Science (B.A. & Sc.) - Honours Cognitive Science (60 credits)

The Honours Cognitive Science, which is restricted to students in the B.A. & Sc., is an extension of the Interfaculty Program and offers students an opportunity to undertake a research project in close association with professors in their main Arts and Science focus areas. Prior to selecting the Honours Program, students should meet with the Interdisciplinary Program Advisor and review the B.A. & Sc. academic requirements for Honours and First Class Honours, which can also be found under "University Regulations and Information", "Graduation" and "Graduation Honours."

To receive an honours degree, students are required to achieve a minimum overall program GPA of 3.3 at graduation, and attain a grade of B+ (3.3) or better in COGS 444. Students must complete both the 60 credit Honours Program, plus an approved Minor Concentration or a Minor in the Faculties of Arts or of Science.

Note: B.A. & Sc. students who take Interfaculty programs, including the Honours in Cognitive Science, must tak

PSYC 532	(3)	Cognitive Science

Complementary Courses (51 credits)

Credits are selected as follows:

3 credits, one of:

COMP 230	(3)	Logic and Computability
MATH 318	(3)	Mathematical Logic
PHIL 210	(3)	Introduction to Deductive Logic 1

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

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

18 credits chosen from Lists A and/or B in Computer Science, Linguistics, Neuroscience, Philosophy, Psychology and/or Research Courses of which at least 12 credits must be at the 400-level or higher.

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, Neurology, or Physiology. For further information, consult the Cognitive Science website: http://www.mcgill.ca/cogsci.

Computer Science

List A:

COMP 206	(3)	Introduction to Software Systems
COMP 250	(3)	Introduction to Computer Science
COMP 251	(3)	Data Structures and Algorithms
COMP 302	(3)	Programming Languages and Paradigms
COMP 424	(3)	Artificial Intelligence
COMP 527	(3)	Logic and Computation
MATH 240	(3)	Discrete Structures 1

List B:

COMP 280	(3)	History and Philosophy of Computing
COMP 330	(3)	Theoretical Aspects: Computer Science
COMP 360	(3)	Algorithm Design Techniques
COMP 400	(3)	Technical Project and Report
COMP 409	(3)	Concurrent Programming
COMP 417	(3)	Introduction Robotics and Intelligent Systems
COMP 421	(3)	Database Systems
COMP 490	(3)	Introduction to Probabilistic Analysis of Algorithms
COMP 526	(3)	Probabilistic Reasoning and AI
COMP 531	(3)	Theory of Computation
COMP 558	(3)	Fundamentals of Computer Vision
MATH 222	(3)	Calculus 3
MATH 223	(3)	Linear Algebra

Linguistics

List A:

LING 201	(3)	Introduction to Linguistics
LING 330	(3)	Phonetics
LING 331	(3)	Phonology 1
LING 355	(3)	Language Acquisition 1
LING 360	(3)	Introduction to Semantics
LING 371	(3)	Syntax 1
LING 390	(3)	Neuroscience of Language
LING 419	(3)	Linguistic Theory and its Foundations
LING 451	(3)	Acquisition of Phonology
LING 455	(3)	Second Language Syntax

List B:

LING 440	(3)	Morphology
LING 461	(3)	Formal Methods in Linguistics
LING 531	(3)	Phonology 2
LING 555	(3)	Language Acquisition 2
LING 565	(3)	Pragmatics
LING 571	(3)	Syntax 2
LING 590	(3)	Language Acquisition and Breakdown

Philosophy

List A:

PHIL 304	(3)	Chomsky
PHIL 306	(3)	Philosophy of Mind
PHIL 310	(3)	Intermediate Logic
PHIL 341	(3)	Philosophy of Science 1
PHIL 360	(3)	17th Century Philosophy
PHIL 370	(3)	Problems in Analytic Philosophy
PHIL 415	(3)	Philosophy of Language
PHIL 419	(3)	Epistemology
PHIL 441	(3)	Philosophy of Science 2
PHIL 506	(3)	Seminar: Philosophy of Mind
PHIL 507	(3)	Seminar: Cognitive Science

List B:

PHIL 410	(3)	Advanced Topics in Logic 1
PHIL 411	(3)	Topics in Philosophy of Logic and Mathematics
PHIL 421	(3)	Metaphysics
PHIL 470	(3)	Topics in Contemporary Analytic Philosophy

