The initial and current values are shown

<table>
<thead>
<tr>
<th>Program: SCMIN1800 - Compare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
</tr>
<tr>
<td><strong>Owning Organizations</strong></td>
</tr>
<tr>
<td><strong>Sections</strong></td>
</tr>
<tr>
<td><strong>Title</strong></td>
</tr>
<tr>
<td><strong>ROSI Title</strong></td>
</tr>
</tbody>
</table>

GIS is based on the integration of digital spatial data, mapping software, and spatial analysis tools. GIS has been a core method in Geographical research for almost two decades, but is also rapidly growing in importance outside Geography, in part because of the huge amounts of new spatial data being generated by ubiquitous sensors such as smart phones with GPS locators.

A growing number of research areas and careers require knowledge of GIS and cartographic presentation skills. This minor program provides training in the theory and practical application of Geographic Information Science and systems for spatial analysis, spatial data management, and cartographic representation, and is an excellent option for students pursuing Human Geography, City Studies, Critical Development Studies, Historical and Cultural Studies, Sociology, Political Science, Anthropology, Environmental Studies and Environmental Science.

**Program Requirements**
This program requires the completion of 4.0 credits as follows:

1. **1.0 credit from ONE of the following discipline groups:**
   a. Human Geography
      - GGRA02H3: The Geography of Global Processes
      - GGRA03H3: Cities and Environments
      - CITB02H3: Foundations of City Studies
   b. Anthropology
      - ANTA01H3: Introduction to Anthropology: Becoming Human
      - ANTA02H3: Introduction to Anthropology: Society, Culture and Language
   c. Environmental Science
      - EESA01H3: Introduction to Environmental Science
      - EESA06H3: Introduction to Planet Earth
   d. History
      - HISA04H3: Themes in World History I
      - HISA05H3: Themes in World History II
   e. International Development Studies
      - IDSA01H3: Introduction to International Development Studies
Program notes/tables

Program: SCMAJCIT C - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJCIT C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organisations</td>
<td>CIT,GGRSC</td>
</tr>
<tr>
<td>Sections</td>
<td>City Studies</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR (CO-OPERATIVE PROGRAM IN CITY STUDIES (ARTS))</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Co-op Contact: askcoop@utsc.utoronto.ca

Graduates will receive an Honours B.A. degree wherein they must combine the Major Program in City Studies with one of the following:

- Major Program in Anthropology
- Major Program in Economics for Management
- Major Program in Environmental Science
- Major Program in History
- Major Program in Human Geography
- Major Program in Political Science
- Major Program in Public Policy
- Major Program in Sociology
- Major Program in Studio
- Major Program in Women's and Gender Studies

The Program is intended to complement the chosen academic discipline and to give students the opportunity to see how they might apply ideas from that discipline in their field of professional interest.

For information on admissions, fees, work terms and standing in the Program, please see the Co-operative Programs section of this Calendar.
Program Admission

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to UTSC from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits including 1.0 from the courses listed in Requirement 1 of the Major Program in City Studies plus a cumulative GPA of at least 2.5.

Program Requirements

The Major (Co-operative) Program in City Studies combines academic studies in various disciplines with work terms in private enterprise, the public sector, or non-governmental organizations. It includes all of the requirements of the Major Program listed above. In addition, students must successfully complete the non-credit Arts & Science Co-op Work Term Preparation activities and two work terms.

Work Terms

Students must satisfactorily complete two work terms, each of four-months duration. To be eligible for the first work term, students must have completed at least 10 full credits, including 5 full credits as a U of T Scarborough student. These must include at least one full credit drawn from each of areas 1 (Introduction to Social Science Thought), 2 (Core Courses), 3 (Fundamentals of City Studies), and 4 (Methods). Students must also successfully complete Arts & Science Co-op Work Term Preparation Activities, which include multiple networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations, prior to their first work term. Students are advised that being available for work terms during fall and winter may increase the variety of work available, and this in turn requires students to take courses during at least one summer session.

Program: SCMAJ1234 - Compare

Program Admission

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to UTSC from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits including 1.0 from the courses listed in Requirement 1 of the Major Program in City Studies plus a cumulative GPA of at least 2.5.

Program Requirements

The Major (Co-operative) Program in City Studies combines academic studies in various disciplines with work terms in private enterprise, the public sector, or non-governmental organizations. It includes all of the requirements of the Major Program listed above. In addition, students must successfully complete the non-credit Arts & Science Co-op Work Term Preparation activities and two work terms.

Work Terms

Students must satisfactorily complete two work terms, each of four-months duration. To be eligible for the first work term, students must have completed at least 10 full credits, including 5 full credits as a U of T Scarborough student. These must include at least one full credit drawn from each of areas 1 (Introduction to Social Science Thought), 2 (Core Courses), 3 (Fundamentals of City Studies), and 4 (Methods). Students must also successfully complete Arts & Science Co-op Work Term Preparation Activities, which include multiple networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations, prior to their first work term. Students are advised that being available for work terms during fall and winter may increase the variety of work available, and this in turn requires students to take courses during at least one summer session.

Program: SCSPE1255 - Compare

Program notes/tables

Program: SCMAJ1234 - Compare

Program notes/tables

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
The Department of Management also offers a Certificate Program for non-degree students. (See the Degrees section of this Calendar for details.) Non-degree students interested in this Certificate Program should visit the Department Website: www.utsc.utoronto.ca/mgmt/business_cert.html

Supervisor: I. Stehlik  
Email: biology-minor@utsc.utoronto.ca

Program Requirements
This program must include one credit of the introductory biology courses (BIOA01H3 & BIOA02H3) plus 3.0 other credits in Biology, of which at least one credit must be at the C- or D-level.

Note: that NROC34H3 (Neuroethology), EESC04H3 (Biodiversity and Biogeography) and EESC30H3 (Microbial Biogeochemistry) may also be used toward fulfilling this requirement.

Program Admission
Note: Registration in this Program is limited.

Students must have completed a minimum of 4.0 credits to be considered for this program. Required courses include (ECMA04H3), MGEA02H3, MGEA06H3, and (MATA32H3 & MATA33H3) (or equivalents). Decisions will be made on the basis of cumulative GPA.

Students may apply until they have completed up to 10 full credits, and admission will be on the basis of all grades received. Students who have completed more than 10 full credits will not be considered for admission to the Program. Students should be aware that the Mathematics requirement implies that Grade 12 Calculus is a requirement for this Program.

Academic Director: I. Au  
Email: economics-supervisor-studies@utsc.utoronto.ca

This Program is designed to give a coordinated exposure to the subject matter of Economics for Management Studies to students pursuing the four-year degree with more than a single area of concentration.

Program Admission
Note: Registration in this Program is limited.

Students must have completed a minimum of 4.0 credits to be considered for this program. Required courses include (ECON32H3), (ECON33H3), and (MAT232H3 & MAT233H3) (or equivalents). Decisions will be made on the basis of cumulative GPA.

Students may apply until they have completed up to 10 full credits, and admission will be on the basis of all grades received. Students who have completed more than 10 full credits will not be considered for admission to the Program. Students should be aware that the Mathematics requirement implies that Grade 12 Calculus is a requirement for this Program.
Program Requirements

The Program consists of 6.0 credits in Economics for Management Studies, 1.0 credit in Mathematics and 1.0 full credit in any courses offered by the Centre for French and Linguistics, Department of Arts, Culture and Media, Department of English, Department of Historical and Cultural Studies, and the Department of Philosophy. The Economics courses must include:

- MGEA02H3 (ECMA01H3) & MGEA06H3 (ECMA06H3)
- MGEA02H3 (ECMA02H3) & MGEB02H3 (ECMA02H3)
- MGEA02H3 (ECMA03H3) & MGEB02H3 (ECMA03H3)
- MGEA02H3 (ECMA04H3) & MGEB02H3 (ECMA04H3)
- MGEA02H3 (ECMA05H3) & MGEB02H3 (ECMA05H3)
- MGEA02H3 (ECMA06H3) & MGEB02H3 (ECMA06H3)

Plus 1.5 full credits chosen from the courses in Economics for Management Studies including at least one at the C-level (excluding MGEC01H3, MGEC02H3, MGEC04H3, MGEC05H3).

Students must also complete [MATA30H3] or [MATA31H3] & [MATA32H3] or [MATA33H3] or [MATA34H3] & [MATA35H3] and one full credit in any course offered by the Centre of French & Linguistic; Department of Arts, Culture & Media; Department of Historical & Cultural Studies; Department of English; and the Department of Philosophy.

Note: Students who take MGEA01H3 (ECMA01H3) and MGEA05H3 (ECMA05H3) and then decide to apply for this program will be permitted to substitute MGEA01H3 (ECMA01H3) and MGEA05H3 (ECMA05H3) for MGEA02H3 (ECMA02H3) & MGEA06H3 (ECMA06H3). However, these students will be required to complete [MATA30H3] or [MATA33H3] or [MATA32H3] or [MATA34H3] & [MATA35H3] before registering in MGEC01H3 (ECMA01H3) and MGEC05H3 (ECMA05H3).

STUDENTS WHO ARE CONSIDERING COMBINING PROGRAMS BETWEEN ECONOMICS AND STATISTICS

For students who are intending to pursue a major in Economics with a major or minor in Statistics, we advise the following recommended sequence of required courses. If the sequence outlined below is not followed, it may result in the student taking exclusions and incurring an “EXTRA” credit. An “EXTRA” credit does NOT count towards the 20 credit degree requirement.

STAB52H3
STAB57H3
MGEC11H3
MGEB11H3
MGEB12H3
MGEC02H3
MGEC06H3

* MGEC11H3 (ECMC11H3) may be taken concurrently with STAB57H3. However, if MGEC11H3 (ECMC11H3) is taken after STAB57H3, it will count as an “EXTRA” course and no credit will be given for the degree requirements.

STUDENTS WHO ARE CONSIDERING COMBINING PROGRAMS BETWEEN ECONOMICS AND STATISTICS

For students who are intending to pursue a major in Economics with a major or minor in Statistics, we advise the following recommended sequence of required courses. If the sequence outlined below is not followed, it may result in the student taking exclusions and incurring an “EXTRA” credit. An “EXTRA” credit does NOT count towards the 20 credit degree requirement.

STAB52H3
STAB57H3
MGEC11H3
MGEB11H3
MGEB12H3
MGEC02H3
MGEC06H3

* MGEC11H3 (ECMC11H3) may be taken concurrently with STAB57H3. However, if MGEC11H3 (ECMC11H3) is taken after STAB57H3, it will count as an “EXTRA” course and no credit will be given for the degree requirements.
Program Admission
Admission in this program is not limited and does not require training in Calculus. All Students who apply for this program will be admitted. However, students are warned that they are not guaranteed admission to B-level, C-level, and D-level courses. Students will be accommodated only after other program students have been admitted to these courses; therefore, many courses may be unavailable. Students will note that some of the B- and C-level courses in Economics for Management Studies do require Calculus; therefore, students signed up for the Minor Program must choose their courses carefully to ensure that they have the necessary prerequisites.

Note: Students in the B.B.A. may not jointly enrol in the Minor Program in Economics for Management Studies.

Program Requirements
The program consists of 4.0 credits in Economics for Management Studies as follows:

- MGEC91H3/(ECMA01H3) or MGEC92H3/(ECMA04H3)
- MGEC92H3/(ECMA05H3) or MGEC93H3/(ECMA06H3)
- MGEC90H3/(ECMB01H3) or MGEC91H3/(ECMB02H3)
- MGEC92H3/(ECMB03H3) or MGEC93H3/(ECMB04H3)

Plus two more full credits in Economics for Management Studies, including at least one at the C-level.

Note: Students are warned that they are not guaranteed admission to all B-level and C-level courses. The following C-level courses, MGEC91H3/(ECMC91H3), MGEC92H3/(ECMC92H3) & MGEC93H3/(ECMC93H3) are available to students in the minor program.

Note: Students may if they wish; count STAB22H3, ANT33H3, PSYB07H3 or SOCBO9H3 or a more advanced statistics course as one half credit B-level Economics course in the Minor Program in Economics for Management Studies. While it is not required, students are strongly encouraged to include a statistics course in the program.

Economics to students who will combine this minor with other programs in order to graduate. (See the Degrees section of this Calendar for Information.) Students need not have completed Grade 12 Calculus in order to enter this program.

Program Admission
Admission in this program is not limited and does not require training in Calculus. All Students who apply for this program will be admitted. However, students are warned that they are not guaranteed admission to B-level, C-level, and D-level courses. Students will be accommodated only after other program students have been admitted to these courses; therefore, many courses may be unavailable. Students will note that some of the B- and C-level courses in Economics for Management Studies do require Calculus; therefore, students signed up for the Minor Program must choose their courses carefully to ensure that they have the necessary prerequisites.

Note: Students in the B.B.A. may not jointly enrol in the Minor Program in Economics for Management Studies.

Program Requirements
The program consists of 4.0 credits in Economics for Management Studies as follows:

- MGEC91H3/(ECMA01H3) or MGEC92H3/(ECMA04H3)
- MGEC92H3/(ECMA05H3) or MGEC93H3/(ECMA06H3)
- MGEC90H3/(ECMB01H3) or MGEC91H3/(ECMB02H3)
- MGEC92H3/(ECMB03H3) or MGEC93H3/(ECMB04H3)

Plus two more full credits in Economics for Management Studies, including at least one at the C-level.

Note: Students are warned that they are not guaranteed admission to all B-level and C-level courses. The following C-level courses, MGEC91H3/(ECMC91H3), MGEC92H3/(ECMC92H3) & MGEC93H3/(ECMC93H3) are available to students in the minor program.

Note: Students may if they wish; count STAB22H3, ANT33H3, PSYB07H3 or SOCBO9H3 or a more advanced statistics course as one half credit B-level Economics course in the Minor Program in Economics for Management Studies. While it is not required, students are strongly encouraged to include a statistics course in the program.

Program notes/tables

Program: SCMAJ0215 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ0215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Orgs</td>
<td>BGYSC,BIO</td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN HUMAN BIOLOGY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor: A. Ashok Email: <a href="mailto:human-biology@utsc.utoronto.ca">human-biology@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

The Human Biology major program provides training and background in general biology with the opportunity to concentrate on courses in upper years that are related to human health. Upper year courses are available in physiology, cell and molecular biology, anatomy, microbiology, pathology, endocrinology, anthropology, psychology and biochemistry. This program is suitable for students with an interest in applied biology in health sciences or in social sciences related to human health.

Program Requirements
The program consists of 8.5 credits. To complete their degree, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements).

Required Courses and Suggested Course Sequence

First Year
1.0 Credit of Introductory Biology Courses

- EBOA01H3 Life on Earth: Unifying Principles

1.0 Credit in Introductory Chemistry Courses

- CHMA10H3 Introductory Chemistry I: Structure and Bonding

Note: Students in the B.B.A. may not jointly enrol in the Minor Program in Economics for Management Studies.
**Online Calendar**

Program: SCMIN0615 - Compare

### 1.0 Credit in Introductory Chemistry Courses
- **CHMA11H3**: Introductory Chemistry I: Reactions and Mechanisms
- **CHMA12H3**: Introductory Chemistry II: Structure and Bonding

### 1.0 Credit in Introductory Psychology Courses
- **PSYA11H3**: Introductory Psychology: Part I
- **PSYA12H3**: Introductory Psychology: Part II

### 0.5 Credit in Mathematics or Statistics
- Choose From:
  - **MATA30H3**: Calculus I for Biological and Physical Sciences
  - **STAT223H3**: Data Analysis in Psychology

### 2.5 Credits of Biology Core Courses

#### Second Year
- **BIOC14H3**: Physiology II: Lecture
- **BIOC10H3**: Physiology II: Laboratory

#### Second Year
- **BIOC39H3**: Physiology II: Lecture

#### Third/Fourth Years
- **BIOC17H3**: Evolutionary Biology

#### Third/Fourth Years
- **BIOC32H3**: Human Physiology I

#### Third/Fourth Years
- **BIOC21H3**: Animal Developmental Biology

#### Third/Fourth Years
- **BIOC15H3**: Evolutionary Genetics and Genomics

#### Third/Fourth Years
- **BIOC16H3**: Genetics

#### Third/Fourth Years
- **BIOC19H3**: Genetics, Environment and Behaviour

#### Third/Fourth Years
- **BIOC26H3**: Microbiology

#### Third/Fourth Years
- **BIOC31H3**: Cell Biology

#### Third/Fourth Years
- **BIOC34H3**: Human Physiology II: Lecture and Laboratory

#### Third/Fourth Years
- **BIOC33H3**: Human Physiology II: Lecture

#### Third/Fourth Years
- **BIOC43H3**: Comparative Animal Physiology

#### Third/Fourth Years
- **BIOC58H3**: Animal Movement and Exercise

#### Third/Fourth Years
- **BIOC65H3**: Mammalian Physiology I or Animal Physiology

#### Third/Fourth Years
- **BIOC61H3**: Molecular Aspects of Cellular and Genetic Processes

#### Third/Fourth Years
- **BIOC64H3**: Human Physiology I

#### Third/Fourth Years
- **BIOC69H3**: Sensory and Motor Systems

#### Third/Fourth Years
- **BIOC71H3**: Synaptic Organisation and Physiology of the Brain

#### Third/Fourth Years
- **BIOC72H3**: Sensory and Motor Systems

#### Third/Fourth Years
- **BIOC73H3**: Pathologies of the Nervous System

#### Third/Fourth Years
- **BIOC74H3**: Comparative Animal Physiology

#### Third/Fourth Years
- **BIOC75H3**: Pathologies of the Nervous System

#### Third/Fourth Years
- **BIOC76H3**: Fungal Biology and Pathogenesis

#### Third/Fourth Years
- **BIOC77H3**: Pathology of Human Disease

#### Third/Fourth Years
- **BIOC78H3**: Drug Addiction

### 0.5 Credit in Calculus or Statistics
- Choose From:
  - **MATA30H3**: Calculus I for Biological and Physical Sciences
  - **STAT223H3**: Data Analysis in Psychology

### 0.5 Credit in a Biology Core Lab
- Choose From:
  - **BIOC31H3**: Cell Biology

### 1.5 Credits of Additional C-Level Courses
- Choose From:
  - **BIOC13H3**: Cell Biology
  - **BIOC14H3**: Genetics
  - **BIOC15H3**: Evolutionary Genetics and Genomics
  - **BIOC16H3**: Microbiology
  - **BIOC19H3**: Microbiology
  - **BIOC21H3**: Animal Developmental Biology
  - **BIOC26H3**: Animal Physiology
  - **BIOC31H3**: Animal Physiology
  - **BIOC32H3**: Animal Physiology
  - **BIOC33H3**: Animal Physiology
  - **BIOC34H3**: Animal Physiology
  - **BIOC43H3**: Animal Physiology
  - **BIOC58H3**: Animal Physiology
  - **BIOC65H3**: Animal Physiology
  - **BIOC61H3**: Animal Physiology
  - **BIOC64H3**: Animal Physiology
  - **BIOC69H3**: Animal Physiology
  - **BIOC71H3**: Animal Physiology
  - **BIOC72H3**: Animal Physiology
  - **BIOC73H3**: Animal Physiology
  - **BIOC74H3**: Animal Physiology
  - **BIOC75H3**: Animal Physiology
  - **BIOC76H3**: Animal Physiology
  - **BIOC77H3**: Animal Physiology
  - **BIOC78H3**: Animal Physiology

### 0.5 Credit of Additional D-Level Biology Courses
- Choose From:
  - **BIOC13H3**: Seminar in Cellular Microbiology
  - **BIOC14H3**: Seminar in Cell Biology
  - **BIOC15H3**: Seminar in Genetics
  - **BIOC16H3**: Seminar in Evolutionary Genetics
  - **BIOC19H3**: Seminar in Microbiology
  - **BIOC21H3**: Seminar in Animal Developmental Biology
  - **BIOC26H3**: Seminar in Animal Physiology
  - **BIOC31H3**: Seminar in Animal Physiology
  - **BIOC32H3**: Seminar in Animal Physiology
  - **BIOC33H3**: Seminar in Animal Physiology
  - **BIOC34H3**: Seminar in Animal Physiology
  - **BIOC43H3**: Seminar in Comparative Animal Physiology
  - **BIOC58H3**: Seminar in Animal Movement and Exercise
  - **BIOC65H3**: Seminar in Mammalian Physiology I or Animal Physiology
  - **BIOC61H3**: Seminar in Molecular Aspects of Cellular and Genetic Processes
  - **BIOC64H3**: Seminar in Human Physiology I
  - **BIOC69H3**: Seminar in Sensory and Motor Systems
  - **BIOC71H3**: Seminar in Synaptic Organisation and Physiology of the Brain
  - **BIOC72H3**: Seminar in Sensory and Motor Systems
  - **BIOC73H3**: Seminar in Pathologies of the Nervous System
  - **BIOC74H3**: Seminar in Comparative Animal Physiology
  - **BIOC75H3**: Seminar in Pathologies of the Nervous System
  - **BIOC76H3**: Seminar in Fungal Biology and Pathogenesis
  - **BIOC77H3**: Seminar in Pathology of Human Disease
  - **BIOC78H3**: Seminar in Drug Addiction

### Program notes/tables
- **Program: SCMIN0615**
- **Code**: SCMIN0615
- **Credit**: 1.0 Credit in Introductory Chemistry Courses
- **Credit**: 1.0 Credit in Introductory Psychology Courses
- **Credit**: 0.5 Credit in Mathematics or Statistics
- **Credit**: 2.5 Credits of Biology Core Courses
- **Credit**: 0.5 Credit in a Biology Core Lab
- **Credit**: 1.5 Credits of Additional C-Level Courses
- **Credit**: 0.5 Credit of Additional D-Level Biology Courses

[https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml][2014-03-05, 5:16:44 PM]
### Program: SCSPE1645 - Compare

**Code:** SCSPE1645  
**Owning Organizations:** ENG, ENGSC  
**Sections:** English  
**Title:** SPECIALIST PROGRAM IN ENGLISH (ARTS)  
**ROSI Title:** Same as Calendar Title  
**Description:**
Email: english-program-supervisor@utsc.utoronto.ca

**Program Requirements:**

12.0 credits in English are required of which at least 3.0 must be at the C-level and 1.5 at the D-level. They should be selected as follows:

1. ENGB03H3 - Critical Thinking About Narrative  
2. ENGB04H3 - Critical Thinking About Poetry  
3. ENGB05H3 - Critical Writing about Literature  
4. ENGB27H3 - Charting Literary History I  
5. ENGB28H3 - Charting Literary History II  
6. 2.0 credits from courses whose content is pre-1900  
7. 0.5 credits in Canadian literature  
8. 7.0 additional credits in English

**Note:** Students may count no more than one of the following courses towards the Specialist requirements: ENGB35H3 (Children's Literature)  
ENGB36H3 (Detective Fiction)  
ENGB41H3 (Science Fiction).  
Students may count no more than one full credit of D-level independent study towards an English program.  
The following courses do not count towards any English programs: ENG100H, ENG185Y.

---

### Program: SCMIN1645 - Compare

**Code:** SCMIN1645  
**Owning Organizations:** ENG, ENGSC  
**Sections:** English  
**Title:** SPECIALIST PROGRAM IN ENGLISH (ARTS)  
**ROSI Title:** Same as Calendar Title  
**Description:**
Email: english-program-supervisor@utsc.utoronto.ca

**Program Requirements:**

12.0 credits in English are required of which at least 3.0 must be at the C-level and 1.5 at the D-level. They should be selected as follows:

1. ENGB03H3 - Critical Thinking About Narrative  
2. ENGB04H3 - Critical Thinking About Poetry  
3. ENGB05H3 - Critical Writing about Literature  
4. ENGB27H3 - Charting Literary History I  
5. ENGB28H3 - Charting Literary History II  
6. 2.0 credits from courses whose content is pre-1900  
7. 0.5 credits in Canadian literature  
8. 7.0 additional credits in English

**Note:** Students may count no more than one of the following courses towards the Specialist requirements: ENGB35H3 (Children's Literature)  
ENGB36H3 (Detective Fiction)  
ENGB41H3 (Science Fiction).  
Students may count no more than one full credit of D-level independent study towards an English program.  
The following courses do not count towards any English programs: ENG100H, ENG185Y.
Organizations
English

Sections

Title
MINOR PROGRAM IN ENGLISH LITERATURE (ARTS)

ROSI Title
Same as Calendar Title

Description

Program Supervisor: Until June 30th, 2013: K. Larson (416-287-7169). After July 1, 2013: TBA. Email: english-program-supervisor@utsc.utoronto.ca

Program Requirements
4.0 credits in English are required. They should be selected as follows:

1. ENGB03H3 Critical Thinking About Narrative
2. ENGB04H3 Critical Thinking About Poetry
3. ENGB05H3 Critical Writing about Literature
4. 1.0 credits at the C-level
5. 1.5 additional credits in English.

Students may count no more than one full credit of D-level independent study [ENGD26Y3, ENGD27Y3, ENGD28Y3, (ENGD97H3), ENGD98Y3, (ENGD99H3)] towards an English program.

The following courses do not count towards any English programs: ENG100H, ENG185Y.

Program notes/tables

Program: SCMIN1908 - Compare

Code
SCMIN1908

Owning Organizations
ENG, ENGSC

Sections

Title
MINOR PROGRAM IN LITERATURE AND FILM STUDIES (ARTS)

ROSI Title
Same as Calendar Title

Description

Program Supervisor: Until June 30th, 2013: K. Larson (416-287-7169). After July 1, 2013: TBA. Email: english-program-supervisor@utsc.utoronto.ca

Program Requirements
4.0 full credits in English are required

1. 1.5 credit as follows:
   - ENGB70H3 Introduction to Cinema
   - ENGB75H3 Cinema and Modernity I
   - ENGB76H3 Cinema and Modernity II

2. 0.5 credits as follows:
   - ENGA10H3 Introduction to Twentieth-Century Literature and Film: 1890 to World War II
   - ENGA11H3 Introduction to Twentieth-Century Literature and Film: 1945 to Today

3. 1.0 credits at the C-or D-level, from the following:
   - ENGC56H3 Literature and Media: From Page to Screen
   - ENGC76H3 The Body in Modernity: Theories and Representations
   - ENGC77H3 The Body in Contemporary Culture: Theories and Representations
   - ENGC78H3 Dystopian Visions in Fiction and Film
   - ENGC82H3 Cinema Studies: Themes and Theories
   - ENGC83H3 Studies in World Cinema
   - ENGD52H3 Cinema: The Auteur Theory
   - ENGD62H3 Topics in Postcolonial Literature and Film
   - ENGD91H3 Avant-Garde Cinema
   - ENGD93H3 Theoretical Approaches to Cinema
   - ENGD94H3 Stranger than Fiction: The Documentary Film
   - ENGD95H3 Cinema Studies: Themes and Theories
   - ENGD96H3 Studies in World Cinema
   - ENGD97H3 The Body in Modernity: Theories and Representations
   - ENGD98H3 The Body in Contemporary Culture: Theories and Representations
   - ENGD99H3 Dystopian Visions in Fiction and Film
   - ENGD52H3 Cinema: The Auteur Theory
   - ENGD62H3 Topics in Postcolonial Literature and Film
   - ENGD91H3 Avant-Garde Cinema
   - ENGD93H3 Theoretical Approaches to Cinema
   - ENGD94H3 Stranger than Fiction: The Documentary Film

Program notes/tables
Program: SCSPEGAS - Compare

Program Requirements
Students must complete 12.0 credits as follows:

1. **0.5 credit:**
   - GASC20H3 Introducing Global Asia and its Histories
   or
   - GASC22H3 Introduction to Global Asia Studies

2. **8.0 credits** from the courses listed below, of which 3.0 credits should be at the C-level (students should check course description for prerequisites):
   - GASC34H3 Media and Globalization
   - GASC33H3 The Arts of South Asia
   - GAS133H3 Gender and Social Institutions in Asia
   - GASC34H3 Global Buddhism in Historical and Contemporary Societies
   - GAS34H3 Culture and Society in Classical South Asia
   - GASC51H3 The Japanese Empire: A Short History
   - GASC71H3/MSE67H3 Sub-Continental Histories: South Asia in the World
   - GASC72H3/MSE68H3 Modern Chinese History
   - GASC73H3/VH167H3 Religion in the Arts: Buddhist Arts and Cultures
   - GASC74H3/VH167H3 Visualizing Asia
   - GASC75H3/VH167H3 Religion in the Arts: Hinduism and Jainism
   - GASC76H3/VH167H3 Asia in Display
   - GASC77H3/VH168H3 Gender in East Asian Science and Technology
   - GASC78H3 Gendering Global Asia
   - GASC79H3 Critical Perspectives in Global Buddhism
   - GASC80H3/MDS34H3 Chinese Media and Politics
   - GASC81H3/MDS34H3 Media and Popular Culture in East and Southeast Asia
   - GASC82H3 Film and Popular Culture in South Asia
   - GASC83H3 Colonialisms and Cultures in Modern East Asia
   - GASC84H3 Film and Popular Cultures in East Asia
   - GASC85H3 Comparative Studies of East Asian Legal Cultures
   - GASC86H3 The Silk Routes
   - GASC87H3/MDS36H3 China and the World
   - GASC88H3/MDS36H3 A Tale of Three Cities: Introduction to Contemporary Art in China

3. **At least 1.0 credit** at the D-level from the courses listed below (students should check course description for prerequisites):
   - GASC01H3 Senior Seminar: Topics in Global Asian Cultures
   - GASC02H3 Senior Seminar: Topics in Global Asian Societies
   - GASC03H3 Senior Seminar: Special Topics in Global Asia Studies
   - GASC32H3/GSOC20H3 Senior Seminar: Social Change and Gender Relations in Chinese Societies
   - GAS143H3 Senior Seminar: Issues in Chinese Media Studies
   - GASA01H3 Introduction to Chinese Media Studies

**Notes:** Film courses selected from other departments and discipline will be approved for the Minor in Literature and Film Studies on a case-by-case basis.

**Undergraduate Advisor:** (416) 287-7184 Email: gas-undergrad-advisor@utsc.utoronto.ca

---

**Program: SCSPEGAS - Compare**

Program Requirements
Students must complete 12.0 credits as follows:

1. **0.5 credit:**
   - GASC20H3 Introducing Global Asia and its Histories
   or
   - GASC22H3 Introduction to Global Asia Studies

2. **8.0 credits** from the courses listed below, of which 3.0 credits should be at the C-level (students should check course description for prerequisites):
   - GASC34H3 Media and Globalization
   - GASC33H3 The Arts of South Asia
   - GAS133H3 Gender and Social Institutions in Asia
   - GASC34H3 Global Buddhism in Historical and Contemporary Societies
   - GAS34H3 Culture and Society in Classical South Asia
   - GASC51H3 The Japanese Empire: A Short History
   - GASC71H3/MSE67H3 Sub-Continental Histories: South Asia in the World
   - GASC72H3/MSE68H3 Modern Chinese History
   - GASC73H3/VH167H3 Religion in the Arts: Buddhist Arts and Cultures
   - GASC74H3/VH167H3 Visualizing Asia
   - GASC75H3/VH167H3 Religion in the Arts: Hinduism and Jainism
   - GASC76H3/VH167H3 Asia in Display
   - GASC77H3/VH168H3 Gender in East Asian Science and Technology
   - GASC78H3 Gendering Global Asia
   - GASC79H3 Critical Perspectives in Global Buddhism
   - GASC80H3/MDS34H3 Chinese Media and Politics
   - GASC81H3/MDS34H3 Media and Popular Culture in East and Southeast Asia
   - GASC82H3 Film and Popular Culture in South Asia
   - GASC83H3 Colonialisms and Cultures in Modern East Asia
   - GASC84H3 Film and Popular Cultures in East Asia
   - GASC85H3 Comparative Studies of East Asian Legal Cultures
   - GASC86H3 The Silk Routes
   - GASC87H3/MDS36H3 China and the World
   - GASC88H3/MDS36H3 A Tale of Three Cities: Introduction to Contemporary Art in China

3. **At least 1.0 credit** at the D-level from the courses listed below (students should check course description for prerequisites):
   - GASC01H3 Senior Seminar: Topics in Global Asian Cultures
   - GASC02H3 Senior Seminar: Topics in Global Asian Societies
   - GASC03H3 Senior Seminar: Special Topics in Global Asia Studies
   - GASC32H3/GSOC20H3 Senior Seminar: Social Change and Gender Relations in Chinese Societies
   - GAS143H3 Senior Seminar: Issues in Chinese Media Studies
   - GASA01H3 Introduction to Chinese Media Studies

**Notes:** Film courses selected from other departments and discipline will be approved for the Minor in Literature and Film Studies on a case-by-case basis.

**Undergraduate Advisor:** (416) 287-7184 Email: gas-undergrad-advisor@utsc.utoronto.ca
<table>
<thead>
<tr>
<th>Program: SCMAJGAS - Compare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
</tr>
<tr>
<td><strong>Owning Organizations</strong></td>
</tr>
<tr>
<td><strong>Sections</strong></td>
</tr>
<tr>
<td><strong>Title</strong></td>
</tr>
<tr>
<td><strong>RSI Title</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
</tbody>
</table>

**Program Requirements**

Students must complete 7.0 full credits as follows:

1. **0.5 credit:**
   - GASA02H3 Introducing Global Asia and its Histories

or

   - GASC02H3 Introduction to Global Asia Studies

2. **4.5 credits from the courses listed below, of which at least 1.5 credits must be at the C-level and 1.0 at the D-level (students should check course description for prerequisites):**
   - GASC03H3 Media and Globalization
   - GASC11H3 The Arts of South Asia
   - GASB13H3 Gender and Social Institutions in Asia
   - GASC04H3 Asian Religions and Cultures
   - GASC05H3 Global Buddhism in Historical and Contemporary Societies
   - GASC34H3 Culture and Society in Classical South Asia
   - GASC06H3 The Japanese Empire: A Short History
   - GASC07H3 CSS671H3 Sub-Continental Histories: South Asia in the World
   - GASC08H3 CSS672H3 Modern Chinese History
   - GASC09H3 CSS673H3 Religion in the Arts: Buddhist Arts and Cultures
   - GASC10H3 CSS674H3 Visualizing Asia
   - GASC11H3 CSS675H3 Religion in the Arts: Hinduism and Jainism
   - GASC12H3 CSS676H3 Asia in Display
   - GASC13H3 CSS677H3 A Tale of Three Cities: Introduction to Contemporary Art in China
   - GASD01H3 Senior Seminar: Topics in Global Asian Cultures
   - GASD02H3 Senior Seminar: Topics in Global Asian Societies
   - GASD03H3 Senior Seminar: Special Topics in Global Asia Studies

3. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

4. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

5. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

6. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

7. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

8. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

9. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

10. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

11. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

12. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

13. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

14. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

15. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

16. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

17. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

18. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

19. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

20. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

21. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

22. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

23. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

24. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

25. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

26. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

27. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

28. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

29. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

30. **2.5 credits from Asian language courses taught at the university, of which at least 1.5 credits should be from courses taken at the B, C, or D-levels.**

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
### Program: SCMINGAS - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCMINGAS</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>GAS,HCSSC</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

#### Program Requirements

**Notes:**
- Program notes/tables
- Program: SCMINGAS - Compare
- Code: SCMINGAS
- Owning Organizations: GAS,HCSSC
- Sections: Global Asia Studies
- Title: MINOR PROGRAM IN GLOBAL ASIA STUDIES (ARTS)
- ROSI Title: MINOR PROGRAM IN GLOBAL ASIA STUDIES (ARTS)
- Description: Same as Calendar Title

**Undergraduate Advisor:** (416) 287-7184  Email: gas-undergrad\
\@utsc.utoronto.ca

#### Program Requirements

Students must complete 4.0 full credits as follows:

1. **0.5 credit:**
   - GASC02H3: Introducing Global Asia and its Histories
   - or 
   - GASC03H3: Introduction to Global Asia Studies

2. **For the remaining 3.5 credits, students have two options:**
   - complete 3.5 credits from the courses listed below, of which at least 1.5 credits must be from C- and/or D-level courses listed below, or
   - complete 2.5 credits from the courses listed below, of which at least 1.0 credit must be from C- and/or D-level courses listed below, plus 1.0 credit from Asian language courses.

3. **2.0 credits from:**
   - Asian language courses taught at the university, of which at least 1.0 credits should be from courses taken at the B, C, or D levels. Preferably, these language courses will be taken in sequence. Major students who do not qualify for existing upper-level language courses at the university can (with prior written permission of the Program Supervisor) make up any necessary credits with other GAS courses.

4. **2.0 credits from:**
   - Asian language courses taught at the university, of which at least 1.0 credits should be from courses taken at the B, C, or D levels. Preferably, these language courses will be taken in sequence. Major students who do not qualify for existing upper-level language courses at the university can (with prior written permission of the Program Supervisor) make up any necessary credits with other GAS courses.

#### Notes:
- Undergraduate Advisor: (416) 287-7184  Email: gas-undergrad\
\@utsc.utoronto.ca

---

**GASC20H3: Introduction to Global Asia Studies**

- The Arts of South Asia
- Asian Religions and Cultures
- Global Buddhism in Historical and Contemporary Societies
- Culture and Society in Classical South Asia
- The Japanese Empire: A Short History
- Sub-Continental Histories: South Asia in the World
- Modern Chinese History
- Religion in the Arts: Buddhist Arts and Cultures
- Visualizing Asia
- Religion in the Arts: Hinduism and Jainism
- Asia in Display
- Gender in East Asian Science and Technology
- Gendering Global Asia
- Critical Perspectives in Global Buddhism
- Chinese Media and Politics
- Media and Popular Culture in East and Southeast Asia
- Film and Popular Culture in South Asia
- Colonialisms and Cultures in Modern East Asia
- Film and Popular Culture in East Asia
- Comparative Studies of East Asian Legal Cultures
- The Silk Routes

**GASC42H3: Senior Seminar: Social Change and Gender Relations in Global Asia**

- Chinese Societies
- Issues in Chinese Media Studies
- Politics and East Asian Art
- Coexistence and Others: Asian Labouring Diasporas in the British Empire
- Law and Society in Chinese History

3. **2.0 credits from:**
   - Asian language courses taught at the university, of which at least 1.0 credits should be from courses taken at the B, C, or D levels. Preferably, these language courses will be taken in sequence. Major students who do not qualify for existing upper-level language courses at the university can (with prior written permission of the Program Supervisor) make up any necessary credits with other GAS courses.

---

**GASC40H3: Senior Seminar: Social Change and Gender Relations in Global Asia**

- Chinese Societies
- Issues in Chinese Media Studies
- Politics and East Asian Art
- Coexistence and Others: Asian Labouring Diasporas in the British Empire
- Law and Society in Chinese History

3. **2.0 credits from:**
   - Asian language courses taught at the university, of which at least 1.0 credits should be from courses taken at the B, C, or D levels. Preferably, these language courses will be taken in sequence. Major students who do not qualify for existing upper-level language courses at the university can (with prior written permission of the Program Supervisor) make up any necessary credits with other GAS courses.

---

**GASC42H3: Senior Seminar: Social Change and Gender Relations in Global Asia**

- Chinese Societies
- Issues in Chinese Media Studies
- Politics and East Asian Art
- Coexistence and Others: Asian Labouring Diasporas in the British Empire
- Law and Society in Chinese History

3. **2.0 credits from:**
   - Asian language courses taught at the university, of which at least 1.0 credits should be from courses taken at the B, C, or D levels. Preferably, these language courses will be taken in sequence. Major students who do not qualify for existing upper-level language courses at the university can (with prior written permission of the Program Supervisor) make up any necessary credits with other GAS courses.
Program: SCMAJ0615 - Compare

Program Requirements
Students must complete 7.5 full credits as follows:

1. ACMA01H3 plus one-half credit at the A-level in Art History.
2. VPHB39H3
3. 3.5 full credits at the B-level in Art History VPAB05H3 & (VPAB06H3) may be used towards this requirement.
4. 2.5 full credits in Art History at the C-/D-level (which may include (VPAC47H3), (VPAC48H3), VPAC48H3), and/or HIS05H3.
5. Requirements # 3 and # 4 together must include at least one full credit dealing with periods prior to 1800 and one full credit dealing with periods after 1800, and at least one half credit on the art of Africa and Asia.

Courses dealing with periods prior to 1800: VPHB41H3, VPHB42H3, VPHB43H3, VPHB53H3, VPHB59H3, VPHB53H3, VPHB59H3, VPHB72H3 as well as VPHB64H3.

Courses dealing with periods after 1800: VPHB73H3, VPHB74H3, VPHB75H3, VPHB76H3, VPHB77H3, VPHB67H3, VPHB68H3, VPHB69H3, VPHB70H3, VPHB71H3, VPHB72H3, VPHB65H3, VPHB66H3, VPHB67H3. Courses dealing with periods prior to 1800 and one full credit dealing with periods after 1800, and at least one half credit on the art of Africa and Asia.

Courses on the art of Africa: VPHB71H3, VPHB65H3.

Courses on the art of Asia: VPHC73H3, VPHC74H3.

Courses in which content may vary, and which may deal with the art of any place or period:

Students interested in curatorial studies should include in their programs:
VPHB75H3, VPHB76H3, VPHC72H3, VPHC48H3, and VHCS04H3.

Program notes/tables

Program Requirements
Students must complete 7.5 full credits as follows:

1. ACMA01H3 plus one-half credit at the A-level in Art History.
2. VPHB39H3
3. 3.5 full credits at the B-level in Art History VPAB05H3 & (VPAB06H3) may be used towards this requirement.
4. 2.5 full credits in Art History at the C-/D-level (which may include (VPAC47H3), (VPAC48H3), VPAC48H3), and/or HIS05H3.
5. Requirements # 3 and # 4 together must include at least one full credit dealing with periods prior to 1800 and one full credit dealing with periods after 1800, and at least one half credit on the art of Africa and Asia.

Courses dealing with periods prior to 1800: VPHB41H3, VPHB42H3, VPHB43H3, VPHB53H3, VPHB59H3, VPHB53H3, VPHB59H3, VPHB72H3 as well as VPHB64H3.

Courses dealing with periods after 1800: VPHB73H3, VPHB74H3, VPHB75H3, VPHB76H3, VPHB77H3, VPHB67H3, VPHB68H3, VPHB69H3, VPHB70H3, VPHB71H3, VPHB72H3, VPHB65H3, VPHB66H3, VPHB67H3. Courses dealing with periods prior to 1800 and one full credit dealing with periods after 1800, and at least one half credit on the art of Africa and Asia.

Courses on the art of Africa: VPHB71H3, VPHB65H3.

Courses on the art of Asia: VPHC73H3, VPHC74H3.

Courses in which content may vary, and which may deal with the art of any place or period:

Students interested in curatorial studies should include in their programs:
VPHB75H3, VPHB76H3, VPHC72H3, VPHC48H3, and VHCS04H3.
Online Calendar

Program: SCMAJ1688 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCMAJ1688</td>
<td>MAJOR PROGRAM IN COMPUTER SCIENCE (SCIENCE)</td>
</tr>
<tr>
<td>CSC.MSCSC</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Supervisor of Studies: R. Pancer (416-287-7679) Email: pancer@utsc.utoronto.ca

Program Objectives
This program provides basic knowledge of the foundations of computer science: modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. This program is intended to be combined with other programs, typically a major program in another discipline.

Program Admission
Students are admitted to the second year of the program. All A-level courses required for the program must have been completed (see requirement 1 below). Admission is based on CGPA and grades in computer science and mathematics courses that the student has taken. The minimum CGPA for admission is calculated annually.

Program Requirements
This program requires a total of 16 distinct courses (8 credits) satisfying all of the requirements listed below.

Note: Many Computer Science courses are offered both at U of T Scarborough and at the St. George campus. When a course is offered at both campuses in a given session, U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus cannot guarantee space for U of T Scarborough students in their courses, especially those offered at both campuses.

1. A-level courses (3 credits)
   - CSCA08H3 Introduction to Computer Programming
   - CSCA20H3 Introduction to Computer Science
   - CSCA48H3 Discrete Mathematics for Computer Scientists
   - MATA23H3 Linear Algebra I
   - MATA31H3 Calculus I for Mathematical Sciences
   - MATA37H3 Calculus II for Mathematical Sciences

2. B-level courses (3 credits)
   - CSCB07H3 Software Design
   - CSCB09H3 Software Tools and Systems Programming
   - CSCB36H3 Introduction to the Theory of Computation
   - CSCB58H3 Computer Organization
   - CSCB63H3 Design and Analysis of Data Structures

One of: (*)
   - MATA36H3 Linear Algebra II
   - STA220H1 Introduction to Probability

(*) In making this choice, students should consider the prerequisites of courses they plan to take to satisfy requirements 3-4.

3. C-level courses in numerical computation and theory of computing (1 credit)
   - CSCC37H3 Introduction to Numerical Algorithms for Computational Mathematics

One of:
   - CSCA67H3 Computability and Computational Complexity
   - CSCA48H3 Algorithm Design and Analysis

4. CSC electives (1 credit)
   - Two of: Any C- or D-level CSC courses.

Writing Recommendation:
Students are urged to take a course from the following list of courses by the end of their
Program: SCMAJ1165 - Compare

<table>
<thead>
<tr>
<th>Notes/Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Calendar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>SCMAJ1165</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>MAT-MSCSC</td>
</tr>
<tr>
<td>Owning Organizations</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Sections</td>
<td>MAJOR PROGRAM IN MATHEMATICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: N. Cherdedeko (416-287-7226) Email: <a href="mailto:n.cheredeko@utoronto.ca">n.cheredeko@utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Objectives
This program provides a solid foundation in basic areas of mathematics, especially those with applications in other disciplines. This program is intended to be combined with other programs, typically a major program in another discipline.

Program Requirements
This stream requires a total of 17 distinct courses or (8.5 credits), chosen so as to satisfy all of the following requirements:

1. Foundational courses - 5.5 credits as follows:
   - CSCA05H3 Discrete Mathematics for Computer Scientists
   - MATB24H3 Linear Algebra I
   - MATB25H3 Calculus I for Physical Sciences OR MATA31H3 Calculus I for Mathematical Sciences
   - MATB26H3 Calculus II for Physical Sciences OR MATA32H3 Calculus II for Mathematical Sciences
   - CSCA03H3 Introduction to Computer Programming
   - MATB28H3 Linear Algebra II
   - MATB31H3 Techniques of the Calculus of Several Variables I
   - MATB32H3 Techniques of the Calculus of Several Variables II
   - MATB34H3 Differential Equations I
   - STAB52H3 Introduction to Probability
   - MATC09H3 Groups and Symmetry OR MATC15H3 Introduction to Number Theory

(*) MATA31H3 is required for MATA37H3

2. Further analysis courses - 1.0 credit form the following:
   - MATB35H3 Introduction to Analysis
   - MATB36H3 Introduction to Topology
   - MATB37H3 Complex Variables
   - MATB38H3 Chaos, Fractals, and Dynamics
   - MATB39H3 Introduction to Real Analysis
   - MATB40H3 Differential Equations II
   - MATB41H3 Complex Variables II

3. Further algebra, geometry, and discrete mathematics courses - 1.0 credit from the following:
   - MATC01H3 Groups and Symmetry
   - MATC03H3 Introduction to Mathematical Logic
   - MATC05H3 Introduction to Number Theory
   - MATC23H3 Graph Theory and Algorithms for Its Applications
   - MATC24H3 Introduction to Combinatorics
   - MATC25H3 Differential Geometry
   - MATC26H3 Fields and Groups
   - MATC27H3 Classical Plane Geometries and their Transformations

4. Elective courses - 1.0 credit from the following:
   - MATB61H3 Linear Programming and Optimization
   - MATB62H3 Linear Programming and Optimization
   - MATB63H3 Linear Programming and Optimization
   - MATB64H3 Linear Programming and Optimization
   - MATB65H3 Linear Programming and Optimization
   - MATB66H3 Linear Programming and Optimization
   - MATB67H3 Linear Programming and Optimization
   - MATB68H3 Linear Programming and Optimization
   - MATB69H3 Linear Programming and Optimization

Program Objectives
This program provides a solid foundation in basic areas of mathematics, especially those with applications in other disciplines. This program is intended to be combined with other programs, typically a major program in another discipline.

Program Requirements
This stream requires a total of 17 distinct courses or (8.5 credits), chosen so as to satisfy all of the following requirements:

1. Foundational courses - 5.5 credits as follows:
   - CSCA05H3 Discrete Mathematics for Computer Scientists
   - MATB24H3 Linear Algebra I
   - MATB25H3 Calculus I for Physical Sciences OR MATA31H3 Calculus I for Mathematical Sciences
   - MATB26H3 Calculus II for Physical Sciences OR MATA32H3 Calculus II for Mathematical Sciences
   - CSCA03H3 Introduction to Computer Programming
   - MATB28H3 Linear Algebra II
   - MATB31H3 Techniques of the Calculus of Several Variables I
   - MATB32H3 Techniques of the Calculus of Several Variables II
   - MATB34H3 Differential Equations I
   - STAB52H3 Introduction to Probability
   - MATC09H3 Groups and Symmetry OR MATC15H3 Introduction to Number Theory

(*) MATA31H3 is required for MATA37H3

2. Further analysis courses - 1.0 credit form the following:
   - MATB35H3 Introduction to Analysis
   - MATB36H3 Introduction to Topology
   - MATB37H3 Complex Variables
   - MATB38H3 Chaos, Fractals, and Dynamics
   - MATB39H3 Introduction to Real Analysis
   - MATB40H3 Differential Equations II
   - MATB41H3 Complex Variables II

3. Further algebra, geometry, and discrete mathematics courses - 1.0 credit from the following:
   - MATC01H3 Groups and Symmetry
   - MATC03H3 Introduction to Mathematical Logic
   - MATC05H3 Introduction to Number Theory
   - MATC23H3 Graph Theory and Algorithms for Its Applications
   - MATC24H3 Introduction to Combinatorics
   - MATC25H3 Differential Geometry
   - MATC26H3 Fields and Groups
   - MATC27H3 Classical Plane Geometries and their Transformations

4. Elective courses - 1.0 credit from the following:
   - MATB61H3 Linear Programming and Optimization
   - MATB62H3 Linear Programming and Optimization
   - MATB63H3 Linear Programming and Optimization
   - MATB64H3 Linear Programming and Optimization
   - MATB65H3 Linear Programming and Optimization
   - MATB66H3 Linear Programming and Optimization
   - MATB67H3 Linear Programming and Optimization
   - MATB68H3 Linear Programming and Optimization
   - MATB69H3 Linear Programming and Optimization
### Program Objectives

The program provides the student with a sound foundation in the main areas of mathematics, and some exposure to computer programming and statistics. It comprises four streams: Comprehensive, Statistics, Teaching, and Design-Your-Own, each serving a more specific goal.

1. **Comprehensive Stream**: Provides a broad and deep knowledge of mathematics at the undergraduate level. It is the recommended program for students who plan to pursue graduate study in mathematics, but it is also suitable for other career paths.

2. **Statistics Stream**: Provides greater exposure to statistics, and the areas of mathematics most closely associated with it. This stream prepares students for careers in industry, or for graduate study in certain mathematically-oriented subjects, including statistics and financial mathematics.

3. **Teaching Stream**: Is intended for students with a serious interest in mathematics but whose career objectives lie in mathematics education at the elementary or secondary level.

4. **Design-Your-Own Stream**: Allows students to tailor their studies in mathematics to specific interests, with guidance from (and approval of) the program supervisor.

### Program Requirements

The Program requirements consist of a core 15 courses (7.5 credits), common to all four streams, and additional requirements that depend on the stream, for a total of 26-28 courses (13.0-14.0 credits).

The structure of the programs allows for easy switching between streams until relatively late. Consequently, these programs should not be viewed as rigidly separated channels of feeding students to different career paths, but as a flexible structure that provides guidance to students in their course selection based on their broad (but possible fluid) interests.

#### Core (7.5 credits)

1. **Writing Requirement** (0.5 credit)[*]


   **Recommended Writing Course**: Students are urged to take a course from the following list of courses by the end of their second year.

It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (2.5 credits)
   CSCA67H3: Discrete Mathematics for Computer Scientists
   MAT21H3: Linear Algebra I
   MAT22H3: Calculus I for Mathematical Sciences
   MAT23H3: Calculus II for Mathematical Sciences
   CSCA68H3: Introduction to Computer Programming I

3. B-level courses (3.5 credits)
   MAT21H3: Linear Algebra II
   MAT22H3: Techniques of the Calculus of Several Variables I
   MAT23H3: Techniques of the Calculus of Several Variables II
   MAT24H3: Introduction to Analysis
   MAT25H3: Differential Equations I
   STA207H3: Introduction to Probability (**)
   STA208H3: Introduction to Statistics (**) (This course may be taken after second year, except for the Statistics stream.

4. C-level courses (1 credit)
   MAT137H3: Groups and Symmetry
   MAT223H3: Complex Variables

A. Comprehensive Stream
This stream requires a total of 28 courses (14.0 credits)
In addition to the core requirements 1-4 common to all streams, 13 other distinct courses must be chosen satisfying all of the following requirements:

5. Elementary courses in closely related disciplines (1.5 credits): (***)
   CSCA48H3: Introduction to Computer Science
   PHYA10H3: Introduction to Physics IA
   PHYA12H3: Introduction to Physics IA
   (***) It is recommended that these be taken in first year.

6. Additional courses in analysis and algebra (1.5 credits):
   MAT217H3: Introduction to Real Analysis
   MAT223H3: Differential Equations II
   MAT224H3: Fields and Groups

7. Courses in key areas of mathematics (1.5 credits):
   Three of:
   - MAT136H3: Introduction to Number Theory
   - MAT137H3: Introduction to Topology
   - MAT213H3: Classical Plane Geometries and their Transformations
   - MAT214H3: Complex Variables I

8. Mathematics of computation (0.5 credit):
   One of:
   - MAT32H3: Introduction to Mathematical Logic
   - MAT325H3: Graph Theory and Algorithms for its Applications
   - MAT344H3: Introduction to Combinatorics
   - CSCA37H3: Introduction to Numerical Algorithms for Computational Mathematics
   - CSCA38H3: Computability and Computational Complexity

9. Electives (1.5 credits):
   Three of:
   - C- or D-level MAT courses, excluding MAT309H3 and MAT310H3

B. Statistics Stream
This stream requires a total of 26 courses (13.0 credits)
In addition to the core requirements 1-4 common to all streams, 11 other distinct courses must be chosen, satisfying all of the following requirements (in choosing courses to satisfy requirements 7-9, students must select at least one D-level course).

5. Algebra and Analysis (1.5 credits):
   MAT136H3: Linear Programming and Optimization
   MAT137H3: Differential Equations II
   MAT213H3: Fields and Groups

6. Regression Analysis (0.5 credit):
   MAT217H3: Introduction to Real Analysis
   MAT223H3: Differential Equations II
   MAT224H3: Fields and Groups
7. Discrete mathematics and geometry (0.5 credit):
   One of:
   - MATC32H3 Graph Theory and Algorithms for its Applications
   - MATC44H3 Introduction to Combinatorics
   - MATD02H3 Classical Plane Geometries and their Transformations

8. Upper-level MAT electives (1 credit):
   Two of:
   - Any C- or D-level MAT course (*)
   (*) For students wishing to pursue graduate studies in Mathematics or Statistics it is recommended that MATC37H3 be chosen as one of these two courses.

9. Upper-level STA electives (2 credits):
   Four of:
   - ACTB47H3 Introductory Life Contingencies
   - Any C- or D-level STA course, excluding STAD29H3

C. Teaching Stream

This stream requires a total of 26 courses (13.0 credits).
In addition to the core requirements 1-4 common to all streams, 11 other distinct courses must be chosen, satisfying all of the following requirements:

5. Algebra, analysis, and geometry (2 credits):
   - MATC15H3 Introduction to Number Theory
   - MATC82H3 Mathematics for Teachers
   - MATD01H3 Fields and Groups
   - MATD02H3 Classical Plane Geometries and their Transformations

6. Discrete mathematics (0.5 credit):
   One of:
   - MATC32H3 Graph Theory and Algorithms for its Applications
   - MATC44H3 Introduction to Combinatorics

7. MAT electives (1.5 credits):
   Three of:
   - C- or D-level MAT courses

8. MAT/STA/CSC electives (1.5 credits):
   Three of:
   - C- or D-level MAT, STA, CSC courses, excluding STA229H4

D. Design-Your-Own-Stream

This stream requires a total of 26 courses (13.0 credits).
In addition to the core requirements 1-4 common to all streams, 11 other distinct courses must be chosen, satisfying all of the following requirements:

5. Electives (5.5 credits):
   11 courses approved by the program supervisor. The core courses together with the approved electives must satisfy the degree requirement so that they include at least 12 courses (6 credits) at the C- or D-level, of which at least two (one credit) are at the D-level.

Program notes/tables

Program: SCSPE2289 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2289</th>
<th>SCSPE2289</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MSCSC,STA</td>
<td>MSCSC,STA</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Statistics</td>
<td>Statistics</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN STATISTICS (SCIENCE)</td>
<td>SPECIALIST PROGRAM IN STATISTICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>
| Description   | Supervisor of Studies: S. Damouras Email: sdamouras@utsc.utoronto.ca (416-208- | Supervisor of Studies: S. Damouras Email: sdamouras@utsc.utoronto.ca (416-208-
Program Objectives

This program provides training in the discipline of Statistics. Students are given a thorough grounding in the theory underlying statistical reasoning and learn the methodologies associated with current applications. A full set of courses on the theory and methodology of the discipline represent the core of the program. In addition students select one of two streams, each of which provides immediately useful, job-related skills. The program also prepares students for further study in Statistics and related fields.

The Quantitative Finance Stream focuses on teaching the computational, mathematical and statistical techniques associated with modern day finance. Students acquire a thorough understanding of the mathematical models that underlie financial modeling and the ability to implement these models in practical settings. This stream prepares students to work as quantitative analysts in the financial industry, and for further study in Quantitative Finance.

The Statistical Machine Learning and Data Mining Stream focuses on applications of statistical theory and concepts to the discovery (or 'learning') of patterns in massive data sets. This field is a recent development in statistics with wide applications in science and technology including computer vision, image understanding, natural language processing, medical diagnosis, and stock market analysis. The stream prepares students for direct employment in industry and government, and further study in Statistical Machine Learning.

Program Requirements

To complete the program, a student must meet the course requirements described below. (One credit is equivalent to two courses.)

The first year requirements of the two streams are almost identical, except that the Quantitative Finance stream requires MGEA02H3 (ECMA04H3) while the Statistical Machine Learning and Data Mining stream requires CSCA67H3; these courses need not be taken in the first year. In the second year the two streams have considerable overlap. This structure makes it relatively easy for students to switch between the two streams as their interests in Statistics become better defined.

Note: There are courses on the St. George campus that can be taken to satisfy some of the requirements of the program. STAB52H3, STAB57H3 and STAC67H3, however, must be taken at the University of Toronto Scarborough; no substitutes are permitted without permission of the program supervisor.

Core (7.5 credits)

1. Writing Requirement (0.5 credit) (*)

One of

- Introduction to Computer Programming
- Introduction to Computer Science

2. A-level courses (2.5 credits)

CSCA48H3 Introduction to Computer Programming

One of

- Calculus I for Mathematical Sciences
- Calculus I for Biological or Physical Sciences

One of

- Calculus II for Mathematical Sciences
- Calculus II for Physical Sciences

(*) It is recommended that this requirement be satisfied by the end of the second year.

3. B-level courses (2.5 credits)

MATA23H3 Linear Algebra I

MATA30H3 Techniques of the Calculus of Several Variables I

MATA31H3 Linear Programming and Optimization

MATA36H3 Introduction to Probability

MATA37H3 Introduction to Statistics

4. Additional courses (1.0 credit)

- One of
  - Introduction to Statistics
  - Techniques of the Calculus of Several Variables II
  - Linear Programming and Optimization
  - Introduction to Probability
  - Introduction to Statistics

5. Final exam (0.5 credit)

Note: There are courses on the St. George campus that can be taken to satisfy some of the requirements of the program. STAB52H3, STAB57H3 and STAC67H3, however, must be taken at the University of Toronto Scarborough; no substitutes are permitted without permission of the program supervisor.

Program Objectives

This program provides training in the discipline of Statistics. Students are given a thorough grounding in the theory underlying statistical reasoning and learn the methodologies associated with current applications. A full set of courses on the theory and methodology of the discipline represent the core of the program. In addition students select one of two streams, each of which provides immediately useful, job-related skills. The program also prepares students for further study in Statistics and related fields.

The Quantitative Finance Stream focuses on teaching the computational, mathematical and statistical techniques associated with modern day finance. Students acquire a thorough understanding of the mathematical models that underlie financial modeling and the ability to implement these models in practical settings. This stream prepares students to work as quantitative analysts in the financial industry, and for further study in Quantitative Finance.

The Statistical Machine Learning and Data Mining Stream focuses on applications of statistical theory and concepts to the discovery (or 'learning') of patterns in massive data sets. This field is a recent development in statistics with wide applications in science and technology including computer vision, image understanding, natural language processing, medical diagnosis, and stock market analysis. The stream prepares students for direct employment in industry and government, and further study in Statistical Machine Learning.

Program Requirements

To complete the program, a student must meet the course requirements described below. (One credit is equivalent to two courses.)

The first year requirements of the two streams are almost identical, except that the Quantitative Finance stream requires MGEA02H3 (ECMA04H3) while the Statistical Machine Learning and Data Mining stream requires CSCA67H3; these courses need not be taken in the first year. In the second year the two streams have considerable overlap. This structure makes it relatively easy for students to switch between the two streams as their interests in Statistics become better defined.

Note: There are courses on the St. George campus that can be taken to satisfy some of the requirements of the program. STAB52H3, STAB57H3 and STAC67H3, however, must be taken at the University of Toronto Scarborough; no substitutes are permitted without permission of the program supervisor.

Core (7.5 credits)

1. Writing Requirement (0.5 credit) (*)

One of

- Introduction to Computer Programming
- Introduction to Computer Science

2. A-level courses (2.5 credits)

CSCA48H3 Introduction to Computer Programming

One of

- Calculus I for Mathematical Sciences
- Calculus I for Biological or Physical Sciences

One of

- Calculus II for Mathematical Sciences
- Calculus II for Physical Sciences

(*) It is recommended that this requirement be satisfied by the end of the second year.

3. B-level courses (2.5 credits)

MATA23H3 Linear Algebra I

MATA30H3 Techniques of the Calculus of Several Variables I

MATA31H3 Linear Programming and Optimization

MATA36H3 Introduction to Probability

MATA37H3 Introduction to Statistics

4. Additional courses (1.0 credit)

- One of
  - Introduction to Statistics
  - Techniques of the Calculus of Several Variables II
  - Linear Programming and Optimization
  - Introduction to Probability
  - Introduction to Statistics

5. Final exam (0.5 credit)

Note: There are courses on the St. George campus that can be taken to satisfy some of the requirements of the program. STAB52H3, STAB57H3 and STAC67H3, however, must be taken at the University of Toronto Scarborough; no substitutes are permitted without permission of the program supervisor.
4. C-level courses (1.5 credits)
- MATC46H3 Differential Equations II
- MATC47H3 Techniques of Calculus of Several Variables II
- STAC70H3 Multivariate Analysis

6. Additional A-level courses (0.5 credit)
- LUCEA04H3/ECMA04H3 Introduction to Microeconomics: A Mathematical Approach

7. Additional B-level courses (2.0 credits)
- ACTB14H3 Fundamentals of Investment and Credit
- ACTB15H3 Techniques of Calculus of Several Variables II
- STAD57H3 Statistical Inference

8. Additional Upper Level courses (3.0 credits)
- MAS337H3 Differential Equations II
- MASC381H3 Statistics and Finance I
- MASC382H3 Time Series Analysis
- MASC383H3 Statistics and Finance II

Two of:
- APM462H1 Nonlinear Optimization
- CSCC11H3 Introduction to Machine Learning and Data Mining
- MASC373H3 Introduction to Real Analysis
- MASC381H3 Categorical Data Analysis
- STAD37H3 Statistical Inference
- STAD58H3 Probability Models
- STAD68H3 Advanced Machine Learning and Data Mining
- STAD69H3 Statistics Project

Note: Students enrolled in this stream should also consider taking complementary courses in economics and finance (e.g. LUCEA04H3/ECMA04H3, LUCEA06H3/ECMA06H3, LUCEA09H3/ECMA09H3, LUCEC73H3/ECMC73H3), or a Minor in Economics for Management Studies.

7. Additional B-level courses (1.0 credit)
- CSCA67H3 Discrete Mathematics for Computer Scientists

8. Additional Upper Level courses (4.0 credits)
- CSCC11H3 Introduction to Machine Learning and Data Mining
- MASC373H3 Introduction to Real Analysis
- STAD58H3 Advanced Machine Learning and Data Mining

Five of:
- Any C or D-level CSC, MAT or STA courses (excluding STAD29H3), three of which must be STA courses.

(*) Some of the courses on this list have prerequisites that are not included in this program; in choosing courses to satisfy this requirement, check the prerequisites carefully and plan accordingly.

A. Quantitative Finance Stream
This stream requires a total of 26 courses (13.0 credits). In addition to the core requirements, 11 other courses (5.5 credits) must be taken satisfying all of the following requirements:

6. Additional A-level courses (0.5 credit)
- LUCEA04H3/ECMA04H3 Introduction to Microeconomics: A Mathematical Approach

7. Additional B-level courses (2.0 credits)
- ACTB14H3 Fundamentals of Investment and Credit
- ACTB15H3 Techniques of Calculus of Several Variables II
- STAD57H3 Statistical Inference

8. Additional Upper Level courses (3.0 credits)
- MAS337H3 Differential Equations II
- MASC381H3 Statistics and Finance I
- MASC382H3 Time Series Analysis
- MASC383H3 Statistics and Finance II

Two of:
- APM462H1 Nonlinear Optimization
- CSCC11H3 Introduction to Machine Learning and Data Mining
- MASC373H3 Introduction to Real Analysis
- MASC381H3 Categorical Data Analysis
- STAD37H3 Statistical Inference
- STAD58H3 Probability Models
- STAD68H3 Advanced Machine Learning and Data Mining
- STAD69H3 Statistics Project

Note: Students enrolled in this stream should also consider taking complementary courses in economics and finance (e.g. LUCEA04H3/ECMA04H3, LUCEA06H3/ECMA06H3, LUCEA09H3/ECMA09H3, LUCEC73H3/ECMC73H3), or a Minor in Economics for Management Studies.

B. Statistical Machine Learning and Data Mining Stream
This stream requires a total of 26 courses (13.0 credits). In addition to the core requirements, 11 other courses (5.5 credits) must be taken satisfying all of the following requirements:

6. Additional A-level courses (0.5 credit)
- CSCA67H3 Discrete Mathematics for Computer Scientists

7. Additional B-level courses (1.0 credit)
Two of:
- CSCA67H3 Software Design
- CSCA69H3 Introduction to Databases and Web Applications
- CSCB36H3 Introduction to the Theory of Computation
- CSCB07H3 Design and Analysis of Data Structures

8. Additional Upper Level courses (4.0 credits)
- CSCC11H3 Introduction to Machine Learning and Data Mining
- MASC373H3 Introduction to Real Analysis
- STAD58H3 Advanced Machine Learning and Data Mining

Five of:
- Any C or D-level CSC, MAT or STA courses (excluding STAD29H3), three of which must be STA courses.

(*) Some of the courses on this list have prerequisites that are not included in this program; in choosing courses to satisfy this requirement, check the prerequisites carefully and plan accordingly.

Program

Program: SCMIN2049 - Compare

Program Requirements

Students must complete four full credits, as follows:

1. Introduction
   - CLAB05H3 The Ancient Mediterranean World

2. History and Culture
   - CLAB06H3 History and Culture of the Greek World
   - CLAB07H3 History and Culture of the Roman World

3. Mythology and Religion
   - CLAC12H3 Ancient Mythology II: Greece and Rome

4. Literature (0.5 credit from the following courses)
   - CLAC11H3 Classical Literature I: Poetry
   - CLAC12H3 Classical Literature II: Prose

5. Electives (1.5 full credits from the following courses, including at least 1.0 full credit at the C or D-level, before choosing their electives, students need to take at least 1.0 full credit at the A-level, 1.0 full credit at the B-level, and 0.5 credit at the C-level):
   - Classical Studies
     - CLAB03H3 Ancient Mythology I: Mesopotamia and Egypt
     - CLAB10H3 Greek and Latin for Scientists
   - CLAC24H3 The Classical World in Film
   - CLAC22H3 Ancient Art and Architecture (ca 900 B.C.-300 A.D.)
   - CLAC23H3 Water Management in the Ancient Mediterranean World
   - CLAC28H3 Multiculturalism and Cultural Identities in the Greek and Roman Worlds
   - CLAC29H3 Environment, Society and Economy in Ptolemaic and Roman Egypt
   - CLAC30H3 Classical Literature I: Poetry if not taken as a required course
   - CLAC31H3 Classical Literature II: Prose if not taken as a required course
   - CLAC32H3 Religions of the Ancient Mediterranean
   - CLAC33H3 Multiculturalism and Cultural Identities in the Greek and Roman Worlds
   - VPHC53H3 Multiculturalism and Cultural Identities in the Greek and Roman Worlds
   - VPHC46H3 Water Management in the Ancient Mediterranean World

Art History
- VPHB41H3 The Human Figure in Greek Art (8th-4th cent. B.C.)
- VPHB54H3 Ancient Art and Architecture (ca 900 B.C.-300 A.D.)
- VPHB76H3 Religion in the Arts: The Judeo-Christian Traditions
- VPHC46H3 Topics in Art of the Ancient World
- VPHC53H3 The Silk Routes

Languages
- ENGC16H3 Classical Myth and Literature
- ENGC17H3 The Bible and Literature I
- ENGC18H3 The Bible and Literature II
- ENGC19H3 Drama: Tragedy
- ENGC21H3 Drama: Comedy

English
- ENGC22H3 Introductory Latin I
- ENGC23H3 Introductory Latin II
- ENGC24H3 Introductory Sanskrit I
- ENGC25H3 Introductory Sanskrit II
- ENGC26H3 Intermediate Sanskrit I
- ENGC27H3 Intermediate Sanskrit II

- VPHC46H3 Water Management in the Ancient Mediterranean World
- VPHC53H3 Multiculturalism and Cultural Identities in the Greek and Roman Worlds
- VPHC46H3 Water Management in the Ancient Mediterranean World

Art History
- VPHB41H3 The Human Figure in Greek Art (8th-4th cent. B.C.)
- VPHB54H3 Ancient Art and Architecture (ca 900 B.C.-300 A.D.)
- VPHB76H3 Religion in the Arts: The Judeo-Christian Traditions
- VPHC46H3 Topics in Art of the Ancient World
- VPHC53H3 The Silk Routes

Languages
- ENGC16H3 Classical Myth and Literature
- ENGC17H3 The Bible and Literature I
- ENGC18H3 The Bible and Literature II
- ENGC19H3 Drama: Tragedy
- ENGC21H3 Drama: Comedy

English
- ENGC22H3 Introductory Latin I
- ENGC23H3 Introductory Latin II
- ENGC24H3 Introductory Sanskrit I
- ENGC25H3 Introductory Sanskrit II
- ENGC26H3 Intermediate Sanskrit I
- ENGC27H3 Intermediate Sanskrit II
### Program: SCMAJ1407 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1407</th>
<th>SCMAJ1407</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organs</td>
<td>DTS</td>
<td>DTS</td>
</tr>
<tr>
<td>Sections</td>
<td>Diaspora and Transnational Studies</td>
<td>Diaspora and Transnational Studies</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN DIASPORA AND TRANSNATIONAL STUDIES (ARTS)</td>
<td>MAJOR PROGRAM IN DIASPORA AND TRANSNATIONAL STUDIES (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Program Requirements</td>
<td>Program Requirements</td>
</tr>
<tr>
<td></td>
<td>Students must complete 7.0 full credits as follows:</td>
<td>Students must complete 7.0 full credits as follows:</td>
</tr>
<tr>
<td></td>
<td>1. DTSB01H3 Introduction to Diaspora and Transnational Studies I</td>
<td>1. DTSB01H3 Introduction to Diaspora and Transnational Studies I</td>
</tr>
<tr>
<td></td>
<td>DTSB02H3 Introduction to Diaspora and Transnational Studies II</td>
<td>DTSB02H3 Introduction to Diaspora and Transnational Studies II</td>
</tr>
<tr>
<td></td>
<td>2. 5.0 full credits from Group A and Group B courses (below) with at least 2.0 full credits from each group. Coverage must include at least two diasporic communities or regions, to be identified in consultation with the program advisor. At least 1.0 full credit must be at the C-level or above.</td>
<td>2. 5.0 full credits from Group A and Group B courses (below) with at least 2.0 full credits from each group. Coverage must include at least two diasporic communities or regions, to be identified in consultation with the program advisor. At least 1.0 full credit must be at the C-level or above.</td>
</tr>
<tr>
<td></td>
<td>3. Any two of:</td>
<td>3. Any two of:</td>
</tr>
<tr>
<td></td>
<td>DTS401H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS401H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS402H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS402H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS403H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS403H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS404H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS404H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td><em>Students pursuing a DTS major should contact the Centre for Diaspora and Transnational Studies (<a href="mailto:CDTS@utoronto.ca">CDTS@utoronto.ca</a>) to be enrolled in these courses.</em></td>
<td><em>Students pursuing a DTS major should contact the Centre for Diaspora and Transnational Studies (<a href="mailto:CDTS@utoronto.ca">CDTS@utoronto.ca</a>) to be enrolled in these courses.</em></td>
</tr>
</tbody>
</table>

**Note:** In addition, while not required at this point in time, the Faculty of Arts & Science course JQR360H (The Canadian Census: Populations, Migrations and Demographics) is highly recommended.

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1407</th>
<th>SCMAJ1407</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organs</td>
<td>DTS</td>
<td>DTS</td>
</tr>
<tr>
<td>Sections</td>
<td>Diaspora and Transnational Studies</td>
<td>Diaspora and Transnational Studies</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN DIASPORA AND TRANSNATIONAL STUDIES (ARTS)</td>
<td>MAJOR PROGRAM IN DIASPORA AND TRANSNATIONAL STUDIES (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Program Requirements</td>
<td>Program Requirements</td>
</tr>
<tr>
<td></td>
<td>Students must complete 7.0 full credits as follows:</td>
<td>Students must complete 7.0 full credits as follows:</td>
</tr>
<tr>
<td></td>
<td>1. DTSB01H3 Introduction to Diaspora and Transnational Studies I</td>
<td>1. DTSB01H3 Introduction to Diaspora and Transnational Studies I</td>
</tr>
<tr>
<td></td>
<td>DTSB02H3 Introduction to Diaspora and Transnational Studies II</td>
<td>DTSB02H3 Introduction to Diaspora and Transnational Studies II</td>
</tr>
<tr>
<td></td>
<td>2. 5.0 full credits from Group A and Group B courses (below) with at least 2.0 full credits from each group. Coverage must include at least two diasporic communities or regions, to be identified in consultation with the program advisor. At least 1.0 full credit must be at the C-level or above.</td>
<td>2. 5.0 full credits from Group A and Group B courses (below) with at least 2.0 full credits from each group. Coverage must include at least two diasporic communities or regions, to be identified in consultation with the program advisor. At least 1.0 full credit must be at the C-level or above.</td>
</tr>
<tr>
<td></td>
<td>3. Any two of:</td>
<td>3. Any two of:</td>
</tr>
<tr>
<td></td>
<td>DTS401H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS401H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS402H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS402H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS403H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS403H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td>DTS404H Advanced Topics in Diaspora and Transnational Studies</td>
<td>DTS404H Advanced Topics in Diaspora and Transnational Studies</td>
</tr>
<tr>
<td></td>
<td><em>Students pursuing a DTS major should contact the Centre for Diaspora and Transnational Studies (<a href="mailto:CDTS@utoronto.ca">CDTS@utoronto.ca</a>) to be enrolled in these courses.</em></td>
<td><em>Students pursuing a DTS major should contact the Centre for Diaspora and Transnational Studies (<a href="mailto:CDTS@utoronto.ca">CDTS@utoronto.ca</a>) to be enrolled in these courses.</em></td>
</tr>
</tbody>
</table>

**Note:** In addition, while not required at this point in time, the Faculty of Arts & Science course JQR360H (The Canadian Census: Populations, Migrations and Demographics) is highly recommended.

### Group A (Humanities) courses

- CLAC24H3: Environment, Society and Economy in Polykleian and Roman Egypt
- CLAC24H3: Multiculturalism and Cultural Identities in the Greek and Roman Worlds
- CLAC24H3: Contemporary Literature from the Caribbean
- CLAC24H3: Contemporary Literature from South Asia
- CLAC24H3: Ethnic Traditions in American Literature
- CLAC24H3: The Immigrant Experience in Literature to 1850
- CLAC24H3: The Immigrant Experience in Literature since 1850

### Group B (Arts) courses

- ENGC13H3: Introduction to World Prehistory: The Rise of Civilization
- ENGC70H3: Hindu Epic
- ENGC71H3: Paul and the Invention of Christianity
- ENGB17H3: The Five Books of Moses
- ENGB19H3: The Gospels
- ENGC71H3: The Five Books of Moses
- ENGC71H3: The Qu'ran in Interpretive and Historical Context

### Cross-institutional courses

- PHLC32H3: Introduction to Ancient Philosophy
- PHLB31H3: Political Philosophy: Ancient Greece and the Middle Ages
- PHLB16H3: Political Philosophy: Ancient Greece and the Middle Ages
- PHLB31H3: The Greek Epic
- PHLB16H3: The Gospels
- PHLB16H3: The Five Books of Moses
- PHLB16H3: Hindu Epic
- PHLB16H3: The Qu'ran in Interpretive and Historical Context

### Anthropology

- ANTS64H3: Group A (Humanities) courses
- ANTS81H3: Group A (Humanities) courses

**Note:** Students who were enrolled at UTSC prior to the 2009 Summer Session may substitute one of the courses for CLAA04H3. Students who have both (CLAA02H3) & (CLAA03H3) may substitute one of (CLAA02H3) or (CLAA03H3) for CLAA06H3.
Online Calendar

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDSB05H3</td>
<td>Topics in Postcolonial Literature and Film</td>
</tr>
<tr>
<td>MDSB06H3</td>
<td>Topics in Literature and Religion</td>
</tr>
<tr>
<td>MDSB07H3</td>
<td>Studies in Arab North American Literature</td>
</tr>
<tr>
<td>ENGDB17H3</td>
<td>Between Traditions and Freedoms: Writing by Canadians of Asian Descent</td>
</tr>
<tr>
<td>FREB21H3</td>
<td>The Francophone World</td>
</tr>
<tr>
<td>FREB22H3</td>
<td>Francophone Literature</td>
</tr>
<tr>
<td>FREB23H3</td>
<td>Cinema of the Francophone World</td>
</tr>
<tr>
<td>FREB24H3</td>
<td>Folktales, Myth and the Fantastic in the French-Speaking World</td>
</tr>
<tr>
<td>FREB25H3</td>
<td>Special Topics in Linguistics: Pidgin and Creole Languages</td>
</tr>
<tr>
<td>FREB26H3</td>
<td>Cultural Identities and Stereotypes in the French-Speaking World</td>
</tr>
<tr>
<td>FREB27H3</td>
<td>Advanced Topics in Literature: Haitian Migrant Literature in Creole</td>
</tr>
<tr>
<td>GASB21H3</td>
<td>Methodologies and Issues in Global Asia Studies</td>
</tr>
<tr>
<td>GASB22H3</td>
<td>Introduction to South Asian Literatures</td>
</tr>
<tr>
<td>GASB23H3</td>
<td>Introduction to Chinese Literature</td>
</tr>
<tr>
<td>GASB24H3</td>
<td>Gender and Social Institutions in Asia</td>
</tr>
<tr>
<td>GASB25H3</td>
<td>Asian Religions and Cultures</td>
</tr>
<tr>
<td>GASB26H3</td>
<td>Chinese Thought and Culture in Historical Perspective</td>
</tr>
<tr>
<td>GASB27H3</td>
<td>Globalising Global Asia</td>
</tr>
<tr>
<td>GASB28H3</td>
<td>Self and Imagination in Pre-modern China</td>
</tr>
<tr>
<td>GASB29H3</td>
<td>Art of Memory: China and the West</td>
</tr>
<tr>
<td>GASB30H3</td>
<td>Chinese Media and Politics</td>
</tr>
<tr>
<td>GASB31H3</td>
<td>Media and Popular Cultures in East and Southeast Asia</td>
</tr>
<tr>
<td>GASB32H3</td>
<td>Film and Popular Culture in South Asia</td>
</tr>
<tr>
<td>GASB33H3</td>
<td>Comparative Studies of East Asian Legal Cultures</td>
</tr>
<tr>
<td>GASB34H3</td>
<td>Politics and Culture in Modern South Asia</td>
</tr>
<tr>
<td>HISD21H3</td>
<td>The British Empire: A Short History</td>
</tr>
<tr>
<td>HISD22H3</td>
<td>History on Film</td>
</tr>
<tr>
<td>HISD31H3</td>
<td>Africa in the Era of the Slave Trade</td>
</tr>
<tr>
<td>HISD32H3</td>
<td>Twentieth Century Africa</td>
</tr>
<tr>
<td>HISD33H3</td>
<td>Sub-Continental Histories: South Asia in the World</td>
</tr>
<tr>
<td>HISD34H3</td>
<td>The Early Modern Mediterranean, 1500-1800</td>
</tr>
<tr>
<td>HISD35H3</td>
<td>History of Animals and People</td>
</tr>
<tr>
<td>HISD36H3</td>
<td>Edible History: History of Global Foodways</td>
</tr>
<tr>
<td>HISD37H3</td>
<td>People in Motion: Immigrants and Migrants in U.S. History</td>
</tr>
<tr>
<td>HISD38H3</td>
<td>Immigrants and Race Relations in Canadian History</td>
</tr>
<tr>
<td>HISD39H3</td>
<td>China and the World</td>
</tr>
<tr>
<td>HISD40H3</td>
<td>Delhi and London: Imperial Cities, Mobile People</td>
</tr>
<tr>
<td>HISD41H3</td>
<td>Old Worlds? Strangers and Foreigners in the Mediterranean, 1200-1700</td>
</tr>
<tr>
<td>HISD42H3</td>
<td>Missionaries and Converts in the Early Modern World</td>
</tr>
<tr>
<td>HISD43H3</td>
<td>Between Two Worlds? Translators and Interpreters in History</td>
</tr>
<tr>
<td>HISD44H3</td>
<td>Global History of Crime and Punishment since 1750</td>
</tr>
<tr>
<td>HISD45H3</td>
<td>Thinking of Diversity: Perspectives on American Pluralisms</td>
</tr>
<tr>
<td>HISD46H3</td>
<td>The Politics of American Immigration, 1865-present</td>
</tr>
<tr>
<td>HISD47H3</td>
<td>East African Societies in Transition</td>
</tr>
<tr>
<td>HISD48H3</td>
<td>Coolest’s and Others: Asian Labouring Diasporas in the British Empire</td>
</tr>
<tr>
<td>HISD49H3</td>
<td>Travelling and Travel Writing from the Middle Ages to the Early Modern Period</td>
</tr>
<tr>
<td>HISD50H3</td>
<td>Theories and Methods in the Study of Society and Culture</td>
</tr>
<tr>
<td>HISD51H3</td>
<td>Media and Popular Cultures in East and Southeast Asia</td>
</tr>
<tr>
<td>HISD52H3</td>
<td>Perspectives on the Globalized and the Transnational II</td>
</tr>
<tr>
<td>HISD53H3</td>
<td>Covering Immigration and Transnational Issues</td>
</tr>
<tr>
<td>HISD54H3</td>
<td>Intermediate Tamil</td>
</tr>
<tr>
<td>HISD55H3</td>
<td>Media and Globalization (formerly HUMB74H3)</td>
</tr>
<tr>
<td>HISD56H3</td>
<td>Covering Immigration</td>
</tr>
<tr>
<td>HISD57H3</td>
<td>Hinduism in South Asia and the Diaspora</td>
</tr>
<tr>
<td>LRLC12H3</td>
<td>Contemporary Engaged Buddhist Movements in Asia (VPAB08H3)</td>
</tr>
<tr>
<td>LRLC13H3</td>
<td>Dialogues in the Diaspora</td>
</tr>
<tr>
<td>LRLC14H3</td>
<td>Africa through the Photographic Lens</td>
</tr>
<tr>
<td>LRLC15H3</td>
<td>Exhibiting Africa. Spectacle and the Politics of Representation</td>
</tr>
<tr>
<td>LRLC16H3</td>
<td>Religion in the Arts: Buddhist Arts and Cultures (VPB70H3)</td>
</tr>
<tr>
<td>LRLC17H3</td>
<td>Images of Women: East Asian Visual Culture</td>
</tr>
<tr>
<td>LRLC18H3</td>
<td>Religion in the Arts: Hinduism and Jainism</td>
</tr>
<tr>
<td>LRLC19H3</td>
<td>Issues in Contemporary Global Arts</td>
</tr>
<tr>
<td>LRLC20H3</td>
<td>The Silk Routes</td>
</tr>
<tr>
<td>LRLC21H3</td>
<td>Religion in the Arts: Seminar in Buddhism and Art</td>
</tr>
<tr>
<td>LRLC22H3</td>
<td>Art in Global Cities</td>
</tr>
<tr>
<td>LRLC23H3</td>
<td>Modern and Contemporary Arts and Visual Culture of the Middle East</td>
</tr>
<tr>
<td>LRLC24H3</td>
<td>Brazilian Modernism: Art and Architecture</td>
</tr>
<tr>
<td>LRLC25H3</td>
<td>Home, Away and In Between: Artists, Art, and Identity</td>
</tr>
<tr>
<td>LRLC26H3</td>
<td>Music of the World’s Peoples</td>
</tr>
<tr>
<td>LRLC27H3</td>
<td>Music in Islamic Cultures</td>
</tr>
</tbody>
</table>

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.shtml
Online Calendar

Program: SCSPE2345 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2345</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>IDS,CDSSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>International Development Studies</td>
</tr>
<tr>
<td>Sections</td>
<td>SPECIALIST (CO-OPERATIVE) PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (SCIENCE)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>The Co-operative Program in International Development Studies (B.Sc.) at the University of Toronto Scarborough, is a five year undergraduate Program which aims to provide students with a critical understanding of international development issues through exposure to a variety of academic disciplines and to another culture. The Program combines interdisciplinary academic study in the social and environmental sciences and humanities with a practical work experience in a developing country. IDS students graduate with an Honours B.Sc. with a Specialist certification in International Development Studies.</td>
</tr>
</tbody>
</table>

For Faculty of Arts & Science courses that may be applied to the program, see [http://www.artsandscience.utoronto.ca/ofr/calendar/crs_dts.htm](http://www.artsandscience.utoronto.ca/ofr/calendar/crs_dts.htm)

For UTM courses, see [www.erin.utoronto.ca/regcal/WEBGROUP125.html](http://www.erin.utoronto.ca/regcal/WEBGROUP125.html)
Online Calendar

Program Admission

Enrolment in the Program is limited. Interviews are normally held from March until May for students who pass the initial screening. Admissions are granted on the basis of the applicants’ academic performance, background in relevant subjects, language skills, experience or interest in international development studies and work. For information on fees and status in the Program, please see the Co-operative Programs section of this Calendar.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Work Placement

This Program requires twenty courses (four years) of study and one work term of eight to twelve months in duration. The work term will normally begin between May and September of the third year. The IDS work term is an integral part of the co-op curriculum and is designed to provide students with practical hands on experience in a developing country. The majority of work terms are with Canadian NGOs, research institutes or private sector consulting firms. The location of placements will vary according to each student’s disciplinary and regional preferences and abilities, the availability of positions, and the practicability and safety of the area. Placement employers are asked to cover the living allowance of the student. Those students who choose to carry out their placement with no funding will be asked to finance the living allowance themselves.

Students are required to submit progress reports every 2 months and begin work on a major research project. To be eligible for placement, students must have completed 14.5 full credits including 12.0 DS credits. These 12 must include ESSA01H3, ESSA02H3, plus 9.5 other credits from Requirements 1 through 4. For information about status in the co-op program, fees, and regulations, please see the Co-operative Programs section of this Calendar.

Students who successfully complete all requirements associated with a work term are awarded credit, these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

IDS Co-op Tutorial and Pre-Departure Orientation

Students participate in a non-credit co-op tutorial, commencing at the end of the year in which they complete 10 credits, and continuing through the following year (the pre-placement year). Presentations, group exercises and individual assignments prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, researching for the thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience.

Program Requirements:

This program requires 16.5 credits of which at least 4.0 must be at the C or D-level including at least 1.0 at the D-level. Complete 14.0 of the 16.5 credits from Requirements 1 through 4.

1. Introduction to International Development Studies (2.0 credits)
   - ESSA01H3 Introduction to International Development Studies
   - ESSA02H3 Introduction to International Development Studies
   - ESSA03H3 Introduction to Microeconomics or
   - ESSA04H3 Introduction to Microeconomics: A Mathematical Approach
   - ESSA05H3 Introduction to Macroeconomics or
   - ESSA06H3 Introduction to Macroeconomics: A Mathematical Approach
   - ESSA07H3 Introduction to Environmental Science

2. Core courses in International Development (8.0 credits)
   - ESSA08H3 Political Economy of International Development
   - ESSA09H3 Development and Environment
   - ESSA10H3 International Health Policy Analysis
   - ESSA11H3 Equity, Ethics and Justice in International Development
   - ESSA12H3 Comparative Development in International Perspective

Program Admission

Enrolment in the Program is limited. Interviews are normally held from March until May for students who pass the initial screening. Admissions are granted on the basis of the applicants’ academic performance, background in relevant subjects, language skills, experience or interest in international development studies and work. For information on fees and status in the Program, please see the Co-operative Programs section of this Calendar.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Work Placement

This Program requires twenty courses (four years) of study and one work term of eight to twelve months in duration. The work term will normally begin between May and September of the third year. The IDS work term is an integral part of the co-op curriculum and is designed to provide students with practical hands on experience in a developing country. The majority of work terms are with Canadian NGOs, research institutes or private sector consulting firms. The location of placements will vary according to each student’s disciplinary and regional preferences and abilities, the availability of positions, and the practicability and safety of the area. Placement employers are asked to cover the living allowance of the student. Those students who choose to carry out their placement with no funding will be asked to finance the living allowance themselves.

Students are required to submit progress reports every 2 months and begin work on a major research project. To be eligible for placement, students must have completed 14.5 full credits including 12.0 DS credits. These 12 must include ESSA01H3, ESSA02H3, plus 9.5 other credits from Requirements 1 through 4. For information about status in the co-op program, fees, and regulations, please see the Co-operative Programs section of this Calendar.

Students who successfully complete all requirements associated with a work term are awarded credit, these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

IDS Co-op Tutorial and Pre-Departure Orientation

Students participate in a non-credit co-op tutorial, commencing at the end of the year in which they complete 10 credits, and continuing through the following year (the pre-placement year). Presentations, group exercises and individual assignments prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, researching for the thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience.

Program Requirements:

This program requires 16.5 credits of which at least 4.0 must be at the C or D-level including at least 1.0 at the D-level.

1. Introduction to International Development Studies (2.0 credits)
   - ESSA01H3 Introduction to International Development Studies
   - ESSA02H3 Introduction to International Development Studies
   - ESSA03H3 Introduction to Microeconomics or
   - ESSA04H3 Introduction to Microeconomics: A Mathematical Approach
   - ESSA05H3 Introduction to Macroeconomics or
   - ESSA06H3 Introduction to Macroeconomics: A Mathematical Approach
   - ESSA07H3 Introduction to Environmental Science

2. Core courses in International Development (8.0 credits)
   - ESSA08H3 Political Economy of International Development
   - ESSA09H3 Development and Environment
   - ESSA10H3 International Health Policy Analysis
   - ESSA11H3 Equity, Ethics and Justice in International Development
   - ESSA12H3 Comparative Development in International Perspective
   - ESSA13H3 Comparative Development in Political Perspective
Online Calendar

Program: SCSPE2540A - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2540A</th>
<th>SCSPE2540A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>DS,CDSSC</td>
<td>DS,CDSSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>International Development Studies</td>
<td>International Development Studies</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
<td>SPECIALIST PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Program Requirements

This program requires 13.0 full credits of which at least 10.0 must be at the C- or D-level including at least 1.0 at the D-level.

1. Introduction to International Development Studies (2.0 full credits as follows)
   - PSAC01H3 Introduction to International Development Studies
   - MGER01H3 Introduction to Microeconomics
   - or
   - MGER02H3 Introduction to Microeconomics: A Mathematical Approach
   - MGER03H3 Introduction to Macroeconomics
   - or
   - MGER04H3 Introduction to Macroeconomics: A Mathematical Approach
   - PSAC01H3 Introduction to Environmental Science

2. Core courses in International Development (3.5 full credits as follows)
   - ESSB01H3 Political Economy of International Development
   - ESSB02H3 Development and Environment
   - ESSB03H3 International Health Policy Analysis
   - ESSB04H3 Equity, Ethics and Justice in International Development
   - POLB07H3 Comparative Development in International Perspective
   - POLB19H3 Comparative Development in Political Perspective
   - MAEG06H3 Introduction to Environmental Science

3. Methods for International Development Studies (1.5 full credits as follows)
   - MGEB11H3 Project Management I
   - 0.5 FCE in Quantitative, Ethnography, Quantitative Methods
   - ANTB35H3
   - TAR23H3
   - MGEB12H3 Project Management II
   - 0.5 FCE in Qualitative, Ethnography, Quantitative Methods
   - MGEB32H3
   - POLC78H3

4. Specialized Courses: Approaches to International Development (6.0 full credits)
   A minimum of 2.0 full credits must be chosen from two different clusters below for a total of 4.0 full credits. The other 2.0 full credits may be selected from any of the courses listed below, and PSAC29H3, PSOC01H3, ESSC04H3, MGEB11H3, MGEB12H3, MGEB32H3 and MGEB68H3 may also be counted towards the completion of this requirement.

Media and Development
- ANTC19H3 Anthropology of Media and Publics
- GASC40H3 Chinese Media and Politics
- GASC41H3 Media and Popular Culture in East and Southeast Asia
- ESSC10H3 Knowledge and Communication for Development
- ESSC11H3 Media and Development
- ESSC12H3 Media and Globalization
- ESSC13H3 Media and Information Technology
- ESSC14H3 Media and Society

Culture and Society
- ANTC10H3 Anthropology of Tourism
- ANTC11H3 Anthropological Perspectives on Development
- ANTC34H3 The Anthropology of Transnationalism
- ANTC35H3 The Anthropology of Foods
- DTSB01H3 Diaspora and Transnationalism Studies I
- DTSB02H3 Diaspora and Transnationalism Studies II
- USSL02H3 Twentieth Century Africa
- USSL03H3 Sub-Continental Histories: South Asia in the World
- USSL04H3 War and Society in Modern Africa
- USSL05H3 Media and Development
- USSL06H3 Politics & Society: Global Transformations
- USSL07H3 Ethnicity, Race and Migration
- USSL08H3 Special Topics in Sociology of Family
- USSL09H3 Migrations & Transnationalisms

Economics of Development
- ANTB19H3 Producing People and Things: Economics and Social Life
- EOVB03H3 Economic Aspects of Public Policy
- EOVB04H3 Comparative Economic Systems

Program Requirements

This program requires 13.0 full credits of which at least 10.0 must be at the C- or D-level including at least 1.0 at the D-level.

1. Introduction to International Development Studies (2.0 full credits as follows)
   - PSAC01H3 Introduction to International Development Studies
   - MGER01H3 Introduction to Microeconomics
   - or
   - MGER02H3 Introduction to Microeconomics: A Mathematical Approach
   - MGER03H3 Introduction to Macroeconomics
   - or
   - MGER04H3 Introduction to Macroeconomics: A Mathematical Approach
   - PSAC01H3 Introduction to Environmental Science

2. Core courses in International Development (3.5 full credits as follows)
   - ESSB01H3 Political Economy of International Development
   - ESSB02H3 Development and Environment
   - ESSB03H3 International Health Policy Analysis
   - ESSB04H3 Equity, Ethics and Justice in International Development
   - POLB07H3 Comparative Development in International Perspective
   - POLB19H3 Comparative Development in Political Perspective
   - MAEG06H3 Introduction to Environmental Science

3. Methods for International Development Studies (1.5 full credits as follows)
   - MGEB11H3 Project Management I
   - 0.5 FCE in Quantitative, Ethnography, Quantitative Methods
   - ANTB35H3
   - TAR23H3
   - MGEB12H3 Project Management II
   - 0.5 FCE in Qualitative, Ethnography, Quantitative Methods
   - MGEB32H3
   - POLC78H3

4. Specialized Courses: Approaches to International Development (6.0 full credits)
   A minimum of 2.0 full credits must be chosen from two different clusters below for a total of 4.0 full credits. The other 2.0 full credits may be selected from any of the courses listed below, and PSAC29H3, PSOC01H3, ESSC04H3, MGEB11H3, MGEB12H3, MGEB32H3 and MGEB68H3 may also be counted towards the completion of this requirement.