PHIL 474	(3)	Phenomenology
PHIL 510	(3)	Seminar: Advanced Logic 2
		Seminar: Philosoph

BIOL 588	(3)	Advances in Molecular/Cellular Neurobiology
NEUR 310	(3)	Cellular Neurobiology
NSCI 200	(3)	Introduction to Neuroscience 1
NSCI 201	(3)	Introduction to Neuroscience 2
PHGY 311*	(3)	Channels, Synapses & Hormones
PHGY 314	(3)	Integrative Neuroscience
PHGY 520	(3)	Ion Channels
PHGY 556	(3)	Topics in Systems Neuroscience
PSYC 311	(3)	Human Cognition and the Brain
PSYC 317	(3)	Genes and Behaviour
PSYC 318	(3)	Behavioural Neuroscience 2
PSYC 410	(3)	Special Topics in Neuropsychology
PSYC 502	(3)	Psychoneuroendocrinology
PSYC 522	(3)	Neurochemistry and Behaviour

Research Courses

COGS 401	(6)	Research Cognitive Science 1
COGS 402	(6)	Research Cognitive Science 2

10.7 Computer Science

The School of Computer Science and the discipline are described under *Faculty of Science > Computer Science (COMP).*

The following are considered Science programs in the B.A. & Sc.:

Minor Concentration in Computer Science
Major Concentration in Computer Science
Major Concentration in Software Engineering

The requirements of the Software Engineering Program are described under the *Bachelor of Arts and Science* section while the requirements of the Computer Science programs are described under *Faculty of Arts > Computer Scienc (COMP).*

10.7.1 Bachelor of Arts and Science (B.A. & Sc.) - Major Concentration Software Engineering (37 credits)

This major concentration provides a program of study that covers the subject commonly known as "Software Engineering". This program may be used to satisfy part of the requirements for a B.A. & Sc. degree. This program does not lead to certification as a Professional Engineer.

Students may complete this program with a minimum of 36 credits or a maximum of 37 credits depending on their choice of complementary courses.

Required Courses (30 credits)

* Students who have sufficient knowledge in a programming language do not need to take COMP 202 and can replace it with additional computer science complementary course credits.

COMP 202*	(3)	Introduction to Computing 1
COMP 206	(3)	Introduction to Software Systems
COMP 250	(3)	Introduction to Computer Science
COMP 251	(3)	Data Structures and Algorithms
COMP 273	(3)	Introduction to Computer Systems
COMP 302	(3)	Programming Languages and Paradigms
COMP 303	(3)	Software Development

COMP 421	(3)	Database Systems
MATH 223	(3)	Linear Algebra
MATH 240	(3)	Discrete Structures 1

Complementary Courses (7 credits)

6 - 7 credits from:

COMP 322	(1)	Introduction to C++
COMP 361D1	(3)	Software Engineering Project
COMP 361D2	(3)	Software Engineering Project
COMP 529	(4)	Software Architecture
COMP 533	(3)	Object-Oriented Software Development

or any computer science course at the 300-level or above, excluding COMP 364, COMP 396, and COMP 431.

10.8 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 sections under *Faculty of Science*.

10.8.1 Bachelor of Arts and Science (B.A. & Sc.) - Major Concentration Earth, Atmosphere and Ocean Sciences (36 credits)

The Major Concentration Earth, Atmosphere and Ocean Sciences, which is restricted to students in the B.A. & Sc., is a sequence of courses designed to permit a degree of specialization in these disciplines.

Required Courses (18 credits)

ATOC 214	(3)	Introduction: Physics of the Atmosphere
ATOC 215	(3)	Oceans, Weather and Climate
ATOC 309	(3)	Weather Radars and Satellites
ATOC 315	(3)	Water in the Atmosphere
EPSC 210	(3)	Introductory Mineralogy
EPSC 212	(3)	Introductory Petrology

Complementary Courses (18 credits)

A minimum of 18 credits, at least 6 of which must be at the 300-level or higher, distributed as follows:

3 credits from:

EPSC 201	(3)	Understanding Planet Earth
EPSC 233	(3)	Earth and Life History

9 credits from:

EPSC 203	(3)	Structural Geology

EPSC 220	(3)	Principles of Geochemistry
EPSC 231	(3)	Field School 1
EPSC 320	(3)	Elementary Earth Physics
EPSC 331	(3)	Field School 2
EPSC 341	(3)	Field School 3
EPSC 425	(3)	Sediments to Sequences
EPSC 455	(3)	Sedimentary Geology
EPSC 542	(3)	Chemical Oceanography
EPSC 549	(3)	Hydrogeology

6 credits from:

ATOC 219	(3)	Introduction to Atmospheric Chemistry
ATOC 412	(3)	Atmospheric Dynamics
GEOG 308	(3)	Principles of Remote Sensing

10.9 Environment

The requirements for the B.A. & Sc. Interfaculty Program and the Honours Program in Environment are described in detail under *McGill School of Environment*. See *McGill School of Environment > Bachelor of Arts and Science (B.A. & Sc.) - Interfaculty Program in Environment* or see *McGill School of Environment > Honours Program in Environment*.

10.10 Geography (GEOG)

The Department of Geography, the discipline, and specific courses are described under the *Faculty of Science* section of this publication.

Note: students may take a Geography program either in Arts or in Science, but not in both.

GEOG 272	(3)	Earth's Changing Surface

Complementary Courses (24 credits)

Courses are selected as follows:

6 credits of analytical techniques are selected from:

GEOG 306	(3)	Raster Geo-Information Science
GEOG 307	(3)	Socioeconomic Applications of GIS
GEOG 308	(3)	Principles of Remote Sensing
GEOG 351	(3)	Quantitative Methods

3 credits of field courses selected from:

GEOG 495	(3)	Field Studies - Physical Geography
GEOG 496	(3)	Geographical Excursion
GEOG 497	(3)	Ecology of Coastal Waters
GEOG 499	(3)	Subarctic Field Studies

9 - 15 credits in systematic physical geography selected from:

GEOG 305	(3)	Soils and Environment
GEOG 321	(3)	Climatic Environments
GEOG 322	(3)	Environmental Hydrology
GEOG 372	(3)	Running Water Environments
GEOG 470	(3)	Wetlands

0 - 6 credits in integrative and advanced topics selected from:

GEOG 302	(3)	Environmental Management 1
GEOG 501	(3)	Modelling Environmental Systems
GEOG 505	(3)	Global Biogeochemistry
GEOG 506	(3)	Advanced Geographic Information Science
GEOG 536	(3)	Geocryology
GEOG 537	(3)	Advanced Fluvial Geomorphology
GEOG 550	(3)	Historical Ecology Techniques
GEOG 555	(3)	Ecological Restoration

10.11 Mathematics

The requirements for the B.A. & Sc. Major Concentration in Mathematics are described in detail under *Faculty of Arts > Mathematics and Statistics (MATH)*G70 0 1e Stati

10.12.1 Bachelor of Arts and Science (B.A. & Sc.) - Major Concentration Physics (36 credits)

The Major Concentration Physics, which is restricted to students in the B.A. & Sc. or B.Sc./B.Ed. is a planned sequence of courses designed to permit a degree of specialization in this discipline. This program is insufficient to prepare a student for professional or graduate work in physics; students interested in pursuing a career in physics are advised to take the appropriate B.Sc. program in physics.

Required Courses* (30 credits)

* 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.

MATH 222	(3)	Calculus 3
MATH 223	(3)	Linear Algebra
MATH 314	(3)	Advanced Calculus
MATH 315	(3)	Ordinary Differential Equations
PHYS 230	(3)	Dynamics of Simple Systems
PHYS 232	(3)	Heat and Waves
PHYS 257	(3)	Experimental Methods 1
PHYS 333	(3)	Thermal and Statistical Physics
PHYS 340	(3)	Majors Electricity and Magnetism
PHYS 446	(3)	Majors Quantum Physics

Complementary Courses (6 credits)

6 credits selected from:

PHYS 214	(3)	Introductory Astrophysics
PHYS 225	(3)	Musical Acoustics
PHYS 241	(3)	Signal Processing
PHYS 258	(3)	Experimental Methods 2
PHYS 334	(3)	Advanced Materials
PHYS 534	(3)	Nanoscience and Nanotechnology

or any 300- or 400-level course approved by an adviser.

10.13 Psychology

The requirements for the B.A. & Sc. Major Concentration in Psychology, Joint Honours Component in Psychology and Minor Concentration in Psychology are described in detail under *Faculty of Arts > Psyc*