Media and Development
- ANTC19H3 Anthropology of Media and Publics
- GASC40H3 Chinese Media and Politics
- GASC41H3 Media and Popular Culture in East and Southeast Asia
- ESSC10H3 Knowledge and Communication for Development
- ESSC11H3 Media and Development
- ESSC12H3 Media and Globalization
- ESSC13H3 Media and Information Technology
- ESSC14H3 Media and Society

Culture and Society
- ANTC10H3 Anthropology of Tourism
- ANTC11H3 Anthropological Perspectives on Development
- ANTC34H3 The Anthropology of Transnationalism
- ANTC35H3 The Anthropology of Foods
- DTSB01H3 Diaspora and Transnationalism Studies I
- DTSB02H3 Diaspora and Transnationalism Studies II
- USSL02H3 Twentieth Century Africa
- USSL03H3 Sub-Continental Histories: South Asia in the World
- USSL04H3 War and Society in Modern Africa
- USSL05H3 Media and Development
- USSL06H3 Politics & Society: Global Transformations
- USSL07H3 Ethnicity, Race and Migration
- USSL08H3 Special Topics in Sociology of Family
- USSL09H3 Migrations & Transnationalisms

Economics of Development
- ANTB19H3 Producing People and Things: Economics and Social Life
- EOVB03H3 Economic Aspects of Public Policy
- EOVB04H3 Comparative Economic Systems
Program: SCSPE2540 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2540</th>
<th>SCSPE2540</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>IDS,CDSSC</td>
<td>IDS,CDSSC</td>
</tr>
<tr>
<td>Sections</td>
<td>International Development Studies</td>
<td>International Development Studies</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST (CO-OPERATIVE) PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
<td>SPECIALIST (CO-OPERATIVE) PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>
The Co-operative Program in International Development Studies (B.A.) at University of Toronto Scarborough, is a five year undergraduate Program which aims to provide students with a critical understanding of international development issues through exposure to a variety of academic disciplines and to another culture. The Program combines interdisciplinary academic study in the social and environmental sciences and humanities with a practical work experience in a developing country. IDS students graduate with an Honours B.A. with a Specialist certification in International Development Studies.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Program Admission

Enrollment in the Program is limited. Interviews are normally held from March until May for students who pass the initial screening. Admissions are granted on the basis of the applicants’ academic performance, background in relevant subjects, language skills, experience or interest in international development studies and work. For information on fees and status in the Program, please see the Co-operative Programs section in this Calendar.

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar.

Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website at: www.utsc.utoronto.ca/subjectpost. The minimum qualifications for entry are 4.0 credits and a cumulative GPA of at least 2.5. An interview is required.

Work Placement

This Program requires twenty courses (four years) of study and one work term of eight to twelve months in duration. The work term will normally begin between April and September of the third year. The IDS work term is an integral part of the co-op curriculum and is designed to provide students with practical hands on experience in a developing country. The majority of work terms are with Canadian NGOs, research institutes or private sector consulting firms. The location of placements will vary according to each student’s disciplinary and regional preferences and abilities, the availability of positions, and the practicability and safety of the area. Placement employers are asked to cover the living allowance of the student. Those students who choose to carry out their placement with no funding will be asked to finance the living allowance themselves.

Students are required to submit progress reports every 2 months and begin work on a major research project. To be eligible for placement, students must have completed 14.5 full credits including 12.0 IDS credits. These 12 must include 4.0 full credits in IDS 140YH, IDS 140XS plus 9.5 other credits from Requirements 1 through 4. For information about status in the co-op program, fees, and regulations, please see the Co-operative Programs section in this Calendar.

Students who successfully complete all requirements associated with a work term are awarded credit; these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

Students who successfully complete all requirements associated with a work term are awarded credit; these credits being additional to the 20.0 normally required for the degree. Work terms are evaluated by program faculty, the co-op office, and the employer, and a grade of CR (credit)/NCR (no credit) is recorded on the transcript.

IDS Co-op Tutorial and Pre-Departure Orientation

Students participate in a non-credit co-op tutorial, commencing at the end of the year in which they complete 10 credits, and continuing through the following year (the pre-placement year). Presentations, group exercises and individual assignments prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, research for the IDS 300YH thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience.

Program Requirements

This program requires 15.0 full credits, of which at least 6.0 must be at the C- or D-level including at least 1.0 at the D-level.

Students must complete requirements 1-3 of the requirements for the Specialist (Non-co-op B.A.) Program in International Development Studies, except for IDS 140YH, plus the following:

- 1.0 full credit in a second language

IDS Co-op Tutorial and Pre-Departure Orientation

Students participate in a non-credit co-op tutorial, commencing at the end of the year in which they complete 10 credits, and continuing through the following year (the pre-placement year). Presentations, group exercises and individual assignments prepare students for the placement experience. There are mandatory sessions on cross-cultural understanding, health and safety issues on placement, research for the IDS 300YH thesis, and other key topics. A weekend retreat with the fifth years (who have returned from placement) provides the opportunity for sharing of first-hand experience.

Program Requirements

This program requires 15.0 full credits, of which at least 6.0 must be at the C- or D-level including at least 1.0 at the D-level.

Students must complete requirements 1-3 of the requirements for the Specialist (Non-co-op B.A.) Program in International Development Studies, except for IDS 140YH, plus the following:

- 1.0 full credit in a second language
Program: SCMIN2295 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN2295</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MSCSC, STA</td>
</tr>
<tr>
<td>Sections</td>
<td>Statistics</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN APPLIED STATISTICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisors: K. Butler. Email: <a href="mailto:butler@utsc.utoronto.ca">butler@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements

This program requires a total of 4.0 credits as follows:

One of (0.5 credit):
- CSCA08H3 Introduction to Computer Science I

One of (0.5 credit):
- STAB22H3 Statistics I
  - MGEB11H3/(ECMB11H3) Quantitative Methods in Economics I
  - PSYB07H3 Data Analysis in Psychology

One of (0.5 credit):
- STAB27H3 Statistics II
  - MGEB12H3/(ECMB12H3) Quantitative Methods in Economics II
  - PSYC08H3 Advanced Data Analysis in Psychology

All of the following (1.5 credits)
- STAC32H3 Applications of Statistical Methods
- STAC50H3 Data Collection
- STAD29H3 Statistics for Life and Social Scientists

Two (1.0 credit) of the following courses
- any ACT, CSC, MAT, STA course
- MGFB10H3/(MGTB09H3)
- MGFC30H3/(MGTC71H3)
- MGOC10H3/(MGTC74H3)
- MGMC01H3/(MGTD07H3)
- MGMD01H3/(MGTD30H3)
- MGEB02H3/(ECMB02H3)
- MGEB06H3/(ECMB06H3)
- MGEC11H3/(ECMC11H3)
- MGED11H3/(ECMD10H3)
- MGED70H3/(ECMD70H3)

Program: SCSPE0506 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE0506</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>LIN, FLSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Linguistics</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN LINGUISTICS (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: <a href="mailto:cfl-ua@utsc.utoronto.ca">cfl-ua@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements

This program requires a total of 4.0 credits as follows:

One of (0.5 credit):
- CSCA08H3 Introduction to Computer Science I

One of (0.5 credit):
- STAB22H3 Statistics I
  - MGEB11H3/(ECMB11H3) Quantitative Methods in Economics I
  - PSYB07H3 Data Analysis in Psychology

One of (0.5 credit):
- STAB27H3 Statistics II
  - MGEB12H3/(ECMB12H3) Quantitative Methods in Economics II
  - PSYC08H3 Advanced Data Analysis in Psychology

All of the following (1.5 credits)
- STAC32H3 Applications of Statistical Methods
- STAC50H3 Data Collection
- STAD29H3 Statistics for Life and Social Scientists

Two (1.0 credit) of the following courses
- any ACT, CSC, MAT, STA course
- MGFB10H3/(MGTB09H3)
- MGFC30H3/(MGTC71H3)
- MGOC10H3/(MGTC74H3)
- MGMC01H3/(MGTD07H3)
- MGMD01H3/(MGTD30H3)
- MGEB02H3/(ECMB02H3)
- MGEB06H3/(ECMB06H3)
- MGEC11H3/(ECMC11H3)
- MGED11H3/(ECMD10H3)
- MGED70H3/(ECMD70H3)

For curriculum inquiries, contact the CFL Undergraduate Assistant: cfl-ua@utsc.utoronto.ca
Program Requirements

Students must complete 12.0 credits, including 4.0 credits at the C- and D-level of which 1.0 credit must be at the D-level as follows:

1. All of the following:
   - LINA01H3 Introduction to Linguistics
   - LINA02H3 Applications of Linguistics
   - PSYA01H3 Introductory Psychology, Part I
   - PSYA02H3 Introductory Psychology, Part II
   - LINC04H3 Phonology I
   - LINC05H3 Phonology II
   - LINC06H3 Syntactic Theory
   - LINC12H3 Semantics: The Study of Meaning
   - LINC27H3 The Psycholinguistics of Reading
   - LINC28H3 Seminars in Sociolinguistic Methodologies
   - LINC47H3 Disorders of Speech and Language
   - LINC50H3 The Psycholinguistics of Reading
   - LINC60H3 Special Topics in Linguistics: Pidgin and Creole Languages
   - PSYA02H3 Introductory Psychology: Part II
   - PSYA01H3 Introductory Psychology: Part I
   - LGG02H3 Disorders of Speech and Language

2. 4.5 credits from the following, including at least 1.5 credits from Group A and at least 1.5 credits from Group B:

   **Group A**
   - LINC09H3 Language and Gender
   - LINC10H3 Acoustic Phonetics
   - LINC11H3 Formal Semantics
   - LINC12H3 Semantics: The Study of Meaning
   - LINC13H3 Principles of Language Learning
   - LINC14H3 Language and Mind

   **Group B**
   - LINC15H3 Psycholinguistics
   - LINC16H3 Language and Emotion
   - LINC17H3 Language and Gender
   - LINC18H3 Introduction to Linguistics
   - LINC19H3 Applications of Linguistics
   - LINC20H3 Phonetics: The Study of Speech Sounds
   - LINC21H3 Introduction to Linguistics
   - LINC22H3 Applications of Linguistics
   - LINC23H3 Phonetics: The Study of Speech Sounds
   - LINC24H3 First Language Acquisition
   - LINC25H3 Syntax I
   - LINC26H3 Morphology
   - LINC27H3 The Psycholinguistics of Reading
   - LINC28H3 Seminars in Sociolinguistic Methodologies

3. 1.0 credit of language study in one or more languages, which may include FRE or LGG courses or language courses at another campus.

4. A further 2.0 credits in any LIN, PLI, JAL or JLP courses.

Program Requirements

Students must complete 12.0 credits, including 4.0 credits at the C- and D-level of which 1.0 credit must be at the D-level as follows:

1. All of the following:
   - LINA01H3 Introduction to Linguistics
   - LINA02H3 Applications of Linguistics
   - PSYA01H3 Introductory Psychology, Part I
   - PSYA02H3 Introductory Psychology, Part II
   - LINC04H3 Phonology I
   - LINC05H3 Phonology II
   - LINC06H3 Syntactic Theory
   - LINC12H3 Semantics: The Study of Meaning
   - LINC27H3 The Psycholinguistics of Reading
   - LINC47H3 Disorders of Speech and Language
   - LINC50H3 The Psycholinguistics of Reading
   - LINC60H3 Special Topics in Linguistics: Pidgin and Creole Languages
   - PSYA02H3 Introductory Psychology: Part II
   - PSYA01H3 Introductory Psychology: Part I
   - LGG02H3 Disorders of Speech and Language

2. 4.5 credits from the following, including at least 1.5 credits from Group A and at least 1.5 credits from Group B:

   **Group A**
   - LINC09H3 Language and Gender
   - LINC10H3 Acoustic Phonetics
   - LINC11H3 Formal Semantics
   - LINC12H3 Semantics: The Study of Meaning
   - LINC13H3 Principles of Language Learning
   - LINC14H3 Language and Mind

   **Group B**
   - LINC15H3 Psycholinguistics
   - LINC16H3 Language and Emotion
   - LINC17H3 Language and Gender
   - LINC18H3 Introduction to Linguistics
   - LINC19H3 Applications of Linguistics
   - LINC20H3 Phonetics: The Study of Speech Sounds
   - LINC21H3 Introduction to Linguistics
   - LINC22H3 Applications of Linguistics
   - LINC23H3 Phonetics: The Study of Speech Sounds
   - LINC24H3 First Language Acquisition
   - LINC25H3 Syntax I
   - LINC26H3 Morphology
   - LINC27H3 The Psycholinguistics of Reading
   - LINC28H3 Seminars in Sociolinguistic Methodologies

3. 1.0 credit of language study in one or more languages, which may include FRE or LGG courses or language courses at another campus.

4. A further 2.0 credits in any LIN, PLI, JAL or JLP courses.

Program: SCSPEPLINC - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPEPLINC</th>
<th>SCSPEPLINC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>LIN,FLSC</td>
<td>LIN,FLSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Linguistics</td>
<td>Linguistics</td>
</tr>
<tr>
<td>Sections</td>
<td>SPECIALIST PROGRAM IN PSYCHOLINGUISTICS (ARTS)</td>
<td>SPECIALIST PROGRAM IN PSYCHOLINGUISTICS (ARTS)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: vik . <a href="mailto:cal@utoronto.ca">cal@utoronto.ca</a></td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: vik . <a href="mailto:cal@utoronto.ca">cal@utoronto.ca</a></td>
</tr>
<tr>
<td>Program Requirements</td>
<td>Students must complete 12.0 credits, including 4.0 credits at the C- and D-level of which 1.0 credit must be at the D-level as follows:</td>
<td>Students must complete 12.0 credits, including 4.0 credits at the C- and D-level of which 1.0 credit must be at the D-level as follows:</td>
</tr>
</tbody>
</table>

1. LINA01H3 Introduction to Linguistics
2. LINA02H3 Applications of Linguistics
3. LINC09H3 Language and Gender
4. A further 2.0 credits in any LIN, PLI, JAL or JLP courses.
Program: SCMAJ0506 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ0506</th>
<th>SCMAJ0506</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>LIN,FLSC</td>
<td>LIN,FLSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Linguistics</td>
<td>Linguistics</td>
</tr>
<tr>
<td>Sections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN LINGUISTICS (ARTS)</td>
<td>MAJOR PROGRAM IN LINGUISTICS (ARTS)</td>
</tr>
<tr>
<td>ROSE Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: <a href="mailto:cfl-ua@utsc.utoronto.ca">cfl-ua@utsc.utoronto.ca</a></td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: <a href="mailto:cfl-ua@utsc.utoronto.ca">cfl-ua@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements
Students must complete 8.0 credits, as follows:

1. LINA01H3 Introduction to Linguistics
   LINA02H3 Applications of Linguistics
   LINB04H3 Phonology I
   LINB06H3 Syntax I
2. One of the following:
   LINA03H3 Sociolinguistics
   LINC02H3 Morphology
   LINC12H3 Semantics: The Study of Meaning
3. 4.0 further credits in LIN and/or PLI of which at least two credits must be at the C- or D-level.
4. 1.0 credit of language study in one or more languages, which may include FRE or LGG courses; language courses at another campus: LINB62H3 Structure of American Sign Language

Program notes/tables

Program: SCMINAFS - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMINAFS</th>
<th>SCMINAFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>AFS,HCSSC</td>
<td>AFS,HCSSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>African Studies</td>
<td>African Studies</td>
</tr>
<tr>
<td>Sections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN AFRICAN STUDIES (ARTS)</td>
<td>MINOR PROGRAM IN AFRICAN STUDIES (ARTS)</td>
</tr>
</tbody>
</table>

Program Requirements
Students must complete 8.0 credits, as follows:

1. LINA01H3 Introduction to Linguistics
   LINA02H3 Applications of Linguistics
   LINB04H3 Phonology I
   LINB06H3 Syntax I
2. One of the following:
   LINA03H3 Sociolinguistics
   LINC02H3 Morphology
   LINC12H3 Semantics: The Study of Meaning
3. 4.0 further credits in LIN and/or PLI of which at least two credits must be at the C- or D-level.
4. 1.0 credit of language study in one or more languages, which may include FRE or LGG courses; language courses at another campus: LINB62H3 Structure of American Sign Language

Program notes/tables
Program Requirements

Students must complete four full credits, as follows:

1. 1.0 credit from the following (students should check course descriptions for prerequisites):
   - AFSA01H3 Africa in the World: An Introduction
   - AFSB51H3 African Worldviews

2. 1.0 credit from the following (students should check course descriptions for prerequisites):
   - AFSA01H3 Africa in the World: An Introduction
   - AFSB51H3 African Worldviews

3. 2.0 credits from the list below; at least 1.0 credit must be at the C- or D-level (students should check course descriptions for prerequisites):
   - AFSA01H3 Africa in the World: An Introduction
   - AFSB51H3 African Worldviews
   - AFSA03H3 Language and Society in the Arab World
   - ANT05H3 African Worldviews
   - ANT06H3 Language and Society in the Arab World
   - ANT07H3 African Worldviews

Note: Not all courses in Requirement #2 and #3 are offered every year.
Students must complete seven full credits as follows:

<table>
<thead>
<tr>
<th>Cluster #1: Health, Sexualities, and the Gendered Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT11H3       Gender and Sexualities</td>
</tr>
<tr>
<td>ANT12H3       The Body in Culture and Society</td>
</tr>
<tr>
<td>ENGC27H3       Women and Health, Past and Present</td>
</tr>
<tr>
<td>ENGC34H3       Psychology of Gender</td>
</tr>
<tr>
<td>ENGB51H3       Women, Violence and Resistance</td>
</tr>
<tr>
<td>Cluster #2: Representations and Constructions of Women and Gender</td>
</tr>
<tr>
<td>ENGC18H3       Women and Literature: Forging a Tradition</td>
</tr>
<tr>
<td>ENGC19H3       Gender and Genre</td>
</tr>
<tr>
<td>ENGC20H3       Early Modern Women and Literature: 1500-1700</td>
</tr>
<tr>
<td>ENGC21H3       Contemporary Arab Women Writers</td>
</tr>
<tr>
<td>ENGC22H3       Women and Canadian Writing</td>
</tr>
<tr>
<td>ENGC23H3       Language and Gender</td>
</tr>
<tr>
<td>ENGC24H3       Philosophy and Feminism</td>
</tr>
<tr>
<td>ENGC25H3       Psychology of Gender</td>
</tr>
<tr>
<td>ENGC26H3       Sociology of Gender</td>
</tr>
<tr>
<td>ENGC27H3       Gender and Information Technology</td>
</tr>
<tr>
<td>ENGC28H3       Sociology of the Arts: Hot Mamas, Amazons, and Madonnas</td>
</tr>
<tr>
<td>ENGC29H3       Music and Gender</td>
</tr>
<tr>
<td>WSTB13H3       Gender, Media and Culture</td>
</tr>
<tr>
<td>WSTB14H3       Writing the Self: Global Women's Autobiographies</td>
</tr>
<tr>
<td>WSTB15H3       Criminal Women: Gender, Justice and the Media</td>
</tr>
<tr>
<td>WSTB16H3       Women and Film</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster #3: Gender, Equity, and Human Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGTC16H3       Gender and Social Institutions in Asia</td>
</tr>
<tr>
<td>MGTC23H3       Diversity in the Workplace</td>
</tr>
<tr>
<td>POLC21H3       Globalization, Gender and Development</td>
</tr>
<tr>
<td>POLC22H3       Sociology of Gender and Work</td>
</tr>
<tr>
<td>POLC23H3       Gendered Sexes, Gendered Bodies</td>
</tr>
<tr>
<td>WSTB13H3       Women, Power and Protest</td>
</tr>
<tr>
<td>WSTB14H3       Women, Community and Policy Change</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster #4: Gender, Local and Global Communities, and Diaspora</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT14H3        Feminism and Anthropology</td>
</tr>
<tr>
<td>GST20H3        Feminism and Anthropology</td>
</tr>
<tr>
<td>GST20H3        Gendering Global Asia</td>
</tr>
<tr>
<td>GST20H3        Senior Seminar: Social Change and Gender Relations in Chinese Societies</td>
</tr>
</tbody>
</table>

### Program: SCSPE0370 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE0370</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EES, PH-SSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ENVIRONMENTAL BIOLOGY (SCIENCE) Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: M. Isaac (416-287-7276). Email: <a href="mailto:marney.issac@utoronto.ca">marney.issac@utoronto.ca</a></td>
</tr>
</tbody>
</table>

#### Program Requirements

**Total requirements: 14.0 full credits**

**First Year:**
- **EESA01H3** Introduction to Environmental Science
- **EESA02H3** Introduction to Plant Earth
- **ECOA18H3** Life on Earth: Unifying Principles
- **ECOA28H3** Life on Earth: Form, Function and Interactions
- **CHMA16H3** Introductory Chemistry I: Structure and Bonding
- **CHMA17H3** Introductory Chemistry II: Reactions and Mechanisms
- **MATA30H3** Calculus I for Biological and Physical Sciences
- **MATA31H3** Calculus II for Biological Sciences or **MATA31H3** Calculus II for Physical Sciences or **MATA31H3** Calculus II for Mathematical Sciences
- **CHMA15H3** Introduction to Physics I or **CHMA15H3** Introduction to Physics II

**Second Year:**
- **EESB02H3** Evolutionary Biology
- **EESB03H3** Evolutionary Biology Laboratory
- **EESA06H3** Earth History
- **EESA03H3** Feeding Humans - The Cost to the Planet
- **EESA04H3** Statistics I
- **CSG02H3** Introduction to Scientific Computing or **CSCA08H3** Introduction to Computer Programming
- **1.0 full credit from the following:**
  - **ESEE03H3** Principles of Climatology
  - **ESEE04H3** Principles of Hydrology
  - **ESEE05H3** Principles of Soil Science
  - **CHMA55H3** Environmental Chemistry

**Third and Fourth Years:**
2.0 credits as follows:
- **EESC03H3** Geographic Information Systems and Remote Sensing

---

**Note:** Not all courses in Requirement #6 or #7 are offered every year.

---

### Program: SCSPE0370 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE0370</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EES, PH-SSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ENVIRONMENTAL BIOLOGY (SCIENCE) Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: M. Isaac (416-287-7276). Email: <a href="mailto:marney.issac@utoronto.ca">marney.issac@utoronto.ca</a></td>
</tr>
</tbody>
</table>

#### Program Requirements

**Total requirements: 14.0 full credits**

**First Year:**
- **EESA01H3** Introduction to Environmental Science
- **EESA02H3** Introduction to Plant Earth
- **ECOA18H3** Life on Earth: Unifying Principles
- **ECOA28H3** Life on Earth: Form, Function and Interactions
- **CHMA16H3** Introductory Chemistry I: Structure and Bonding
- **CHMA17H3** Introductory Chemistry II: Reactions and Mechanisms
- **MATA30H3** Calculus I for Biological and Physical Sciences
- **MATA31H3** Calculus II for Biological Sciences or **MATA31H3** Calculus II for Physical Sciences or **MATA31H3** Calculus II for Mathematical Sciences
- **CHMA15H3** Introduction to Physics I or **CHMA15H3** Introduction to Physics II

**Second Year:**
- **EESB02H3** Evolutionary Biology
- **EESB03H3** Evolutionary Biology Laboratory
- **EESA06H3** Earth History
- **EESA03H3** Feeding Humans - The Cost to the Planet
- **EESA04H3** Statistics I
- **CSG02H3** Introduction to Scientific Computing or **CSCA08H3** Introduction to Computer Programming
- **1.0 full credit from the following:**
  - **ESEE03H3** Principles of Climatology
  - **ESEE04H3** Principles of Hydrology
  - **ESEE05H3** Principles of Soil Science
  - **CHMA55H3** Environmental Chemistry

**Third and Fourth Years:**
2.0 credits as follows:
- **EESC03H3** Geographic Information Systems and Remote Sensing

---

**Note:** Not all courses in Requirement #6 or #7 are offered every year.
**Program: SCSPE0360 - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE0360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EES, PHSSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ENVIRONMENTAL CHEMISTRY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: Myrna Simpson (416) 287-7234 Email: <a href="mailto:myrna.simpson@utoronto.ca">myrna.simpson@utoronto.ca</a>  Advisor: J. Donaldson (416-287-7213)</td>
</tr>
</tbody>
</table>

**Program Requirements**

**Total requirements: 15.0 full credits**

**First Year:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EES22H3</td>
<td>Introduction to Environmental Science</td>
</tr>
<tr>
<td>EES224H3</td>
<td>Introduction to Planet Earth</td>
</tr>
<tr>
<td>EES14H3</td>
<td>Life on Earth: Unifying Principles</td>
</tr>
<tr>
<td>EES144H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
<tr>
<td>CHEM1A1H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHEM2A1H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
<tr>
<td>MATH2A0H3</td>
<td>Calculus I for Biological and Physical Sciences</td>
</tr>
<tr>
<td>MATH2A1H3</td>
<td>Calculus II for Physical Sciences</td>
</tr>
</tbody>
</table>

**Second Year:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB50H3</td>
<td>Ecology</td>
</tr>
<tr>
<td>CHME2B2H3</td>
<td>Chemical Thermodynamics and Elementary Kinetics</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Chemical Structure and Spectroscopy</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Environmental Chemistry</td>
</tr>
<tr>
<td>STA222H3</td>
<td>Statistics I</td>
</tr>
</tbody>
</table>

**Total requirements: 15.0 full credits**

**First Year:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EES22H3</td>
<td>Introduction to Environmental Science</td>
</tr>
<tr>
<td>EES224H3</td>
<td>Introduction to Planet Earth</td>
</tr>
<tr>
<td>EES14H3</td>
<td>Life on Earth: Unifying Principles</td>
</tr>
<tr>
<td>EES144H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
<tr>
<td>CHEM1A1H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHEM2A1H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
<tr>
<td>MATH2A0H3</td>
<td>Calculus I for Biological and Physical Sciences</td>
</tr>
<tr>
<td>MATH2A1H3</td>
<td>Calculus II for Physical Sciences</td>
</tr>
</tbody>
</table>

**Second Year:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB50H3</td>
<td>Ecology</td>
</tr>
<tr>
<td>CHME2B2H3</td>
<td>Chemical Thermodynamics and Elementary Kinetics</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Chemical Structure and Spectroscopy</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHME2B1H3</td>
<td>Environmental Chemistry</td>
</tr>
<tr>
<td>STA222H3</td>
<td>Statistics I</td>
</tr>
</tbody>
</table>
Online Calendar

1.0 full credit from the following:
- EESB03H3 Principles of Climatology
- EESB04H3 Principles of Hydrology
- EESB05H3 Principles of Soil Science
- EESB15H3 Earth History

Third Year:
- EESC03H3 Geographic Information Systems and Remote Sensing
- EESC07H3 Groundwater
- EESC13H3 Environmental Impact Assessment and Auditing
- EESC20H3 Geochemistry
- CHMB16H3 Techniques in Analytical Chemistry
- CHMB31H3 Introduction to Inorganic Chemistry
- EESC675H3 Introduction to Scientific Computing

1.0 credit from the following:
- CHMC11H3 Principles of Analytical Instrumentation
- CHMC31Y3 Intermediate Inorganic Chemistry
- CHMC41H3 Organic Reaction Mechanisms
- CHMC42H3 Organic Synthesis
- CHMC47H3 Bio-Organic Chemistry
- CHMD59H3 Topics in Environmental Chemistry
- CHMD89H3 Introduction to Green Chemistry
- EESD13H3 Environmental Law and Ethics

Fourth Year:
- EESD02H3 Contaminant Hydrogeology
- EESD15H3 Cleaning Up Our Mess: Remediation of Terrestrial and Aquatic Environments
- CHMC11H3 Principles of Analytical Instrumentation
- CHMC21H3 Topics in Biophysical Chemistry
- CHMC31Y3 Intermediate Inorganic Chemistry
- CHMC41H3 Organic Reaction Mechanisms
- CHMC42H3 Organic Synthesis
- CHMC47H3 Bio-Organic Chemistry
- CHMC51H3 Topics in Environmental Chemistry
- CHMC52H3 Introduction to Green Chemistry
- EESC35H3 Mineralogy

Program notes/tables

Program: SCSPE1076B - Compare

Code: SCSPE1076B
Owning Organizations: PHSSC, PHY
Sections: Physics and Astrophysics
Title: SPECIALIST PROGRAM IN ENVIRONMENTAL PHYSICS (SCIENCE)
ROSI Title: Same as Calendar Title
Description:
Supervisors of Studies: W.A. Gough (416-208-4873), Email: gough@utsc.utoronto.ca
and J. Lowman (416-208-4880), Email: lowman@utsc.utoronto.ca

Program Requirements
Total Requirements: 15.5 full credits

First Year (4.0 credits):
- PHYA10H3 Introduction to Physics IA
- PHYA21H3 Introduction to Physics IIA
- MATA30H3 Calculus I for Biological and Physical Sciences
- MATA36H3 Calculus II for Physical Sciences
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- EESA06H3 Introduction to Planet Earth
- MATA23H3 Linear Algebra I

Second Year (4.5 credits):
- PHYB10H3 Intermediate Physics Laboratory I
- PHYB21H3 Electricity and Magnetism
- PHYB52H3 Organic Chemistry
- PHYB54H3 Mechanics: From Oscillations to Chaos
- VATA41H3 Techniques of Calculus of Several Variables I
- VATA42H3 Techniques of Calculus of Several Variables II

Fourth Year (4.5 credits):
- PHYD10H3 Introduction to Physics IA
- PHYD21H3 Introduction to Physics IIA
- VATA30H3 Calculus I for Biological and Physical Sciences
- VATA36H3 Calculus II for Physical Sciences
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- EESA06H3 Introduction to Planet Earth
- VATA41H3 Linear Algebra I

Second Year (4.5 credits):

MATB44H3  Differential Equations I
Two of:
  EESB02H3  Principles of Geomorphology
  EESB03H3  Principles of Climatology
  EESB04H3  Principles of Hydrology
  EESB05H3  Principles of Soil Science
  EESB15H3  Earth History

Third Year (4.0 credits):
  PHYB56H3  Introduction to Quantum Physics
  PHYC11H3  Intermediate Physics Laboratory II
  PSCB57H3  Introduction to Scientific Computing
  MATC46H3  Differential Equations II
  STAB22H3  Statistics I
One of:
  PHYC50H3  Electromagnetic Theory
  PHYC54H3  Classical Mechanics
Two of:
  CHMB55H3  Environmental Chemistry
  EESC07H3  Groundwater
  EESC18H3  The Great Lakes: An Introduction to Physical Limnology
  EESC19H3  Marine Systems
  EESC20H3  Geochemistry
  EESC31H3  Principles of Glacial Sedimentology and Stratigraphy

Fourth Year (3.0 credits):
  PHYD37H3  Introduction to Fluid Mechanics
  PHYD38H3  Nonlinear Systems and Chaos
Four of:
  ASTC25H3  Astrophysics of Planetary Systems
  EESC03H3  Geographic Information Systems and Remote Sensing
  EESC06H3  Contaminant Hydrogeology
  EESC08H3  Climate Change Impact Assessment
  EESC09H3  Research Project in Environmental Science*
  PHYC50H3  Electromagnetic Theory
  PHYC54H3  Classical Mechanics
  PHYD01H3  Physics Research Project*
  PHYD11H3  Computational Physics Project*
  PHYD72H3  Supervised Reading in Physics*
*no more than two of PHYC50H3, PHYC54H3, PHYD01H3 and PHYD11H3 may be counted as fulfilling the program requirements.

NOTE: Where any course appears on more than one option list, it may only be counted as fulfilling the requirements for one of those lists of options.

Program: SCMAJ1762 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1762</th>
<th>SCMAJ1762</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>CHM,PHSSC</td>
<td>CHM,PHSSC</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Chemistry</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN BIOCHEMISTRY (SCIENCE)</td>
<td>MAJOR PROGRAM IN BIOCHEMISTRY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor: Alen Hadzovic (416-287-5602) Email: <a href="mailto:alen.hadzovic@utoronto.ca">alen.hadzovic@utoronto.ca</a> This Program places a greater emphasis on the biological aspects of chemistry than does the general Chemistry Major Program. It is offered for students who are primarily</td>
<td></td>
</tr>
</tbody>
</table>

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
Program Requirements

Students should complete the following 8.5 full credits:

First Year:
- BIOA01H3 Life on Earth: Unifying Principles
- BIOA02H3 Life on Earth: Form, Function and Interactions
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA30H3 Calculus I for Biological and Physical Sciences
- [MATA35H3 Calculus II for Biological Sciences or MATA36H3 Calculus II for Physical Sciences]

Second and Later Years:
- BIOB10H3 Cell Biology
- BIOB11H3 Molecular Aspect of Cellular and Genetic Processes
- BIOB12H3 Cell & Molecular Biology Laboratory
- BIOC12H3 Biochemistry I: Proteins & Enzymes
- BIOC13H3 Biochemistry II: Bioenergetics & Metabolism
- BIOC23H3 Practical Approaches to Biochemistry
- CHMB16H3 Techniques in Analytical Chemistry
- CHMB41H3 Organic Chemistry I
- CHMB42H3 Organic Chemistry II
- CHMC47H3 Bio-Organic Chemistry

And 0.5 credit from the following:
- CHMB20H3 Chemical Thermodynamics and Elementary Kinetics
- CHMB20H3 Introduction to Inorganic Chemistry
- CHMB20H3 Environmental Chemistry
- CHMB20H3 Principles of Analytical Instrumentation
- CHMB20H3 Organic Reaction Mechanisms
- CHMB20H3 Organic Synthesis

* If CHMB20H3 is selected, MATA10H3 is required.

Program: SCMAJMDS - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJMDS</th>
<th>SCMAJMDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MDS, ACMSC</td>
<td>MDS, ACMSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Media Studies</td>
<td>Media Studies</td>
</tr>
<tr>
<td>Sections</td>
<td>MAJOR PROGRAM IN MEDIA STUDIES (ARTS)</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN MEDIA STUDIES (ARTS)</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Undergraduate Advisor: Email: <a href="mailto:mds-undergrad-advisor@utsc.utoronto.ca">mds-undergrad-advisor@utsc.utoronto.ca</a></td>
<td>Undergraduate Advisor: Email: <a href="mailto:mds-undergrad-advisor@utsc.utoronto.ca">mds-undergrad-advisor@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements

Students must complete 8.0 full credits including 2.0 credits at the C- or D-level:

1. 1.5 credits:
- ACMA01H3 Exploring Key Questions in the Humanities
- MDSA01H3 Introduction to Media Studies
- MDSA02H3 History of Media and Technology

2. 0.5 credit from the following:
- MDSM02H3 Media and Globalization
- MDSM03H3 Political Economy of Media

3. 0.5 credit from the following:
- MSMS02H3 Exploring Key Questions in the Humanities
- MSMS03H3 History of Media and Technology

Program Requirements

Students must complete 8.0 full credits:

1. 1.5 credits:
- ACMA01H3 Exploring Key Questions in the Humanities
- MDSA01H3 Introduction to Media Studies
- MDSA02H3 History of Media and Technology

2. 0.5 credit from the following:
- MSMS02H3 Media and Globalization
- MSMS03H3 Political Economy of Media

3. 0.5 credit from the following:
- MSMS02H3 Exploring Key Questions in the Humanities
- MSMS03H3 History of Media and Technology
4. 1.0 credit:
- MDSA01H3 Introduction to Media Studies
- MDSA02H3 History of Media and Technology
- MDSB61H3 Critical Approaches to New Media
- MDSB62H3 Understanding Visual Culture

5. 0.5 credit from the following:
- MDSD01H3 Senior Seminar: Topics in Media and Arts
- MDSD02H3 Senior Seminar: Topics in Media and Society

6. 3.5 credits from the following:
- MDSB01H3 Human, Animal, Machine
- MDSB02H3 Anthropology of Language and Media: An Introduction
- MDSB03H3 Advertising and Consumer Culture
- MDSB05H3 Media and Globalization (if not used above)
- MDSB25H3 Political Economy of Media (if not used above)
- MDSB61H3 Mapping New Media (if not used above)
- MDSB62H3 Visual Culture (if not used above)
- MDSB63H3 Critical Approaches to Digital Media (if not used above)
- MDSB64H3 Old Media, New Media: Film and Technology
- MDSB65H3 Online Gaming and Virtual Worlds

7. 0.5 credit from the following:
- ENGB70H3 Introduction to Cinema
- ENGB75H3 Cinema and Modernity
- ENGB76H3 Cinema and Modernity
- ENGC56H3 Literature and Media
- HISC08H3 Colonialism and Empire
- HISB12H3 The Classical World in Film
- PHIL17H3 Media Studies
- PHIL18H3 Media Ethics
- PHIL19H3 Media and Society
- PHIL23H3 Art and the Everyday: Mass Culture and the Visual Arts
- PHIL25H3 Ethical Approaches to Digital Media
- PHIL26H3 Critical Approaches to New Media
- PHIL27H3 Media and the World of Work
- PHIL28H3 Media Ethics
- PHIL29H3 Online Gaming and Virtual Worlds
- PHIL30H3 Senior Seminar: Topics in Media and Arts (if not used above)
- PHIL31H3 Senior Seminar: Topics in Media and Society (if not used above)

Program Requirements:
Students must complete 9.0 full credits of which at least 2.0 must be at the C- or D-level, including:
1. 2.0 full credits:
- MDSA01H3 Introduction to Media Studies
- MDSA02H3 History of Media and Technology
- MDSB61H3 Critical Approaches to New Media
- MDSB62H3 Understanding Visual Culture
2. 1.0 additional full credit from the following:
  - MDSD01H3 Language and Media
  - NMEB10H3 Advertising and Consumer Culture
  - NMEB09H3 Media and Globalization
  - NMEB08H3 Political Economy of Media
  - NMEB06H3 Theories and Methods in Media Studies
  - NMEB05H3 Topics in Media, Identities and Politics
  - NMEB04H3 Chinese Media and Politics
  - NMEB03H3 Media and Popular Culture in East and Southeast Asia
  - NMEB02H3 Old Media, New Media and Technology
  - NMEB01H3 Senior Seminar: Topics in Media and Society

3. 0.5 credit from the following:
  - MDSD01H3 Introduction to Computer Programming
  - NMEB10H3 Introduction to Computer Science
  - NMEB09H3 Introduction to Digital Animation
  - NMEB08H3 Introduction to Sound Art
  - NMEB06H3 Digital Studio Projects
  - NMEB05H3 Application Software for Interactive Media
  - NMEB04H3 Sound Design
  - NMEB03H3 Design for New Media

4. 4.5 full credits from Centennial College:

**New Media Group 1.**

Students will be eligible to enrol in New Media Group 1 courses after completing any 10 full credits including 2 full credits from category 1 and 0.5 credits from category 1 or 2.

- MDSD02H3 Digital Fundamentals
- NMEB20H3 Introduction to New Media Communications
- NMEB10H3 The Language of Design
- NMEB09H3 Interface Design, Navigation and Interaction I

**New Media Group 2.**

Students will be eligible to enrol in these courses after successfully completing all courses in New Media Group 1.

- MDSD01H3 Interface Design, Navigation and Interaction II
- NMEB08H3 Project Development and Presentation
- NMEB07H3 Application Software for Interactive Media
- NMEB06H3 Sound Design
- NMEB05H3 Design for New Media

5. 1.0 full credit:
- NMED01H3 New Media Senior Project
- NMED20H3 Theory and Practice of New Media

**Note:** The following NME courses are taught at UTSC: NMED01H3 and NMED20H3. All other NME courses are taught at Centennial College.

---

2. 1.0 additional full credit from the following:
  - MDSD01H3 Language and Media
  - NMEB10H3 Advertising and Consumer Culture
  - NMEB09H3 Media and Globalization
  - NMEB08H3 Political Economy of Media
  - NMEB06H3 Theories and Methods in Media Studies
  - NMEB05H3 Topics in Media, Identities and Politics
  - NMEB04H3 Chinese Media and Politics
  - NMEB03H3 Media and Popular Culture in East and Southeast Asia
  - NMEB02H3 Old Media, New Media and Technology
  - NMEB01H3 Senior Seminar: Topics in Media and Society

3. 0.5 credit from the following:
  - MDSD01H3 Introduction to Computer Programming
  - NMEB10H3 Introduction to Computer Science
  - NMEB09H3 Introduction to Digital Animation
  - NMEB08H3 Introduction to Sound Art
  - NMEB06H3 Digital Studio Projects
  - NMEB05H3 Application Software for Interactive Media
  - NMEB04H3 Sound Design
  - NMEB03H3 Design for New Media

4. 4.5 full credits from Centennial College:

**New Media Group 1.**

Students will be eligible to enrol in New Media Group 1 courses after completing any 10 full credits including 2 full credits from category 1 and 0.5 credits from category 1 or 2.

- MDSD02H3 Digital Fundamentals
- NMEB20H3 Introduction to New Media Communications
- NMEB10H3 The Language of Design
- NMEB09H3 Interface Design, Navigation and Interaction I

**New Media Group 2.**

Students will be eligible to enrol in these courses after successfully completing all courses in New Media Group 1.

- MDSD01H3 Interface Design, Navigation and Interaction II
- NMEB08H3 Project Development and Presentation
- NMEB07H3 Application Software for Interactive Media
- NMEB06H3 Sound Design
- NMEB05H3 Design for New Media

5. 1.0 full credit:
- NMED01H3 New Media Senior Project
- NMED20H3 Theory and Practice of New Media

**Note:** NMED01H3 and NMED20H3 are taught at UTSC. All other NME courses are taught at Centennial College.
### Program Requirements:

This program requires 14.0 credits of which at least 4.0 must be at the C- or D-level including at least 1.0 at the D-level.

1. **Introduction to International Development Studies** (2.0 credits)
   - MGEA02H3 Introduction to International Development Studies
   - MGEB11H3 Introduction to Microeconomics
   - MGEA04H3 Introduction to Microeconomics: A Mathematical Approach
   - MGEA06H3 Introduction to Macroeconomics
   - MGEA08H3 Introduction to Macroeconomics: A Mathematical Approach
   - MGEA09H3 Introduction to Environmental Science

2. **Core courses in International Development** (3.0 credits)
   - MGDA01H3 Development and Environment
   - MGEA01H3 International Health Policy Analysis
   - MGEA07H3 Equity, Ethics and Justice in International Development
   - MGEB11H3 Comparative Development in International Perspective
   - MGEB01H3 Comparative Development in Political Perspective

3. **Methods for International Development Studies** (1.5 credits)
   - MGEB06H3 Quantitative Methods
   - MGEB05H3 Qualitative Methods
   - MGEB04H3 Introduction to International Development Studies

4. **Specialized Courses** (3.0 credits)
   - MGDA01H3 Life on Earth: Unifying Principles
   - MGDA02H3 Life on Earth: Form, Function and Interactions
   - CMAB01H3 Introductory Chemistry I: Structure and Bonding
   - CMAB02H3 Introductory Chemistry II: Reactions and Mechanisms
   - MATA03H3 Calculus I for Biological and Physical Sciences
   - MATA04H3 or MATA11H3 Introduction to Physics IA or IB

5. 1.0 credits from:
   - EESB17H3 Introduction to Geology
   - EESB16H3 Introduction to Geology
   - EESB05H3 Introduction to Soil Science
   - EESB04H3 Principles of Geology
   - EESB03H3 Earth History
   - EESB02H3 Feeding Humans: The Cost to the Planet
   - GGRB02H3 Introduction to Geographic Information Systems
   - GGRB01H3 Introduction to Scientific Computing

6. 3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:
   - EESB18H3 Biodiversity and Biogeography
   - EESB19H3 Groundwater
   - EESB18H3 Environmental Impact Assessment and Auditing
   - GGRB01H3 Introduction to Scientific Computing

---

### Program Requirements:

This program requires 14.0 credits of which at least 4.0 must be at the C- or D-level including at least 1.0 at the D-level.

1. **Introduction to International Development Studies** (2.0 credits)
   - MGEA02H3 Introduction to International Development Studies
   - MGEB11H3 Introduction to Microeconomics
   - MGEA04H3 Introduction to Microeconomics: A Mathematical Approach
   - MGEA06H3 Introduction to Macroeconomics
   - MGEA08H3 Introduction to Macroeconomics: A Mathematical Approach
   - MGEA09H3 Introduction to Environmental Science

2. **Core courses in International Development** (3.0 credits)
   - MGDA01H3 Development and Environment
   - MGEA01H3 International Health Policy Analysis
   - MGEA07H3 Equity, Ethics and Justice in International Development
   - MGEB11H3 Comparative Development in International Perspective
   - MGEB01H3 Comparative Development in Political Perspective

3. **Methods for International Development Studies** (1.5 credits)
   - MGEB06H3 Quantitative Methods
   - MGEB05H3 Qualitative Methods
   - MGEB04H3 Introduction to International Development Studies

4. **Specialized Core Courses** (3.0 credits)
   - MGDA01H3 Life on Earth: Unifying Principles
   - MGDA02H3 Life on Earth: Form, Function and Interactions
   - CMAB01H3 Introductory Chemistry I: Structure and Bonding
   - CMAB02H3 Introductory Chemistry II: Reactions and Mechanisms
   - MATA03H3 Calculus I for Biological and Physical Sciences
   - MATA04H3 or MATA11H3 Introduction to Physics IA or IB

5. 1.0 credits from:
   - EESB17H3 Introduction to Geology
   - EESB16H3 Introduction to Geology
   - EESB05H3 Introduction to Soil Science
   - EESB04H3 Principles of Geology
   - EESB03H3 Earth History
   - EESB02H3 Feeding Humans: The Cost to the Planet
   - GGRB02H3 Introduction to Geographic Information Systems
   - GGRB01H3 Introduction to Scientific Computing

6. 3.0 credits from C- and D-level EES courses, with at least 0.5 credits at the D-level, from the following:
Program: SCMAJ2540 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ2540</th>
<th>Code</th>
<th>SCMAJ2540</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>IDS,CDSSC</td>
<td>Owning</td>
<td>IDS,CDSSC</td>
</tr>
<tr>
<td>Sections</td>
<td>International Development Studies</td>
<td>Sections</td>
<td>International Development Studies</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
<td>Title</td>
<td>MAJOR PROGRAM IN INTERNATIONAL DEVELOPMENT STUDIES (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program Requirements
This program requires 8.0 full credits of which at least 2.0 must be at the C- or D-level.

1. Introduction to International Development Studies (0.5 full credits)
   IDSA01H3 Introduction to International Development Studies

2. Core courses in International Development (1.5 full credits)
   1.5 full credits from the following:
   - IDSB01H3 Political Economy of International Development
   - IDSB02H3 Development and Environment
   - IDSB04H3 International Health Policy Analysis
   - IDSB06H3 Equity, Ethics and Justice in International Development
   - POLE90H3 Comparative Development in International Perspective
   (Students wishing to take IDSB01H3 should be aware that there are A-level prerequisites for this course.)

3. Methods for International Development Studies (1.5 full credits)
   IDSC04H3 Project Management I
   0.5 credits in quantitative/statistical methods from the following:
   - ANTC35H3 Quantitative Methods in Anthropology
   - GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
   0.5 credits in qualitative methods from:
   - ANTB19H3 Ethnography and the Comparative Study of Human Societies
   - GGRB30H3 Fundamentals of GIS I
   (Students wishing to take IDSB01H3 should be aware that there are A-level prerequisites for this course.)

4. Specialized Courses (4.5 full credits)
   4.5 credits from the courses listed in Requirement 4 of the B.A. version of the Specialist Program in IDS with at least 1.0 credit from each of TWO of the clusters.

Program: SCMAJ1666P - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1666P</th>
<th>Code</th>
<th>SCMAJ1666P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>GGR,GFRSC</td>
<td>Owning</td>
<td>GGR,GFRSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Geography</td>
<td>Sections</td>
<td>Geography</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN PHYSICAL AND HUMAN GEOGRAPHY (ARTS)</td>
<td>Title</td>
<td>MAJOR PROGRAM IN PHYSICAL AND HUMAN GEOGRAPHY (ARTS)</td>
</tr>
</tbody>
</table>

Program Requirements
This program requires 8.0 full credits of which at least 2.0 must be at the C- or D-level.

1. Introduction to International Development Studies (0.5 credits)
   IDSA01H3 Introduction to International Development Studies

2. Core courses in International Development (1.5 credits)
   1.5 full credits from the following:
   - IDSB01H3 Political Economy of International Development
   - IDSB02H3 Development and Environment
   - IDSB04H3 International Health Policy Analysis
   - IDSB06H3 Equity, Ethics and Justice in International Development
   - POLE90H3 Comparative Development in International Perspective
   (Students wishing to take IDSB01H3 should be aware that there are A-level prerequisites for this course.)

3. Methods for International Development Studies (1.5 credits)
   IDSC04H3 Project Management I
   0.5 credits in quantitative/statistical methods from the following:
   - ANTC35H3 Quantitative Methods in Anthropology
   - MGEB11H3/ECMB11H3 Quantitative Methods in Economics
   - GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
   - POLB90H3 Comparative Development in International Perspective
   0.5 credits in qualitative methods from the following:
   - ANTB19H3 Ethnography and the Comparative Study of Human Societies
   - GGRB30H3 Fundamentals of GIS I
   - POLC78H3 Political Analysis I
   (Students wishing to take IDSB01H3 should be aware that there are A-level prerequisites for this course.)

4. Specialized Courses (4.5 credits)
   4.5 credits from the courses listed in Requirement 4 of the B.A. version of the Specialist Program in IDS with at least 1.0 credit from each of TWO of the clusters.
This is an interdepartmental program leading to a B.A. degree in which students combine courses in human geography (GGR prefix) with courses in physical geography (EES prefix).

**Guidelines for 1st year course selection**
EES courses presume a background in physical sciences and mathematics. It is recommended that first year students take ESES11H3, ESES01H3, GGRB02H3, and at least 1.0 full credit from among EESA01H3, GGRA01H3, GGRA02H3, or PHYS01H3, MATHE01H3 or MATHE02H3.

**Program Requirements**
The Program in Physical and Human Geography requires the completion of a total of 8.0 full credits of which 4.0 credits are to be EES courses, and 4.0 credits are to be GGR courses. Among these 8.0 credits, the student must include:

1. ESES01H3, ESES02H3, GGRB02H3, or GGRB03H3
2. At least 1.5 credits from among ESES03H3, ESES04H3, ESES05H3, ESES06H3, ESES07H3, or ESES08H3
3. At least 1.5 credits from among GGRB04H3, GGRB05H3, GGRB06H3, or GGRB07H3
4. At least 1.0 credit at the C- or D-level from among EES courses
5. At least 1.0 credit at the C- or D-level from among GGR courses
6. At least one additional 0.5 credit with a GGR prefix
7. At least one additional 0.5 credit with an EES prefix

**Program notes/tables**

---

**Program: SCMIN2015 - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN2015</th>
<th>SCMIN2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>POL POLS</td>
<td>POL POLS</td>
</tr>
<tr>
<td>Sections</td>
<td>Political Science</td>
<td>Political Science</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN POLITICAL SCIENCE (ARTS)</td>
<td>MINOR PROGRAM IN POLITICAL SCIENCE (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

**Program Requirements**
The Program requires the completion of at least 4.0 credits in Political Science and at least 4.0 credits in Geography. At least 1.0 credit from each of the following fields must be taken:

- Political Theory
- International Relations
- Comparative Politics
- Public Policy
- Canadian Government and Politics
- Political Economy
- International Relations
- Comparative Politics
- Public Policy

**Program notes/tables**
**Program: SCSPE1995 - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>CHM,PHSSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN BIOLOGICAL CHEMISTRY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>This program is intended for students who want to specialize in Chemistry, but who are also interested in the chemistry of living systems.</td>
</tr>
</tbody>
</table>

**Admission to Biological Chemistry Specialist**

Students may apply to this program after completing at least 4.0 FCE including: PRAC24H3, PRAC26H3, CHMA10H3, PRAC26H3 and PSCB57H3 with a cumulative grade point average (CGPA) of at least 2.0. Application for admission to the program is made to the registrar through ROSI in April/May and July/August. See the UTSC Registrar's website for information on program (Subject POSt) selection at www.utsc.utoronto.ca/subjectpost.

**Program Requirements**

The program requires the completion of the following 15.0 full credits:

**First Year:**
- BIOA01H3 Life On Earth: Unifying Principles
- BIOA02H3 Life On Earth: Form, Function and Interactions
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- [MATA35H3 Calculus I for Biological and Physical Sciences] or [MATA36H3 Calculus II for Biological Sciences] or [MATA37H3 Calculus II for Physical Sciences]
- PHYA10H3 Introduction to Physics IA
- PHYA11H3 Introduction to Physics IA

**Note:** MATA37H3 requires either MATA36H3 or MATA38H3 as a prerequisite. MATA36H3 is strongly recommended over MATA38H3 in order that future course selection is not compromised.

**Second Year:**
- BIOB10H3 Cell Biology
- BIOB11H3 Molecular Aspect of Cellular and Genetic Processes
- BIOB12H3 Laboratory for Cell and Molecular Biology
- CHMA11H3 Introductory Chemistry I: Structure and Bonding
- CHMA12H3 Organic Chemistry I
- CHMA13H3 Organic Chemistry II
- CHMB16H3 Introduction to Inorganic Chemistry
- STAB22H3 Practical Approaches to Biochemistry
- BIOC12H3 Biochemistry I: Proteins and Enzymes
- BIOC13H3 Biochemistry II: Bioenergetics and Metabolism
- PHYA20H3 Introduction to Physics IIA
- PHYA21H3 Introduction to Physics IIA

**Second or Third Year:**
- BIOC21H3 Techniques in Analytical Chemistry
- BIOC22H3 Chemical Structure and Spectroscopy
- STAB22H3 Practical Approaches to Biochemistry
- STAB23H3 Laboratory Techniques
- STAT22H3 Statistics I

**Third Year:**
- BIOB10H3 Cell Biology
- BIOB11H3 Molecular Aspect of Cellular and Genetic Processes
- BIOB12H3 Laboratory for Cell and Molecular Biology
- CHMA11H3 Introductory Chemistry I: Structure and Bonding
- CHMA12H3 Organic Chemistry I
- CHMA13H3 Organic Chemistry II
- CHMB16H3 Introduction to Inorganic Chemistry
- CHMC11H3 Principles of Analytical Instrumentation
- CHMC12H3 Intermediate Inorganic Chemistry
- CHMC13H3 Organic Reaction Mechanisms or CHMC15H3 Organic Synthesis

**Fourth Year:**
Topics in Biological Chemistry
1.5 full credits in D-level or 400-level CHM courses including one of the following courses:
- CHMD90Y3 Directed Research
- CHMD91H3 Directed Research
- CHMD92H3 Advanced Organic Chemistry Lab Course
and at least 0.5 full credit from the following:
- CHMD98H3 Bioinorganic Chemistry
- CHMD71H3 Pharmaceutical Chemistry

Fourth Year:
Topics in Biological Chemistry
1.5 full credits in D-level or 400-level CHM courses including one of the following courses:
- CHMD90Y3 Directed Research
- CHMD91H3 Directed Research
- CHMD92H3 Advanced Organic Chemistry Lab Course
and at least 0.5 full credit from the following:
- CHMD98H3 Bioinorganic Chemistry
- CHMD71H3 Pharmaceutical Chemistry

Program notes/tables

Program: SCMAJ1376 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SOMA1376</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>CHM,PHSSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN CHEMISTRY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor: S. Mikhaylichenko (416-287-7207) Email: <a href="mailto:mikhay@utsc.utoronto.ca">mikhay@utsc.utoronto.ca</a> This Program offers the possibility of obtaining an introduction to all of the sub-disciplines of Chemistry.</td>
</tr>
</tbody>
</table>

Program Requirements
Students should complete the following 8.5 full credits:

First Year:
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA30H3 Calculus I for Biological and Physical Sciences
- MATA36H3 Calculus II for Physical Sciences
- PHYA10H3 Introduction to Physics IA
- PHYA21H3 Introduction to Physics IA

Second and Later Years:
- CHMB16H3 Techniques in Analytical Chemistry
- CHMB20H3 Chemical Thermodynamics and Kinetics
- CHMB31H3 Introduction to Inorganic Chemistry
- CHMB41H3 Organic Chemistry I
- CHMB42H3 Organic Chemistry II
- CHMB62H3 Introduction to Biochemistry
and
2.5 full course credits in CHM of which at least 2.0 must be at the C- or D-level and 0.5 of which must be at the D-level. One of these C- or D-level half credits must include a laboratory component. **

** Students should note that if they are going to select CHMC20H3/CHMC21H3, MATA23H3 and MATB41H3 will need to be taken in addition to their other program requirements.

Program notes/tables

Program: SCMIN1688 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN1688</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>CSC,MSCSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN COMPUTER SCIENCE (SCIENCE)</td>
</tr>
</tbody>
</table>

Program Requirements
Students should complete the following 8.5 full credits:

First Year:
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA30H3 Calculus I for Biological and Physical Sciences
- MATA36H3 Calculus II for Physical Sciences
- PHYA10H3 Introduction to Physics IA
- PHYA21H3 Introduction to Physics IA

Second and Later Years:
- CHMB16H3 Techniques in Analytical Chemistry
- CHMB20H3 Chemical Thermodynamics and Kinetics
- CHMB31H3 Introduction to Inorganic Chemistry
- CHMB41H3 Organic Chemistry I
- CHMB42H3 Organic Chemistry II
- CHMB62H3 Introduction to Biochemistry
and
2.5 full course credits in CHM of which at least 2.0 must be at the C- or D-level and 0.5 of which must be at the D-level. One of these C- or D-level half credits must include a laboratory component. **

** Students should note that if they are going to select CHMC20H3/CHMC21H3, MATA23H3 and MATB41H3 will need to be taken in addition to their other program requirements.

Program notes/tables
<table>
<thead>
<tr>
<th>ROSI Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Objectives</td>
<td>This program provides a basic introduction to the tools and methodologies of computer science and equips students with the knowledge necessary to use the tools and methodologies as they relate to other subjects. The program is intended to complement programs in other disciplines.</td>
</tr>
<tr>
<td>Program Requirements</td>
<td>This program may not be combined with any Major or Specialist Program in Computer Science, Mathematics, or Statistics. It requires 4.0 credits as follows:</td>
</tr>
</tbody>
</table>

1. Introductory programming courses (1.0 credit)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA08H3</td>
<td>Introduction to Computer Science</td>
</tr>
<tr>
<td>CSCA48H3</td>
<td>Software Design</td>
</tr>
<tr>
<td>CSCB07H3</td>
<td>Intermediate programming, systems, and theory courses (1.5 credits)</td>
</tr>
</tbody>
</table>

2. Basic mathematics courses (0.5 credit)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA67H3</td>
<td>Discrete Mathematics for Computer Scientists</td>
</tr>
<tr>
<td>MAT231H3</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>MAT232H3</td>
<td>Calculus I for Biological and Physical Sciences</td>
</tr>
<tr>
<td>MAT233H3</td>
<td>Calculus I for Mathematical Sciences</td>
</tr>
<tr>
<td>MAT234H3</td>
<td>Calculus for Management I</td>
</tr>
<tr>
<td>CSCA23H3</td>
<td>Design and Analysis of Data Structures (**)</td>
</tr>
</tbody>
</table>

3. Intermediate programming, systems, and theory courses (1.5 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA23H3</td>
<td>Design and Analysis of Data Structures (**)</td>
</tr>
<tr>
<td>CSCA24H3</td>
<td>Computer Organization</td>
</tr>
<tr>
<td>CSCA68H3</td>
<td>Design and Analysis of Data Structures (**)</td>
</tr>
</tbody>
</table>

4. CSC electives (1.0 credit)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC electives</td>
<td>( \text{Any C- or D-level CSC courses} ) (*)</td>
</tr>
</tbody>
</table>

(*) Some C- or D-level courses have prerequisites that would have to be taken in addition to the 4 credits required for this program. Check the prerequisites carefully before selecting courses to satisfy this requirement.
Program: SCMAJ1165C - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1165C</th>
<th>Code</th>
<th>SCMAJ1165C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MAT,MSCS</td>
<td>Owning</td>
<td>MAT,MSCS</td>
</tr>
<tr>
<td>Organizations</td>
<td>Mathematics</td>
<td>Sections</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR (CO-OPERATIVE) PROGRAM IN MATHEMATICS (SCIENCE)</td>
<td>Title</td>
<td>MAJOR (CO-OPERATIVE) PROGRAM IN MATHEMATICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: 416-287-5166 Email: <a href="mailto:askcoop@utsc.utoronto.ca">askcoop@utsc.utoronto.ca</a></td>
<td>Description</td>
<td>Supervisor of Studies: 416-287-5166 Email: <a href="mailto:askcoop@utsc.utoronto.ca">askcoop@utsc.utoronto.ca</a></td>
</tr>
<tr>
<td>Co-op Contact</td>
<td><a href="mailto:askcoop@utsc.utoronto.ca">askcoop@utsc.utoronto.ca</a></td>
<td>Co-op Contact</td>
<td><a href="mailto:askcoop@utsc.utoronto.ca">askcoop@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Objectives
This program combines the coursework of the Major Program in Mathematics described above with paid work terms in public and private enterprises. It shares the goals and structure of the Major Program in Mathematics, but complements study of the subject with considerable work experience.

Admission Requirements
Refer to the Program Admission requirements for the Major Program in Mathematics described above and the Co-operative Programs section in this Calendar. Students entering this program must have a CGPA of at least 2.5.

Program Requirements
To remain in the program, a student must maintain a CGPA of 2.5 or higher throughout the program. To complete the program, a student must meet the work term and course requirements described below.

Work Term Requirements
Students must successfully complete three work terms, at most one of which can be during the summer. In addition, prior to their first work term, students must successfully complete the Arts & Science Co-op Work Term Preparation Activities. These include networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations.

Course Requirements
The course requirements of the Co-operative Major Program in Mathematics are identical to those of the Major Program in Mathematics described above.

Program Objectives
This program combines the coursework of the Major Program in Mathematics described above with paid work terms in public and private enterprises. It shares the goals and structure of the Major Program in Mathematics, but complements study of the subject with considerable work experience.

Admission Requirements
Refer to the Program Admission requirements for the Major Program in Mathematics described above and the Co-operative Programs section in this Calendar. Students entering this program must have a CGPA of at least 2.5.

Program Requirements
To remain in the program, a student must maintain a CGPA of 2.5 or higher throughout the program. To complete the program, a student must meet the work term and course requirements described below.

Work Term Requirements
Students must successfully complete three work terms, at most one of which can be during the summer. In addition, prior to their first work term, students must successfully complete the Arts & Science Co-op Work Term Preparation Activities. These include networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations.

Course Requirements
The course requirements of the Co-operative Major Program in Mathematics are identical to those of the Major Program in Mathematics described above.
Program: SCSPE2288 - Compare

**Code**
SCSPE2288

**Owning Organizations**
MSCSC,STA

**Sections**
Statistics

**Title**
SPECIALIST (CO-OPERATIVE) PROGRAM IN STATISTICS (SCIENCE)

**ROSI Title**
Same as Calendar Title

**Description**
Supervisor of Studies: S. Damouras (416-208-4794)  Email: sdamouras@utsc.utoronto.ca
Co-op Contact: askcoop@utsc.utoronto.ca

Program Objectives
This program combines the coursework of the Specialist Program in Statistics described above with paid work terms in public and private enterprises. It shares the goals and structure of the Specialist Program in Statistics, but complements study of the subject with considerable work experience.

Admission Requirements
Refer to the Program Admission requirements for the Specialist Program in Statistics described above and the Co-operative Programs section in this Calendar. Students entering this program must have a CGPA of at least 2.5.

Program Requirements
To remain in the program, a student must maintain a CGPA of 2.5 or higher throughout the program. To complete the program, a student must meet the work term and course requirements described below.

Work Term Requirements
Students must successfully complete three work terms, at most one of which can be during the summer. In addition, prior to their first work term, students must successfully complete the Arts & Science Co-op Work Term Preparation Activities. These include networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations.

Course Requirements
The course requirements of the Co-operative Specialist Program in Statistics are identical to those of the Specialist Program in Statistics described above.

Program: SCMAJ2289C - Compare

**Code**
SCMAJ2289C

**Owning Organizations**
MSCSC,STA

**Sections**
Statistics

**Title**
MAJOR (CO-OPERATIVE) PROGRAM IN STATISTICS (SCIENCE)

**ROSI Title**
Same as Calendar Title

**Description**
Supervisor of Studies: M. Samarakoon (416-208-4748)  Email: mahinda@utsc.utoronto.ca
Co-op Contact: askcoop@utsc.utoronto.ca

Program Objectives
This program combines the coursework of the Major Program in Statistics described above with paid work terms in public and private enterprises. It shares the goals and structure of the Major Program in Statistics, but complements study of the subject with considerable work experience.

Admission Requirements
Refer to the Program Admission requirements for the Major Program in Statistics described above and the Co-operative Programs section in this Calendar. Students entering this program after first year must have a CGPA of at least 2.75.

Program Requirements
To remain in the program, a student must maintain a CGPA of 2.5 or higher throughout the program. To complete the program, a student must meet the work term and course requirements described below.

Work Term Requirements
Students must successfully complete three work terms, at most one of which can be during the summer. In addition, prior to their first work term, students must successfully complete the Arts & Science Co-op Work Term Preparation Activities. These include networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations.

Course Requirements
The course requirements of the Co-operative Major Program in Statistics are identical to those of the Major Program in Statistics described above.
Online Calendar

**Program: SCMAJ2289 - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ2289</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MSCSC.STA</td>
</tr>
<tr>
<td>Organizations</td>
<td>Statistics</td>
</tr>
<tr>
<td>Sections</td>
<td>MAJOR PROGRAM IN STATISTICS (SCIENCE)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Students entering this program must have a CGPA of at least 2.5.</td>
</tr>
</tbody>
</table>

**Program Requirements**

This program requires 8.0 full credits.

1. **A-level courses**
   - MATA30H3 Introduction to Computer Science
   - MATA31H3 Calculus I for Biological and Physical Sciences
   - MATA31H3 Calculus I for Mathematical Sciences*

   *The sequence MATA31H3 and MATA32H3 is recommended.

2. **B-level courses**
   - MATA32H3 Calculus II for Biological and Physical Sciences
   - MATA32H3 Calculus II for Physical Sciences
   - MATA32H3 Calculus II for Mathematical Sciences*

   *The sequence MATA31H3 and MATA32H3 is recommended.

3. **Upper-level courses**
   - MATA37H3 Regression Analysis*

---

**Program: SCMAJ2289 - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ2289</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MSCSC.STA</td>
</tr>
<tr>
<td>Organizations</td>
<td>Statistics</td>
</tr>
<tr>
<td>Sections</td>
<td>MAJOR PROGRAM IN STATISTICS (SCIENCE)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Students entering this program must have a CGPA of at least 2.5.</td>
</tr>
</tbody>
</table>

**Program Requirements**

This program requires 8.0 full credits.

1. **A-level courses**
   - MATA30H3 Introduction to Computer Science
   - MATA31H3 Calculus I for Biological and Physical Sciences
   - MATA31H3 Calculus I for Mathematical Sciences*

   *The sequence MATA31H3 and MATA32H3 is recommended.

2. **B-level courses**
   - MATA32H3 Calculus II for Biological and Physical Sciences
   - MATA32H3 Calculus II for Physical Sciences
   - MATA32H3 Calculus II for Mathematical Sciences*

   *The sequence MATA31H3 and MATA32H3 is recommended.

3. **Upper-level courses**
   - MATA37H3 Regression Analysis*
Program: SCMIN2289 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN2289</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MSCSC,STA</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Statistics</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN STATISTICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: M. Samarakoon Email: <a href="mailto:mahinda@utsc.utoronto.ca">mahinda@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements
This program requires 4.0 full credits.

First Year (2.0 credits)
- CSCA08H3 Introduction to Computer Programming
- MATA23H3 Linear Algebra I
- [MATA30H3 Calculus I for Biological and Physical Sciences or MATA31H3 Calculus I for Mathematical Sciences] and [MATA36H3 Calculus II for Physical Sciences or MATA37H3 Calculus II for Mathematical Sciences.]

Notes:
1. The sequence MATA31H3 and MATA37H3 is recommended.
2. MATA31H3 is the pre-requisite for MATA37H3.

Second Year (1.0 credit)
- STAB52H3 An Introduction to Probability
- STAB57H3 An Introduction to Statistics

Third and Fourth Year (1.0 credit)
- STAC67H3 Regression Analysis

In addition 0.5 credits must be chosen from any C- or D-level STA course but not STAD29H3.

Program: SCMAJ1645 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1645</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EN,ENGSC</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>English</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN ENGLISH (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program Requirements
This program requires 4.0 full credits.

First Year (2.0 credits)
- One of: CSCA08H3 Introduction to Computer Programming, CSCA20H3 Computer Science for the Sciences
- MATA23H3 Linear Algebra I
- [MATA30H3 Calculus I for Biological and Physical Sciences or MATA31H3 Calculus I for Mathematical Sciences] and [MATA36H3 Calculus II for Physical Sciences or MATA37H3 Calculus II for Mathematical Sciences.]

Notes:
1. The sequence MATA31H3 and MATA37H3 is recommended.
2. MATA31H3 is the pre-requisite for MATA37H3.

Second Year (1.0 credit)
- STAB52H3 An Introduction to Probability
- STAB57H3 An Introduction to Statistics

Third and Fourth Year (1.0 credit)
- STAC67H3 Regression Analysis

In addition 0.5 credits must be chosen from any C- or D-level STA course but not STAD29H3.
Program Requirements
7.5 credits in English are required of which at least 2.0 must be at the C- or D-level. They should be selected as follows:

1. ENGB03H3 Critical Thinking About Narrative
2. ENGB04H3 Critical Thinking About Poetry
3. ENGB05H3 Critical Writing about Literature
4. ENGB27H3 Charting Literary History I
5. ENGB28H3 Charting Literary History II
6. 1.0 credit from courses whose content is pre-1900
7. 7.5 additional credits in English

Notes:
1. Students may count no more than one of the following courses towards the Major requirements: ENGB03H3 Children’s Literature, ENGB04H3 Detective Fiction, ENGB05H3 Science Fiction.
2. Students may count no more than one full credit of D-level independent study towards an English program.
3. The following courses do not count towards any English programs: ENG100H, ENG185Y.

Program Admission
Enrolment in the Specialist Program is limited. Students must normally apply to enter the Program after completing 4 or 5 full credits including SOC01H3 and SOC02H3. Decisions are made on Program admissions only twice a year, in May and in August, and are based on student requests submitted to the Registrar through ROSI. Admission is determined on the basis of a student’s overall GPA and grades in SOC01H3 and SOC02H3. For students applying after 8-10 credits, admission will be based on the basis of overall GPA and grades in SOC courses taken. Specialist students will be entitled to priority access to SOC02H3, SOC03H3, SOC05H3 & SOCC23H3 for fall-winter sessions, during the summer early registration period.

Program Requirements
The Program requires completion of 12.0 full credits as described below. No more than 1.0 full credits in Sociology may be included in a year of degree.

1. SOC02H3 Introduction to Sociology I
2. SOC03H3 Introduction to Sociology II
3. SOC04H3 Logic of Social Inquiry
4. STAB21H3 Statistics I
5. SOC05H3 Classical Sociological Theory I
6. SOC06H3 Classical Sociological Theory II
7. 3.0 full credits at B-level in Sociology
8. SOC06H3 Contemporary Sociological Theory
9. SOC09H3 Practicum in Quantitative Research Methods
10. SOC09H3 Practicum in Qualitative Research Methods
11. SOCC23H3 Capstone Course: Realizing the Sociological Imagination

Notes:
1. Students may count no more than one of the following courses towards the Major requirements: SOC02H3 Children’s Literature, (ENGB04H3) Detective Fiction, ENGB05H3 Science Fiction.
2. Students may count no more than one full credit of D-level independent study towards an English program.
3. The following courses do not count towards any English programs: ENG100H, ENG185Y.
4. 1.0 credit from courses whose content is pre-1900
5. 7.5 additional credits in English
6. 1.0 credit from courses whose content is pre-1900
7. 7.5 additional credits in English
8. 14.0 full credits in Sociology may be included in a four-year degree.

Program Admission
Enrolment in the Specialist Program is limited. Students must normally apply to enter the Program after completing 4 or 5 full credits including SOC02H3 and SOC03H3. Decisions are made on Program admissions only twice a year, in May and in August, and are based on student requests submitted to the Registrar through ROSI. Admission is determined on the basis of a student’s overall GPA and grades in SOC01H3 and SOC02H3. For students applying after 8-10 credits, admission will be based on the basis of overall GPA and grades in SOC courses taken. Specialist students will be entitled to priority access to SOC02H3, SOC03H3, SOC05H3 & SOCC23H3 for fall-winter sessions, during the summer early registration period.

Program Requirements
The Program requires completion of 12.0 full credits as described below. No more than 14.0 full credits in Sociology may be included in a four-year degree.

1. SOC02H3 Introduction to Sociology I
2. SOC03H3 Introduction to Sociology II
3. SOC04H3 Logic of Social Inquiry
4. STAB21H3 Statistics I
5. SOC05H3 Classical Sociological Theory I
6. SOC06H3 Classical Sociological Theory II
7. 3.0 full credits at B-level in Sociology
8. SOC06H3 Contemporary Sociological Theory
9. SOC09H3 Practicum in Quantitative Research Methods
10. SOC09H3 Practicum in Qualitative Research Methods
11. 2.0 full credits in Sociology at C- or D-level of which at least 1.0 must be at the D-level.
11. 4.0 full credits in Sociology at C- or D- level of which at least 0.5 must be at the D-level.

Note: Students may substitute courses from cognate disciplines with the prior approval of the program supervisor.

12. 1.0 other full credit in Sociology.

Note: Students may substitute courses from cognate disciplines with the prior approval of the program supervisor.

Program notes/tables

Program: SCMIN1013 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN1013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>SOC, SOSC, SOC</td>
</tr>
<tr>
<td>Sections</td>
<td>Sociology</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN SOCIOLOGY (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program Admission
Admission to the Minor Program in Sociology is not limited. All students who apply for this Program will be admitted. However, students are warned that they are not guaranteed admission to B-level and C-level courses during fall and winter session, and thus will be accommodated only after other Program students have been admitted to these courses. Thus some courses may be unavailable, or available only in the summer.

Program Requirements
The Program requires completion of 4.0 full credits in Sociology as follows:

1. SOCA01H3, Introduction to Sociology I
2. SOCA02H3, Introduction to Sociology II
3. SOCB05H3, Logic of Social Inquiry
4. SOCB42H3, Classical Sociological Theory I
5. 1.5 additional full credits in Sociology, including 1.0 at the C-level

Program notes/tables

Program: SCMAJ15902 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ15902</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>VPM, ACMSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Music and Culture</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN MUSIC AND CULTURE (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program Admission
Admission to the Major Program in Music and Culture is not limited. All students who apply for this Program will be admitted. However, students are warned that they are not guaranteed admission to B-level and C-level courses during fall and winter session, and thus will be accommodated only after other Program students have been admitted to these courses. Thus some courses may be unavailable, or available only in the summer.

Program Requirements
Students are required to complete eight (8.5) credits as follows:

1. ACMA01H3, Exploring Key Questions in Humanities
2. VPMA90H3, Materials of Music I
3. VPMA93H3, Listening to Music
4. VPMA99H3, Music of the World’s Peoples
5. VPMB90H3, Materials of Music II
6. One and one-half (1.5) credits from the sequence: VPMB80H3 to VPMB82H3
7. One half (0.5) credit chosen from the following courses: VPMB65H3, Music and Healing; VPMB75H3, Music in Islamic Cultures; VPMB77H3, Music in Religion and Ritual
8. 0.5 credit chosen from the following courses: VPMB82H3, Art Music in the Modern and Contemporary Era; VPMB83H3, Popular Music in the Modern and Contemporary Era

Program notes/tables
Program notes/tables

Program: SCMIN15902 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN15902</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Orgs</td>
<td>VPM,ACMSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Music and Culture</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN MUSIC AND CULTURE (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Undergraduate Advisor: Email: <a href="mailto:music-program-supervisor@utsc.utoronto.ca">music-program-supervisor@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Requirements
Students are required to complete 4.0 full credits as follows:

1. **1.0 credits from the sequence VPMA90H3 to VPMA99H3.**
2. **1.0 credit chosen from VPMB80H3 to VPMB82H3.**
3. **1.0 credit chosen from VPAC89H3 to VPMC97H3.** Depending on topic, IEEC71H3 or IEEC81H3 may also be substituted with the permission of the program supervisor.
4. **0.5 credit in Performance. Students must choose the graded option for this credit.**

Program notes/tables

Program: SCMAJ2085 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ2085</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Orgs</td>
<td>HLT,ANTSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Health Studies</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN HEALTH STUDIES - Health Policy (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Undergraduate Advisor: Email: <a href="mailto:music-program-supervisor@utsc.utoronto.ca">music-program-supervisor@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

This program requires the completion of 8.0 credits, as described below.

1. **1.0 credit at A-level:**
   - HLTA02H3 Foundations of Health Studies I
   - HLTA03H3 Foundations of Health Studies II

3.5 credits at B-level:
   - HLTA04H3 Introduction to Health Research Methodology
   - HLTA05H3 Introduction to Public Health
   - HLTA06H3 Conceptual Models of Health
   - HLTA07H3 Health Policy and Health Systems
   - HLTA08H3 Introduction to Health Management*  
   - MGTA06H3 Introduction to Health Management*  
   - PHLB09H3 Biomedical Ethics  
   - STAB22H3 Statistics I  
   - MGTA06H3 Introduction to Health Management*  
   *NOTE: HLTA08H3 has prerequisites that are not part of this program.

2.0 credits at C-level:
   - HLTA04H3 Introduction to Health Research Methodology
   - HLTA05H3 Introduction to Public Health
   - HLTA06H3 Conceptual Models of Health
   - HLTA07H3 Health Policy and Health Systems
   - HLTA08H3 Introduction to Health Management*  
   - MGTA06H3 Introduction to Health Management*  
   - PHLB09H3 Biomedical Ethics  
   *NOTE: HLTA08H3 has prerequisites that are not part of this program.
This program requires the completion of 8.0 credits, as described below.

### 1.0 credit at A-level:
- **HLTA02H3** Foundations of Health Studies I
- **HLTA03H3** Foundations of Health Studies II

### 3.5 credits at B-level:
- **HLTB17H3** Conceptual Models of Health
- **HLTB20H3** Contemporary Human Evolution and Variation
- **HLTB21H3** Infectious Diseases
- **HLTB22H3** Biological Determinants of Health
- **PHLB09H3** Biomedical Ethics
- **STAB22H3** Statistics I
- **STAB27H3** Statistics II

### 2.0 credits at C-level from:
- **ANTC40H3** Methods and Analysis in Anthropological Demography
- **ANTC67H3** Foundations of Epidemiology
- **ANTC68H3** Deconstructing Epidemics
- **HLTB16H3** Patterns of Health, Disease, and Injuries
- **STAC30H3** Applications of Statistical Methods
- **STAC30H3** Data Collection

### 1.0 credit at C-level:
- **GGRB28H3** Geographies of Disease
- **HLTB16H3** Introduction to Public Health
- **HLTH25H3** Methods
- **HLTB24H3** Health, Aging and the Life Cycle
- **HLTB32H3** Issues in Child Health and Development
- **HLTB44H3** Health and the Urban Environment

### 0.5 credit from:
- **HLTA04H3** Directed Readings in Health Studies

---

This program requires the completion of 8.0 credits, as described below.

### 1.0 credit at A-level:
- **HLTA02H3** Foundations of Health Studies I
- **HLTA03H3** Foundations of Health Studies II

### 3.5 credits at B-level as follows:
- **STAB22H3** Statistics I
- **STAB27H3** Statistics II

### 2.0 credits at C-level from:
- **ANTC40H3** Methods and Analysis in Anthropological Demography
- **ANTC67H3** Foundations of Epidemiology
- **ANTC68H3** Deconstructing Epidemics
- **HLTB16H3** Patterns of Health, Disease, and Injuries
- **STAC30H3** Applications of Statistical Methods
- **STAC30H3** Data Collection

### 1.0 credit at C-level:
- **GGRB28H3** Geographies of Disease
- **HLTB16H3** Introduction to Public Health
- **HLTH25H3** Methods
- **HLTB24H3** Health, Aging and the Life Cycle
- **HLTB32H3** Issues in Child Health and Development
- **HLTB44H3** Environment and Health

### 0.5 credit from:
- **HLTA04H3** Directed Readings in Health Studies
Guidelines for Major Program Completion

The City Studies curriculum has three areas of concentration: (1) City-Building, (2) Community Development and (3) City Governance.

Major students are welcome to take courses in more than one area of concentration and are encouraged to take at least three of the City Studies core courses, CITB02H3 Foundations of City Studies (required for all Major students in City Studies), CITB01H3 Canadian Cities and Planning, CITB03H3 Social Planning and Community Development, CITB04H3 City Politics, or CITB08H3 Economy of Cities. These core courses cover foundational concepts of the program and are considered essential preparation for upper level courses.

<table>
<thead>
<tr>
<th>City Building</th>
<th>Community Development</th>
<th>City Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITC03H3 Real Estate and the City</td>
<td>CITC01H3 Urban Communities and Neighbourhoods Case Study</td>
<td>CITC12H3 City Structures and City Choices: Local Government, Management, and Policymaking</td>
</tr>
<tr>
<td>CITC04H3 Municipal and Planning Law in Ontario</td>
<td>CITC02H3 Learning in Community Service</td>
<td>CITC13H3 Taxing and Spending: Public Finance in Canadian Cities</td>
</tr>
<tr>
<td>CITC14H3 Environmental Planning</td>
<td>CITC07H3 Urban Social Policy</td>
<td>CITC14H3 Environmental Planning</td>
</tr>
<tr>
<td>CITC18H3 Transportation Policy Analysis</td>
<td>CITC08H3 Cities and Community Development</td>
<td>CITC16H3 Planning and Governing the Metropolis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CITC17H3 Civic Engagement in Urban Politics</td>
</tr>
</tbody>
</table>

Note: It is Department policy that students without the prerequisite will be removed from the course. Students should carefully check the prerequisites required for particular B- and C-level courses.

Program Requirements

Program Requirements
1. Introduction to Social Science Thought (1.0 full credit from among the following):

ANTA01H3: Introduction to Anthropology: Becoming Human

2. Core courses (1.5 full credits including):

GGRA02H3: Social Planning and Community Development

3. City Studies Fundamentals of (at least 1.5 full credits from among the following):

GGRA06H3: The Geography of Global Processes

4. Methods (1 full credit from among the following):

GGRA30H3: Introduction to GIS and Empirical Reasoning

5. Applications (at least 2.0 full credits from among the following):

CITC03H3: Learning in Community Service

This program requires a total of 7.0 full credits.
Program notes/tables

Program: SCMIN1666H - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN1666H</th>
<th>SCMIN1666H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Org</td>
<td>GGR, GGRSC</td>
<td>GGR, GGRSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Geography</td>
<td>Geography</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN HUMAN GEOGRAPHY (ARTS)</td>
<td>MINOR PROGRAM IN HUMAN GEOGRAPHY (ARTS)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Program Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.0 full credits in Geography which must include 1.0 full credit at the C- or D-level</td>
<td></td>
</tr>
</tbody>
</table>

Program notes/tables

Program: SCSPE0133 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE0133</th>
<th>SCSPE0133</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Org</td>
<td>MGT, MGTEC</td>
<td>MGT, MGTEC</td>
</tr>
<tr>
<td>Sections</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ECONOMICS FOR MANAGEMENT STUDIES (BACHELOR OF BUSINESS ADMINISTRATION)</td>
<td>SPECIALIST PROGRAM IN ECONOMICS FOR MANAGEMENT STUDIES (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Program Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This program will provide a specialization for those wishing for a substantial component of Economics in a Management degree leading to a B.B.A. The program which has a co-op option combines academic studies in economics and management with work experience in public and private enterprises. It is designed to allow students to learn practical skills of data analysis and to combine them with the interpretive skills given by knowledge of economic theory. For information on work terms please see the Co-operative Programs section of this Calendar.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOTE: Students who are considering graduate work in Economics should be aware that they should accumulate considerably more mathematics than the minimum required, and they should consult the Supervisor of Studies in Economics for details.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Program Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Specialist Program in Economics for Management Studies requires the completion of 17.0 to 18.0 credits as part of a twenty-credit B.B.A. degree.</td>
<td></td>
</tr>
</tbody>
</table>

Program notes/tables

Program Requirements

1. 8.5 full credits in Economics for Management Studies:

- ECMA04H3 Introduction to Microeconomics: A Mathematical Approach
- ECMA06H3 Introduction to Macroeconomics: A Mathematical Approach
- MGEB01H3 Price Theory: A Mathematical Approach
Note: A single course may only be used once to fulfill one of the following requirements:

1. 8.5 full credits in Economics for Management Studies:

|MATA29H3| MATA31H3 or ECON31H3| Principles of Microeconomics: A Mathematical Approach
|MATA28H3| MATA30H3| Introduction to Macroeconomics: A Mathematical Approach

2. (1.0 credit):

|MATA28H3| MGCM93H3| Principles of Accounting

3. 6.0 full credits in Management Communications, chosen from:

|MGAB01H3| MGTC45H3| The Changing World of Business-Government Relations
|MGAB02H3| MGTC33H3| Event and Sponsorship Management
|MGAB03H3| MGTC34H3| Consulting, Contracting & Freelancing
|MGAB04H3| MGTC35H3| Management Ethics
|MGAB05H3| MGTC36H3| New Ventures in Entrepreneurship
|MGAB06H3| MGTC37H3| Entrepreneurship
|MGSC12H3| MGTC38H3| New Venture Creation and Planning
|MGSC13H3| MGTC39H3| Event and Sponsorship Management
|MGSC14H3| MGTC40H3| The Legal Environment of Business I
|MGSC15H3| MGTC41H3| The Legal Environment of Business II
|MGSC16H3| MGTC42H3| Event and Sponsorship Management
|MGSC17H3| MGTC43H3| Organization Strategies
|MGSC18H3| MGTC44H3| Knowledge Management
|MGSC19H3| MGTC45H3| Management Control Systems

4. At least 0.5 credit of courses emphasizing strategic management, chosen from:

|MGSC22H3| MGTC19H3| New Ventures in Entrepreneurship
|MGSC22H3| MGTC20H3| The Legal Environment of Business I
|MGSC23H3| MGTC31H3| Event and Sponsorship Management
|MGSC24H3| MGTC32H3| The Legal Environment of Business II
|MGSC25H3| MGTC33H3| Event and Sponsorship Management
|MGSC26H3| MGTC34H3| Consulting, Contracting & Freelancing
|MGSC27H3| MGTC35H3| Management Ethics
|MGSC28H3| MGTC36H3| New Ventures in Entrepreneurship
|MGSC29H3| MGTC37H3| Entrepreneurship
|MGSC30H3| MGTC38H3| New Venture Creation and Planning
|MGSC31H3| MGTC39H3| Event and Sponsorship Management
|MGSC32H3| MGTC40H3| The Legal Environment of Business I
|MGSC33H3| MGTC41H3| The Legal Environment of Business II
|MGSC34H3| MGTC42H3| Event and Sponsorship Management
|MGSC35H3| MGTC43H3| Organization Strategies
|MGSC36H3| MGTC44H3| Knowledge Management
|MGSC37H3| MGTC45H3| Management Control Systems

5. At least 0.5 credit of courses emphasizing strategic management, chosen from:

|MGSC38H3| MGTC19H3| New Ventures in Entrepreneurship
|MGSC39H3| MGTC20H3| The Legal Environment of Business I
|MGSC40H3| MGTC31H3| Event and Sponsorship Management
|MGSC41H3| MGTC32H3| The Legal Environment of Business II
|MGSC42H3| MGTC33H3| Event and Sponsorship Management
|MGSC43H3| MGTC34H3| Consulting, Contracting & Freelancing
|MGSC44H3| MGTC35H3| Management Ethics
|MGSC45H3| MGTC36H3| New Ventures in Entrepreneurship
|MGSC46H3| MGTC37H3| Entrepreneurship
|MGSC47H3| MGTC38H3| New Venture Creation and Planning
|MGSC48H3| MGTC39H3| Event and Sponsorship Management
|MGSC49H3| MGTC40H3| The Legal Environment of Business I
|MGSC50H3| MGTC41H3| The Legal Environment of Business II
|MGSC51H3| MGTC42H3| Event and Sponsorship Management
|MGSC52H3| MGTC43H3| Organization Strategies
|MGSC53H3| MGTC44H3| Knowledge Management
|MGSC54H3| MGTC45H3| Management Control Systems

6. 3.0 full credits in Management Communications, chosen from:

|MGAB01H3| MGTC45H3| The Changing World of Business-Government Relations
|MGAB02H3| MGTC33H3| Event and Sponsorship Management
|MGAB03H3| MGTC34H3| Consulting, Contracting & Freelancing
|MGAB04H3| MGTC35H3| Management Ethics
|MGAB05H3| MGTC36H3| New Ventures in Entrepreneurship
|MGAB06H3| MGTC37H3| Entrepreneurship
|MGAB07H3| MGTC38H3| New Venture Creation and Planning
|MGAB08H3| MGTC39H3| Event and Sponsorship Management
|MGAB09H3| MGTC40H3| The Legal Environment of Business I
|MGAB10H3| MGTC41H3| The Legal Environment of Business II
|MGAB11H3| MGTC42H3| Event and Sponsorship Management
|MGAB12H3| MGTC43H3| Organization Strategies
|MGAB13H3| MGTC44H3| Knowledge Management
|MGAB14H3| MGTC45H3| Management Control Systems

Program
Program: SCSPE1180 - Compare

**Code**
SCSPE1180

**Owning Program**
VPH,ACMSC

**Sections**
Arts Management

**Title**
SPECIALIST PROGRAM IN ARTS MANAGEMENT (ARTS)

**Description**
Same as Calendar Title

Program Director: S.L. Helwig (416-287-7160) Email: arts-management-program-director@utoronto.ca

Arts Management is designed for students with an interest both in the arts and in the business of the arts, primarily from a not-for-profit perspective. It provides students with a solid grounding in the knowledge and skills necessary for fulfilling professional careers in producing, presenting and exhibiting organizations (theatres, opera companies, orchestras, dance companies, galleries, museums), arts councils, arts service organizations, government, and many other related areas, or for graduate studies in disciplines such as Arts Management, Cultural and Public Policy, and Museum or Curatorial Studies. For further information, see www.utsc.utoronto.ca/artsmanagement/

Program Admission

Enrollment in the program is limited and entry is competitive. Admissions are granted on the basis of applicants' academic performance, background in one or more of the arts, and demonstrated interest and potential ability in Arts Management.

Program Requirements

Students complete seven full credits in a field of study, and 1.5 credits in Arts Management-specific courses. Students must maintain a minimum cumulative grade point average. Continuous consultation with the Program Director is strongly encouraged for all students in each year of their program.

1. **Arts Management Core Courses**

Students must complete seven full credits as follows:

a. **Management Core Program, two full credits in Arts Management (and as to eight full credits from one or two selected fields), and must maintain a minimum cumulative grade point average.**

   - **VPAC12H3** Introduction to Arts Management
   - **VPAC16H3** Visual and Performing Arts Management in the Digital Age
   - **VPAC17H3** introduction to Contemporary Cultural Theory
   - **VPAC18H3** Equity & Diversity in Arts Organizations
   - **VPAB13H3** Financial Management for Arts Managers
   - **VPAA06H3** Managing and Leading in Cultural Organizations
   - **VPAH11H3** Planning and Project Management in the Arts and Cultural Sector
   - **VPAC12H3** Cultural Policy
   - **VPH10H3** Senior Seminar in Arts Management

b. **One additional full credit from the following:**

   - **VPAC12H3** Arts Marketing
   - **VPAC18H3** Fundraising and Development in the Arts
   - **VPAC17H3** Visual and Performing Arts Management in the Digital Age
   - **VPAC17H3** Introduction to Contemporary Cultural Theory
   - **VPAC18H3** Equity & Diversity in Arts Organizations
   - **VPAB13H3** Financial Management for Arts Managers
   - **VPAA06H3** Managing and Leading in Cultural Organizations
   - **VPAH11H3** Planning and Project Management in the Arts and Cultural Sector
   - **VPAC12H3** Cultural Policy
   - **VPH10H3** Senior Seminar in Arts Management

c. **Additional full credit from one of the following:**

   - **VPAC12H3** Arts Education and Outreach
   - **VPAC18H3** Legal and Human Resource Issues in Arts Management
   - **VPAH11H3** Special Topics in Arts Management I
   - **VPAA10H3** Special Topics in Arts Management II
   - **VPAC12H3** Agency & Pluralism in Social & Cultural Transformations
   - **VPAC12H3** Independent Studies in Arts Management

2. **Management Field of Study**

The following two full credits are required:

a. **Flexible Credit**

   - **VPAC12H3** Introduction to Management
   - **VPAC13H3** Fundraising and Development in the Arts
   - **VPAC18H3** Visual and Performing Arts Management in the Digital Age
   - **VPAC17H3** Introduction to Contemporary Cultural Theory
   - **VPAC18H3** Equity & Diversity in Arts Organizations
   - **VPAB13H3** Financial Management for Arts Managers
   - **VPAA06H3** Managing and Leading in Cultural Organizations
   - **VPAH11H3** Planning and Project Management in the Arts and Cultural Sector
   - **VPAC12H3** Cultural Policy
   - **VPH10H3** Senior Seminar in Arts Management

b. **One additional full credit from Management or Economics (normally at the 200 level, unless an alternative is approved in advance by the Arts Management Program Director).**

   - **VPAC12H3** Arts Education and Outreach
   - **VPAC18H3** Legal and Human Resource Issues in Arts Management
   - **VPAH11H3** Special Topics in Arts Management I
   - **VPAA10H3** Special Topics in Arts Management II
   - **VPAC12H3** Agency & Pluralism in Social & Cultural Transformations
   - **VPAC12H3** Independent Studies in Arts Management

Core (13.5 credits)

1. **Arts Management Courses (6.0 credits)**

   - **VPAC12H3** Introduction to Arts Management
   - **VPAC13H3** Fundraising and Development in the Arts
   - **VPAC18H3** Visual and Performing Arts Management in the Digital Age
   - **VPAC17H3** Introduction to Contemporary Cultural Theory
   - **VPAC18H3** Equity & Diversity in Arts Organizations
   - **VPAB13H3** Financial Management for Arts Managers
   - **VPAA06H3** Managing and Leading in Cultural Organizations

Program Admission

Enrollment in the program is limited and entry is competitive. Admissions are granted on the basis of applicants' academic performance, background in one or more of the arts, and demonstrated interest and potential ability in Arts Management. Continuous consultation with the Program Director is strongly encouraged for all students in each year of their program.

Program Requirements

This program requires the completion of a total of 15.0 credits. Students complete a core understanding of Arts Management at the undergraduate level through academic courses but without field placements. This program is well suited to students who have past or alternate practical experience in arts management.

The Field Placement Stream of the program is designed to enhance the students' understanding of Arts Management through substantial exposure to its practice in a minimum of two 300-hour not-for-profit credit placements.

The Standard Stream of the program is designed to give students a broad and deep understanding of Arts Management at the undergraduate level through academic courses but without field placements. This program is well suited to students who have past or alternate practical experience in arts management.

Program Admission

Enrollment in the program is limited and entry is competitive. Admissions are granted on the basis of applicants' academic performance, background in one or more of the arts, and demonstrated interest and potential ability in Arts Management. Continuous consultation with the Program Director is strongly encouraged for all students in each year of their program.

Program Requirements

This program requires the completion of a total of 15.0 credits. Students must maintain a minimum cumulative grade point average (CGPA) of 2.5 for the Standard Stream and 3.0 for the Field Placement Stream. Continuous consultation with the Program Director is strongly encouraged for all students in each year of their program.

Core (13.5 credits)
Introduction to Contemporary Cultural Theory

VPAC17H3

ACMEE Applied Practice II (to be taken concurrently with, or after Field Placement II)

Arts Management students have access to the following courses:

Fundraising and Development in the Arts

Legal and Human Resource Issues in Arts Management

Arts Marketing

From Principles to Practices in Arts Management

Planning and Project Management in the Arts and Cultural Sector

Cultural Policy

Senior Seminar in Arts Management

2. Management Courses (1.5 credits)

MGSD30H3 Production Management

MGHC23H3 Production Management II

MGHB02H3 Production Management III

Note:

Arts Management students have access to the following Management courses via ROSI:

MGTA03H3, MGTA04H3, MGTC33H3, MGTD45H3, MGMC30H3, MGSC44H3 or MGSC45H3.

Arts Marketing students interested in Management courses must approach the Arts Management Program Director early in the enrolment period to discuss suitability and to request access. Appropriate prerequisite knowledge is required for all Management courses.

3. Arts Courses (6.0 credits)

Arts Management courses are offered within the Major program in one of the artistic disciplines within the Arts, Culture and Media Department (Art History, Music and Culture, Studio and Theatre Performance Studies).

Note:

Arts Management students interested in other Management courses must approach the Arts Management Program Director early in the enrolment period to discuss suitability and to request access. Appropriate prerequisite knowledge is required for all Management courses.

Courses in the first two years of the program

The first year of study would normally consist of 5.0 full credits (10 courses - five in each semester). Included in the list below are the Core courses, a related field(s) of study, and related courses. A related field(s) of study is necessary to complete the Major program in their artistic discipline of choice rather than unrelated elective courses.

To wit:

a. Consist of six full credits of those credits required within the Major program in one of the artistic disciplines within the Arts, Culture and Media Department (Art History, Music and Culture, Studio and Theatre Performance Studies). Students choosing this option may select the six full credits necessary to complete the Major program in their artistic discipline of choice.

b. Consist of a minimum of six full credits which must be in a Visual and Performing Arts discipline.

Note:

Prerequisite knowledge is required for these courses.

Appropriate prerequisite knowledge is required for all Management courses.

Courses (1.5 credits)

MGSC44H3: Fundraising and Development in the Arts

MGSC45H3: Planning and Project Management in the Arts and Cultural Sector

MGTA01H3: From Principles to Practices in Arts Management

MGTA03H3: Planning and Project Management in the Arts and Cultural Sector

MGTA04H3: Cultural Policy

MGSC44H3: Senior Seminar in Arts Management

A. Standard Stream

In addition to the Core requirements above, students must complete an additional 1.5 credits.

4. (1.5 credits)

ACMD01H3: Introduction to Contemporary Cultural Theory

ACMC01H3: Arts Education and Outreach

ACMT02H3: Arts Marketing

ACMG02H3: Fundraising and Development in the Arts

ACMC01H3: Arts Education and Outreach

ACMG02H3: Planning and Project Management in the Arts and Cultural Sector

ACMG02H3: Senior Seminar in Arts Management

Note:

Arts Management students have access to the following Management courses via ROSI:

MGTA03H3, MGTA04H3, MGTC33H3, MGTD45H3, MGMC30H3, MGSC44H3

Arts Marketing students interested in Management courses must approach the Arts Management Program Director early in the enrolment period to discuss suitability and to request access. Appropriate prerequisite knowledge is required for all Management courses.

B. Field Placement Stream

4. Work Term Placements

In addition to the Core requirements above, students must complete a minimum of two 100-hour paid work term placements.

Field Placement I

Field Placement II

Note:

Arts Management students have access to the following courses:

MGSC44H3: From Principles to Practices in Arts Management

MGSC45H3: Planning and Project Management in the Arts and Cultural Sector

MGTA04H3: Cultural Policy

MGSC44H3: Senior Seminar in Arts Management
Program: SCSPE1150 - Compare

Program notes/tables

Program: SCSPE1150 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>BGYSC.BIO</td>
</tr>
<tr>
<td>Organizations</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN BIODIVERSITY, ECOLOGY AND EVOLUTION (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor: I. Stehlik Email: <a href="mailto:biodiversity@utsc.utoronto.ca">biodiversity@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

This program presents a foundation for understanding how ecology and evolution shape organismal features (from morphology and physiology to behaviour) and the structure and function of communities and ecosystems. Ultimately these processes determine the broad patterns of organization of life on earth and biodiversity. The challenges to biodiversity are daunting. Habitat destruction, biological invasions and climate change are causing loss of species and disruption of ecosystems worldwide. Students are trained to understand and actively seek solutions to these problems. This program will show how ecological and evolutionary perspectives can be used to understand and predict the outcome of dynamic interactions among organisms, populations, species, and communities. Students will be well trained to take positions in government agencies, consulting firms or NGO's, able to pursue careers in business or law related to environmental issues, stewardship and sustainable development.

Program Requirements

This program consists of 14.5 required credits. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth (see Degree Requirements). It is advised that, including electives, students should plan to take 5 credits in each year of their four year degree.

A. Required Courses

1.0 Credit of Introductory Biology Courses

- BSCA05H3 Life on Earth: Unifying Principles
- BSCA06H3 Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses

- CHMA11H3 Introductory Chemistry I: Structure and Bonding
- CHMA12H3 Introductory Chemistry II: Reactions and Mechanisms

1.0 Credit in Mathematics

- MATA30H3 Calculus I for Biological Sciences
- MATA35H3 Calculus I for Biological and Physical Sciences

0.5 Credit in Physics

Choose from:

- PHYA10H3 Introduction to Physics IA
- PHYA11H3 Introduction to Physics IB

0.5 Credit in Computer Science
Online Calendar

Second Year

3.0 Credits of Biology Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>BIOC35H3</td>
<td>Winter Ecology</td>
</tr>
<tr>
<td>BIOC67H3</td>
<td>Applied Conservation Biology</td>
</tr>
</tbody>
</table>

0.5 Credit in Computer Science

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA08H3</td>
<td>Introduction to Computer Science</td>
</tr>
<tr>
<td>CSCA20H3</td>
<td>Introduction to Scientific Computing</td>
</tr>
</tbody>
</table>

0.5 Credit in Biology Core Labs

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Ecology, and Evolutionary Biology, Laboratory</td>
</tr>
</tbody>
</table>

0.5 Credit in Statistics

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAB22H3</td>
<td>Statistics I</td>
</tr>
<tr>
<td>PSYB07H3</td>
<td>Data Analysis in Psychology</td>
</tr>
</tbody>
</table>

Third Year

2.0 Credits of C-level Ecology and Evolution Foundation Courses

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC61H3</td>
<td>Molecular Aspects of Cellular and Genetic Processes</td>
</tr>
<tr>
<td>BIOC63H3</td>
<td>Mammalian Physiology I or Animal Physiology</td>
</tr>
<tr>
<td>BIOC64H3</td>
<td>Mammalian Physiology II or Animal Physiology</td>
</tr>
<tr>
<td>BIOC65H3</td>
<td>Advanced Population Ecology</td>
</tr>
<tr>
<td>BIOC66H3</td>
<td>Evolutionary Biology</td>
</tr>
<tr>
<td>BIOC67H3</td>
<td>Inter-University Biology Field Course</td>
</tr>
</tbody>
</table>

Third/Fourth Year

4.5 credits of C- & D-level courses from Bins 1 and 2 below. This must include at least one credit from each bin and at least one credit total at the D-level.

Bin 1: C- & D-level Ecology and Evolution Courses

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Plants: Life on the Edge</td>
</tr>
<tr>
<td>BIOC39H3</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>BIOC41H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOC42H3</td>
<td>Role of Zoos in Conservation</td>
</tr>
<tr>
<td>BIOC43H3</td>
<td>Fungal Biology &amp; Pathogenesis</td>
</tr>
<tr>
<td>BIOC44H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC45H3</td>
<td>Biology of Plant Stress</td>
</tr>
<tr>
<td>BIOC46H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC47H3</td>
<td>Animal Communication</td>
</tr>
<tr>
<td>BIOC48H3</td>
<td>Ornithology and Herpetology</td>
</tr>
<tr>
<td>BIOC49H3</td>
<td>Special Topics in Behavioural Ecology</td>
</tr>
<tr>
<td>BIOC50H3</td>
<td>Microbial Biogeochemistry</td>
</tr>
</tbody>
</table>

Bin 2: C- & D-level Organismal Biology Courses

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Plants: Life on the Edge</td>
</tr>
<tr>
<td>BIOC39H3</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>BIOC41H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOC42H3</td>
<td>Role of Zoos in Conservation</td>
</tr>
<tr>
<td>BIOC43H3</td>
<td>Fungal Biology &amp; Pathogenesis</td>
</tr>
<tr>
<td>BIOC44H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC45H3</td>
<td>Biology of Plant Stress</td>
</tr>
<tr>
<td>BIOC46H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC47H3</td>
<td>Animal Communication</td>
</tr>
<tr>
<td>BIOC48H3</td>
<td>Ornithology and Herpetology</td>
</tr>
<tr>
<td>BIOC49H3</td>
<td>Special Topics in Behavioural Ecology</td>
</tr>
<tr>
<td>BIOC50H3</td>
<td>Microbial Biogeochemistry</td>
</tr>
</tbody>
</table>

B. Senior Research Courses (optional)

Students interested in graduate research are encouraged to take one or more of the independent research courses offered in Biological Sciences as part of their degree.

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Plants: Life on the Edge</td>
</tr>
<tr>
<td>BIOC39H3</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>BIOC41H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOC42H3</td>
<td>Role of Zoos in Conservation</td>
</tr>
<tr>
<td>BIOC43H3</td>
<td>Fungal Biology &amp; Pathogenesis</td>
</tr>
<tr>
<td>BIOC44H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC45H3</td>
<td>Biology of Plant Stress</td>
</tr>
<tr>
<td>BIOC46H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC47H3</td>
<td>Animal Communication</td>
</tr>
<tr>
<td>BIOC48H3</td>
<td>Ornithology and Herpetology</td>
</tr>
<tr>
<td>BIOC49H3</td>
<td>Special Topics in Behavioural Ecology</td>
</tr>
<tr>
<td>BIOC50H3</td>
<td>Microbial Biogeochemistry</td>
</tr>
</tbody>
</table>

B. Senior Research Courses (optional)

Students interested in graduate research are encouraged to take one or more of the independent research courses offered in Biological Sciences as part of their degree.

Choose from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC38H3</td>
<td>Plants: Life on the Edge</td>
</tr>
<tr>
<td>BIOC39H3</td>
<td>Plants and Society</td>
</tr>
<tr>
<td>BIOC41H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOC42H3</td>
<td>Role of Zoos in Conservation</td>
</tr>
<tr>
<td>BIOC43H3</td>
<td>Fungal Biology &amp; Pathogenesis</td>
</tr>
<tr>
<td>BIOC44H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC45H3</td>
<td>Biology of Plant Stress</td>
</tr>
<tr>
<td>BIOC46H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC47H3</td>
<td>Animal Communication</td>
</tr>
<tr>
<td>BIOC48H3</td>
<td>Ornithology and Herpetology</td>
</tr>
<tr>
<td>BIOC49H3</td>
<td>Special Topics in Behavioural Ecology</td>
</tr>
<tr>
<td>BIOC50H3</td>
<td>Microbial Biogeochemistry</td>
</tr>
</tbody>
</table>

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
The Human Biology specialist program provides a solid foundation of introductory science courses and core biology courses while emphasizing, in the upper years, issues related to human health, the nature of humans and their culture as well as the interaction of the human species with the environment. The first year of the program emphasizes introductory courses in biology, chemistry, calculus, physics and psychology. The second year of the program emphasizes core courses in cell biology, molecular biology, physiology, ecology, evolution and anatomy that provide the basis for continued specialization in the third and fourth years. The upper years of the program emphasize specialized courses in anatomy, histology, anthropology, biochemistry, endocrinology, immunology, microbiology, physiology, psychology, pathology and pathobiology. This program is suited for those students who wish to go onto health-related fields such as medicine, dentistry, nursing, pharmacy, physiotherapy and health policy/management or graduate studies in these, and other, areas such as physiology, medicine and endocrinology.

Program Requirements
The Program consists of 15.5 credits.

Required Courses and Suggested Course Sequence
First Year
1.0 Credit of Introductory Biology Courses
BIOA01H3: Life on Earth: Unifying Principles
BIOA02H3: Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses
CHMA10H3: Introductory Chemistry I: Structure and Bonding
1.0 Credit of Mathematics
MATA30H3 Calculus I for Biological and Physical Sciences
MATA31H3 Calculus II for Biological and Physical Sciences

1.0 Credit of Introductory Physics Courses
PHYA11H3 Introduction to Physics I
PHYA22H3 Introduction to Physics II

1.0 Credit of Introductory Psychology Courses
PSYA01H3 Introductory Psychology: Part I
PSYA02H3 Introductory Psychology: Part II

Second Year
3.0 Credits of Biology Core Courses
BIOC10H3 Organic Chemistry I
BIOC11H3 Organic Chemistry II

1.0 Credit of Biology Core Labs
BIOC14H3 Animal Physiology Laboratory
BIOC15H3 Human Development and Anatomy Laboratory

1.0 Credit of Organic Chemistry Courses
CHMB41H3 Introductory Organic Chemistry

Third/Fourth Years
2.0 Credits of C-level Biology Core Courses
BIOC17H3 Genetics
BIOC18H3 Microbiology

1.5 Credits of Additional C-level Biology Courses
Choose From:
BIOC19H3 Cell Biology
BIOC20H3 Molecular Genetics
BIOC21H3 Mammalian Physiology
BIOC22H3 Animal Physiology
BIOC23H3 Comparative Animal Physiology
BIOC24H3 Human Physiology
BIOC25H3 Environmental Toxicology

1.0 Credit of D-level Biology Courses
Choose From:
BIOC30H3 Animal Physiology Laboratory
BIOC31H3 Human Physiology Laboratory

0.5 Credit in Statistics
Choose From:
STAT220H3 Statistics I
STAT230H3 Data Analysis in Psychology

0.5 Credit in Psychology or Health Studies
Choose From any B-, C- or D-level Psychology course, or from the Health Studies courses listed below:
HTHE10H3 Introduction to Health Research Methodology

0.5 Credit in Statistics
Choose From:
STAT220H3 Statistics I

0.5 Credit in Psychology or Health Studies
Choose From any B-, C- or D-level Psychology course, or from the Health Studies courses listed below:
HTHE10H3 Introduction to Health Research Methodology

Second Year
3.0 Credits of Biology Core Courses
BIOC11H3 Molecular Aspects of Cellular and Genetic Processes
BIOC12H3 Plant Physiology
BIOC13H3 Cell Biology

1.0 Credit of Introductory Biology Courses
BIOC58H3 Animal Physiology

1.0 Credit of Biology Core Labs
BIOC11H3 Animal Physiology Laboratory

1.0 Credit of Organic Chemistry Courses
CHMB42H3 Organic Chemistry I

Third/Fourth Years
2.0 Credits of C-level Biology Core Courses
BIOC19H3 Genetics
BIOC20H3 Microbiology

1.5 Credits of Additional C-level Biology Courses
Choose From:
BIOC19H3 Cell Biology
BIOC20H3 Molecular Genetics
BIOC21H3 Mammalian Physiology
BIOC22H3 Animal Physiology
BIOC23H3 Comparative Animal Physiology
BIOC24H3 Human Physiology
BIOC25H3 Environmental Toxicology

1.0 Credit of D-level Biology Courses
Choose From:
BIOC30H3 Animal Physiology Laboratory
BIOC31H3 Human Physiology Laboratory

0.5 Credit in Statistics
Choose From:
STAT220H3 Statistics I
STAT230H3 Data Analysis in Psychology

0.5 Credit in Psychology or Health Studies
Choose From any B-, C- or D-level Psychology course, or from the Health Studies courses listed below:
HTHE10H3 Introduction to Health Research Methodology

0.5 Credit in Statistics
Choose From:
STAT220H3 Statistics I

0.5 Credit in Psychology or Health Studies
Choose From any B-, C- or D-level Psychology course, or from the Health Studies courses listed below:
HTHE10H3 Introduction to Health Research Methodology

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
Program: SCSPE1203C - Compare

Code

SCSPE1203C

SCSPE1203C

Owning Organizations

BGS,YC,BIO

BGS,YC,BIO

Sections

Biological Sciences

Biological Sciences

Title

SPECIALIST (CO-OPERATIVE) PROGRAM IN MOLECULAR BIOLOGY (SCIENCE)

SPECIALIST (CO-OPERATIVE) PROGRAM IN MOLECULAR BIOLOGY (SCIENCE)

ROSITitle

Same as Calendar Title

Same as Calendar Title

Description

Supervisor: J. Nash

Supervisor: J. Nash

Email: cell-and-molecular-biology@utsc.utoronto.ca

Email: cell-and-molecular-biology@utsc.utoronto.ca

Co-op Contact:

Co-op Contact:

askcoop@utsc.utoronto.ca

askcoop@utsc.utoronto.ca

The Cell and Molecular Biology program strives to help students construct a broad foundation of knowledge across the major disciplines of biology in the first two years of study, and combine this knowledge with an increasingly analytical and reflective approach to learning. Upon this base, students deepen their knowledge of biological processes that occur at the cellular and molecular level through course work of their third and fourth years. This is a laboratory-rich program that integrates an understanding of chemical and physical processes with our complex biological systems. Because of broad training in biology and rigorous cross training in cognate disciplines, graduates are well positioned to apply to professional and graduate schools or work in a broad range of government regulatory agencies, clinical or research-focused industries and other careers that require the union of strong analytical and technical skills. The co-op option of the Cell and Molecular Biology program complements and punctuates academic course work with full-time work terms in research laboratories, government, health care, or in public or private industry. These placements help students define and refine their career and/or professional school goals. For information on admissions, fees, work terms and standing in the Program, please see the co-operative Programs section of this Calendar.

Program Admission

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-secondary institution, see the Co-operative Programs section in this Calendar. Current U of T Scarborough students: Application procedures can be found at the Registrar’s Office website: www.utsc.utoronto.ca/registrar. The minimum qualifications for entry are 5.0 credits including BIOA01H3, BIOA02H3, PHYA10H3, MATA20H3, MATA21H3, CHMA10H3, CHMA11H3, plus a cumulative GPA of at least 2.75.

Program Requirements

This program consists of 14.0 required credits plus two work-terms. Students must achieve a grade of at least 70% in all required courses.

A. Course Requirements

First Year

1.0 Credit of Introductory Biology Courses

BIOA10H3: Life on Earth: Unifying Principles

BIOA20H3: Life on Earth: Form, Function and Interactions

1.0 Credit of Introductory Chemistry Courses

CHMA10H3: Introductory Chemistry I: Structure and Bonding

CHMA11H3: Introductory Chemistry I: Reactions and Mechanisms

1.0 Credit in Mathematics

Choose from:

MATA30H3 Calculus I for Biological and Physical Sciences

MATA35H3 Calculus II for Biological Sciences
1.0 Credit in Physics
Choose 0.5 credit from:
- PHYA10H3 Introduction to Physics IA
- PHYA11H3 Introduction to Physics IB

Choose 0.5 credit from:
- PHYA21H3 Introduction to Physics IA
- PHYA22H3 Introduction to Physics IB

0.5 Credit in Statistics
Choose from:
- STAT221H3 Statistics I (this course could also be taken in second year)
- PSYB07H3 Data Analysis in Psychology (this course could also be taken in second year)

0.5 Credit in Computer Science
Choose from:
- CSCA08H3 Introduction to Computer Science I (most appropriate course for computer science students)

Introduction to Scientific Computing

0.5 Credit of C-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)

0.5 Credit of D-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC23H3 Introduction to Computer Science
- BIOC24H3 Introduction to Scientific Computing

0.5 Credit of Advanced Molecular Techniques
Choose from:
- BIOC29H3 Advanced Molecular Biology Laboratory
- BIOC30H3 Microbiology
- BIOC31H3 (BGYC22H3) Vertebrate Histology: Cells and Tissues
- BIOC32H3 Animal Developmental Biology
- BIOC33H3 Eukaryotic Plant Cell (Plant and Animal Cell Biology)
- BIOC34H3 Plant Physiology
- BIOC35H3 Animal Physiology
- BIOC36H3 Vertebrate Histology: Cells and Tissues
- BIOC38H3 Mammalian Physiology I or BIOB34H3 Plant Physiology
- BIOC39H3 Cell and Molecular Biology Laboratory
- BIOC40H3 Introduction to Computer Science

0.5 Credit of D-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)

0.5 Credit in Computer Science
Choose from:
- CSCA08H3 Introduction to Computer Science I (most appropriate course for computer science students)

Introduction to Scientific Computing

0.5 Credit of C-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)

0.5 Credit of D-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)

0.5 Credit in Computer Science
Choose from:
- CSCA08H3 Introduction to Computer Science I (most appropriate course for computer science students)

Introduction to Scientific Computing

0.5 Credit of C-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)

0.5 Credit of D-level Research-Oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 (BGYC22H3) Vertebrate Histology: Organs
- BIOC12H3 (BIOC39H3) Cell and Molecular Biology Laboratory
- BIOC13H3 Cell Biology
- BIOC14H3 Evolutionary Biology
- BIOC15H3 Genetics
- BIOC16H3 Microbiology
- BIOC17H3 Practical Approaches to Biochemistry
- BIOC18H3 Immunology (can be completed in third or fourth year)
### Program: SCSPE1203 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1203</th>
<th>SCSPE1203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>BGYSC.BIO</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Section</td>
<td></td>
<td>SPECIALIST PROGRAM IN CELL AND MOLECULAR BIOLOGY (SCIENCE)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
<td></td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td>Supervisor: J. Nash Email: <a href="mailto:cell-and-molecular-biology@utsc.utoronto.ca">cell-and-molecular-biology@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

**Program Requirements**

This program consists of 14.0 required credits. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth.

**Program Notes/Tables**

The Cell and Molecular Biology program strives to help students construct a broad foundation of knowledge across the major disciplines of biology in the first two years of study, and combine this knowledge with an increasingly analytical and reflective approach to learning. Upon this base students deepen their knowledge of biological processes that occur at the cellular and molecular level through the course work of their third and fourth years. This is a laboratory-rich program that integrates an understanding of chemical and physical processes with our complex biological systems. Because of broad training in biology and rigorous cross training in cognate disciplines, graduates are well positioned to apply to professional and graduate schools or work in a broad range of government regulatory agencies, clinical or research-focused industries and other careers that require the union of strong analytical and technical skills.

**Program Requirements**

This program consists of 14.0 required credits.
# Plants and Society

## First Year

### 1.0 Credit of Introductory Biology Courses
- **BIOC10H3** Life on Earth: Form, Function and Interactions
- **BIOC14H3** Life on Earth: Unifying Principles
- **BIOC19H3** Life on Earth: Unifying Principles

### 1.0 Credit of Introductory Chemistry Courses
- **CHMA10H3** Introductory Chemistry I: Structure and Bonding
- **CHMA11H3** Introductory Chemistry I: Reactions and Mechanisms

### 1.0 Credit in Mathematics
Choose from:
- **MATA30H3** Calculus I for Biological and Physical Sciences & Calculus II for Biological Sciences
- or **MATA35H3** Calculus I for Biological and Physical Sciences & Calculus II for Physical Sciences

### 1.0 Credit in Physics
Choose 0.5 credit from:
- **PHYA10H3** Introduction to Physics I
- **PHYA11H3** Introduction to Physics IA

Choose 0.5 credit from:
- **PHYA21H3** Introduction to Physics I
- **PHYA22H3** Introduction to Physics IB

### 0.5 Credit in Statistics
Choose from:
- **STA222H3** Statistics I (this course could also be taken in second year)
- **PSYB07H3** Data Analysis in Psychology (this course could also be taken in second year)

## Second Year

### 3.0 Credits of Biology Core Courses
- **BIOC21H3** Cell Biology
- **BIOC39H3** Cell Biology:
  - Vertebrate Histology: Cells and Tissues
- **BIOC15H3** Genetics
- **BIOC12H3** Biochemistry I: Proteins & Enzymes
- **BIOC17H3** Biochemistry II: Bioenergetics and Metabolism
- **BIOC34H3** Mammalian Physiology
- *or*
  - **BIOC30H3** Mammalian Physiology I
- **BIOC23H3** Microbiology
- **BIOC22H3** The General Cell
- **BIOC24H3** Practical Approaches to Biochemistry
- **BIOC25H3** Immunology (can be completed in third or fourth year)

### 0.5 Credit in Biology Core Labs
- **BIOC19H3** Cell and Molecular Biology Laboratory

### 1.0 Credit of Organic Chemistry Courses
- **CHMB10H3** Organic Chemistry I
- **CHMB11H3** Organic Chemistry II

## Third Year

### 3.0 Credits of Biology C-level Courses
- **BIOC11H3** Biochemistry: Proteins & Enzymes
- **BIOC12H3** Biochemistry II: Bioenergetics and Metabolism
- **BIOC13H3** Genetics
- **BIOC14H3** Microbiology
- **BIOC15H3** Practical Approaches to Biochemistry
- **BIOC16H3** Immunology (can be completed in third or fourth year)

### 0.5 Credit in Computer Science
Choose from:
- **CSCA20H3** Introduction to Computer Science I (most appropriate course for computer science students)
- **CSCA22H3** Introduction to Programming (most appropriate course for non-computer science students)
- **CSCA24H3** Introduction to Scientific Computing (computer science could also be taken in an earlier year)

## Fourth Year

### 0.5 Credit of Cognate Biology Courses
Choose from:
- **BIOC23H3** Cell Biology
- **BIOC25H3** Genetics, Environment and behaviour
- **BIOC26H3** Animal Developmental Biology
- **BIOC27H3** Vertebrate Histology: Cells and Tissues

---

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
**Program: SCMAJ1030A - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCM1030A</th>
<th>SCM1030A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>BGYS.C.BIO</td>
<td>BGYS.C.BIO</td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>Major Program in Biology (Science)</td>
<td>Major Program in Biology (Science)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Biology is the study of life and this major program in Biology is meant to provide students with a solid basic knowledge of this vast discipline, while also allowing the student to tailor their program in the upper years toward one or more of Biology's many sub-disciplines. Many of the world's most important and timely issues (medical science and disease, conservation and biodiversity, food and energy supplies) are issues that require citizens to have a firm understanding of biological principles and practices.</td>
<td>Biology is the study of life and this major program in Biology is meant to provide students with a solid basic knowledge of this vast discipline, while also allowing the student to tailor their program in the upper years toward one or more of Biology's many sub-disciplines. Many of the world's most important and timely issues (medical science and disease, conservation and biodiversity, food and energy supplies) are issues that require citizens to have a firm understanding of biological principles and practices.</td>
</tr>
</tbody>
</table>

**Program Requirements**

This program consists of 8.0 required credits.

**First Year**

1.0 Credit of Introductory Biology Courses
- BIOA01H3 Life on Earth: Unifying Principles
- BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit in Chemistry
- CHMA12H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

0.5 Credit in Mathematics or Statistics
- CHMA10H3 Calculus for Biological and Physical Sciences
- CHMA11H3 Statistics I (this course could also be taken in second year)
- STAB22H3 Data Analysis in Psychology (this course could also be taken in second year)

**Second Year**

3.0 Credits of Biology Core Courses
- BIOB10H3 Introduction to Molecular Biology
- BIOB20H3 Genomics
- BIOB21H3 Molecular endocrinology
- BIOB22H3 Fungal Biology and Pathogenesis
- BIOB23H3 Molecular Endocrinology
- BIOB24H3 Directed Research in Biology

0.5 Credit of D-level Research-oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 Seminar in Cellular Microbiology
- BIOC11H3 Epigenetics in Health and Disease
- BIOC12H3 Molecular Biology of the Stress Response
- BIOC13H3 Special Topics in Cell Biology
- BIOC14H3 Genomics
- BIOC15H3 Fungal Biology and Pathogenesis
- BIOC16H3 Molecular Endocrinology
- BIOC17H3 Directed Research in Biology

**Note:** Any of these courses not used to satisfy this requirement may be used to fulfill the "0.5 Credit of Cognate Biology Courses".

**Fourth Year**

0.5 Credit in Advanced Molecular Techniques
- BIOC20H3 Advanced Molecular Biology Laboratory

0.5 Credit of D-level Research-oriented "Cell & Molecular" Course Work
Choose from:
- BIOC21H3 Advanced Molecular Biology Laboratory
- BIOC22H3 Seminar in Cellular Microbiology
- BIOC23H3 Epigenetics in Health and Disease
- BIOC24H3 Molecular Biology of the Stress Response
- BIOC25H3 Special Topics in Cell Biology
- BIOC26H3 Genomics
- BIOC27H3 Fungal Biology and Pathogenesis
- BIOC28H3 Molecular Endocrinology
- BIOC29H3 Directed Research in Biology

**Note:** Any of these courses not used to satisfy this requirement may be used to fulfill the "0.5 Credit of Cognate Biology Courses".

**Program Notes/Tables**

**Program: SCMAJ1030A - Compare**

<table>
<thead>
<tr>
<th>Code</th>
<th>SCM1030A</th>
<th>SCM1030A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organizations</td>
<td>BGYS.C.BIO</td>
<td>BGYS.C.BIO</td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>Major Program in Biology (Science)</td>
<td>Major Program in Biology (Science)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Biology is the study of life and this major program in Biology is meant to provide students with a solid basic knowledge of this vast discipline, while also allowing the student to tailor their program in the upper years toward one or more of Biology's many sub-disciplines. Many of the world's most important and timely issues (medical science and disease, conservation and biodiversity, food and energy supplies) are issues that require citizens to have a firm understanding of biological principles and practices.</td>
<td>Biology is the study of life and this major program in Biology is meant to provide students with a solid basic knowledge of this vast discipline, while also allowing the student to tailor their program in the upper years toward one or more of Biology's many sub-disciplines. Many of the world's most important and timely issues (medical science and disease, conservation and biodiversity, food and energy supplies) are issues that require citizens to have a firm understanding of biological principles and practices.</td>
</tr>
</tbody>
</table>

**Program Requirements**

This program consists of 8.0 required credits.

**First Year**

1.0 Credit of Introductory Biology Courses
- BIOA01H3 Life on Earth: Unifying Principles
- BIOA02H3 Life on Earth: Form, Function and Interactions

1.0 Credit in Chemistry
- CHMA12H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms

0.5 Credit in Mathematics or Statistics
- CHMA10H3 Calculus for Biological and Physical Sciences
- CHMA11H3 Statistics I (this course could also be taken in second year)
- STAB22H3 Data Analysis in Psychology (this course could also be taken in second year)

**Second Year**

3.0 Credits of Biology Core Courses
- BIOB10H3 Introduction to Molecular Biology
- BIOB20H3 Genomics
- BIOB21H3 Molecular endocrinology
- BIOB22H3 Fungal Biology and Pathogenesis
- BIOB23H3 Molecular Endocrinology
- BIOB24H3 Directed Research in Biology

0.5 Credit of D-level Research-oriented "Cell & Molecular" Course Work
Choose from:
- BIOC10H3 Seminar in Cellular Microbiology
- BIOC11H3 Epigenetics in Health and Disease
- BIOC12H3 Molecular Biology of the Stress Response
- BIOC13H3 Special Topics in Cell Biology
- BIOC14H3 Genomics
- BIOC15H3 Fungal Biology and Pathogenesis
- BIOC16H3 Molecular Endocrinology
- BIOC17H3 Directed Research in Biology

**Note:** Any of these courses not used to satisfy this requirement may be used to fulfill the "0.5 Credit of Cognate Biology Courses".

**Fourth Year**

0.5 Credit in Advanced Molecular Techniques
- BIOC20H3 Advanced Molecular Biology Laboratory

0.5 Credit of D-level Research-oriented "Cell & Molecular" Course Work
Choose from:
- BIOC21H3 Advanced Molecular Biology Laboratory
- BIOC22H3 Seminar in Cellular Microbiology
- BIOC23H3 Epigenetics in Health and Disease
- BIOC24H3 Molecular Biology of the Stress Response
- BIOC25H3 Special Topics in Cell Biology
- BIOC26H3 Genomics
- BIOC27H3 Fungal Biology and Pathogenesis
- BIOC28H3 Molecular Endocrinology
- BIOC29H3 Directed Research in Biology

**Note:** Any of these courses not used to satisfy this requirement may be used to fulfill the "0.5 Credit of Cognate Biology Courses".
3.0 Credits of Biology Core Courses

- BIOC31H3: Molecular Aspects of Cellular and Genetic Processes
- BIOC33H3: Mammalian Physiology I or BIOC34H3: Animal Physiology
- BIOC38H3: Plant Physiology
- BIOC39H3: Evolutionary Biology

0.5 Credit of Biology Core Labs

Choose from:
- BIOC32H3: Cell and Molecular Biology Laboratory
- BIOC35H3: Animal Physiology Laboratory
- BIOC36H3: Human Development and Anatomy Laboratory
- BIOC37H3: Ecology and Evolutionary Biology Laboratory

Third Year

1.5 Credits of Additional C-level Biology Courses

Choose from: Any BIO C-level courses offered by the department.

Notes:
- NROC34H3: Neuroscience
- EESC30H3: Biodiversity and Biogeography

Note: Microbial Biogeochemistry may also be used toward fulfilling this requirement.

Fourth Year

0.5 Credit of Additional D-Level Biology Courses

Choose from: Any BIO D-level courses offered by the department.

Note: that this includes the Biology Supervised Studies and Directed Research courses BIOD95H3 & BIOD99Y3.

Program Requirements

This program consists of 8.5 required credits. To complete their degree, students should combine this major program with another major program, or two minor programs.

First Year

1.0 Credit of Introductory Biology Courses

- BIOC07H3: Life on Earth: Unifying Principles
- BIOC08H3: Life on Earth: Form, Function and Interactions

1.0 Credit in Chemistry

- CHMA10H3: Introductory Chemistry I: Structure and Bonding
- CHMA11H3: Introductory Chemistry II: Reactions and Mechanisms

0.5 Credit in Mathematics or Statistics

Choose from:
- MATA30H3: Calculus I for Biological and Physical Sciences
- STAB22H3: Statistics I
- PSYB07H3: Data Analysis in Psychology

Second Year

3.0 Credits of Biology Core Courses

Choose from:
- BIOC31H3: Molecular Aspects of Cellular and Genetic Processes
- BIOC33H3: Mammalian Physiology I or BIOC34H3: Animal Physiology
- BIOC38H3: Plant Physiology
- BIOC39H3: Evolutionary Biology

0.5 Credit of Biology Core Labs

Choose from:
- BIOC32H3: Cell and Molecular Biology Laboratory
- BIOC35H3: Animal Physiology Laboratory
- BIOC36H3: Human Development and Anatomy Laboratory
- BIOC37H3: Ecology and Evolutionary Biology Laboratory

Third Year

1.5 Credits of Additional C-level Biology Courses

Choose from: Any BIO C-level courses offered by the department.

Notes:
- NROC34H3: Neuroscience
- EESC30H3: Biodiversity and Biogeography

Note: Microbial Biogeochemistry may also be used toward fulfilling this requirement.

Fourth Year

0.5 Credit of Additional D-Level Biology Courses

Choose from: Any BIO D-level courses offered by the department.

Note: that this includes the Biology Supervised Studies and Directed Research courses BIOD95H3 & BIOD99Y3.

Program Requirements

This program consists of 8.5 required credits.
Online Calendar

Second Year

3.0 Credits of Biology Core Courses

MATH33H3: Calculus I for Biological and Physical Sciences

STAT235H1: Statistics

PSYB27H3: Data Analysis in Psychology

0.5 Credit of Biology Core Labs

ECO30H3: Ecology

0.5 Credit of the Ecology & Evolution Core Lab

ECO30H3: Ecology and Evolutionary Biology Laboratory

Third Year

1.0 Credit of Ecology & Evolution Foundation Courses

Choose from:

BIOC16H3: Evolutionary Genetics and Genomics

BIOC50H3: Macroevolution

BIOC59H3: Advanced Population Ecology

BIOC61H3: Community Ecology and Environmental Biology

1.0 Credit of Other C-level Courses

Choose from:

BIOC37H3: Plants: Life on the Edge

BIOC38H3: Plants and Society

BIOC40H3: Plant Physiology

BIOC51H3: Tropical Biodiversity Field Course

BIOC52H3: Ecology Field Course

BIOC54H3: Animal Behaviour

BIOC58H3: Biological Consequences of Global Change

BIOC60H3: Winter Ecology

BIOC62H3: Role of Zoos in Conservation

BIOC63H3: Conservation Biology

BIOC65H3: Environmental Toxicology

BIOC67H3: Inter-University Biology Field Course

EESC30H3: Microbial Biogeochemistry

Fourth Year

0.5 Credit of D-level Courses

Choose from:

BIOC25H3: Genomics

BIOC26H3: Fungal Biology & Pathogenesis

BIOC33H3: Comparative Animal Physiology

BIOC43H3: Animal Movement and Exercise

BIOC45H3: Animal Communication

BIOC48H3: Ornithology and Herpetology

BIOC52H3: Special Topics in Biodiversity and Systematics

BIOC53H3: Special Topics in Behavioural Ecology

BIOC54H3: Special Topics in Conservation Biology

BIOC60H3: Spatial Ecology

BIOC62H3: Species and Speciation

BIOC66H3: Causes & Consequences of Biodiversity

EESC15H3: Cleaning Up Our Mess: Remediation of Terrestrial and Aquatic Environments

---

Program: SCSPEPMD - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPEPMD</th>
<th>SCSPEPMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>BGYS.C.PMD</td>
<td>BGYS.C.PMD</td>
</tr>
<tr>
<td>Organizations</td>
<td>Paramedicine</td>
<td>Paramedicine</td>
</tr>
<tr>
<td>Sections</td>
<td>Paramedicine</td>
<td>Paramedicine</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST (JOINT) PROGRAM IN PARAMEDICINE (SCIENCE)</td>
<td>SPECIALIST (JOINT) PROGRAM IN PARAMEDICINE (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: Shelley Brunt. Email: <a href="mailto:paramedicine@utsc.utoronto.ca">paramedicine@utsc.utoronto.ca</a></td>
<td>Supervisor of Studies: Shelley Brunt. Email: <a href="mailto:paramedicine@utsc.utoronto.ca">paramedicine@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
This program consists of 17.0 required credits and may be taken in fulfilment of the requirements of a four-year (20-credit) Honours Degree. Students taking this program must take an additional 5 credits of electives. When choosing electives keep in mind the minimum breadth requirements that must be met to complete a degree. It is advisable that, including electives, students plan to take 2.5 credits in each semester of their four-year degree. Note that three of the PMD courses are 1 credit (Y courses) rather than 0.5 credit (H courses). Students who complete the requirements of the program will also qualify for the Paramedic Diploma from Centennial College. Students who have completed the requirements for Centennial’s diploma are eligible to take the Ministry of Health exams required to qualify as a Primary Care Paramedic.

Program Admission

Limited enrolment. Applicants must fill out a Program Admission Supplementary Application form. Prior to taking courses at Centennial College, students must also fill out a medical certificate and have current qualifications in CPR and standard first aid. Other non-academic requirements such as a vulnerable sector police check, fitness standards and face mask fit certification will also ultimately be required. Additional details regarding these requirements may be found at Centennial’s website or by contacting Walter Tavares at Centennial College (WTavares@centennialcollege.ca). Applicants may arrange to complete some of these requirements during their first year of study at the University of Toronto Scarborough.

For more information on admission and deadlines, see the Joint Programs with Toronto Scarborough.

For more information on admission and deadlines, see the Joint Programs with Toronto Scarborough.

Program Requirements

Notes:

1. In order to remain in the program, students must typically maintain a cumulative grade point average of at least 2.0. Students whose cumulative GPA falls below 2.0 should consult the program supervisor to discuss their options. Please note, space in some Centennial College courses is limited. Students who must repeat one of these courses and whose CGPA has fallen below 2.0 will be allowed to register in these courses only if space permits.

2. Suggested course sequences follow below.

1.0 Credit of Introductory Biology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC15H3</td>
<td>2.0 Credits of Foundational Biology Courses</td>
</tr>
<tr>
<td>BIOC17H3</td>
<td>Life on Earth: Unifying Principles</td>
</tr>
<tr>
<td>BIOC21H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
<tr>
<td>BIOC32H3</td>
<td>Human Physiology I</td>
</tr>
<tr>
<td>BIOC33H3</td>
<td>Human Physiology II</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYA01H3</td>
<td>1.0 Credit of Introductory Psychology Courses</td>
</tr>
<tr>
<td>PSYA02H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
</tbody>
</table>

1.0 Credit of Advanced Biology Courses

Choose From:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC17H3</td>
<td>Seminars in Cellular Microbiology</td>
</tr>
<tr>
<td>BIOC22H3</td>
<td>Fungal Biology and Pathogenesis</td>
</tr>
<tr>
<td>BIOC28H3</td>
<td>Pathology of Human Disease</td>
</tr>
<tr>
<td>BIOC33H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC34H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC36H3</td>
<td>Pathologies of the Nervous System</td>
</tr>
<tr>
<td>BIOC40H3</td>
<td>Directed Research in Paramedicine</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYA01H3</td>
<td>1.0 Credit of Introductory Psychology Courses</td>
</tr>
<tr>
<td>PSYA02H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
</tbody>
</table>

1.0 Credit of Advanced Biology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC17H3</td>
<td>Seminars in Cellular Microbiology</td>
</tr>
<tr>
<td>BIOC22H3</td>
<td>Fungal Biology and Pathogenesis</td>
</tr>
<tr>
<td>BIOC28H3</td>
<td>Pathology of Human Disease</td>
</tr>
<tr>
<td>BIOC33H3</td>
<td>Comparative Animal Physiology</td>
</tr>
<tr>
<td>BIOC34H3</td>
<td>Animal Movement and Exercise</td>
</tr>
<tr>
<td>BIOC36H3</td>
<td>Pathologies of the Nervous System</td>
</tr>
<tr>
<td>BIOC40H3</td>
<td>Directed Research in Paramedicine</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYA01H3</td>
<td>1.0 Credit of Introductory Psychology Courses</td>
</tr>
<tr>
<td>PSYA02H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
</tbody>
</table>

1.0 Credit of B-Level Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYA01H3</td>
<td>Introduction to Developmental Psychology</td>
</tr>
</tbody>
</table>
1.0 Credit of B-Level Psychology Courses
- PSYB22H3: Introduction to Developmental Psychology
- PSYB32H3: Abnormal Psychology

1.0 Credit of Statistics/Data Analysis Courses
- STA202H3: Statistics I or PSYB22H3: Data Analysis in Psychology
- PSY203H3: Advanced Data Analysis in Psychology

7.0 Credits of Paramedicine Courses
- *PMDC31H3: Pre-Hospital Care 1: Theory and Lab
- *PMDC32H3: Therapeutic Approaches to Behaviour in Crisis
- *PMDC33H3: Alterations of Human Body Function I
- *PMDC34H3: Pre-Hospital Care 2: Theory, Lab and Clinical
- *PMDC35H3: Pharmacology for Allied Health Pre-requisite
- *PMDC36H3: Professional Issues, Research and Leadership
- *PMDC37H3: Alterations in Human Body Function II
- *PMDC38H3: Pre-Hospital Care 3: Theory, Lab and Field
- *PMDC39H3: Medical Directed Therapeutics and Paramedic Responsibilities
- *PMDC40H3: Pre-Hospital Care 4: Theory, Lab and Field
- *PMDC41H3: Primary Care Practice Integration and Decision Making
- *PMDC42H3: Pharmacology for Allied Health Pre-requisite
- *PMDC43H3: Professional Issues, Research and Leadership
- *PMDC54H3: Alterations in Human Body Function II
- *PMDC55H3: Pre-Hospital Care 3: Theory, Lab and Field
- *PMDC56H3: Medical Directed Therapeutics and Paramedic Responsibilities
- *PMDC57H3: Primary Care Practice Integration and Decision Making

A grade of 60% is required in these courses both to pass the course and to maintain standing in the program. All PMD courses are taught at Centennial College. Note, some PMD courses require that 60% be achieved in all components of the course (i.e., lecture component, practical component, and clinical placement component).

1.0 Credit of C-Level Anthropology Courses
- *PMDB33H3: Human Development and Anatomy
- *PMDB34H3: Pre-Hospital Care 1: Theory and Lab
- *PMDB35H3: Pharmacology for Allied Health Pre-requisite
- *PMDB36H3: Professional Issues, Research and Leadership
- *PMDB37H3: Alterations in Human Body Function II
- *PMDB38H3: Pre-Hospital Care 3: Theory, Lab and Field
- *PMDB39H3: Medical Directed Therapeutics and Paramedic Responsibilities
- *PMDB40H3: Pre-Hospital Care 4: Theory, Lab and Field
- *PMDB41H3: Primary Care Practice Integration and Decision Making
- *PMDB42H3: Pharmacology for Allied Health Pre-requisite
- *PMDB43H3: Professional Issues, Research and Leadership
- *PMDB54H3: Alterations in Human Body Function II
- *PMDB55H3: Pre-Hospital Care 3: Theory, Lab and Field
- *PMDB56H3: Medical Directed Therapeutics and Paramedic Responsibilities
- *PMDB57H3: Primary Care Practice Integration and Decision Making

A grade of 60% is required in these courses both to pass the course and to maintain standing in the program. All PMD courses are taught at Centennial College. Note, some PMD courses require that 60% be achieved in all components of the course (i.e., lecture component, practical component, and clinical placement component).

Suggested Program Sequence

Note: Students may also take courses in the summer, when offered. BIOB10Y3 may be taken in the summer in place of BIOB10H3.

Year 1: Fall Session
- a. BIOA01H3: Life on Earth: Unifying Principles
- b. CHMA10H3: Introductory Chemistry I: Structure and Bonding
- c. PSYB10H3: Introductory Psychology: Part I
- d. PSYB20H3: Data Analysis in Psychology (Fall) & 0.5 credits of elective courses
- e. 0.5 credits of elective courses

Year 1: Winter Session
- a. BIOA02H3: Life on Earth: Form, Function and Interactions
- b. CHMA11H3: Introductory Chemistry II: Reactions and Mechanisms
- c. PSYB10H3: Introductory Psychology: Part II
- d. STA202H3: Statistics I & 0.5 credits of elective courses
- e. 1.0 credits of elective courses

Year 2: Fall Session
- a. BIOB10H3: Cell Biology
- b. PMDC33H3: Pharmacology for Allied Health Pre-requisite
- c. PMDC34H3: Pre-Hospital Care 1: Theory and Lab
- d. PMDC35H3: Therapeutic Approaches to Behaviour in Crisis
- e. PMDC36H3: Professional Issues, Research and Leadership

Year 2: Winter Session
- a. BIOL11H3: Molecular Aspects of Genetic Processes
- b. PMDC33H3: Pharmacology for Allied Health Pre-requisite
- c. PMDC34H3: Pre-Hospital Care 2: Theory, Lab and Clinical
- d. PMDC35H3: Pharmacology for Allied Health Pre-requisite

Year 3: Fall Session
- a. BIOB30H3: Mammalian Physiology I or PMDB31H3: Animal Physiology
- b. PMDC33H3: Pharmacology for Allied Health Pre-requisite
- c. PMDC34H3: Pre-Hospital Care 2: Theory, Lab and Clinical
- d. PMDC35H3: Therapeutic Approaches to Behaviour in Crisis
- e. PMDC36H3: Professional Issues, Research and Leadership

Year 3: Winter Session

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml
Program: SCSPE24312 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE24312</th>
<th>SCSPE24312</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owners and Organizations</td>
<td>MGT,MGTEC</td>
<td>MGT,MGTEC</td>
</tr>
<tr>
<td>Sections</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT (BACHELOR OF BUSINESS ADMINISTRATION)</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Program notes/tables</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This program has two streams: the General stream which is designed to give students a broad exposure to all functional areas of Management as well as a solid grounding in Economics; and the Health Management stream which is designed to focus specifically on Management in the Health Sector. The program also includes a Co-operative option. Co-op students should see the section regarding work term requirements for specific details on courses required before each work term.

General Stream:

Program Requirements

This stream requires the completion of 13.5 to 14.5 credits as part of a twenty-credit B.B.A. degree.

**Note:** A single course may only be used once to fulfill one of the following requirements:

1. **(7.0 to 8.0 credits):**
   - MGMT01H3 (MGTE01H3) Principles of Marketing
   - MGMT02H3 (MGTE02H3) Foundations of Business Management or (MGTA01H3/MGTA03H3) and (MGTA04H3/MGTA04H3)

**Year 3: Winter Session**

1. a. BIOC17H3 Microbiology, The Bacterial Cell
2. b. BIOC21H3 Human Physiology, Lecture
3. c. PMDC53H3 Pre-Hospital Care 3: Theory, Lab and Field
4. d. PMDC56H3 Primary Care Practice Integration and Decision Making

**Year 4: Fall Session**

1. a. BIOC16H3 Genetics
2. b. BIOC21H3 Vertebrate Histology, Cells and Tissues or BIOC32H3 Human Physiology
3. c. PSYB10H3 Introduction to Developmental Psychology
4. d. PSYB11H3 Abnormal Psychology
5. e. BIOC34H3 Comparative Animal Physiology or BIOD29H3 Pathologies of the Nervous System or BIOD65H3 Fungal Biology and Pathogenesis or BIOC68H3 Directed Research in Paramedicine

**Year 4: Winter Session**

1. a. BIOC17H3 Microbiology
2. b. BIOC21H3 Human Physiology, Lecture
3. c. PMDC53H3 Pre-Hospital Care 3: Theory, Lab and Field
4. d. PMDC56H3 Primary Care Practice Integration and Decision Making

**Year 4: Winter Session**

1. a. BIOC17H3 Microbiology
2. b. BIOC21H3 Human Physiology, Lecture
3. c. PMDC53H3 Pre-Hospital Care 3: Theory, Lab and Field
4. d. PMDC56H3 Primary Care Practice Integration and Decision Making

**Notes:** Students may take any 2 of these D-level courses to meet program requirements. The sequence here merely reflects current scheduling of courses in the various sessions.

**Program: SCSPE24312 - Compare**

- **Academic Director:** S. Ahmed
  - E-mail: mgmtss@utsc.utoronto.ca

This program has two streams: the General stream which is designed to give students a broad exposure to all functional areas of Management as well as a solid grounding in Economics; and the Health Management stream which is designed to focus specifically on Management in the Health Sector. The program also includes a Co-operative option. Co-op students should see the section regarding work term requirements for specific details on courses required before each work term.

**General Stream:**

Program Requirements

This stream requires the completion of 13.5 to 14.5 credits as part of a twenty-credit B.B.A. degree.

**Note:** A single course may only be used once to fulfill one of the following requirements:

1. **(7.0 to 8.0 credits):**
   - MGMT01H3 (MGTE01H3) Principles of Marketing
   - MGMT02H3 (MGTE02H3) Foundations of Business Management or (MGTA01H3/MGTA03H3) and (MGTA04H3/MGTA04H3)
Program Requirements

This stream requires the completion of 17.0 to 18.0 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (8.0 to 9.0 credits):
- UGTA35H3/MGTC09H3 Management Communications for non Co-op or MGTA36H3
- UGTA36H3/MGTC11H3 Management Communications for non Co-op or MGTA36H3
- UGTA37H3/MGTC12H3 Management Communications for non Co-op or MGTA36H3
- UGTA38H3/MGTC13H3 Principles of Marketing
- UGTA40H3/MGTA05H3 Introduction to Health Management
- UGTA41H3/MGTA06H3 Management Communications for non Co-op or MGTA36H3
- UGTA42H3/MGTA07H3 Management Communications for Co-op or MGTA36H3
- UGTA43H3/MGTA08H3 Introductory Financial Accounting I
- UGTA44H3/MGTA09H3 Introductory Financial Accounting II
- UGTA45H3/MGTA10H3 Introductory Management Accounting
- UGTA46H3/MGTA11H3 Management Information Systems
- UGTA47H3/MGTA12H3 Principles of Finance
- UGTA48H3/MGTA13H3 Managing People and Groups in Organizations or MGTA22H3 and MGTA23H3
- UGTA49H3/MGTA24H3 Human Resource Management
- UGTA50H3/MGTA25H3 Principles of Finance
- UGTA51H3/MGTA26H3 Managing People and Groups in Organizations or MGTA22H3 and MGTA23H3
- UGTA52H3/MGTA27H3 Human Resource Management

2. (1.0 credit):
- UGTA34H3 and UGTA35H3 strongly recommended, or UGTA36H3 and UGTA37H3

3. At least 0.5 credit of courses emphasizing strategic management, chosen from:
- UGSC22H3/MGTC31H3 Corporate Strategy
- UGSC23H3/MGTC32H3 The Changing World of Business-Government Relations
- UGSC24H3/MGTC33H3 Management Ethics
- UGSC26H3/MGTC35H3 Event and Sponsorship Management
- UGSC27H3/MGTC36H3 The Legal Environment of Business I
- UGSC28H3/MGTC37H3 Event and Sponsorship Management
- UGSC29H3/MGTC38H3 The Legal Environment of Business II
- UGSC30H3/MGTC39H3 Organization Strategies
- UGSC31H3/MGTC40H3 Knowledge Management
- UGSC32H3/MGTC41H3 Management Control Systems
- UGSC33H3/MGTC42H3 Management Control Systems

4. (4.0 credits):
- UGSC34H3/ECA40H3 Introduction to Microeconomics: A Mathematical Approach
- UGSC35H3/ECA41H3 Introduction to Macroeconomics: A Mathematical Approach
- UGSC36H3/ECA42H3 Price Theory: A Mathematical Approach
- UGSC38H3/ECA44H3 Quantitative Methods in Economics I
- UGSC39H3/ECA45H3 Quantitative Methods in Economics II

5. 1.0 credit of D-level Management or Economic courses.

Health Management Stream:

Program Requirements

This stream requires the completion of 17.0 to 18.0 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (8.0 to 9.0 credits):
- UGSC41H3/MGSC01H3 Management Communications for Co-op or (MGSC24H3/MGTC39H3) New Venture Creation and Planning
- UGSC42H3/MGSC02H3 Introductory Financial Accounting I
- UGSC43H3/MGSC03H3 Introductory Financial Accounting II
- UGSC44H3/MGSC04H3 Introductory Management Accounting
- UGSC45H3/MGSC05H3 Intermediate Management Accounting
- UGSC46H3/MGSC06H3 Management Information Systems
- UGSC47H3/MGSC07H3 Principles of Finance
- UGSC48H3/MGSC08H3 Managing People and Groups in Organizations or MGSC22H3 and MGSC23H3
- UGSC49H3/MGSC24H3 Human Resource Management
- UGSC50H3/MGSC25H3 Principles of Finance
- UGSC51H3/MGSC26H3 Managing People and Groups in Organizations or MGSC22H3 and MGSC23H3
- UGSC52H3/MGSC27H3 Human Resource Management
- UGSC53H3/MGSC30H3 Marketing Management
Program: SCSPE2432A - Compare

The Accounting Specialist program is designed for the individual who is interested in acquiring a concentrated core of accounting and related knowledge required to become a professional accountant. It provides a solid foundation to prepare students to become Chartered Professional Accountants, Certified Management Accountants and Certified General Accountants after graduation. In addition, the Specialist program provides students with the personal and professional attributes necessary to build a successful career in senior management.

The Accounting Specialist program encompasses topics such as introductory to advanced financial and managerial accounting, assurance, taxation, economics, and finance, along with a range of more advanced electives which cover topics and competencies that incorporate critical thinking and ethical decision making.

Program Requirements

The Program requires the completion of 16.0 to 17.0 credits as part of a twenty-credit program breadth and depth found in the Degree Requirements section of this Calendar.
The Program requires the completion 16.0 to 17.0 credits as part of a twenty-credit B.B.A. degree.

**Note:** A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):

   - MGAC01H3 (MGTB04H3) Principles of Marketing
   - MGAC02H3 (MGTB05H3) Foundations of Business Management or (MGTA03H3) and (MGTA04H3)
   - MGAC03H3 (MGTA06H3) Management Communications for non-Co-op or (MGTA08H3) Management Communications for Co-op or (MGTC09H3)
   - UGEB01H3 (MGTE06H3) Introductory Financial Accounting I
   - UGEB02H3 (MGTE08H3) Introductory Financial Accounting II
   - UGEC01H3 (MGTE09H3) Introductory Management Accounting
   - UGEC02H3 (MGTE10H3) Principles of Finance
   - MGFB10H3 (MGTE11H3) Managing People and Groups in Organizations or (MGTA01H3) and (MGTA02H3) or UGEC12H3
   - MGEC91H3 (MGTC22H3) Human Resource Management
   - MGEC92H3 (MGTC23H3) Marketing Management
   - MATA30H3 (MGTC41H3) Corporate Strategy, MGAD40H3
   - MGAD50H3 (MGTC42H3) Economics for Co-op or (MGTA09H3)
   - MGAD60H3 (MGTC43H3) Financial Management (MGTA10H3)
   - MGAD70H3 (MGTC44H3) Advanced Accounting Case Analysis
   - MGAD80H3 (MGTC45H3) Auditing in a Computer Environment
   - MGAD90H3 (MGTC46H3) Advanced Auditing
   - MGTA03H3 (MGTC47H3) Leadership Skills
   - MGTA04H3 (MGTC48H3) Analysis for Decision Making
   - MGTC53H3 (MGTC49H3) Operations Management: A Mathematical Approach

2. (1.0 credit):

   - [MATA35H3] and [MATA36H3] strongly recommended, or [MATA35H3] (MGTA01H3) and [MATA36H3] (MGTA02H3)

3. (4.0 credits):

   - UGEB01H3 (MGEB03H3) Introduction to Microeconomics: A Mathematical Approach
   - UGEB02H3 (MGEB04H3) Introduction to Macroeconomics: A Mathematical Approach
   - UGEB03H3 (MGEB05H3) Price Theory: A Mathematical Approach
   - UGEB06H3 (MGEB08H3) Microeconomic Theory and Policy: A Mathematical Approach
   - UGEC11H3 (MGEC01H3) Quantitative Methods in Economics I
   - UGEC12H3 (MGEC02H3) Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGEC03H3, MGEC32H3, MGEC33H3, MGEC34H3)

4. (3.5 credits):

   - MGTA01H3 (MGTC07H3) Intermediate Financial Accounting I
   - MGTA02H3 (MGTC08H3) Intermediate Financial Accounting II
   - MGTA03H3 (MGTC09H3) Intermediate Management Accounting
   - MGTA04H3 (MGTC10H3) The Legal Environment of Business I
   - MGTA05H3 (MGTC04H3) The Legal Environment of Business II
   - MGTA06H3 (MGTC11H3) Canadian Income Taxation I
   - MGTA07H3 (MGTC12H3) Canadian Income Taxation II
   - MGTA08H3 (MGTC13H3) Management Information Systems
   - MGAD10H3 (MGTD06H3) Auditing

5. At least one D-level course (0.5 credit) from:

   - MGTA09H3 (MGTC14H3) Advanced Auditing
   - MGTA10H3 (MGTC15H3) Auditing in a Computer Environment
   - MGTA11H3 (MGTC16H3) Management Control Systems
   - MGTA12H3 (MGTC17H3) Advanced Financial Accounting
   - MGTA13H3 (MGTC18H3) Controversial Issues in Accounting
   - MGTA14H3 (MGTC19H3) Advanced Accounting Case Analysis

**NOTE:** In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of the Calendar.

**NOTE:** A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):

   - MGAC01H3 (MGTB04H3) Principles of Marketing
   - MGAC02H3 (MGTB05H3) Foundations of Business Management or (MGTA03H3) and (MGTA04H3)
   - MGAC03H3 (MGTA06H3) Management Communications for non-Co-op or (MGTA08H3) Management Communications for Co-op or (MGTC09H3)
   - UGEB01H3 (MGTE06H3) Introductory Financial Accounting I
   - UGEB02H3 (MGTE08H3) Introductory Financial Accounting II
   - UGEC01H3 (MGTE09H3) Introductory Management Accounting
   - UGEC02H3 (MGTE10H3) Principles of Finance
   - MGFB10H3 (MGTE11H3) Managing People and Groups in Organizations or (MGTA01H3) and (MGTA02H3) or UGEC12H3
   - MGEC91H3 (MGTC22H3) Human Resource Management
   - MGEC92H3 (MGTC23H3) Marketing Management
   - MATA30H3 (MGTC41H3) Corporate Strategy, MGAD40H3
   - MGAD50H3 (MGTC42H3) Economics for Co-op or (MGTA09H3)
   - MGAD60H3 (MGTC43H3) Financial Management (MGTA10H3)
   - MGAD70H3 (MGTC44H3) Advanced Accounting Case Analysis
   - MGAD80H3 (MGTC45H3) Auditing in a Computer Environment
   - MGAD90H3 (MGTC46H3) Advanced Auditing
   - MGTA03H3 (MGTC47H3) Leadership Skills
   - MGTA04H3 (MGTC48H3) Analysis for Decision Making
   - MGTC53H3 (MGTC49H3) Operations Management: A Mathematical Approach

2. (1.0 credit):

   - [MATA35H3] and [MATA36H3] strongly recommended, or [MATA35H3] (MGTA01H3) and [MATA36H3] (MGTA02H3)

3. (4.0 credits):

   - UGEB01H3 (MGEB03H3) Introduction to Microeconomics: A Mathematical Approach
   - UGEB02H3 (MGEB04H3) Introduction to Macroeconomics: A Mathematical Approach
   - UGEB03H3 (MGEB05H3) Price Theory: A Mathematical Approach
   - UGEB06H3 (MGEB08H3) Microeconomic Theory and Policy: A Mathematical Approach
   - UGEC11H3 (MGEC01H3) Quantitative Methods in Economics I
   - UGEC12H3 (MGEC02H3) Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGEC03H3, MGEC32H3, MGEC33H3, MGEC34H3)

4. (3.5 credits):

   - MGTA01H3 (MGTC07H3) Intermediate Financial Accounting I
   - MGTA02H3 (MGTC08H3) Intermediate Financial Accounting II
   - MGTA03H3 (MGTC09H3) Intermediate Management Accounting
   - MGTA04H3 (MGTC10H3) The Legal Environment of Business I
   - MGTA05H3 (MGTC04H3) The Legal Environment of Business II
   - MGTA06H3 (MGTC11H3) Canadian Income Taxation I
   - MGTA07H3 (MGTC12H3) Canadian Income Taxation II
   - MGTA08H3 (MGTC13H3) Management Information Systems
   - MGAD10H3 (MGTD06H3) Auditing

5. At least one D-level course (0.5 credit) from:

   - MGTA09H3 (MGTC14H3) Advanced Auditing
   - MGTA10H3 (MGTC15H3) Auditing in a Computer Environment
   - MGTA11H3 (MGTC16H3) Management Control Systems
   - MGTA12H3 (MGTC17H3) Advanced Financial Accounting
   - MGTA13H3 (MGTC18H3) Controversial Issues in Accounting
   - MGTA14H3 (MGTC19H3) Advanced Accounting Case Analysis

**NOTE:** In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of the Calendar.

**NOTE:** Students who are interested in a professional accounting designation can either pursue a Chartered Professional Accountancy or Certified General Accountancy post-graduation. Chartered Professional Accountancy (CPA) requirements are currently in existence while Chartered General Accountancy (CGA) requirements are in the process of being replaced by the Chartered Professional Accountancy (CPA) requirements. Students must strongly consider attending accounting seminars or attending a professional accounting institute while completing their degree.

**Requirements:**

- **Legacy Chartered Accountancy (CA) requirements:** Students interested in CA designation must also complete: MGAC01H3 (MGTC04H3) Corporate Strategy, MGAD40H3 (MGTD54H3)

- **Certified Management Accountancy (CMA) requirements:** Students interested in CMA designation must also complete: MGCT41H3 (MGTD54H3)
Program: SCSPE2432F - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2432F</th>
<th>SCSPE2432F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MGT,MGETCO</td>
<td>MGT,MGETCO</td>
</tr>
<tr>
<td>Organizations</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>Sections</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT AND FINANCE (BACHELOR OF BUSINESS ADMINISTRATION)</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT AND FINANCE (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>S. Ahmed</td>
<td>S. Ahmed</td>
</tr>
<tr>
<td>Description</td>
<td>Email: <a href="mailto:mgmtss@utsc.utoronto.ca">mgmtss@utsc.utoronto.ca</a></td>
<td>Email: <a href="mailto:mgmtss@utsc.utoronto.ca">mgmtss@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

The Program has a co-op option builds on the core of the Specialist in Management Program and offers a deeper and wider coverage of Finance topics. The Program courses will equip students with a comprehensive understanding of financial issues and concepts, and with a firm mastery of methodologies and problem solving skills required in modern-day finance.

Program Requirements
The Program requires the completion of 15.5 to 16.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):
- MGTAD01H3/MBTB04H3 Principles of Marketing
- MGTAD02H3/MBTB05H3 Foundations of Business Management or [MGTAD01H3/MBTA09H3] and [MGTAD02H3/MBTA09H3]
- MGTAD03H3/MBTA09H3 Management Communications for Co-op or [MGTAD04H3/MBTA09H3] and [MGTAD05H3/MBTA09H3]
- MGTAD06H3/MBTA09H3 Introductory Financial Accounting I
- MGTAD07H3/MBTA09H3 Introductory Financial Accounting II
- MGTAD08H3/MBTA09H3 Financial Accounting Principles
- MGTAD10H3/MBTA09H3 Principles of Finance
- MGTAD11H3/MBTA09H3 Managing People and Groups in Organizations or [MGTAD12H3] and [MGTAD13H3]
- MGTAD14H3/MBTA09H3 Organizational Behaviour
- MGTAD15H3/MBTA09H3 Human Resource Management
- MGTAD16H3/MBTA09H3 Marketing Management
- MGTAD17H3/MBTA09H3 Intermediate Finance
- MGTAD18H3/MBTA09H3 Leadership Skills
- MGTAD19H3/MBTA09H3 Analysis of Decision Making

Management Control Systems, MGTAD60H3/MBTA60H3 Controversial Issues in Accounting, or MGTAD64H3/MBTA64H3 Advanced Accounting Case Analysis

Chartered Professional Accountancy (CPA) requirements:
- Students interested in the CPA designation must also complete:
  - MGTAD02H3/MBTB04H3 Principles of Marketing
  - MGTAD03H3/MBTB05H3 Foundations of Business Management
  - MGTAD04H3/MBTB06H3 Management Control Systems, MGTAD05H3/MBTB06H3 Controversial Issues in Accounting, or MGTAD06H3/MBTB06H3 Advanced Accounting Case Analysis

Certified General Accountants (CGA) requirements:
- Students who wish to be eligible for a "block transfer" of credits into CGA PACE studies must also complete:
  - MGTAD02H3/MBTB04H3 Principles of Marketing
  - MGTAD03H3/MBTB05H3 Foundations of Business Management
  - MGTAD06H3/MBTB06H3 Management Control Systems, MGTAD07H3/MBTB06H3 Controversial Issues in Accounting, or MGTAD08H3/MBTB06H3 Advanced Accounting Case Analysis

Other:
- Regardless of which professional accounting path students are interested in pursuing, they are strongly advised to refer to the web-sites of the three professional accounting organizations to be aware of their specified minimum grade requirements and any changes that may occur between updates of this program in the UTSC Calendar.

The advanced auditing courses - MGTAD02H3/MBTB04H3 Principles of Marketing and MGTAD03H3/MBTB05H3 Foundations of Business Management are part of post graduate CGA professional studies and students who take these courses as part of their degree studies should be aware that they will still be required to write CGA challenge exams.

Students who wish to be eligible for a "block transfer" of credits into CGA PACE studies must also complete:
- MGTAD02H3/MBTB04H3 Principles of Marketing
- MGTAD03H3/MBTB05H3 Foundations of Business Management
- MGTAD06H3/MBTB06H3 Management Control Systems, MGTAD07H3/MBTB06H3 Controversial Issues in Accounting, or MGTAD08H3/MBTB06H3 Advanced Accounting Case Analysis

Other:
- Regardless of which professional accounting path students are interested in pursuing, they are strongly advised to refer to the web-sites of the three professional accounting organizations to be aware of their specified minimum grade requirements and any changes that may occur between updates of this program in the UTSC Calendar.
2. (1.0 credit): 
[ECMA04H3] and [ECMA06H3] strongly recommended, or 
[ECMA05H3] and [ECMA06H3] / [E36H/A37H3]

3. At least 0.5 credit of courses emphasizing strategic management, 
chosen from: 
[MGSF04H3] / [MGTE04H3] Corporate Strategy 
[MGSF05H3] / [MGTE05H3] Public Management 
[MGSF07H3] / [MGTE07H3] Organizational Theory, Design, 
[MGSC40H3] / [MGTC40H3] Knowledge Management 
[MGSC43H3]

4. (4.0 credits): 
[ECMA01H3] / [ECMA02H3] Introduction to Microeconomics: A Mathematical Approach 
[ECMA05H3] / [ECMA06H3] Price Theory: A Mathematical Approach 
[MGEB02H3] / [MGEB03H3] Quantitative Methods in Economics I 
[MGEB03H3] / [MGEB04H3] Quantitative Methods in Economics II and 
1 full credit of C-level Economics for Management Studies courses (excluding 
MGSC03H3, MGSC04H3, MGSC05H3, MGSC06H3, MGSC07H3)

5. (1.0 credit): 
[MGSC08H3] / [MGSC09H3] Introduction to Derivative Markets 

6. At least 2.0 full credits from: 
[MGEB04H3] / [MGEB05H3] Money and Banking 
[MGSC03H3] / [MGSC04H3] Personal Financial Management 
[MGSC05H3] / [MGSC06H3] International Financial Management 

NOTE: In selecting options and electives, students should refer to the guidelines for 
program breadth and depth found in the Degree Requirements section of this Calendar.

Program notes/tables

Program: SCSPE2432H - Compare

Code
SCSPE2432H

SCSPE2432H

Owning Organizations
MGT,MGTEC

MGT,MGTEC

Sections
Management

Management

Title
SPECIALIST PROGRAM IN MANAGEMENT AND HUMAN RESOURCES (BACHELOR OF BUSINESS ADMINISTRATION)

SPECIALIST PROGRAM IN MANAGEMENT AND HUMAN RESOURCES (BACHELOR OF BUSINESS ADMINISTRATION)

ROSI Title
Same as Calendar Title

Same as Calendar Title

Description
Supervisor: S. Ahmed Email: spsahmed@utsc.utoronto.ca

Academic Director: S. Ahmed Email: s.ahmed@utsc.utoronto.ca

This Program which has a co-op option is designed to give students a broad exposure to 
all functional areas of Management as well as specialization in the area of Human

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
all functional areas of Management as well as specialization in the area of Human Resource Management (HRM). HRM is an area that encompasses topics such as recruitment and selection, performance management, compensation, and industrial relations. By taking a B.B.A. with a specialist in HRM, you will be qualified to work in any area of Human Resource Management, to take a graduate degree in HRM (potentially with advance standing), and you will be well prepared for the CHRP certification exam required by many organizations for upper-level HR positions. In order to qualify for CHRP certification, you must maintain an average of at least 70% across the 9 courses required by CHRP and at least 65% in each of those 9 courses.

By completing this Specialist Program in Management and Human Resources, you will cover the nine required CHRP courses.

Program Requirements
The Program requires the completion of 15.5 to 16.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):
   - MGTA01H3 (MGTA02H3, MGTA03H3) Principles of Marketing
   - MGTA02H3 Foundations of Business Management or (MGTA01H3, MGTA03H3) and (MGTA04H3)
   - MGTC53H3 Management Communications for Co-op or (MGTA03H3, MGTC59H3) Management Communications for Non-Co-op or (MGTA04H3)
   - MGTD22H3 (MGTD26H3) Introductory Financial Accounting I
   - MGTD23H3 (MGTD27H3) Introductory Financial Accounting II
   - MGTD25H3 (MGTD28H3) Introductory Management Accounting
   - MGSC01H3 Principles of Finance
   - MGSC02H3 Managing People and Organizations or (MGTA03H3, MGTA04H3)
   - MGSC03H3 Intermediate Finance
   - MGSC04H3 (MGSC05H3) Leadership Skills
   - MGSC10H3 (MGSC11H3) Operations Management: A Mathematical Approach

2. (1.0 credit):
   - MGSC05H3 (MGTA01H3, MGTA03H3) and (MGTA02H3, MGTA04H3) strongly recommended, or (MGSC05H3, MGTA01H3 and MGTA02H3, MGTA03H3, MGTA04H3)

3. At least 0.5 credit of courses emphasizing strategic management, chosen from:
   - MGSC32H3 (MGSC33H3, MGSC34H3) Corporate Strategy
   - MGSC34H3 (MGSC35H3) Management Communications for Co-op or (MGTA35H3) Management Communications for Non-Co-op or (MGTA36H3, MGTA37H3) Management Communications for Non-Co-op, or (MGTA38H3, MGTA39H3) Management Communications for Co-op or (MGTA30H3) Management Communications for Non-Co-op or (MGTA31H3, MGTA32H3) Management Communications for Non-Co-op or (MGTA33H3)
   - MGSC35H3 (MGSC36H3) New Ways of Work: Consulting, Contracting & Freelancing
   - MGSC22H3 (MGSC23H3) Entrepreneurship
   - MGSC23H3 (MGSC24H3) New Venture Creation and Planning
   - MGSC31H3 (MGSC32H3) The Legal Environment of Business I
   - MGSC33H3 (MGSC34H3) Event and Sponsorship Management
   - MGSC32H3 (MGSC33H3) The Legal Environment of Business II
   - MGSC43H3 (ECBM43H3, ECO34H3) Organization Strategies
   - MGSD10H3 (MGSD11H3) Knowledge Management
   - MGSC50H3 (MGSC51H3) Business and Industrial Relations

4. (4.0 credits):
   - ECOA04H3 (ECMA04H3) Introduction to Microeconomics: A Mathematical Approach
   - ECOA06H3 (ECMA06H3) Introduction to Microeconomics: A Mathematical Approach
   - ECOB03H3 (ECMB03H3) Principles of Macroeconomics: A Mathematical Approach
   - ECOB04H3 (ECMB04H3) Macroeconomic Theory and Policy: A Mathematical Approach
   - ECOB11H3 (ECMB11H3) Quantitative Methods in Economics I
   - ECOB12H3 (ECMB12H3) Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGEB06H3, MGEB12H3, MGEC92H3, MGMC30H3, MGSC20H3, MGSC22H3)

5. (3.0 credits):
   - MGSC05H3 (MGSC33H3) Introduction to Industrial Relations
   - MGSC22H3 (MGSC24H3) Occupational Health and Safety Management

By completing this Specialist Program in Management and Human Resources, you will cover the nine required CHRP courses.

Program Requirements
The Program requires the completion of 15.5 to 16.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):
   - MGTA01H3 (MGTA02H3, MGTA03H3) Principles of Marketing
   - MGTA02H3 Foundations of Business Management or (MGTA01H3, MGTA03H3) and (MGTA04H3)
   - MGTA03H3 Management Communications for Co-op or (MGTA04H3)
   - MGTA04H3 Management Communications for Non-Co-op or (MGTA03H3)
   - MGTA05H3 Introductory Financial Accounting I
   - MGTA06H3 Introductory Financial Accounting II
   - MGTA07H3 Internally Managed Accounting
   - MGTA08H3 Principles of Finance
   - MGTA25H3 Managing People and Groups in Organizations or (MGTC33H3, MGTC34H3)
   - MGTA26H3 Intermediate Finance
   - MGSC01H3 Leadership Skills
   - MGSC10H3 (MGSC11H3) Operations Management: A Mathematical Approach

2. (1.0 credit):
   - MGTA01H3 and MGTA03H3 strongly recommended, or (MGTA01H3, MGTA02H3, MGTA03H3, MGTA04H3)

3. At least 0.5 credit of courses emphasizing strategic management, chosen from:
   - MGTA01H3 (MGTA02H3, MGTA03H3) and (MGTA04H3)
   - MGTA03H3 (MGTA04H3) Foundations of Business Management or (MGTA01H3, MGTA02H3, MGTA04H3)
   - MGTA04H3 Management Communications for Co-op or (MGTA03H3)
   - MGTA05H3 Introductory Financial Accounting I
   - MGTA06H3 Introductory Financial Accounting II
   - MGTA07H3 Internally Managed Accounting
   - MGTA08H3 Principles of Finance
   - MGTA25H3 Managing People and Groups in Organizations or (MGTC33H3, MGTC34H3)
   - MGTA26H3 Intermediate Finance
   - MGSC01H3 Leadership Skills
   - MGSC10H3 (MGSC11H3) Operations Management: A Mathematical Approach

4. (4.0 credits):
   - MGEC92H3 (MGEC93H3) Introduction to Microeconomics: A Mathematical Approach
   - MGEC92H3 (MGEC93H3) Introduction to Microeconomics: A Mathematical Approach
   - MGEC92H3 (MGEC93H3) Principles of Macroeconomics: A Mathematical Approach
   - MGEC92H3 (MGEC93H3) Quantitative Methods in Economics I
   - MGEC92H3 (MGEC93H3) Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGEB06H3, MGEB12H3, MGEC92H3, MGMC30H3, MGSC20H3, MGSC22H3)

5. (3.0 credits):
   - MGSC01H3 (MGSC02H3) Introduction to Industrial Relations
   - MGSC22H3 (MGSC24H3) Occupational Health and Safety Management
NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of this Calendar.

Program: SCMAJ0220 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SOMA0222</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning Organs</td>
<td>BGYS,BIO</td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN MOLECULAR BIOLOGY, IMMUNOLOGY AND DISEASE</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisors: TBA, Email: TBA</td>
</tr>
</tbody>
</table>

This program provides training and background in general biology with the opportunity to concentrate on courses in upper years that are related to immunology, infection and disease. Upper year courses are available in microbiology, immunology, biochemistry and pathobiology of disease. This program is suitable for students with an interest in molecular biology and disease.

Program Requirements

The program consists of 8.0 credits. To complete their degree, students shall combine this Major program with another Major program, or two Minor programs (see section entitled Combining Majors in Biology in the preamble to the description of Biological Sciences programs). When selecting their course of studies, students should refer to the University of Toronto guidelines for program breadth and depth (see the Degree Requirements section of this Calendar).

Required Courses and Suggested Sequence:

First Year

1.0 Credit of Introductory Biology Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOA01H3</td>
<td>Life on Earth: Unifying Principles</td>
</tr>
<tr>
<td>BIOA02H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

0.5 Credit in Calculus or Statistics

Choose from:

- MAT235H1 Calculus I for Biological and Physical Sciences
- MAT240H1 Calculus II for Biological and Physical Sciences
- STA240H1 Statistics I
- STA244H1 Data Analysis in Psychology

Second Year

2.5 Credits of Biology Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCS11H3</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BCR11H3</td>
<td>Molecular Aspects of Cellular and Genetic Processes</td>
</tr>
<tr>
<td>BCR12H3</td>
<td>Animal Physiology</td>
</tr>
<tr>
<td>BCS26H3</td>
<td>Ecology</td>
</tr>
<tr>
<td>BCS34H3</td>
<td>Evolutionary Biology</td>
</tr>
</tbody>
</table>

0.5 Credit in a Biology Core Lab

Choose From:

- BCS26H3 Cell and Molecular Biology Laboratory
- BCS27H3 Animal Physiology Laboratory
- BCS27H4 Human Development and Anatomy

Program Requirements

This program consists of 8.0 credits. To complete their degree, students shall combine this Major program with another Major program, or two Minor programs (see section entitled Combining Majors in Biology in the preamble to the description of Biological Sciences programs). When selecting their course of studies, students should refer to the University of Toronto guidelines for program breadth and depth (see the Degree Requirements section of this Calendar).

Required Courses and Suggested Sequence:

First Year

1.0 Credit of Introductory Biology Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOA01H3</td>
<td>Life on Earth: Unifying Principles</td>
</tr>
<tr>
<td>BIOA02H3</td>
<td>Life on Earth: Form, Function and Interactions</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

0.5 Credit in Calculus or Statistics

Choose from:

- MAT235H1 Calculus I for Biological and Physical Sciences
- MAT240H1 Calculus II for Biological and Physical Sciences
- STA240H1 Statistics I
- STA244H1 Data Analysis in Psychology

Second Year

2.5 Credits of Biology Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCS11H3</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BCR11H3</td>
<td>Molecular Aspects of Cellular and Genetic Processes</td>
</tr>
<tr>
<td>BCR12H3</td>
<td>Animal Physiology</td>
</tr>
<tr>
<td>BCS26H3</td>
<td>Ecology</td>
</tr>
<tr>
<td>BCS34H3</td>
<td>Evolutionary Biology</td>
</tr>
</tbody>
</table>

0.5 Credit in a Biology Core Lab

Choose From:

- BCS26H3 Cell and Molecular Biology Laboratory
- BCS27H3 Animal Physiology Laboratory
- BCS27H4 Human Development and Anatomy
## Program: SCSPE2432I - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2432</th>
<th>SCSPE2432</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MGT, MGTEC</td>
<td>MGT, MGTEC</td>
</tr>
<tr>
<td>Sections</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT AND INFORMATION TECHNOLOGY (BACHELOR OF BUSINESS ADMINISTRATION)</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT AND INFORMATION TECHNOLOGY (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>S. Ahmed E-mail: <a href="mailto:sahmed@utsc.utoronto.ca">sahmed@utsc.utoronto.ca</a></td>
<td>S. Ahmed E-mail: <a href="mailto:sahmed@utsc.utoronto.ca">sahmed@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

This program, which has a co-op option, is designed to give students a broad exposure to all functional areas of Management as well as a solid grounding in Computer Science. Please see the section regarding work term requirements for specific details on courses required before each work term.

### Program Requirements

The Program requires the completion of 18.5 to 19.5 credits as part of a twenty-credit B.B.A. degree.

**Note:** A single course may only be used once to fulfill one of the following requirements:

1. **(7.0 to 8.0 credits):**
   - MGTA04H3 / MGTC08H3 Foundations of Business Management
   - MGTB05H3 / MGTC09H3 Introductory Management Accounting
   - MGTB06H3 / MGTC90H3 Introduction to Management Accounting
   - MGTB09H3 / MGTC22H3 Human Resource Management
   - MGTB10H3 / MGTC09H3 Marketing Management
   - MGTA05H3 / MGTC90H3 Leadership Skills

---

### 1.0 Credit of Required C-level Courses

- BIOC12H3 Cell Biology: Protein from Life to Death
- BIOC13H3 Biochemistry I: Proteins & Enzymes
- BIOC14H3 Biochemistry II: Bioenergetics and Metabolism
- BIOC15H3 Genetics
- BIOC16H3 Animal Developmental Biology
- BIOC17H3 Pathology of Human Disease

### 0.5 Credit of Additional D-level Biology Courses

Choose from:
- BIOC11H3 Seminars in Cellular Microbiology
- BIOC12H3 Epigenetics in Health and Disease
- BIOC21H3 Special Topics in Cell Biology
- BIOC22H3 Genomics
- BIOC23H3 Fungal Biology and Pathogenesis
- BIOC24H3 Molecular Endocrinology
- BIOC25H3 Pathobiology of Human Disease
- BIOC26H3 Plant Development and Biotechnology

Choose from:
- BIOC13H3 Biomedical Genetics
- BIOC14H3 Immunology
- BIOC15H3 Microbiology
- BIOC16H3 Plant Development and Biotechnology
- BIOC17H3 Animal Developmental Biology
- BIOC18H3 Pathobiology of Human Disease

## Program Requirements

The Program requires the completion of 18.5 to 19.5 credits as part of a twenty-credit B.B.A. degree.

**Note:** A single course may only be used once to fulfill one of the following requirements:

1. **(7.0 to 8.0 credits):**
   - MGTA04H3 / MGTC08H3 Foundations of Business Management
   - MGTB05H3 / MGTC09H3 Introductory Management Accounting
   - MGTB06H3 / MGTC90H3 Introduction to Management Accounting
   - MGTB09H3 / MGTC22H3 Human Resource Management
   - MGTB10H3 / MGTC09H3 Marketing Management
   - MGTA05H3 / MGTC90H3 Leadership Skills

---
2. (1.0 credit): MATA30H3, strongly recommended or MATA33H3, A31H3 and MATA35H3.

3. (5.0 credits):
   - CSCA48H3: Introduction to Computer Programming
   - CSCA49H3: Introduction to Computer Science
   - CSCA67H3: Discrete Mathematics for Computer Scientists
   - CSCB07H3: Software Design
   - CSCB20H3: Software Tools and Systems Software
   - CSCB36H3: Introduction to Databases and Web Applications
   - CSCB98H3: Introduction to the Theory of Computation
   - CSCC01H3: Introduction to Software Engineering
   - MATA30H3: Linear Algebra I
   - MATA35H3: Linear Algebra II

4. (4.0 credits):
   - MATA32H3: Linear Algebra I
   - MATA35H3: Linear Algebra II
   - MGEC91H3: Introduction to Microeconomics: A Mathematical Approach
   - MGEC92H3: Introduction to Microeconomics: A Mathematical Approach
   - MGEC93H3: Price Theory: A Mathematical Approach
   - ECMA04H3: Introduction to Microeconomics: A Mathematical Approach
   - ECMA06H3: Introduction to Macroeconomics: A Mathematical Approach
   - ECMB02H3: Price Theory: A Mathematical Approach
   - ECMB06H3: Macroeconomic Theory and Policy: A Mathematical Approach
   - MGTC59H3: Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGEA02H3, MGEA06H3, MGTC74H3, MGTC75H3)

5. (0.5 credit):
   - MGSC14H3: Social Impact of Information Technology or MGSC15H3 (MGTO5H3) Management Ethics

6. 1.0 credits at the D-level in Management, Economics or CSC courses.

NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of this Calendar.

Program Requirements
This program consists of 14.5 required credits including at least 4.0 credits at the C- or D-level of which at least 1.0 must be at the D-level. In selecting options and electives, students should refer to the University of Toronto guidelines for program breadth and depth found in the Degree Requirements section of this Calendar. It is advised that including electives, students undertake further studies at the professional or graduate level.

Program Requirements
This program consists of 14.5 required credits including at least 4.0 credits at the C- or D-level of which at least 1.0 must be at the D-level.

A. Required Courses

Supervisor: I. Stehlik. Email: integrative.biology@utoronto.ca
In today’s rapidly changing world, the development of solutions to combat some of the most pressing global challenges such as climate change, emerging diseases, hunger and species extinction, requires an integrative approach in which expertise is drawn from disparate biological and other disciplines. The specialist program in Integrative Biology provides the student with a solid knowledge base in key core and foundational areas of biology while also providing a breadth of knowledge to support more specialized studies and focused training in a range of disciplines for example, see below under Routes to Specialization. Students who complete this program will be well positioned for a career in many aspects of the biological sciences or to undertake further studies at the professional or graduate level.
A. Required Courses

1.0 Credit of Introductory Biology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOA01H3</td>
<td>Introduction to Biology IA</td>
</tr>
<tr>
<td>BIOA02H3</td>
<td>Introduction to Biology II</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

1.0 Credit in Mathematics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATA30H3</td>
<td>Calculus I for Biological and Physical Sciences</td>
</tr>
<tr>
<td>MATA31H3</td>
<td>Calculus II for Biological Sciences</td>
</tr>
</tbody>
</table>

0.5 Credit in Physics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYA10H3</td>
<td>0.5 Credit in Physics</td>
</tr>
<tr>
<td>PHYA11H3</td>
<td>0.5 Credit in Physics</td>
</tr>
</tbody>
</table>

0.5 Credit in Computer Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA08H3</td>
<td>0.5 Credit in Computer Science</td>
</tr>
<tr>
<td>CSCA20H3</td>
<td>Introduction to Scientific Computing (most appropriate course for non-computer science students)</td>
</tr>
<tr>
<td>PSCB57H3</td>
<td>Introduction to Programming (most appropriate course for computer science students)</td>
</tr>
</tbody>
</table>

Second Year

3.0 Credits of Biology Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB11H3</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BIOB12H3</td>
<td>Molecular Aspects of Cellular and Genetic Processes</td>
</tr>
<tr>
<td>BIOB31H3</td>
<td>Plant Physiology</td>
</tr>
<tr>
<td>BIOB32H3</td>
<td>Physiology of Plants and Society</td>
</tr>
<tr>
<td>BIOB33H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOB34H3</td>
<td>Biochemistry I: Proteins and Enzymes</td>
</tr>
<tr>
<td>BIOB35H3</td>
<td>Bioenergetics and Metabolism</td>
</tr>
<tr>
<td>BIOB36H3</td>
<td>Practical Approaches to Biochemistry</td>
</tr>
<tr>
<td>BIOB37H3</td>
<td>Human Physiology I</td>
</tr>
<tr>
<td>BIOB38H3</td>
<td>Human Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOB39H3</td>
<td>Human Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOB41H3</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIOB43H3</td>
<td>Environmental Toxicology</td>
</tr>
<tr>
<td>BIOB44H3</td>
<td>Animal Physiology I</td>
</tr>
<tr>
<td>BIOB46H3</td>
<td>Animal Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOB47H3</td>
<td>Animal Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOB48H3</td>
<td>Neurobiology</td>
</tr>
<tr>
<td>BIOB49H3</td>
<td>Foundations in Epidemiology</td>
</tr>
<tr>
<td>BIOB51H3</td>
<td>Learning and Motivation</td>
</tr>
<tr>
<td>BIOB52H3</td>
<td>Sensory and Motor Systems</td>
</tr>
</tbody>
</table>

0.5 Credit of Biology Core Labs

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB11L3</td>
<td>Cell and Molecular Biology Laboratory</td>
</tr>
<tr>
<td>BIOB12L3</td>
<td>Animal Physiology Laboratory</td>
</tr>
<tr>
<td>BIOB13L3</td>
<td>Human Development and Anatomy Laboratory</td>
</tr>
<tr>
<td>BIOB14L3</td>
<td>Ecology and Evolutionary Biology Laboratory</td>
</tr>
<tr>
<td>BIOB15L3</td>
<td>Evolutionary Biology Laboratory</td>
</tr>
</tbody>
</table>

0.5 Credit in Statistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAB22H3</td>
<td>Statistics I</td>
</tr>
<tr>
<td>STAB23H3</td>
<td>Data Analysis in Psychology</td>
</tr>
</tbody>
</table>

Third Year

1.5 Credits of Biology Foundation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC15H3</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIOC17H3</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIOC18H3</td>
<td>Animal Behaviour</td>
</tr>
</tbody>
</table>

0.5 Credit of Advanced Courses in Physiology, Biochemistry and Neurobiology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC12H3</td>
<td>Biochemistry I: Proteins and Enzymes</td>
</tr>
<tr>
<td>BIOC13H3</td>
<td>Biochemistry II: Bioenergetics and Metabolism</td>
</tr>
<tr>
<td>BIOC14H3</td>
<td>Practical Approaches to Biochemistry</td>
</tr>
<tr>
<td>BIOC15H3</td>
<td>Human Physiology I</td>
</tr>
<tr>
<td>BIOC16H3</td>
<td>Human Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOC17H3</td>
<td>Human Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOC18H3</td>
<td>Neurobiology</td>
</tr>
<tr>
<td>BIOC19H3</td>
<td>Foundations in Epidemiology</td>
</tr>
<tr>
<td>BIOC20H3</td>
<td>Learning and Motivation</td>
</tr>
<tr>
<td>BIOC21H3</td>
<td>Sensory and Motor Systems</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Biology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC10H3</td>
<td>Introduction to Biology IA</td>
</tr>
<tr>
<td>BIOC11H3</td>
<td>Introduction to Biology II</td>
</tr>
</tbody>
</table>

1.0 Credit of Introductory Chemistry Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMA10H3</td>
<td>Introductory Chemistry I: Structure and Bonding</td>
</tr>
<tr>
<td>CHMA11H3</td>
<td>Introductory Chemistry II: Reactions and Mechanisms</td>
</tr>
</tbody>
</table>

1.0 Credit in Mathematics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATA30H3</td>
<td>Calculus I for Biological and Physical Sciences</td>
</tr>
<tr>
<td>MATA31H3</td>
<td>Calculus II for Biological Sciences</td>
</tr>
</tbody>
</table>

0.5 Credit in Physics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYA10H3</td>
<td>0.5 Credit in Physics</td>
</tr>
<tr>
<td>PHYA11H3</td>
<td>0.5 Credit in Physics</td>
</tr>
</tbody>
</table>

0.5 Credit in Computer Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCA08H3</td>
<td>0.5 Credit in Computer Science</td>
</tr>
<tr>
<td>CSCA20H3</td>
<td>Introduction to Scientific Computing (most appropriate course for non-computer science students)</td>
</tr>
<tr>
<td>PSCB57H3</td>
<td>Introduction to Programming (most appropriate course for computer science students)</td>
</tr>
</tbody>
</table>

Second Year

3.0 Credits of Biology Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB11H3</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BIOB12H3</td>
<td>Molecular Aspects of Cellular and Genetic Processes</td>
</tr>
<tr>
<td>BIOB31H3</td>
<td>Plant Physiology</td>
</tr>
<tr>
<td>BIOB32H3</td>
<td>Physiology of Plants and Society</td>
</tr>
<tr>
<td>BIOB33H3</td>
<td>Animal Behaviour</td>
</tr>
<tr>
<td>BIOB34H3</td>
<td>Biochemistry I: Proteins and Enzymes</td>
</tr>
<tr>
<td>BIOB35H3</td>
<td>Bioenergetics and Metabolism</td>
</tr>
<tr>
<td>BIOB36H3</td>
<td>Practical Approaches to Biochemistry</td>
</tr>
<tr>
<td>BIOB37H3</td>
<td>Human Physiology I</td>
</tr>
<tr>
<td>BIOB38H3</td>
<td>Human Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOB39H3</td>
<td>Human Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOB41H3</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIOB43H3</td>
<td>Environmental Toxicology</td>
</tr>
<tr>
<td>BIOB44H3</td>
<td>Animal Physiology I</td>
</tr>
<tr>
<td>BIOB46H3</td>
<td>Animal Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOB47H3</td>
<td>Animal Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOB48H3</td>
<td>Neurobiology</td>
</tr>
<tr>
<td>BIOB49H3</td>
<td>Foundations in Epidemiology</td>
</tr>
<tr>
<td>BIOB51H3</td>
<td>Learning and Motivation</td>
</tr>
<tr>
<td>BIOB52H3</td>
<td>Sensory and Motor Systems</td>
</tr>
</tbody>
</table>

0.5 Credit of Biology Core Labs

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB11L3</td>
<td>Cell and Molecular Biology Laboratory</td>
</tr>
<tr>
<td>BIOB12L3</td>
<td>Animal Physiology Laboratory</td>
</tr>
<tr>
<td>BIOB13L3</td>
<td>Human Development and Anatomy Laboratory</td>
</tr>
<tr>
<td>BIOB14L3</td>
<td>Ecology and Evolutionary Biology Laboratory</td>
</tr>
<tr>
<td>BIOB15L3</td>
<td>Evolutionary Biology Laboratory</td>
</tr>
</tbody>
</table>

0.5 Credit in Statistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAB22H3</td>
<td>Statistics I</td>
</tr>
<tr>
<td>STAB23H3</td>
<td>Data Analysis in Psychology</td>
</tr>
</tbody>
</table>

Third Year

1.5 Credits of Biology Foundation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC15H3</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIOC17H3</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIOC18H3</td>
<td>Animal Behaviour</td>
</tr>
</tbody>
</table>

0.5 Credit of Advanced Courses in Physiology, Biochemistry and Neurobiology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC12H3</td>
<td>Biochemistry I: Proteins and Enzymes</td>
</tr>
<tr>
<td>BIOC13H3</td>
<td>Biochemistry II: Bioenergetics and Metabolism</td>
</tr>
<tr>
<td>BIOC14H3</td>
<td>Practical Approaches to Biochemistry</td>
</tr>
<tr>
<td>BIOC15H3</td>
<td>Human Physiology I</td>
</tr>
<tr>
<td>BIOC16H3</td>
<td>Human Physiology II: Lecture and Laboratory</td>
</tr>
<tr>
<td>BIOC17H3</td>
<td>Human Physiology II: Lecture</td>
</tr>
<tr>
<td>BIOC18H3</td>
<td>Neurobiology</td>
</tr>
<tr>
<td>BIOC19H3</td>
<td>Foundations in Epidemiology</td>
</tr>
<tr>
<td>BIOC20H3</td>
<td>Learning and Motivation</td>
</tr>
<tr>
<td>BIOC21H3</td>
<td>Sensory and Motor Systems</td>
</tr>
</tbody>
</table>
A key advantage of the specialist program in Integrative Biology is the ability for students to readily specialize in areas of particular interest. Please note that students are not required to follow any of these suggested routes. They are provided for guidance only.

### B. Routes to Specialization (optional)

- For students with a particular interest in “The Impact of Environment and Climate Change on the Biology of Ecosystems”, you should consider including some or all of the following courses in your program: BIOC37H3

### 0.5 Credit of Advanced Courses in Ecology and Conservation

Choose from:
- BIOC37H3 Tropical Biodiversity Field Course
- BIOC24H3 Ecology Field Course
- BIOC39H3 Biological Consequences of Global Change
- BIOC46H3 Advanced Population Ecology
- BIOC41H3 Community Ecology and Environmental Biology
- BIOC21H3 Role of Zoos in Conservation
- BIOC24H3 Conservation Biology
- BIOC67H3 Inter-University Biology Field Course
- EESC30H3 Biodiversity and Biogeography
- BIOC32H3 Special Topics in Biodiversity and Systematics
- BIOC26H3 Spatial Ecology
- BIOC24H3 Species and Speciation
- BIOC24H3 Causes and Consequences of Diversity

### 0.5 Credit of Advanced Courses in Genes and Development

Choose from:
- BIOC35H3 Cell Biology
- BIOC14H3 Genetics, Environment and Behaviour
- BIOC18H3 Evolutionary Genetics and Genomics
- BIOC19H3 Animal Developmental Biology
- BIOC15H3 Plant Development
- BIOC16H3 Epigenetics in Health and Disease
- BIOC45H3 Advanced Molecular Biology Laboratory
- BIOC25H3 Molecular Biology of the Stress Response
- BIOC26H3 Special Topics in Cell Biology
- BIOC28H3 Genomics

### 0.5 Credit of Advanced Courses in Organismal Biology

Choose from:
- BIOC22H3 Vertebrate Histology: Cells and Tissues
- BIOC22H3 Vertebrate Histology: Organs
- ANTD22H3 Theory and Methodology of Primatology
- ANTD22H3 Deconstructing Epidemics
- BIOC31H3 Microbial Biogeochemistry
- BIOC31H3 Plants: Life on the Edge
- BIOC38H3 Plants and Society
- BIOC24H3 Seminars in Cellular Microbiology
- BIOC28H3 Fungal Biology and Pathogenesis
- BIOC29H3 Comparative Animal Physiology
- BIOC29H3 Biology of Plant Stress
- BIOC28H3 Animal Communication
- BIOC28H3 Ornithology and Herpetology
- BIOC28H3 Special Topics in Behavioural Ecology

### 3.0 Credits of Additional C- or D-Level Biology Courses

Choose from:
Any BIC (formerly BGY) C- or D-level courses offered by the department.

**Note:** This includes the Biology Team Research, Supervised Studies and Directed Research courses (BIOC35H3, BIOC35H3, BIOC35H3, and BIOC35H3).

**Note:** NROD34H3 (Neuroethology), BIOC35H3 (Biodiversity and Biogeography) and BIOC35H3 (Microbial Biogeochemistry) may also be used toward fulfilling this requirement, if not already used toward fulfilling one of the other requirements above.

### B. Routes to Specialization (optional)

A key advantage of the specialist program in Integrative Biology is the ability for students to readily specialize in areas of particular interest. Please note that students are not required to follow any of these suggested routes. They are provided for guidance only.

- For students with a particular interest in “The Impact of Environment and Climate Change on the Biology of Ecosystems”, you should consider including some or all of the following courses in your program: BIOC37H3

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml
C. **Complementary Elective Courses (optional)**

For students with a particular interest in "The Conservation and Biodiversity of Organisms", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BCG55H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).

- For students with a particular interest in "Ecophysiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "The Evolution of Development" (a.k.a. "evo/devo"), you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Infection and Disease" or "clinically-oriented topics", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Physiology", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
- For students with a particular interest in "Animal Movement and Exercise", you should consider including some or all of the following courses in your program: **BCG35H3** (Ecology Field Course), **BIOC67H3** (Inter-University Biology Field Course).
Program: SCSPE2432M - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2432M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MGT,MGETC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Management</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN MANAGEMENT AND MARKETING (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>
| Description   | Supervised: S. Ahmed  
Email: management-supervisor-studies@utsc.utoronto.ca |

The Specialist Program in Management and Marketing which has a Co-op option gives students the perspective of the overall organization and beyond. In addition to the company focus, Marketing also ensures that students take an external orientation by having an in-depth understanding of the competition and the consumer. While developing a good understanding of all the issues involved in developing marketing strategy, the student will learn to implement the tools of marketing tactics.

Program Requirements
The Program requires the completion of 15.5 to 16.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):
   - MGMA01H3 (MGTB04H3) Principles of Marketing
   - MGTA05H3 Foundations of Business Management or (MGTA01H3/MGTA03H3 and MGTA02H3/MGTA04H3)
   - MGTA35H3 Management Communications for non Co-op or MGTA36H3 Management Communications for Co-op or (MGTB36H3)
   - MGAB01H3 (MGTB05H3) Introductory Financial Accounting I
   - MGAB02H3 (MGTB06H3) Introductory Financial Accounting II
   - MGAB03H3 (MGTB03H3) Introductory Management Accounting
   - MGFB10H3 (MGTB09H3) Principles of Finance
   - MGHB02H3 Managing People and Groups in Organizations or (MGTB02H3 and MGTB03H3 Principles of Management)
   - MGTC02H3 Medical Anthropology, Biological and Demographic Perspectives
   - MGTC03H3 Medical Osteology, Public Health Perspectives on Human Skeletal Health
   - MGTC04H3 Medical Primatology, Public Health Perspectives on Zoonotic Diseases
   - MGTB01H3 Bio-Organic Chemistry
   - MGTB02H3 From Hunting, Fishing to the Food to the Plate
   - MGTB03H3 Food, Health, Anthropology, New Discoveries
   - MGTB04H3 Politics of Canadian Health Studies
   - MGTB05H3 History of Animals and People
   - MGTB06H3 Canadian Environmental Policy
2. (1.0 credit):
[MATA30H3 and MATA32H3] strongly recommended, or
[MATA36H3/A31H3 and MATA36H3/A36H3/A37H3]

3. At least 0.5 credit of courses emphasizing strategic management,
chosen from:

MGSC01H3/MGTC01H3: Corporate Strategy
MGSC02H3/MGTC02H3: Public Management
MGSC26H3/MGTC26H3: Management Ethics
MGSC28H3/MGTC28H3: Entrepreneurship
MGSC29H3/MGTC29H3: New Venture Creation and Planning
MGSC30H3/MGTC30H3: The Legal Environment of Business I
MGSC31H3/MGTC31H3: The Legal Environment of Business II
MGSC32H3/MGTC32H3: Organization Strategies
MGSC33H3/MGTC33H3: Knowledge Management
MGSC34H3/MGTC34H3: Management Control Systems

2. (1.0 credit):
[MATA30H3 and MATA32H3] strongly recommended, or
[MATA36H3/A31H3 and MATA36H3/A36H3/A37H3]

3. At least 0.5 credit of courses emphasizing strategic management,
chosen from:

MGSC01H3/MGTC01H3: Corporate Strategy
MGSC02H3/MGTC02H3: Public Management
MGSC26H3/MGTC26H3: Management Ethics
MGSC28H3/MGTC28H3: Entrepreneurship
MGSC29H3/MGTC29H3: New Venture Creation and Planning
MGSC30H3/MGTC30H3: The Legal Environment of Business I
MGSC31H3/MGTC31H3: The Legal Environment of Business II
MGSC32H3/MGTC32H3: Organization Strategies
MGSC33H3/MGTC33H3: Knowledge Management
MGSC34H3/MGTC34H3: Management Control Systems

4. (4.0 credits):

LGEA06H3/ECMA06H3: Introduction to Macroeconomics: A Mathematical Approach
LGER21H3/ECEB21H3: Price Theory: A Mathematical Approach
LGER12H3/ECEB12H3: Quantitative Methods in Economics II and 1 full credit of C-level Economics for Management Studies courses (excluding MGER31H1/ECCM31H1, MGER32H1/ECCM32H1, MGER33H1/ECCM33H1)

5. 6 of the following courses (3.0 credits):

LMN12H3/MGMTD12H3: Market Research
LMN13H3/MGMTD13H3: Consumer Behaviour
LMN14H3/MGMTD14H3: Product Management and Branding
LMN23H3/MGMTD23H3: Advertising: From Theory to Practice
LMN21H3/MGMTD21H3: Pricing Strategy
LMN22H3/MGMTD22H3: Sales and Distribution Management
LMN30H3/MGMTD30H3: Applied Marketing Models
LMN32H3/MGMTD32H3: Judgement and Decision Making

NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of this Calendar.

Program: SCSPE1376 - Compare

<table>
<thead>
<tr>
<th>Program</th>
<th>Code</th>
<th>Owning Organizations</th>
<th>Sections</th>
<th>Title</th>
<th>ROSI Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCSPE1376</td>
<td>CHM PHSSC</td>
<td>Chemistry</td>
<td>SPECIALIST PROGRAM IN CHEMISTRY (SCIENCE)</td>
<td>Same as Calendar Title</td>
<td>This Program is meant for students who are interested in obtaining a strong background in Chemistry.</td>
<td>Supervisor: Andre Simpson (416-287-7547) Email: <a href="mailto:andre.simpson@utoronto.ca">andre.simpson@utoronto.ca</a></td>
</tr>
<tr>
<td>SCSPE1376</td>
<td>CHM PHSSC</td>
<td>Chemistry</td>
<td>SPECIALIST PROGRAM IN CHEMISTRY (SCIENCE)</td>
<td>Same as Calendar Title</td>
<td>This Program is meant for students who are interested in obtaining a strong background in Chemistry.</td>
<td>Supervisor: Andre Simpson (416-287-7547) Email: <a href="mailto:andre.simpson@utoronto.ca">andre.simpson@utoronto.ca</a></td>
</tr>
</tbody>
</table>
Admission to Chemistry Specialist

Students may apply to this program after completing at least 4.0 FCE, including CHMA10H3, CHMA11H3, CHMA12H3, PHYA10H3, and 1.0 FCE in either MATA23H3, MATA36H3 or MATA39H3 with a cumulative grade point average (CGPA) of at least 2.0.

Application for admission to the program is made to the registrar through RSCI in April/May and July/August. See the UTSC Registrar's website for information on program (Subject POSt) selection at www.utoronto.ca/subjectpost.

Program Requirements

The Program requires completion of 14.0 full credits as follows:

First Year:
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA23H3 Linear Algebra I
- MATA36H3 Calculus I for Biological and Physical Sciences
- MATA39H3 Calculus II for Physical Sciences
- CHMA12H3 Introduction to Physics IA
- CHMA13H3 Introduction to Physics IA
- and 0.5 full credit chosen from:
  - ASTA01H3 Introduction to Astronomy and Astrophysics I: The Sun and Planets
  - EESA06H3 Environmental Hazards in all aspects of modern chemistry.
  - EESA05H3 Life on Earth: Unifying Principles
  - EESA07H3 Introductory Planet Earth

Second Year:
- CHMC20H3 Analytical Instrumentation
- CHMC21H3 Intermediate Physical Chemistry
- CHMC22H3 Organic Reaction Mechanisms or CHMC24H3 Organic Synthesis
- CHMC23H3 Organic Chemistry I
- CHMC24H3 Organic Chemistry II
- CHMC25H3 Introduction to Biochemistry
- MATA41H3 Techniques of Calculus of Several Variables
- PSCB57H3 Introduction to Scientific Computing
- STAT23H3 Statistics I

Third Year:
- CHMD90Y3 Introductory Chemistry II: Reactions and Mechanisms
- CHMD91H3 Introductory Chemistry I: Structure and Bonding
- CHMA10H3 Directed Research
- CHMA11H3 Directed Research
- CHMA12H3 Advanced Organic Chemistry Lab Course

Fourth Year:
- PSCD02H3 Current Questions in Mathematics and Science
- and 0.5 full credit in any C-level or 300-level CHM course not already taken
- and 2.0 full credits in any D-level or 400-level CHM course including one of the following courses:
  - CHMA10H3 Directed Research
  - CHMA11H3 Directed Research
  - CHMA12H3 Advanced Organic Chemistry Lab Course

Admission to Chemistry Specialist

Students may apply to this program after completing at least 4.0 FCE, including CHMA10H3, CHMA11H3, CHMA12H3, PHYA10H3, and 1.0 FCE in either MATA23H3, MATA36H3 or MATA39H3 with a cumulative grade point average (CGPA) of at least 2.0.

Application for admission to the program is made to the registrar through RSCI in April/May and July/August. See the UTSC Registrar's website for information on program (Subject POSt) selection at www.utoronto.ca/subjectpost.

Program Requirements

The Program requires completion of 14.0 full credits as follows:

First Year:
- CHMA10H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA23H3 Linear Algebra I
- MATA36H3 Calculus I for Biological and Physical Sciences
- MATA39H3 Calculus II for Physical Sciences
- CHMA12H3 Introduction to Physics IA
- CHMA13H3 Introduction to Physics IA
- and 0.5 full credit chosen from:
  - ASTA01H3 Introduction to Astronomy and Astrophysics I: The Sun and Planets
  - EESA06H3 Environmental Hazards
  - EESA05H3 Life on Earth: Unifying Principles
  - PSCB57H3 Introduction to Planet Earth
  - STAT23H3 Statistics I

Second Year:
- CHMS11H3 Chemical Structure and Spectroscopy
- CHMS13H3 Introduction to Inorganic Chemistry
- CHMS14H3 Organic Chemistry I
- CHMS24H3 Organic Chemistry II
- CHMS25H3 Introduction to Biochemistry
- MATA41H3 Techniques of Calculus of Several Variables
- PSCB57H3 Introduction to Scientific Computing
- STAT23H3 Statistics I

Third Year:
- CHMC20H3 Analytical Instrumentation
- CHMC21H3 Intermediate Physical Chemistry or CHMC24H3 Topics in Biophysical Chemistry
- CHMC22H3 Organic Reaction Mechanisms or CHMC24H3 Organic Synthesis
- CHMC23H3 Organic Chemistry I
- CHMC24H3 Organic Chemistry II
- CHMC25H3 Introduction to Biochemistry
- MATA41H3 Techniques of Calculus of Several Variables
- PSCB57H3 Introduction to Scientific Computing
- STAT23H3 Statistics I

Fourth Year:
- PSCD02H3 Current Questions in Mathematics and Science
- and 0.5 full credit in any C-level or 300-level CHM course not already taken
- and 2.0 full credits in any D-level or 400-level CHM course including one of the following courses:
  - CHMA10H3 Directed Research
  - CHMA11H3 Directed Research
  - CHMA12H3 Advanced Organic Chemistry Lab Course
Program Requirements

Total requirements: 15.0 full credits of which 1.0 must be at the D-level as follows:

First Year:
- EESC13H3 Introduction to Environmental Science
- EESB02H3 Introduction to Planet Earth
- GEOA10H3 Life on Earth: Unifying Principles
- EESD02H3 Life on Earth: Form, Function and Interactions
- CHMA15H3 Introductory Chemistry I: Structure and Bonding
- CHMA11H3 Introductory Chemistry II: Reactions and Mechanisms
- MATA30H3 Calculus I for Biological and Physical Sciences
- MATA36H3 Calculus I for Biological Sciences or MATA37H3 Calculus I for Physical Sciences or MATB32H3 Calculus II for Physical Sciences or MATA36H3 Calculus II for Mathematical Sciences
- MATA35H3 Introduction to Physics IA or MATA36H3 Introduction to Physics IB

Second Year:
- MATA37H3 Environmental Chemistry
- EESC21H3 Principles of Geomorphology
- EESC22H3 Principles of Hydrology
- EESB03H3 Principles of Soil Science
- EESB04H3 Earth History
- EESB15H3 Introduction to Scientific Computing
- EASA21H3 Statistics I

Third Year:
- EESC31H3 Geographic Information Systems and Remote Sensing
- EESB19H3 Biodiversity and Biogeography
- EESC20H3 Hydrogeology
- EESB20H3 Environmental Impact Assessment and Auditing
- EESC21H3 Geochemistry
- EESD10Y3 Principles of Glacial Sedimentology and Stratigraphy
- EESC22H3 Environmental Impact Assessment
- EESC20H3 Geocarbon
- EESC32H3 Petrology

and

0.5 credit from the following:
- EESC14H3 The Great Lakes: An Introduction to Physical Limnology
- EESC15H3 Marine Systems

Fourth Year:
1.0 full credit from the following:
- EESC29H3 Urban Environmental Problems of the Greater Toronto Area
- EESC26H3 Contaminant Hydrogeology
- EESC28H3 Climate Change Impact Assessment
- EESC29H3 Research Project in Environmental Science
- EESC24H3 Process Hydrology
- EESC37H3 Cleaning Up Our Mess: Remediation of Terrestrial and Aquatic Environments
- EESD19H3 Professional Development Seminars in Geoscience

and

1.0 full credit from any other EES courses

Strongly recommended: EESC16H3 Field Camp I or EESC27H3 Field Camp II
Program: SCSPE2432 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2432</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MGT, MGTEC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Management</td>
</tr>
<tr>
<td>Sections</td>
<td>SPECIALIST PROGRAM IN STRATEGIC MANAGEMENT [BACHELOR OF BUSINESS ADMINISTRATION]</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervised: S. Ahmed Email: <a href="mailto:mgmtss@utsc.utoronto.ca">mgmtss@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

This Program is designed to give students a broad exposure to all functional areas of Management as well as a solid grounding in Strategic Management. It covers the direction and coordination of private sector, public sector, or non-profit sector organizations. The Program requires a grounding in strategic management, while providing a variety of elective courses to appeal to students interested in any one of the three sectors.

Program Requirements

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.0 credits):
   - MGTB29H3 Principles of Marketing
   - MGTA01H3 Foundations of Business Management or [MGTA01H3/MGTA03H3] and [MGTA02H3/MGTA04H3]
   - MGTA09H3 Management Communications for non-Co-op or MGTA08H3 Management Communications for Co-op or [MGTB39H3]
   - MGTC02H3/ MGTC03H3 Introductory Financial Accounting I
   - MGTC03H3/ MGTC04H3 Introductory Financial Accounting II
   - MGTC05H3/ MGTC06H3 Introductory Management Accounting
   - MGTC08H3/ MGTC09H3 Principles of Finance
   - MGTC14H3 Managing People and Groups in Organizations or [MGTA12H3] and MGTA08H3 or MGTA09H3
   - MGTC15H3/ MGTC22H3 Human Resource Management
   - MGTA01H3/ MGTA03H3 Marketing Management
   - MGTC02H3/ MGTA04H3 Intermediate Finance
   - MGTC05H3/ MGTC06H3 Leadership Skills
   - MGTC07H3/ MGTC14H3 Analysis for Decision Making
   - MGTC08H3/ MGTC19H3 Operations Management: A Mathematical Approach

2. (1.0 credit):
   - MGTA01H3 strongly recommended, or MGTA03H3, MGTA02H3, MGTA04H3

3. At least 0.5 credit of courses emphasizing strategic management, chosen from:
   - MGTB39H3/ MGTC09H3 Management Ethics
   - MGTB39H3/ MGTC10H3 New Ventures: Creation and Planning
   - MGTC07H3/ MGTC11H3 The Legal Environment of Business I
   - MGTC08H3/ MGTC12H3 Event and Sponsorship Management
   - MGTC08H3/ MGTC13H3 The Legal Environment of Business II
   - MGTC09H3/ ECOM04H3 Organization Strategies
   - MGTC12H3/ MGTD85H4 Management Control Systems

MGTB29H3/ MGTC09H3 Professional Development Seminars in Geoscience

1.0 full credits from any other EES courses

Strongly recommended: EESC19H3 Field Camp I or EESC29H3 Field Camp II

The Management Strategy stream is designed to give students a broad exposure to all functional areas of Management as well as a solid grounding in Strategic Management, while providing a variety of elective courses to appeal to students interested in any one of the three sectors. It covers the direction and coordination of private sector, public sector, or non-profit sector organizations.

Program Requirements

Note: A single course may only be used once to fulfill one of the following requirements:

1. (7.0 to 8.5 credits):
   - MGTA01H3/ MGTA03H3 Principles of Marketing
   - MGTA02H3/ MGTA04H3 Foundations of Business Management or [MGTA01H3/MGTA03H3] and [MGTA02H3/MGTA04H3]
   - MGTA08H3/ MGTA09H3 Management Communications for non-Co-op or MGTA08H3 Management Communications for Co-op or [MGTB39H3]
   - MGTC03H3/ MGTC04H3 Introductory Financial Accounting I
   - MGTA01H3/ MGTA03H3 Introductory Financial Accounting II
   - MGTA02H3/ MGTA04H3 Introductory Management Accounting
   - MGTA05H3/ MGTA06H3 Principles of Finance
   - MGTA07H3/ MGTA08H3 Managing People and Groups in Organizations or [MGTA12H3] and MGTA08H3 or MGTA09H3
   - MGTA08H3/ MGTC22H3 Human Resource Management
   - MGTA02H3/ MGTA04H3 Marketing Management
   - MGTA04H3/ MGTA05H3 Intermediate Finance
   - MGTA05H3/ MGTA06H3 Leadership Skills
   - MGTA07H3/ MGTC14H3 Analysis for Decision Making
   - MGTA08H3/ MGTC19H3 Operations Management: A Mathematical Approach

One additional half-credit at the D-level in either Management or Economics for Core (12.5 to 13.5 credits):
4. (4.0 credits):
- MGSC24H3 (MGTC47H3) New Venture Creation and Planning
- MGSD24H3 (MGTC59H3) Management Ethics
- MGSC30H3 (MGTC40H3) Knowledge Management
- MGSC30H3 (MGTC55H3) Management Strategy
- MGSC32H3 (MGTC52H3) The Legal Environment of Business II
- MGSC35H3 (MGTC51H3) Event and Sponsorship Management
- MGSC35H3 (MGTC53H3) Corporate Strategy

5. 1.0 credit from:
- MGSD30H3 (MGTC45H3) The Changing World of Business-Government Relations
- MGSC45H3 (MGTC39H3) New Venture Creation and Planning
- MGSC45H3 (MGTC38H3) Entrepreneurship
- MGSC45H3 (MGTC37H3) Management Strategy

6. 0.5 credit from:
- MGSC03H3 (MGTC35H3) Narratives on Management
- MGSC05H3 (MGTC33H3) Event and Sponsorship Management
- MGSC05H3 (MGTC31H3) The Legal Environment of Business I
- MGSC12H3 (MGTC22H3) Corporate Strategy
- MGSC14H3 (MGTC41H3) Corporate Strategy
- MGSC22H3 (MGTC42H3) Public Management
- MGSC24H3 (MGTC43H3) Organization Strategies
- MGSC24H3 (MGTC44H3) Management Ethics

7. (1.0 credit):
- MGSD30H3 (MGTC46H3) Senior Seminar in Strategic Management
- MGSD30H3 (MGTC47H3) Seminar in Strategic Management
- MGSC35H3 (MGTC59H3) Management Ethics
- MGSC35H3 (MGTC52H3) The Legal Environment of Business II
- MGSC35H3 (MGTC53H3) Corporate Strategy
- MGSC35H3 (MGTC54H3) Management Strategy
- MGSD35H3 (MGTC55H3) Management Strategy

NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the "Core Requirements" section of the Calendar.
Program: SCSPE2431J - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE2431J</th>
<th>SCSPE2431J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>MGT,MGTEC</td>
<td>MGT,MGTEC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td>Sections</td>
<td>SPECIALIST CO-OPERATIVE PROGRAM IN MANAGEMENT AND INTERNATIONAL BUSINESS (BACHELOR OF BUSINESS ADMINISTRATION)</td>
<td>SPECIALIST CO-OPERATIVE PROGRAM IN MANAGEMENT AND INTERNATIONAL BUSINESS (BACHELOR OF BUSINESS ADMINISTRATION)</td>
</tr>
<tr>
<td>Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>ROSI Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The MIB is an exclusive co-op program that is designed to give students a broad exposure to all functional areas of Management while providing a unique understanding of the business world in a global context. Academically, the program requires a language development component and a number of specially designed courses emphasizing international business. Through the high-level curricular programming as well as the practical experiences abroad, students will experience an emphasis on cross-cultural communications and leadership while simultaneously maintaining a quantitative and analytical focus. Students will also have the opportunity to maintain a more general academic approach, or use their electives to focus in on a specific discipline within the Management Program.

Program Admission:
Enrolment in the program is limited, and students may only apply directly from secondary school. Under normal circumstances, transfer students and international students will not be considered for admission into the MIB program. The MIB is only offered as a Co-op program, and admissions will be based on the applicant's academic performance as well as a supplementary application and interview process. Interviews will be held in February, March and April for students who pass the initial screening. Successful students will demonstrate strength in academics, extra-curricular and volunteer activities, as well as an interest and focus on developing global competencies. For further information please see the Co-operative Programs section in this Calendar at www.utsc.utoronto.ca/management and the MIB section of the Management website: http://www.utsc.utoronto.ca/~mgmt/ManagementInternationalBusinessProgram.html

MIB Prep Course and Study Term:
Students will complete a non-credit international co-op prep course in their first year prior to the first approved work term. Students are also required to complete one study term outside of Canada, typically in their second or third year with an approved partner University, and will be required to complete some of the program requirements during this time. Although scholarships may be available, students are expected to budget for the additional costs of studying abroad.

Work Term:
This program requires four years of study along with three approved academically related.
work terms. At least one of the work terms must be outside of Canada. Students must complete 7.0 credits prior to the commencement of their first work term, which will likely be in Canada. The location of the international placements will vary according to student interest, availability of positions, practicability and safety of an area, as well as established international relationships. For further information about status in the co-op program, fees, and regulations, please see the Co-operative Programs section in this Calendar.

Program Requirements:
The Program requires the completion 17.0 to 17.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfil one of the following requirements:

1. 10.5 to 11.0 credits in Management as follows:
   - MGTA02H3 Foundations of Business Management or (MGTA01H3/MGTA03H3 and MGTA04H3)
   - MGTA05H3 Management Communications for Co-op or (MGTC03H3)
   - MGTA04H3 Introduction to Financial Accounting I
   - MGTA03H3/MTGD19H3 Global Marketing
   - MGTA06H3/MTGD06H3 International Financial Accounting II
   - MGTA07H3/MTGD09H3 International Organizational Behaviour
   - MGTA08H3/MTGD08H3 Introduction to Management Accounting
   - MGTA09H3/MTGD05H3 Principles of Finance
   - MGTA10H3/MTGD04H3 International Corporate Strategy
   - MGTA11H3/MTGD10H3 International Leadership Skills
   - MGTA12H3/MTGD18H3 Analysis for Decision-Making
   - MGTA13H3/MTGD07H3 Intermediate Finance
   - MGTA14H3/MTGD11H3 International Business Ethics
   - MGTA15H3/MTGD08H3 Operations Management: A Mathematical Approach
   - MGTA16H3/MTGD09H3 The Legal Environment of Business I
   - MGTA17H3/MTGD12H3 International Financial Management
   - MGTA18H3/MTGD01H3 Introduction to International Business Law
   - MGTA19H3/MTGD15H3 International Capstone Case Analysis
   - MGTA20H3/MTGD34H3 Accounting Issues in International Business

2. 1.0 credit in Calculus from:
   - MATA30H3 and MATA32H3 strongly recommended, or
   - MATA33H3 and MATA31H3

3. 3.0 credits in Economics for Management Studies as follows:
   - ECMA04H3 Introduction to Microeconomics: A Mathematical Approach
   - ECMA06H3 Introduction to Macroeconomics: A Mathematical Approach
   - ECOM32H3/ECMB06H3 Price Theory: A Mathematical Approach
   - ECOM11H3 Quantitative Methods in Economics I
   - ECOM12H3 Quantitative Methods in Economics II

4. 0.5 additional credit in Economics for Management Studies from:
   - ECOM01H3/ECOM06H3 International Economics: Finance or
   - ECOM02H3/ECOM08H3 International Economics: Trade Theory

5. 2.0 credits (four H-courses) of Languages (LGG) or French (FRE) courses
   At least three courses must be in the same language (either LGG or FRE); the fourth course may follow that same language or may be a different language. Please note that your language skill will be assessed by the FRENCH and LANGUAGES areas before being formally placed in a given section.

   NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of this Calendar.

Complementary Elective Courses (optional)

The following are some courses from other departments that can be used to complement the Specialist Program in Management and International Business. Students may want to consider these courses as potential electives. Please note that some of these courses require prerequisites which are not included in this program.

Program Requirements:
The Program requires the completion 17.0 to 17.5 credits as part of a twenty-credit B.B.A. degree.

Note: A single course may only be used once to fulfil one of the following requirements:

1. 10.5 to 11.0 credits in Management as follows:
   - MGTA02H3 Foundations of Business Management or (MGTA01H3/MGTA03H3 and MGTA04H3)
   - MGTA05H3 Management Communications for Co-op or (MGTC03H3)
   - MGTA04H3 Introduction to Financial Accounting I
   - MGTA03H3/MTGD19H3 Global Marketing
   - MGTA06H3/MTGD06H3 International Financial Accounting II
   - MGTA07H3/MTGD09H3 International Organizational Behaviour
   - MGTA08H3/MTGD08H3 Introduction to Management Accounting
   - MGTA09H3/MTGD05H3 Principles of Finance
   - MGTA10H3/MTGD04H3 International Corporate Strategy
   - MGTA11H3/MTGD10H3 International Leadership Skills
   - MGTA12H3/MTGD18H3 Analysis for Decision-Making
   - MGTA13H3/MTGD07H3 Intermediate Finance
   - MGTA14H3/MTGD11H3 International Business Ethics
   - MGTA15H3/MTGD08H3 Operations Management: A Mathematical Approach
   - MGTA16H3/MTGD09H3 The Legal Environment of Business I
   - MGTA17H3/MTGD12H3 International Financial Management
   - MGTA18H3/MTGD01H3 Introduction to International Business Law
   - MGTA19H3/MTGD15H3 International Capstone Case Analysis
   - MGTA20H3/MTGD34H3 Accounting Issues in International Business

2. 1.0 credit in Calculus from:
   - MATA30H3 and MATA32H3 strongly recommended, or
   - MATA33H3 and MATA31H3

3. 3.0 credits in Economics for Management Studies as follows:
   - ECOM01H3/ECOM06H3 International Economics: Finance or
   - ECOM02H3/ECOM08H3 International Economics: Trade Theory

4. 0.5 additional credit in Economics for Management Studies from:
   - ECOM01H3/ECOM06H3 International Economics: Finance or
   - ECOM02H3/ECOM08H3 International Economics: Trade Theory

5. 2.0 credits (four H-courses) of Languages (LGG) or French (FRE) courses
   At least three courses must be in the same language (either LGG or FRE); the fourth course may follow that same language or may be a different language. Please note that your language skill will be assessed by the FRENCH and LANGUAGES areas before being formally placed in a given section.

   NOTE: In selecting options and electives, students should refer to the guidelines for program breadth and depth found in the Degree Requirements section of this Calendar.
This program is designed to provide students with a fundamental knowledge and grasp of principles and practices in core areas of French: language, grammar, linguistics, literature and culture. This program requires 12.0 credits as follows including at least 4.0 credits at the C- or D-level of which at least 1.0 must be at the D-level:

1. 4.0 credits consisting of:
   - FREB40H3 Language Practice I
   - FREB42H3 Language Practice II
   - FREB43H3 Language Practice III
   - FREB45H3 Language Practice IV
   - FREB47H3 Language Practice V
   - FREB48H3 Language Practice VI
   - FREB49H3 Language Practice VII: Written French
   - FREB51H3 Language Practice VIII: Oral French
   (Except where substitution of other French credits is permitted for students with special proficiency in the French language)

2. 2.5 credits selected from:
   - FREB11H3 Introduction to Linguistics: French Phonetics and Phonology
   - FREB44H3 Introduction to Linguistics: French Morphology and Syntax
   - FREC01H3 Semantics: The Study of Meaning
   - FREC02H3 Morphology
   - FREC03H3 Syntax I
   - FREC04H3 Syntax II
   - FREC05H3 Special Topics in Linguistics: Pidgin and Creole Languages
   - FREC06H3 Sociolinguistics of French
   - FREC07H3 Field Methods in Linguistics (FRED49H3) French Semantics

3. 1.5 credits selected from:
   - FREB01H3 The Society and Culture of Québec
   - FREB02H3 Modern France
   - FREB03H3 Cinema and the Francophone World
   - FREB04H3 Folklore, Myth and the Fantastic in the French-Speaking World
   - FREB05H3 Cultural Identities and Stereotypes in the French-Speaking World

4. 3.0 credits in literature which must include: one full credit in French Canadian literature, one full credit in French literature and one full credit in French historical literature:
   - FREB10H3 Introduction to French Canadian Literature
   - FREB11H3 Introduction to French Canadian Literature
   - FREB12H3 The Society and Culture of Québec
   - FREB13H3 Modern France
   - FREB14H3 Cinema and the Francophone World
   - FREB15H3 Folklore, Myth and the Fantastic in the French-Speaking World
   - FREB16H3 Cultural Identities and Stereotypes in the French-Speaking World
   - FREB20H3 Introduction to French Canadian Literature
   - FREB21H3 Introduction to French Canadian Literature
   - FREB22H3 The Society and Culture of Québec
   - FREB23H3 Modern France
   - FREB24H3 Cinema and the Francophone World
   - FREB25H3 Folklore, Myth and the Fantastic in the French-Speaking World
   - FREB26H3 Cultural Identities and Stereotypes in the French-Speaking World
   - FREB31H3 Introduction to French Canadian Literature
   - FREB32H3 Introduction to French Canadian Literature
   - FREB33H3 The Society and Culture of Québec
   - FREB34H3 Modern France
   - FREB35H3 Cinema and the Francophone World
   - FREB36H3 Folklore, Myth and the Fantastic in the French-Speaking World
   - FREB37H3 Cultural Identities and Stereotypes in the French-Speaking World
   - FREB40H3 Language Practice I
   - FREB42H3 Language Practice II
   - FREB43H3 Language Practice III
   - FREB45H3 Language Practice IV
   - FREB47H3 Language Practice V
   - FREB48H3 Language Practice VI
   - FREB49H3 Language Practice VII: Written French
   - FREB51H3 Language Practice VIII: Oral French
   (Except where substitution of other French credits is permitted for students with special proficiency in the French language)
can fulfill this requirement); one-half credit in literature from other parts of the French-speaking world excluding France and Canada, one-half credit of your choice.

5. 1.0 additional credit in French.

Note: Specialist students (including CTEP) cannot obtain more than 0.5 credits (out of 12.0) by taking a course in English. This does not include CTEP courses taught in English through OISE.

### Program: SCMAJ2156 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ2156</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owners</td>
<td>FREN, FLSC</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN FRENCH (ARTS)</td>
</tr>
<tr>
<td>Description</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Notes</td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: <a href="mailto:cfl-ua@utsc.utoronto.ca">cfl-ua@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

**Program Requirements**

Students must complete 8.0 credits in French, of which at least 2.0 credits must be at the C- or D-level, including:

1. 1.0 credit in French Language: FREB01H3, FREB02H3, FRED01H3, FREB08H3, FREB17H3, FREB22H3, FREC38H3, FREC46H3, FREC48H3
2. One further full credit in Language: FREB09H3, FREB17H3, FREB22H3
4. Three additional full credits in French.

Note: At the A-level, only FREA01H3 and FREA02H3 may be counted towards a French Program.

Note: For Co-op opportunities related to the Major Program in French please see the Humanities and Social Sciences Co-operative section in this Calendar.

Note: Major students cannot obtain more than 0.5 credits (out of 12.0) by taking a course taught in English.

### Program: SCMINMDS - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMINMDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owners</td>
<td>FREN, FLSC</td>
</tr>
<tr>
<td>Title</td>
<td>MAJOR PROGRAM IN FRENCH (ARTS)</td>
</tr>
<tr>
<td>Description</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Notes</td>
<td>For curriculum inquiries, contact the CFL Undergraduate Assistant: <a href="mailto:cfl-ua@utsc.utoronto.ca">cfl-ua@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

**Program Requirements**

Students must complete 8.0 credits in French, of which at least 2.0 credits must be at the C- or D-level, including:

1. 1.5 credits as follows:
   - 0.5 credit in Culture: FREB01H3, FREB02H3, FREB03H3, FREB04H3, FREB05H3, FREB06H3, FREB07H3, FREB08H3, FREB09H3, FREB10H3, FREB11H3, FREB12H3, FREB13H3, FREB14H3, FREB15H3, FREB16H3

2. 1.0 credit in Linguistics courses taught in French:
   - FRED12H3, FRED46H3, FRED47H3

3. 1.0 credit in Culture:

4. Three additional credits in French:
   - Introduction to Literature in French: FREB08H3, FREB09H3, FREB17H3
   - Introduction to Linguistics: FREB08H3, FREB09H3, FREB17H3

5. 1.0 credit in French courses not already taken.

Note: At the A-level, only FREA01H3 and FREA02H3 may be counted towards a French Program.

Note: For Co-op opportunities related to the Major Program in French please see the Humanities and Social Sciences Co-operative section in this Calendar.

Note: Major students cannot obtain more than 0.5 credits (out of 12.0) by taking a course taught in English.
Program Requirements
Students must complete 4.0 credits from the courses below as follows:

1. 1.0 credit from the following:
   - ACMA01H3 Exploring Key Questions in the Humanities
   - MDSA01H3 Introduction to Media Studies

2. 0.5 credit from the following:
   - MDSA02H3 History of Media and Technology
   - MDSB05H3 Media and Globalization

3. 1.0 credit from the following:
   - MDSB01H3 Human, Animal, Machine
   - MDSB02H3 Anthropology of Language and the Media: An Introduction
   - MDSB03H3 Advertising and Consumer Culture
   - MDSB25H3 Political Economy of Media
   - MDSB61H3 Mapping New Media
   - MDSB62H3 Visual Culture

4. 1.0 credit from the following:
   - MDSC01H3 Theories and Methods in Media Studies
   - MDSC02H3 Topics in Media, Identities and Politics
   - MDSC40H3 Chinese Media and Politics
   - MDSC41H3 Media and Popular Culture in East and Southeast Asia
   - MDSC53H3 Anthropology of Media and Publics
   - MDSC62H3 Media and the World of Work
   - MDSC63H3 Media Ethics
   - MDSC64H3 Old Media, New Media: Film and Technology
   - MDSC65H3 Online Gaming and Virtual Worlds
   - MDSD01H3 Senior Seminar: Topics in Media and Arts
   - MDSD02H3 Senior Seminar: Topics in Media and Society

5. 0.5 credit from the following:
   - WSTC16H3 Criminal Women, Gender and Crime
   - WSTC22H3 Women and Film

Program: SCMAJ2735 - Compare

Program Requirements
Students must complete 4.0 credits including 1.0 credit at the C- or D-level from the courses below as follows:

1. 1.0 credit from the following:
   - ACMA01H3 Exploring Key Questions in the Humanities
   - MDSA01H3 Introduction to Media Studies

2. 0.5 credit from the following:
   - MDSA02H3 History of Media and Technology
   - MDSB05H3 Media and Globalization

3. 1.0 credit from the following:
   - MDSB01H3 Human, Animal, Machine
   - MDSB02H3 Anthropology of Language and the Media: An Introduction
   - MDSB03H3 Advertising and Consumer Culture
   - MDSB25H3 Political Economy of Media
   - MDSB61H3 Mapping New Media
   - MDSB62H3 Visual Culture

4. 1.0 credit from the following:
   - MDSC01H3 Theories and Methods in Media Studies
   - MDSC02H3 Topics in Media, Identities and Politics
   - MDSC40H3 Chinese Media and Politics
   - MDSC41H3 Media and Popular Culture in East and Southeast Asia
   - MDSC53H3 Anthropology of Media and Publics
   - MDSC62H3 Media and the World of Work
   - MDSC63H3 Media Ethics
   - MDSC64H3 Old Media, New Media: Film and Technology
   - MDSC65H3 Online Gaming and Virtual Worlds
   - MDSD01H3 Senior Seminar: Topics in Media and Arts
   - MDSD02H3 Senior Seminar: Topics in Media and Society

5. 0.5 credit from the following:
   - WSTC16H3 Criminal Women, Gender and Crime
   - WSTC22H3 Women and Film
Program Requirements
Completion of 8.5 credits as follows:

### 1. Core Courses (2.5 credits)
- EREA01H3: Introduction to Environmental Science
- MGEA01H3 (or MGEA09H3): Introduction to Microeconomics or Introduction to Macroeconomics

### 2. Foundations & Skills (3.5 credits)
- EESA06H3: Introduction to Environmental Studies
- EESA07H3: Introduction to Environmental Science
- EESA08H3: Exploring Globalization
- EESA09H3: Canada's Political Institutions
- EESA10H3: Introduction to International Relations

### 3. Capstone & Applications (2.5 credits)
- EESA11H3: Environmental Hazards
- EESA12H3: Introduction to Planet Earth
- EESA13H3: Water
- EESA14H3: Wind
- EESA15H3: Human Health and the Environment
- EESA16H3: Environmental Pollution

Program notes/tables

Program: SCSPE1234A - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCSPE1234A</td>
<td>Environmental Studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSSC,PHY</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program: SCSPE1234A - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCSPE1234A</td>
<td>Environmental Studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSSC,PHY</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>

Program: SCSPE1234A - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCSPE1234A</td>
<td>Environmental Studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSSC,PHY</td>
<td>Same as Calendar Title</td>
</tr>
</tbody>
</table>
### Title

**SPECIALIST PROGRAM IN PHYSICS AND ASTROPHYSICS (SCIENCE)**

Same as Calendar Title

### ROSI Title

**SPECIALIST PROGRAM IN PHYSICS AND ASTROPHYSICS (SCIENCE)**

Same as Calendar Title

### Description

**Supervisor:**

Email: lowman@utsc.utoronto.ca

Program Requirements: The Program requires 13.0 full credits as follows:

#### First Year

- **PHYS19H3** Introduction to Physics IA
- **PHYS27H3** Introduction to Physics IA
- **MAT223H1** Calculus for Biological and Physical Sciences
- **MAT222H1** Linear Algebra I
- **MAT224H1** Calculus II for Physical Sciences
  
  or
  
  **MAT225H1** Calculus II for Mathematical Sciences

#### Second Year

- **ASTB23H3** Astrophysics of Stars, Galaxies and the Universe
- **PHYS35H3** Intermediate Physics Laboratory I
- **PHYS36H3** Introduction to Quantum Physics
- **PHYS57H3** Electricity and Magnetism
- **PHYS52H3** Thermal Physics
- **PHYS54H3** Mechanics: From Oscillations to Chaos
- **MAT242H1** Techniques of the Calculus of Several Variables I
- **MAT243H1** Techniques of the Calculus of Several Variables II
- **MAT226H1** Differential Equations I

#### Third Year

- **PHYS39H3** Electromagnetic Theory
- **PHYS83H3** Quantum Mechanics I
- **PHYS15H3** Intermediate Physics Laboratory II
- **PHYS08H3** Classical Mechanics
- **MAT255H2** Introduction to Scientific Computing
- **MAT256H2** Complex Variables
- **MAT227H1** Differential Equations II

#### Fourth Year

Three of:

- **ASTC25H3** Astrophysics of Planetary Systems
- **PHYS30H3** Introduction to Fluid Mechanics
- **PHYS37H3** Introduction to Nonlinear Systems and Chaos
- **PHY452H3** Basic Statistical Mechanics
- **PHY456H3** Quantum Mechanics II
- **PHY484H1** Relativity Theory I
- **PHY484H2** Relativity Theory II
- **PHY487H3** Condensed Matter Physics
- **PHY491H3** Introduction to High Energy Physics
- **PHY497H3** Current Interpretations of Quantum Mechanics
- **PHY498H1** Advanced Atmospheric Physics
- **PHY498H2** Geophysical Imaging I
- **PHY499H1** Geophysical Imaging II
- **PHY499H2** Experimental Geophysics
- **PHY499H3** Experimental Applied Geophysics

One of:

- **PHYC01H3** Physics Research Project
- **PHYC01H3** Computational Physics Project
- **PHYC01H3** Supervised Reading in Physics
- **ASTD01H3** Astrophysics Research Project
- **ASTD02H3** Supervised Reading in Astrophysics
- **PSCD10H3** Physical Sciences Project

One additional 0.5 credit from a course in AST or PHY at the C-, D-, 300-, or 400-level, or

**PSCD02H3** Current Questions in Mathematics and Science

---

### Program: SCMAJ0275A - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ0275A</th>
<th>SCMAJ0275A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>PHSSC,PHY</td>
<td>PHSSC,PHY</td>
</tr>
<tr>
<td>Organization</td>
<td>Physics and Astrophysics</td>
<td>Physics and Astrophysics</td>
</tr>
</tbody>
</table>

---

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
Program: SCSPE2015 - Compare

## Program Requirements

This program requires 8.5 credits as follows:

### First Year
- **PHYA11H3** Introduction to Physics IA
- **PHYA12H3** Introduction to Physics IA
- **MATA30H3** Calculus I for Biological and Physical Sciences
- **MATA31H3** Calculus II for Biological and Physical Sciences
- **MATA32H3** Linear Algebra I
- **MATA36H3** Calculus III: Multivariable Calculus
- **MATA37H3** Calculus II for Mathematical Sciences

### Second and Later Years
- **ASTB23H3** Astrophysics of Stars, Galaxies and the Universe
- **MATH137H3** Calculus A for Mathematical Sciences
- **PHYS145H3** Electricity and Magnetism
- **PHYS146H3** Thermodynamics and Quantum Physics
- **PHYS155H3** Mechanics: From Oscillations to Chaos
- **PHYS165H3** Mechanics

A total of 2.0 credits from:
- **ASTD01H3** Astrophysics Research Project
- **ASTD02H3** Supervised Reading in Astrophysics
- **ASTC25H3** Computational Physics Project
- **MATC30H3** Differential Equations I
- **MATC34H3** Techniques of the Calculus of Several Variables I
- **MATC36H3** Functions of a Complex Variable
- **MATC37H3** Computational Physics Project
- **MATC46H3** Differential Equations II
- **MATC47H3** Techniques of the Calculus of Several Variables II
- **MATC48H3** Complex Variables

A total of 2.0 credits from:
- **ASTB23H3** Astrophysics of Stars, Galaxies and the Universe
- **MATH137H3** Calculus A for Mathematical Sciences
- **PHYS145H3** Electricity and Magnetism
- **PHYS146H3** Thermodynamics and Quantum Physics
- **PHYS155H3** Mechanics: From Oscillations to Chaos
- **PHYS165H3** Mechanics

### Notes/Tables

**Program notes/tables**

**Program Requirements**

Students must complete at least 12.0 full credits in Political Science including:

1. **POLB70H3** Introduction to Political Science 1.0 credit
2. **POLA02H3** Classic Texts in Political Theory 1.0 credit
3. **POLB71H3** Critical Issues in Politics 1.0 credit

### Program Requirements

Students must complete at least 12.0 full credits in Political Science including:

1. **POLA01H3** Introduction to Political Science 1.0 credit
2. **POLB71H3** Classic Texts in Political Theory 1.0 credit
3. **POLA02H3** Classic Texts in Political Theory 1.0 credit
3. POLB70H3 Classic Texts in Political Theory I

4. POLB71H3 Classic Texts in Political Theory II

5. POLB70H3 Classic Texts in Political Theory I

6. POLB71H3 Classic Texts in Political Theory II

Program Requirements

Students must complete at least 5.0 credits in Political Science as follows:

1. Introduction to Political Science (1.0 credit):
   - POLA01H3
   - POLA02H3

2. Political Theory (1.0 credit):
   - POLB70H3
   - POLB71H3

3. Canadian Politics (1.0 credit):
   - POLB50Y3

4. At least four of the following (2.0 credits):
   - POLB80H3 Introduction to International Relations
   - POLB81H3 Global Issues and Governance
   - POLB90H3 Comparative Development in International Perspective
   - POLB91H3 Comparative Politics: Revolution, Democracy and Authoritarianism in Modern Europe
   - POLB92H3 Comparative Politics: Ethnic Conflict and Democratization in Europe After the Cold War
   - POLB93H3 Comparative Politics: Ethnic Conflict and Democratization in Europe After the Cold War

5. Methods (1.0 credit):
   - STAB22H3
   - POLC78H3

6. Applications (2.0 credits):
   - 2.0 credits in political science at the C- and/or D-level, of which at least 1.0 must be at the D-level
Program Requirements

Students must complete 8.0 full credits as follows:

1. 1.0 credit at the A- or B-level in Anthropology, City Studies, Geography, or Sociology. At least 0.5 credits in A-level Political Science are recommended.

We also recommend interested students take introductory courses in departments like City Studies, Economics, Environmental Science, and that may reflect their particular substantive interests:

2. Canadian Politics (1.0 credit)
   CITC04H3
   CITC07H3
   CITC12H3
   CITC15H3
   CITC16H3
   CITC18H3
   CITC19H3
   CITC23H3
   CITC24H3
   CITC25H3
   CITC26H3
   CITC28H3
   CITC29H3
   CITC30H3
   CITC31H3
   CITC32H3
   CITC33H3
   CITC34H3
   CITC35H3
   CITC36H3
   CITC37H3
   CITC38H3
   CITC39H3
   CITC40H3
   CITC41H3
   CITC42H3
   CITC43H3
   CITC44H3
   CITC45H3

3. Fundamentals of Public Policy (1.0 credits)
   MGEB11H3
   MGEB12H3
   MGEB13H3
   MGEB14H3
   MGEB15H3
   MGEB16H3
   MGEB17H3
   MGEB18H3
   MGEB19H3
   MGEB20H3
   MGEB21H3
   MGEB22H3
   MGEB23H3
   MGEB24H3
   MGEB25H3
   MGEB26H3
   MGEB27H3
   MGEB28H3
   MGEB29H3
   MGEB30H3
   MGEB31H3
   MGEB32H3
   MGEB33H3
   MGEB34H3
   MGEB35H3
   MGEB36H3
   MGEB37H3
   MGEB38H3
   MGEB39H3
   MGEB40H3
   MGEB41H3
   MGEB42H3
   MGEB43H3
   MGEB44H3
   MGEB45H3

4. Economics for Public Policy (1.0 credit)
   MGEC31H3
   MGEC32H3
   MGEC33H3
   MGEC34H3
   MGEC35H3
   MGEC36H3
   MGEC37H3
   MGEC38H3
   MGEC39H3
   MGEC40H3
   MGEC41H3
   MGEC42H3
   MGEC43H3
   MGEC44H3
   MGEC45H3

5. Research Methods (1.0 credits)
   MGEC91H3
   MGER91H3
   MGER01H3
   MGER02H3
   MGER03H3
   MGER04H3
   MGER05H3
   MGER06H3
   MGER07H3
   MGER08H3
   MGER09H3
   MGER10H3
   MGER11H3
   MGER12H3
   MGER13H3
   MGER14H3
   MGER15H3
   MGER16H3
   MGER17H3
   MGER18H3
   MGER19H3
   MGER20H3
   MGER21H3
   MGER22H3
   MGER23H3
   MGER24H3
   MGER25H3
   MGER26H3
   MGER27H3
   MGER28H3
   MGER29H3
   MGER30H3
   MGER31H3
   MGER32H3
   MGER33H3
   MGER34H3
   MGER35H3
   MGER36H3
   MGER37H3
   MGER38H3
   MGER39H3
   MGER40H3
   MGER41H3
   MGER42H3
   MGER43H3
   MGER44H3
   MGER45H3

6. Applications of Public Policy (2.0 credits) from the following list* of Public Policy courses, or other courses with the approval of the supervisor of studies. Of these, 1.0 credits must be from C- or D-level courses in Political Science.
   CITC04H3
   CITC07H3
   CITC12H3
   CITC15H3
   CITC16H3
   CITC18H3
   CITC19H3
   CITC23H3
   CITC24H3
   CITC25H3
   CITC26H3
   CITC28H3
   CITC29H3
   CITC30H3
   CITC31H3
   CITC32H3
   CITC33H3
   CITC34H3
   CITC35H3
   CITC36H3
   CITC37H3
   CITC38H3
   CITC39H3
   CITC40H3
   CITC41H3
   CITC42H3
   CITC43H3
   CITC44H3
   CITC45H3

Course requirements:

Students must complete 8.0 full credits as follows:

1. 1.0 credit at the A- or B-level in Anthropology, City Studies, Geography, or Sociology. At least 0.5 credits in A-level Political Science are recommended.

We also recommend interested students take introductory courses in departments like City Studies, Economics, Environmental Science, and that may reflect their particular substantive interests:

2. Canadian Politics (1.0 credit)
   CITC04H3
   CITC07H3
   CITC12H3
   CITC15H3
   CITC16H3
   CITC18H3
   CITC19H3
   CITC23H3
   CITC24H3
   CITC25H3
   CITC26H3
   CITC28H3
   CITC29H3
   CITC30H3
   CITC31H3
   CITC32H3
   CITC33H3
   CITC34H3
   CITC35H3
   CITC36H3
   CITC37H3
   CITC38H3
   CITC39H3
   CITC40H3
   CITC41H3
   CITC42H3
   CITC43H3
   CITC44H3
   CITC45H3

3. Fundamentals of Public Policy (1.0 credits)
   MGEB11H3
   MGEB12H3
   MGEB13H3
   MGEB14H3
   MGEB15H3
   MGEB16H3
   MGEB17H3
   MGEB18H3
   MGEB19H3
   MGEB20H3
   MGEB21H3
   MGEB22H3
   MGEB23H3
   MGEB24H3
   MGEB25H3
   MGEB26H3
   MGEB27H3
   MGEB28H3
   MGEB29H3
   MGEB30H3
   MGEB31H3
   MGEB32H3
   MGEB33H3
   MGEB34H3
   MGEB35H3
   MGEB36H3
   MGEB37H3
   MGEB38H3
   MGEB39H3
   MGEB40H3
   MGEB41H3
   MGEB42H3
   MGEB43H3
   MGEB44H3
   MGEB45H3

4. Economics for Public Policy (1.0 credit)
   MGEC31H3
   MGEC32H3
   MGEC33H3
   MGEC34H3
   MGEC35H3
   MGEC36H3
   MGEC37H3
   MGEC38H3
   MGEC39H3
   MGEC40H3
   MGEC41H3
   MGEC42H3
   MGEC43H3
   MGEC44H3
   MGEC45H3

5. Research Methods (1.0 credits)
   MGEC91H3
   MGER91H3
   MGER01H3
   MGER02H3
   MGER03H3
   MGER04H3
   MGER05H3
   MGER06H3
   MGER07H3
   MGER08H3
   MGER09H3
   MGER10H3
   MGER11H3
   MGER12H3
   MGER13H3
   MGER14H3
   MGER15H3
   MGER16H3
   MGER17H3
   MGER18H3
   MGER19H3
   MGER20H3
   MGER21H3
   MGER22H3
   MGER23H3
   MGER24H3
   MGER25H3
   MGER26H3
   MGER27H3
   MGER28H3
   MGER29H3
   MGER30H3
   MGER31H3
   MGER32H3
   MGER33H3
   MGER34H3
   MGER35H3
   MGER36H3
   MGER37H3
   MGER38H3
   MGER39H3
   MGER40H3
   MGER41H3
   MGER42H3
   MGER43H3
   MGER44H3
   MGER45H3

6. Applications of Public Policy (2.0 credits) from the following list* of Public Policy courses, or other courses with the approval of the supervisor of studies. Of these, 1.0 credits must be from C- or D-level courses in Political Science.
   CITC04H3
   CITC07H3
   CITC12H3
   CITC15H3
   CITC16H3
   CITC18H3
   CITC19H3
   CITC23H3
   CITC24H3
   CITC25H3
   CITC26H3
   CITC28H3
   CITC29H3
   CITC30H3
   CITC31H3
   CITC32H3
   CITC33H3
   CITC34H3
   CITC35H3
   CITC36H3
   CITC37H3
   CITC38H3
   CITC39H3
   CITC40H3
   CITC41H3
   CITC42H3
   CITC43H3
   CITC44H3
   CITC45H3

*Students must pay careful attention to the prerequisites for higher level courses.
The Co-operative Program in Public Policy is a work-study program which combines academic studies in various disciplines with work terms in public enterprises, the private sector, and non-governmental organizations. Two work terms, each of four months duration, must be completed along with the academic program. An optional, third work term may be completed with the permission of the Co-op Coordinator.

The program equips students with the analytical and methodological skills to secure employment as policy analysts in government, business, and the non-governmental sector, or to continue to graduate training in public policy. The Program is cross-disciplinary, public policy analysis is the exercise of applying the theoretical frameworks and the positivist and interpretive methodologies of the social sciences and humanities to understand the development, implementation, and evaluation of public policy. It requires the ability to think clearly and critically, to design and execute research projects, to analyze both quantitative and qualitative data, and to write clearly. It also requires an understanding of the context, institutions, and processes of policy-making and implementation, as well as concepts and criteria for policy evaluation.

The Co-operative Program in Public Policy is designed to be completed in conjunction with a Major or Specialist Program in another discipline and may only be taken as part of a twenty course honours degree.

For information on fees, work terms and standing in the Program, please see the Social Sciences and Humanities Co-operative section of the Calendar.

Program Admission

Program Admission

Prospective Applicants: For direct admission from secondary school or for students who wish to transfer to U of T Scarborough from another U of T faculty or from another post-
Program Requirements

Work Placement
To be eligible for the first work term, students must have completed at least 10 credits, including 5.0 credits as a University of Toronto Scarborough student including POLB50Y3 (Canadian Government and Politics), and 0.5 credit of Research Methods. Prior to their first work term, students must also successfully complete Arts & Science Co-op Work Term Preparation Activities, which include multiple networking sessions, speaker panels and industry tours along with seminars covering resumes, cover letters, job interviews and work term expectations.

Program notes/tables

Program: SCSPEIMC - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPEIMC</th>
<th>SCSPEIMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>BGYSBIO</td>
<td>BGYSBIO</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST(JOINT) PROGRAM IN APPLIED MICROBIOLOGY (SCIENCE)</td>
<td>SPECIALIST(JOINT) PROGRAM IN APPLIED MICROBIOLOGY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>See the Applied Microbiology section of this Calendar for program requirements.</td>
<td>See the Applied Microbiology section of this Calendar for program requirements.</td>
</tr>
</tbody>
</table>

Program notes/tables

Program: SCSPEPMD - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPEPMD</th>
<th>SCSPEPMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>BGYSBIO</td>
<td>BGYSBIO</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Biological Sciences</td>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST(JOINT) PROGRAM IN PARAMEDICINE (SCIENCE)</td>
<td>SPECIALIST(JOINT) PROGRAM IN PARAMEDICINE (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>See the Paramedicine section of this Calendar for program requirements.</td>
<td>See the Paramedicine section of this Calendar for program requirements.</td>
</tr>
</tbody>
</table>

Program notes/tables

Program: SCSPE1688 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1688</th>
<th>SCSPE1688</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>CSC,MSCSC</td>
<td>CSC,MSCSC</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections</td>
<td>Computer Science</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN COMPUTER SCIENCE (SCIENCE)</td>
<td>SPECIALIST PROGRAM IN COMPUTER SCIENCE (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor of Studies: R. Pancer (416-287-7679) Email: <a href="mailto:pancer@utsc.utoronto.ca">pancer@utsc.utoronto.ca</a></td>
<td>Supervisor of Studies: R. Pancer (416-287-7679) Email: <a href="mailto:pancer@utsc.utoronto.ca">pancer@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

Program Objectives
This program provides a working knowledge of the foundations of computer science, modern computer software and hardware, theoretical aspects of computer science, and relevant areas of mathematics and statistics. It also imparts an appreciation of the discipline's transformative impact on science and society. The program prepares students for further study and for careers in the computing industry. It comprises four streams with different emphases:

The Comprehensive Stream provides a broad and balanced exposure to the discipline. It is the stream best-suited for students planning to pursue graduate study in computer science, but it is also suitable for other career paths.

The Software Engineering Stream places a greater emphasis on the engineering side of the discipline, including computer systems and core applications.

The Information Systems Stream has a similar focus as the Software Engineering Stream, but it provides additional exposure to certain aspects of business management. It is of special interest to students wishing to pursue careers in technical management but who have a deep interest in the technology.

The Health Informatics Stream provides a broad perspective of the discipline and exposure to additional subjects, including statistics and social sciences, that are useful for a career as a computer scientist in the health sector.

The structure of the program requirements allows one to easily switch streams until relatively late in the program. Consequently, these streams should not be viewed as rigidly separated channels feeding students to different career paths, but as a flexible structure that provides computer science students guidance in their course selection based on their broad (but possibly fluid) interests.

Program Admission

Students applying to U of T students are strongly encouraged to apply online. The Comprehensive Stream. If the student has not completed all G100-level courses, they may apply as a Direct Entry student. After first year, students may transfer to Comprehensive to other streams. Due to limited enrollment in the required Management courses, eligible Information Systems students must meet academic performance requirements. Applicants must complete A-level courses in Computer Science (see below) and the CGPA for admission is calculated on the average of the two A-level MGT courses.

Program Requirements

To remain in the program, a student must maintain a CGPA of 2.0 or higher throughout the program. To complete the program, a student must meet the course requirements described below. (One credit is equivalent to two courses). The program requirements comprise a core of 18 courses (9.0 credits), common to all three streams and additional requirements which depend on the stream, for a total of 27 courses (13.5 credits) for the Comprehensive and Software Engineering Streams, and 30 courses (15.0 credits) for the Information Systems Stream.

Note: Many Computer Science courses are offered both at U of T Scarborough and at the St. George campus. When a course is offered at both campuses in a given session, U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus cannot guarantee space for U of T Scarborough students in their courses, especially those offered at both campuses.

Core (9.0 credits)

1. Writing Requirement (0.5 credit) (*)

One of: ANTA01H3, ANTA02H3, (CLAA02H3), CTLA19H3, CTLA01H3, ENGA01H3, ENGA10H3, ENGB06H3, ENGB07H3, ENGB50H3, ENGB51H3, (GGRA02H3), (HISA01H3), (HLTA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LINA01H3), (LGGA99H3), (PHLA10H3), (WSTA01H3), (YIIA01H3)

Note: Many Computer Science courses are offered both at U of T Scarborough and at the St. George campus. When a course is offered at both campuses in a given session, U of T Scarborough students are expected to take that course at U of T Scarborough. The Department of Computer Science at the St. George campus cannot guarantee space for U of T Scarborough students in their courses, especially those offered at both campuses.

Core (9.0 credits)

1. Writing Requirement (0.5 credit) (*)

One of: ANTA01H3, ANTA02H3, (CLAA02H3), CTLA19H3, CTLA01H3, ENGA01H3, ENGA10H3, ENGB06H3, ENGB07H3, ENGB50H3, ENGB51H3, (GGRA02H3), (HISA01H3), (HLTA01H3), (HUMA01H3), (HUMA11H3), (HUMA17H3), (LINA01H3), (LGGA99H3), (PHLA10H3), (WSTA01H3), (YIIA01H3)

(*) It is recommended that this requirement be satisfied by the end of the second year.

2. A-level courses (3.0 credits)

One of: CSCA20H3 Introduction to Computer Science, CSCA21H3 Introduction to Computer Science II, DISC11H3 Discrete Mathematics for Computer Scientists, DISC12H3 Discrete Mathematics for Computer Scientists, DISC21H3 Linear Algebra I, DATASA1H3 Data Structures I, DATASA2H3 Calculus I: Mathematical Sciences, DATASA3H3 Calculus II: Mathematical Sciences...
2. A-level courses (3.0 credits)
- CSC320H Introduction to Computer Science
- CSCA08H3 Operating Systems Design and Implementation
- CSCA67H3 Design and Analysis of Data Structures
- MATA23H3 Linear Algebra I
- MATA31H3 Calculus I for Mathematical Sciences
- MATA37H3 Calculus II for Mathematical Sciences

3. B-level courses (3.5 credits)
- CSCB63H3 Software Design
- CSCB36H3 Software Tools and Systems Programming
- CSCB58H3 Introduction to the Theory of Computation
- CSCB65H3 Computer Organization
- CSCB69H3 Design and Analysis of Data Structures
- MATA45H3 Linear Algebra II
- STAB90H3 Introduction to Probability

4. C-level courses (1.5 credits)
- CSCC11H3 Introduction to Databases
- CSCC09H3 Operating Systems
- CSCC85H3 Algorithm Design and Analysis

5. D-level courses (0.5 credit)
- CSCD01H3 Social Impact of Information Technology

6. Additional required courses (2.5 credits)
- MATHA11H3 Techniques of the Calculus of Several Variables I
- CSCC46H3 Principles of Programming Languages
- CSCC57H3 Introduction to Numerical Algorithms for Computational Mathematics
- CSCC58H3 Computability and Computational Complexity
- CSCC59H3 Analysis of Numerical Algorithms for Computational Mathematics

7. Electives from courses on computers systems and applications (1.0 credit)
Two of:
- CSCC63H3 Introduction to Software Engineering
- CSCC64H3 Programming on the Web
- CSCC65H3 Introduction to Machine Learning and Data Mining
- CSCC66H3 Introduction to Embedded Systems
- CSCC67H3 Engineering Large Software Systems
- CSCC73H3 Computer Graphics
- CSCC74H3 Computer and Network Security
- CSCC75H3 Database System Technology
- CSCC68H3 Computer Networks
- CSCC69H3 Artificial Intelligence
- CSCC81H3 Design of Interactive Computational Media
- CSCC82H3 Visual Computing
- CSCC83H3 Introduction to Neural Networks and Machine Learning
- CSCC84H3 Natural Language Computing
- CSCC85H3 Operating Systems Design and Implementation
- CSCC86H3 Computational Linguistics
- CSCC87H3 Compilers and Interpreters

8. Electives from courses related to the theory of computing (0.5 credit)
One of:
- MAT49H3 Introduction to Mathematical Logic
- MAT18H3 Coding Theory and Cryptography
- MAT38H3 Graph Theory and Algorithms for its Applications
- MAT149H3 Introduction to Combinatorics
- CSC483H3 Computability and Logic
- CSC485H3 Formal Languages and Automata
- CSC486H3 Formal Methods in Software Design

9. CSC, MAT, or STA elective (0.5 credit)
One of:
- Any C- or D-level CSC, MAT, or STA course, excluding MAT38H3, MAT39H3 and STA23H3

3. B-level courses (3.5 credits)
- CSCD02H3 Software Design
- CSCD03H3 Software Tools and Systems Programming
- CSCD04H3 Introduction to the Theory of Computation
- CSCD05H3 Computer Organization
- CSCD06H3 Design and Analysis of Data Structures
- MATA45H3 Linear Algebra II
- STAB90H3 Introduction to Probability

4. C-level courses (1.5 credits)
- CSCD43H3 Introduction to Databases
- CSCD58H3 Operating Systems
- CSCD70H3 Algorithm Design and Analysis

5. D-level courses (0.5 credit)
- CSCD84H3 Social Impact of Information Technology

A. Comprehensive Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 9 other distinct courses (4.5 credits) must be chosen satisfying all of the following requirements:

6. Additional required courses (2.5 credits)
- MATHA11H3 Techniques of the Calculus of Several Variables I
- CSCC46H3 Principles of Programming Languages
- CSCC57H3 Introduction to Numerical Algorithms for Computational Mathematics
- CSCC58H3 Computability and Computational Complexity
- CSCC59H3 Analysis of Numerical Algorithms for Computational Mathematics

7. Electives from courses on computers systems and applications (1.0 credit)
Two of:
- CSCC63H3 Introduction to Software Engineering
- CSCC64H3 Programming on the Web
- CSCC65H3 Introduction to Machine Learning and Data Mining
- CSCC66H3 Introduction to Embedded Systems
- CSCC67H3 Engineering Large Software Systems
- CSCC73H3 Computer Graphics
- CSCC74H3 Computer and Network Security
- CSCC75H3 Database System Technology
- CSCC68H3 Computer Networks
- CSCC69H3 Artificial Intelligence
- CSCC81H3 Design of Interactive Computational Media
- CSCC82H3 Visual Computing
- CSCC83H3 Introduction to Neural Networks and Machine Learning
- CSCC84H3 Natural Language Computing
- CSCC85H3 Operating Systems Design and Implementation
- CSCC86H3 Computational Linguistics
- CSCC87H3 Compilers and Interpreters

8. Electives from courses related to the theory of computing (0.5 credit)
One of:
- MAT49H3 Introduction to Mathematical Logic
- MAT18H3 Coding Theory and Cryptography
- MAT38H3 Graph Theory and Algorithms for its Applications
- MAT149H3 Introduction to Combinatorics
- CSC483H3 Computability and Logic
- CSC485H3 Formal Languages and Automata
- CSC486H3 Formal Methods in Software Design

9. CSC, MAT, or STA elective (0.5 credit)
One of:
- Any C- or D-level CSC, MAT, or STA course, excluding MAT38H3, MAT39H3 and STA23H3

B. Software Engineering Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 9 other distinct courses (4.5 credits) must be chosen satisfying all of the following requirements:

6. Additional required courses (3.0 credits)
One of:
  Any C- or D-level CSC, MAT, or STA course, excluding MAT232H5, MAT233H5, and STA202H5.

B. Software Engineering Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 9 other distinct courses (4.5 credits) must be chosen satisfying all of the following requirements:

6. Additional required courses (3.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGTA01H3</td>
<td>Techniques of the Calculus of Several Variables I</td>
</tr>
<tr>
<td>MGTA02H3</td>
<td>Introduction to Software Engineering</td>
</tr>
<tr>
<td>MGTA04H3</td>
<td>Introduction to Numerical Algorithms for Computational Mathematics</td>
</tr>
<tr>
<td>MGTA05H3</td>
<td>Computability and Computational Complexity</td>
</tr>
<tr>
<td>MGTA06H3</td>
<td>Engineering Large Software Systems</td>
</tr>
</tbody>
</table>

7. Electives from courses on computer systems and applications (1.5 credits)
Three of:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC206H3</td>
<td>Programming on the Web</td>
</tr>
<tr>
<td>CSC211H3</td>
<td>Introduction to Machine Learning and Data Mining</td>
</tr>
<tr>
<td>CSC212H3</td>
<td>Introduction to Embedded Systems</td>
</tr>
<tr>
<td>CSC213H3</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>CSC214H3</td>
<td>Computer and Network Security</td>
</tr>
<tr>
<td>CSC215H3</td>
<td>Database System Technology</td>
</tr>
<tr>
<td>CSC216H3</td>
<td>Computer Networks</td>
</tr>
<tr>
<td>CSC217H3</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>CSC318H3</td>
<td>Design of Interactive Computational Media</td>
</tr>
<tr>
<td>CSC321H3</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>CSC322H3</td>
<td>Introduction to Neural Networks and Machine Learning</td>
</tr>
<tr>
<td>CSC340H3</td>
<td>Natural Language Computing</td>
</tr>
<tr>
<td>CSC346H3</td>
<td>Operating Systems Design and Implementation</td>
</tr>
<tr>
<td>CSC348H3</td>
<td>Computational Linguistics</td>
</tr>
<tr>
<td>CSC348H3</td>
<td>Compilers and Interpreters</td>
</tr>
</tbody>
</table>

C. Information Systems Stream
This stream requires a total of 27 courses (13.5 credits). In addition to the core requirements 1-5 common to all streams, 12 other distinct courses (6.0 credits) must be chosen satisfying all of the following requirements:

6. Required management courses (2.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGTA03H3</td>
<td>Introduction to Management I</td>
</tr>
<tr>
<td>MGTA04H3</td>
<td>Introduction to Management II</td>
</tr>
<tr>
<td>MGTA05H3</td>
<td>Managing People and Groups in Organizations</td>
</tr>
</tbody>
</table>

7. Additional required mathematics and computer science courses (3.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT234H5</td>
<td>Techniques of the Calculus of Several Variables I</td>
</tr>
<tr>
<td>CSC201H3</td>
<td>Introduction to Software Engineering</td>
</tr>
<tr>
<td>CSC207H3</td>
<td>Introduction to Numerical Algorithms for Computational Mathematics</td>
</tr>
<tr>
<td>CSC208H3</td>
<td>Computability and Computational Complexity</td>
</tr>
<tr>
<td>CSC209H3</td>
<td>Engineering Large Software Systems</td>
</tr>
<tr>
<td>CSC210H3</td>
<td>Database System Technology</td>
</tr>
</tbody>
</table>

8. Electives from courses on computer systems and applications (1.0 credit)
Two of:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC206H3</td>
<td>Programming on the Web</td>
</tr>
<tr>
<td>CSC211H3</td>
<td>Introduction to Machine Learning and Data Mining</td>
</tr>
<tr>
<td>CSC212H3</td>
<td>Introduction to Embedded Systems</td>
</tr>
<tr>
<td>CSC213H3</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>CSC214H3</td>
<td>Computer and Network Security</td>
</tr>
<tr>
<td>CSC215H3</td>
<td>Computer Networks</td>
</tr>
<tr>
<td>CSC216H3</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>CSC318H3</td>
<td>Design of Interactive Computational Media</td>
</tr>
<tr>
<td>CSC321H3</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>CSC322H3</td>
<td>Introduction to Neural Networks and Machine Learning</td>
</tr>
<tr>
<td>CSC340H3</td>
<td>Natural Language Computing</td>
</tr>
<tr>
<td>CSC346H3</td>
<td>Operating Systems Design and Implementation</td>
</tr>
</tbody>
</table>

D. Health Informatics Stream
This stream requires a total of 30 courses (15.0 credits). In addition to the core requirements 1-5 common to all streams, 12 other distinct courses (6.0 credits) must be chosen satisfying all of the following requirements:

6. Additional courses related to health studies (2 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSC200H3</td>
<td>Biomedical Ethics</td>
</tr>
<tr>
<td>HSC205H3</td>
<td>Introduction to Health Management*</td>
</tr>
</tbody>
</table>

One of:
(courses on health policy and politics)
D. Health Informatics Stream

This stream requires a total of 30 courses (15.0 credits). In addition to the core requirements 1-5 common to all streams, 12 other distinct courses (6.0 credits) must be chosen satisfying all of the following requirements:

6. Additional courses related to health studies (2 credits)
   - PHLB09H3 Biomedical Ethics
   - MGTA06H3 Introduction to Health Management*
   - One of: (courses on health policy and politics)
     - HLTB16H3 Introduction to Public Health
     - HLTB17H3 Conceptual Models of Health
     - HLTB18H3 Health Policy and Health Systems
     - HLTB40H3 Health Policy and Health Systems
   - One of: (other courses on health studies)
     - HLTB22H3 Biological Determinants of Health
     - HLTC05H3 Social Determinants of Health
   - (*) These courses have prerequisites not included in this program's requirements.

7. Additional required computer science and statistics courses (1.5 credits)
   - CSCC01H3 Introduction to Software Engineering
   - STAB57H3 Introduction to Statistics
   - STAC50H3 Data Collection

8. Additional CSC, MAT and STA courses (2.5 credits)
   - MATB41H3 Techniques of the Calculus of Several Variables I
   - Four of:
     - any other C- or D-level CSC or STA courses, excluding STAD29H3
   - **NOTE:** Of the five courses taken to satisfy this requirement, at least one must be a D-level course, and at least three must be CSC courses.
   - ** Some C- and D-level CSC and STA courses have prerequisites that are not included among the required courses for this stream. Review the prerequisites carefully before selecting courses for this requirement. One or more courses taken to satisfy this requirement can be prerequisites for other courses also taken to satisfy this requirement.

   Among the CSC courses that can be used to satisfy this requirement there are two categories of courses that are particularly well aligned with the goals of the Health Informatics stream: software engineering and systems, and computer science applications. Courses in the category of software engineering and systems include:
   - CSCC09H3, CSCC85H3, CSCD01H3, CSCD43H3, and CSCD58H3.
   - Courses in the category of computer science applications include: CSCC11H3, CSCD18H3, and CSCD84H3.

   ** Among the CSC courses that can be used to satisfy this requirement there are two categories of courses that are particularly well aligned with the goals of the Health Informatics stream: software engineering and systems, and computer science applications. Courses in the category of software engineering and systems include:
   - CSCC09H3, CSCC85H3, CSCD01H3, CSCD43H3, and CSCD58H3.
   - Courses in the category of computer science applications include: CSCC11H3, CSCD18H3, and CSCD84H3.

---

Program notes/tables

Program: SCSPE1076B - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1076B</th>
<th>SCSPE1076B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EES,PHSSC</td>
<td>EES,PHSSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Environmental Science</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Sections</td>
<td>Environmental Science</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ENVIRONMENTAL PHYSICS (SCIENCE)</td>
<td>SPECIALIST PROGRAM IN ENVIRONMENTAL PHYSICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>See the Physics and Astrophysics, section of this Calendar for program requirements</td>
<td>See the Physics and Astrophysics, section of this Calendar for program requirements</td>
</tr>
</tbody>
</table>

Program: SCSPESTE - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPESTE</th>
<th>SCSPESTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>EES,PHSSC</td>
<td>EES,PHSSC</td>
</tr>
</tbody>
</table>
Organizations  | Environmental Science  
Sections  | Environmental Science  
Title  | SPECIALIST(JOINT) PROGRAM IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY (SCIENCE)  
ROSI Title  | Same as Calendar Title  
Description  | See the Environmental Science and Technology section of this Calendar for program requirements.

Program: SCMIN1076 - Compare

| Code  | SCMIN1076  
| Owners Organizations  | EES,PHSSC  
| Title  | MINOR PROGRAM IN ENVIRONMENTAL SCIENCE (SCIENCE)  
| ROSI Title  | Same as Calendar Title  
| Description  | Supervisor of Studies/Advisor: G. Arhonditsis (416-208-4858) Email: georgea@utsc.utoronto.ca
The Minor Program is designed to provide insights into the basic principles of Environmental Science and its application to current environmental issues. It is intended for students with an interest in environmental issues but who do not have the necessary background for specialization in the field. In addition to science students, it is appropriate for students pursuing a degree in the social sciences or in management and economics.

Program Requirements  
Total requirements: 4.0 full credits  
First Year:  
EESA01H3 Introduction to Environmental Science  
EESA06H3 Introduction to Planet Earth  
Second Year:  
Any 1.5 full credits from the following:  
EESB02H3 Principles of Geomorphology  
EESB03H3 Principles of Climatology  
EESB04H3 Principles of Hydrology  
EESB05H3 Principles of Soil Science  
EESB15H3 Earth History  
Third Year:  
1.5 full credits of any other EES courses of which 1.0 full credit must be at the C- or D- level.

Program: SCMAJ1666H - Compare

| Code  | SCMAJ1666H  
| Owners Organizations  | GGR,GGRSC  
| Title  | MAJOR PROGRAM IN HUMAN GEOGRAPHY (ARTS)  
| ROSI Title  | Same as Calendar Title  
| Description  | A Major Program for students interested in Human Geography as an academic discipline. The Program equips students with the knowledge and skills needed to understand contemporary social science thought in the context of the communities, societies, and...
economies formed by human populations, and the ways in which location, landscape, and spatial context shape (and are shaped by) social structures, functioning, and behaviour.

Guidelines for 1st year course selection

Students intending to complete the Major Program in Human Geography are required to take GGRA02H3, and are advised to take one of GGRA03H3 and GGRA30H3 in their first year.

Guidelines for Major Program completion:

Courses in the Major Program in Human Geography are divided into three main subdisciplinary concentrations: Urban Geography, Social/Cultural Geography and Environmental Geography. Major students are welcome to take courses in more than one area of concentration and are advised to take all three of the related Theory and Concepts courses. (Courses marked with an asterisk (*) are foundational courses. Courses described as foundational cover core concepts in the discipline and are considered essential prerequisites for upper level courses. You should take these in your first or second year of study.)

Human Geography Major students are advised to focus after second year, in one of the three following concentrations: Urban, Social/Cultural, and Environmental.

**URBAN Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRB02H3</td>
<td>The Great Scarborough Mashup</td>
</tr>
<tr>
<td>GGRB13H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRB21H3</td>
<td>Political Ecology Theory and Applications</td>
</tr>
<tr>
<td>GGRB22H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRB23H3</td>
<td>Indigenous Environmental Knowledge</td>
</tr>
<tr>
<td>GGRB24H3</td>
<td>Environmental Conservation and Sustainable Development</td>
</tr>
<tr>
<td>GGRB25H3</td>
<td>Research Seminar in Environmental Geography</td>
</tr>
</tbody>
</table>

**SOCIAL/CULTURAL Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRD08H3</td>
<td>The Geography of Global Processes</td>
</tr>
<tr>
<td>GGRD10H3</td>
<td>Social Geography</td>
</tr>
<tr>
<td>GGRD19H3</td>
<td>Geographies of Disease</td>
</tr>
<tr>
<td>GGRD20H3</td>
<td>Urban Residential Geography</td>
</tr>
<tr>
<td>GGRD21H3</td>
<td>Current Topics in Social Geography</td>
</tr>
<tr>
<td>GGRD22H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRD23H3</td>
<td>Research Seminar in Social Geography</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRB08H3</td>
<td>The Geography of Global Processes</td>
</tr>
<tr>
<td>GGRB09H3</td>
<td>Cities and Environments</td>
</tr>
<tr>
<td>GGRB10H3</td>
<td>Current Topics in Environmental Geography</td>
</tr>
<tr>
<td>GGRB11H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB12H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB13H3</td>
<td>Current Topics in Environmental Geography</td>
</tr>
<tr>
<td>GGRB14H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB15H3</td>
<td>Environmental Conservation and Sustainable Development</td>
</tr>
<tr>
<td>GGRB26H3</td>
<td>Research Seminar in Environmental Geography</td>
</tr>
</tbody>
</table>

**URBAN Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRB02H3</td>
<td>The Great Scarborough Mashup</td>
</tr>
<tr>
<td>GGRB13H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRB21H3</td>
<td>Political Ecology Theory and Applications</td>
</tr>
<tr>
<td>GGRB22H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRB23H3</td>
<td>Indigenous Environmental Knowledge</td>
</tr>
<tr>
<td>GGRB24H3</td>
<td>Environmental Conservation and Sustainable Development</td>
</tr>
<tr>
<td>GGRB25H3</td>
<td>Research Seminar in Environmental Geography</td>
</tr>
</tbody>
</table>

**SOCIAL/CULTURAL Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRD08H3</td>
<td>The Geography of Global Processes</td>
</tr>
<tr>
<td>GGRD10H3</td>
<td>Social Geography</td>
</tr>
<tr>
<td>GGRD19H3</td>
<td>Geographies of Disease</td>
</tr>
<tr>
<td>GGRD20H3</td>
<td>Urban Residential Geography</td>
</tr>
<tr>
<td>GGRD21H3</td>
<td>Current Topics in Social Geography</td>
</tr>
<tr>
<td>GGRD22H3</td>
<td>Geographies of Environmental Governance</td>
</tr>
<tr>
<td>GGRD23H3</td>
<td>Research Seminar in Social Geography</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL Geography Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGRB08H3</td>
<td>The Geography of Global Processes</td>
</tr>
<tr>
<td>GGRB09H3</td>
<td>Cities and Environments</td>
</tr>
<tr>
<td>GGRB10H3</td>
<td>Current Topics in Environmental Geography</td>
</tr>
<tr>
<td>GGRB11H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB12H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB13H3</td>
<td>Current Topics in Environmental Geography</td>
</tr>
<tr>
<td>GGRB14H3</td>
<td>Geo-Economics and Environmentalism</td>
</tr>
<tr>
<td>GGRB15H3</td>
<td>Environmental Conservation and Sustainable Development</td>
</tr>
<tr>
<td>GGRB26H3</td>
<td>Research Seminar in Environmental Geography</td>
</tr>
</tbody>
</table>
Program Requirements

The Major Program in Human Geography requires a total of 7.0 full credits as follows:

1. Theory and Concepts in Human Geography
   - 1.5 credits from:
     - GGRA30H3 Urban Geography
     - GGRA31H3 Social Geography
     - GGRA32H3 Environments and Environmentalisms
     - GGRA33H3 Geographies of Disease
     - GGRA34H3 Geographies of Religion and Secularism
   - and
   - 1.5 additional credits to be selected from GGRA03H3

2. Methods (1.0 credit)
   - GGRA30H3 Geographic Information Systems (GIS) and Empirical Reasoning
   - and one of:
     - GGRA33H3 Social/Spatial Analysis (Intermediate GIS)
     - GGRA34H3 Qualitative Geographical Methods: Place and Ethnography
     - GGRA35H3 Human Geography Field Trip
     - GGRA36H3 Geographical Information Systems (GIS) and Empirical Reasoning
     - GGRA37H3 Introductory Analytical Methods
   - GGRD25H3 Social Research Methods
   - GGRD26H3 Statistics

3. Applications (at least 2.0 credits from among the following):
   - GGRA23H3 Supervised Readings in Human Geography
   - GGRA24H3 Population Geography
   - GGRA25H3 Current Topics in Social Geography
   - GGRA26H3 Urbanization and Development
   - GGRA27H3 Current Topics in Urban Geography
   - GGRA28H3 Urban Political Geography
   - GGRA29H3 Current Topics in Environmental Geography
   - GGRA30H3 Political Ecology Theory and Applications
   - GGRA31H3 Socio-Natures and the Cultural Politics of 'The Environment'
   - GGRA32H3 Land Reform and Development
   - GGRB11H3 Geographies of Environments and Environmentalisms
   - GGRB12H3 Geographies of Religion and Secularism
   - GGRB13H3 The Logic of Geographical Thought
   - GGRB14H3 Geographies of Disease
   - GGRB15H3 Social Geography
   - GGRB16H3 Urban Geography
   - GGRB17H3 Environmental Conservation and Sustainable Development
   - GGRB18H3 Local Geographies of Globalization
   - GGRB19H3 Geographies of Urban Poverty
   - GGRB20H3 Geographies of Urban Poverty
   - GGRB21H3 Human Geography Field Trip
   - GGRB22H3 Spaces of Travel: Unsettling Migration, Tourism, and Everyday Mobilities
   - GGRB23H3 Local Geographies of Globalization
   - GGRB24H3 Geographies of Disease
   - GGRB25H3 Spaces of Travel: Unsettling Migration, Tourism, and Everyday Mobilities
   - GGRB26H3 Local Geographies of Globalization
   - GGRB27H3 Geographies of Urban Poverty
   - GGRB28H3 Spaces of Travel: Unsettling Migration, Tourism, and Everyday Mobilities
   - GGRB29H3 Local Geographies of Globalization
   - GGRB30H3 Geographies of Disease
   - GGRB31H3 Environmental Conservation and Sustainable Development
   - GGRB32H3 Geographies of Urban Poverty
   - GGRB33H3 Geographies of Disease
   - GGRB34H3 Environmental Conservation and Sustainable Development
   - GGRB35H3 Geographies of Urban Poverty
   - GGRB36H3 Geographies of Disease
   - GGRB37H3 Environmental Conservation and Sustainable Development
   - GGRB38H3 Geographies of Urban Poverty
   - GGRB39H3 Geographies of Disease
   - GGRB40H3 Environmental Conservation and Sustainable Development
   - GGRB41H3 Geographies of Urban Poverty
   - GGRB42H3 Geographies of Disease
   - GGRB43H3 Environmental Conservation and Sustainable Development
   - GGRB44H3 Geographies of Urban Poverty
   - GGRB45H3 Geographies of Disease
   - GGRB46H3 Environmental Conservation and Sustainable Development
   - GGRB47H3 Geographies of Urban Poverty
   - GGRB48H3 Geographies of Disease
   - GGRB49H3 Environmental Conservation and Sustainable Development
   - GGRB50H3 Geographies of Urban Poverty
   - GGRB51H3 Geographies of Disease

4. 1.5 additional credits to be selected from GGRA23H3, or the courses listed in Requirements 1 and 3 above.

Program notes/tables

Program: SCMAJ0652 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ0652</th>
<th>SCMAJ0652</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>HIS,HCSSC</td>
<td>HIS,HCSSC</td>
</tr>
</tbody>
</table>

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
Online Calendar

Program Requirements

Students must complete at least 7.0 credits in History, including:

1. Two of the following (1.0 credit):
   - HISA04H3 Themes in World History I
   - HISA05H3 Themes in World History II
   - HISA06H3/GASA01H3 Introducing Global Asia and Its Histories
   - HISA07H3/CLAA04H3 The Ancient Mediterranean World

2. 0.5 credit as follows:
   - HISP31H3 Critical Writing and Research for Historians

3. 3.0 credits at the C- or D-level.

4. Pre-1800 credits:
   - 1.5 credits must deal with the period prior to 1800.

5. Areas of Study:
   - Students must take 1.0 credit in Canadian history and at least 0.5 credit in two of the following areas of history:
     1. United States and Latin America
     2. Medieval
     3. European
     4. Africa and Asia
     5. Transnational
     6. Ancient World

Program notes/tables

Program: SCSPEJOU - Compare

This program may be taken in fulfillment of the requirements of a four-year (20.0 credit) Honours B.A. Degree and requires four to five years to complete. In addition to completing the requirements for the degree, students who intend to qualify for the Advanced College Diploma from Centennial College must complete a short non-credit course on journalism career management at Centennial. Courses are taught at both U of T Scarborough and at Centennial College (The Centre for Creative Communications in East York). Centennial courses are taken during three consecutive college semesters starting in the third year of the program. Students must be registered on a full-time basis while at Centennial College. The course work may include evenings and weekends.

Students must maintain a Cumulative Grade Point Average (CGPA) of 2.0 or higher to remain in the program.

Guidelines for 1st year course selection

Students intending to complete the program should include the following in their first year course selection:

- MDSA02H3
- JOUA01H3 & JOUA02H3
- ACMA01H3 & other courses of interest.

Program notes/tables

Program: SCSPEJOU - Compare

This program may be taken in fulfillment of the requirements of a four-year (20.0 credit) Honours B.A. Degree and requires four to five years to complete. In addition to completing the requirements for the degree, students who intend to qualify for the Advanced College Diploma from Centennial College must complete a short non-credit course on journalism career management at Centennial. Courses are taught at both U of T Scarborough and at Centennial College (The Centre for Creative Communications in East York). Centennial courses are taken during three consecutive college semesters starting in the third year of the program. Students must be registered on a full-time basis while at Centennial College. The course work may include evenings and weekends.

Students must maintain a Cumulative Grade Point Average (CGPA) of 2.0 or higher to remain in the program.

Guidelines for 1st year course selection

Students intending to complete the program should include the following in their first year course selection:

- MDSA02H3
- JOUA01H3 & JOUA02H3
- ACMA01H3 & other courses of interest.
The Journalism Study Guide is available at: web.utsc.utoronto.ca/~humdiv/prg_jo.html

Note: Many of the new media courses codes have changed from MDS to JOU. See course descriptions.

Program Admission

Limited enrolment. Applicants must fill out a joint program application form, which is available online at www.utsc.utoronto.ca/jtprogs

Program Requirements

1. History of Media and Technology

2. Introduction to Journalism

3. Exploring Key Questions in Humanities

4. Journalism in the Age of New Media

5. Covering Immigration and Transnational Issues

6. Critical Journalism

7. Fundamentals of Journalistic Writing

8. Inquiry and Reasoning in the Humanities

9. 2.0 credits at the C or D-level, of which at least 1.0 credits are at the D-level

10. Courses that satisfy the requirements of one Minor Program. Note: Courses used to meet this requirement may also be applied to Requirements 1 through 9.

11. Journalism Group I

* Students will be eligible to enrol in these courses after successfully completing at least 10 full credits at the University of Toronto Scarborough (or permission of the Program Coordinator) including MDSA02H3, JOUB01H3, JOUB02H3, JOUB03H3, JOUB05H3, JOUB10H3, JOUB11H3, JOUB14H3, JOUB18H3, JOUB20H3.

12. History of Media and Technology

13. Introduction to Journalism

14. Exploring Key Questions in Humanities

15. Multiplatform Journalism

16. Journalism Group II

* Students will be eligible to enrol in these courses after successfully completing Group I above.

17. Beat Reporting

18. News Laboratory II

19. Television News

20. Field Placement

* A minimum grade of C- is required in these particular courses to pass and maintain standing in the program

Completion of a three-week Career Management course is required to qualify for the Advanced College Diploma from Centennial College. **

Guidelines for computer and software selection

Students accepted in the Joint Program in Journalism are advised to purchase an industry-standard laptop and obtain designated software and hardware.

** Students will be eligible to enrol in these courses after successfully completing the 10 full credits at the University of Toronto Scarborough (or permission of the Program Coordinator) including MDSA02H3, JOUB01H3, JOUB02H3, JOUB05H3, JOUB10H3, JOUB11H3, JOUB14H3, JOUB18H3, JOUB20H3.

1. 12.0 credits as follows

2. 12.5 credits as follows

3. 12.5 credits at the C or D-level, of which at least 11 credits are at the D-level

4. Courses that satisfy the requirements of one Minor Program. Note: Courses used to meet this requirement may also be applied to Requirements 1 through 3.

5. 12.0 credits as follows

6. ** Students will be eligible to enrol in these courses after successfully completing the 10 full credits at the University of Toronto Scarborough (or permission of the Program Coordinator) including MDSA02H3, JOUB01H3, JOUB02H3, JOUB05H3, JOUB10H3, JOUB11H3, JOUB14H3, JOUB18H3, JOUB20H3.

7. 2.5 credits as follows

8. 2.5 credits as follows

9. Beat Reporting

10. Journalism Group III

* Students will be eligible to enrol in these courses after successfully completing Courses from Journalism Group I above

11. Journalism Group IV

* Students will be eligible to enrol in these courses after successfully completing Courses from Journalism Group II above

Note: Many of the new media courses codes have changed from MDS to JOU. See course descriptions.

Program Admission

Limited enrolment. Applicants must fill out a joint program application form, which is available online at www.utsc.utoronto.ca/jtprogs

Program Requirements

1. Introduction to Journalism

2. History of Media and Technology

3. Exploring Key Questions in Humanities

4. Multiplatform Journalism

5. Journalism Group II

* Students will be eligible to enrol in these courses after successfully completing Group I above.

6. Beat Reporting

7. News Laboratory II

8. Television News

9. Field Placement

* A minimum grade of C- is required in these particular courses to pass and maintain standing in the program.

Completion of a three-week Career Management course is required to qualify for the Advanced College Diploma from Centennial College.
* JOUC16Y3 News Laboratory II
* JOUC17H3 Television News

* JOUC25H3 Field Placement

Note: Students will be eligible to enrol in this course after successfully completing Journalism Group II above.

* JOUD10H3 Senior Seminar in Journalism

A minimum grade of C- is required in these particular courses to pass and maintain standing in the program.

Completion of a three-week Career Management course is required to qualify for the Advanced College Diploma from Centennial College.

Program notes/tables

Program: SCMIN1423 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMIN1423</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>PHSSC,PHY</td>
</tr>
<tr>
<td>Sections</td>
<td>Physics and Astrophysics</td>
</tr>
<tr>
<td>Title</td>
<td>MINOR PROGRAM IN ASTRONOMY AND ASTROPHYSICS (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>Supervisor: J. Bayer Carpintero (416-287-7327) Email: <a href="mailto:jbayer@utsc.utoronto.ca">jbayer@utsc.utoronto.ca</a></td>
</tr>
</tbody>
</table>

See the Astronomy section of this Calendar.

Program notes/tables

Program: SCSPE1780 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE1780</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>ANT,ANTSC</td>
</tr>
<tr>
<td>Sections</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN ANTHROPOLOGY (ARTS/SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>The Specialist Program in Anthropology is intended to provide the professionally oriented student with background preparation of sufficient breadth and depth to pursue specialized training at the graduate level. It is also designed to offer interested students a course structure as background for a wide range of occupations and professions. Students are encouraged to consult with the Undergraduate Counsellor regarding the selection of a course sequence appropriate to their interests and objectives. In exceptional circumstances, supervised research and reading courses are available at the C- and D-levels (ANTC03H3, ANTD31H3). These courses require special arrangements prior to registration. Read the descriptions for these courses carefully as restrictions apply.</td>
</tr>
</tbody>
</table>

Program Requirements

The Program requires completion of 12.0 full credits, as indicated below.

1. ANTA01H3 Introduction to Anthropology: Becoming Human
2. ANTA02H3 Introduction to Anthropology: Society, Culture and Language
3. ANTB19H3 Ethnography and the Comparative Study of Human Societies
4. ANTB20H3 Culture, Politics and Globalization
5. At least 1.0 credits at the B-level or above, of which at least 5.0 credits must be at the C- or D-level, including at least 1.0 credit at the D-level. Students must ensure that as part of Requirement 5 they complete:

Program Requirements

The Program requires completion of 12.0 full credits, as indicated below.

1. ANTA01H3 Introduction to Anthropology: Becoming Human
2. ANTA02H3 Introduction to Anthropology: Society, Culture and Language
3. ANTB19H3 Ethnography and the Comparative Study of Human Societies
4. ANTB20H3 Culture, Politics and Globalization
5. At least 1.0 credits at the B-level or above, of which at least 5.0 credits must be at the C- or D-level, including at least 1.0 credit at the D-level. Students must ensure that as part of Requirement 5 they complete:
Students intending to specialize in Evolutionary Anthropology must take ANT14H3 and ANT15H3. Students intending to specialize in Socio-Cultural Anthropology must take ANT19H3 and ANT20H3. These are prerequisites for upper level courses.

3. At least 10.0 credits at the B-level or above, of which 5.0 credits should be at the C- or D-level, including at least 1.0 credit at the D-level.

Note: Students pursuing the Socio-Cultural stream must ensure that as part of Requirement 3 they complete:

a. At least 1.0 credit in area studies courses: ANTD06H3, ANTD07H3, ANTD08H3, ANTD11H3, ANTD12H3, ANTD13H3.

b. At least 0.5 credit in Ethnographic methods: ANTC60H3.

c. At least 1.0 credit in areas courses: ANTD05H3, ANTD06H3, ANTD11H3, ANTD12H3, ANTD13H3.

d. Courses in Anthropological Linguistics may be counted towards fulfilling Requirement 3.

Note: Partial ESRC at least 1.5 of the credits required for the program must be science credits.

Program notes/tables

Program: SCSPE17806 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCSPE17806</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>ANT,ANTSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Sections</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Title</td>
<td>SPECIALIST PROGRAM IN EVOLUTIONARY ANTHROPOLOGY (SCIENCE)</td>
</tr>
<tr>
<td>ROSI Title</td>
<td>Same as Calendar Title</td>
</tr>
<tr>
<td>Description</td>
<td>The Specialist Program in Evolutionary Anthropology is intended to provide the professionally oriented student with background preparation of sufficient breadth and depth to pursue specialized training at the graduate level. It is also designed to offer interested students a course structure as background for a wide range of occupations and professions. Students are encouraged to consult with the Undergraduate Counselor regarding the selection of a course sequence appropriate to their interests and objectives. In exceptional circumstances, supervised research and reading courses are available at the C- and D-levels (ANTC04H3). These courses require special arrangements prior to registration. Read the descriptions for these courses carefully as restrictions apply.</td>
</tr>
</tbody>
</table>

Program Requirements

The Program requires completion of 12.0 full credits, as indicated below.

1. ANTA01H3 Introduction to Anthropology: Becoming Human
2. ANTA02H3 Introduction to Anthropology: Society, Culture and Language
3. ANTD01H3 Biological Anthropology: Beginnings
4. ANTD02H3 Contemporary Human Evolution and Variation
4. At least 10.0 credits at the B-level or above, of which at least 5.0 credits must be at the C- or D-level, including at least 1.0 credit at the D-level. At least 7.5 credits must be composed of ANT courses identified as “Science credit” in the UTSC Academic Calendar.

Note: ANT14H3 and ANT15H3 are prerequisites for C- and D-level courses in the B.Sc. program.

Program notes/tables

Program: SCMAJ1780 - Compare

<table>
<thead>
<tr>
<th>Code</th>
<th>SCMAJ1780</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owning</td>
<td>ANT,ANTSC</td>
</tr>
<tr>
<td>Organizations</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Description</td>
<td>The Specialist Program in Evolutionary Anthropology is intended to provide the professionally oriented student with background preparation of sufficient breadth and depth to pursue specialized training at the graduate level. It is also designed to offer interested students a course structure as background for a wide range of occupations and professions. Students are encouraged to consult with the Undergraduate Counselor regarding the selection of a course sequence appropriate to their interests and objectives. In exceptional circumstances, supervised research and reading courses are available at the C- and D-levels (ANTC04H3). These courses require special arrangements prior to registration. Read the descriptions for these courses carefully as restrictions apply.</td>
</tr>
</tbody>
</table>

Program Requirements

The Program requires completion of 12.0 full credits, as indicated below.

1. ANTA01H3 Introduction to Anthropology: Becoming Human
2. ANTA02H3 Introduction to Anthropology: Society, Culture and Language
3. ANTD01H3 Biological Anthropology: Beginnings
4. ANTD02H3 Contemporary Human Evolution and Variation
4. At least 10.0 credits at the B-level or above, of which at least 5.0 credits must be at the C- or D-level, including at least 1.0 credit at the D-level. At least 7.5 credits must be composed of ANT courses identified as “Science credit” in the UTSC Academic Calendar.

Note: ANT14H3 and ANT15H3 are prerequisites for C- and D-level courses in the Evolutionary Anthropology program.

Program notes/tables

https://calendaradmin.rosi.utoronto.ca/calendar/pages/reports/reports.xhtml[2014-03-05, 5:16:44 PM]
The Major program in Anthropology provides a course structure for those students desiring to expand upon or supplement other areas of academic interest by taking advantage of Anthropology’s unique global, chronological, and biological perspective on the human condition.

**Program Requirements**

The Program requires completion of 8.0 full credits in Anthropology including:

1. ANTA01H3 Introduction to Anthropology: Becoming Human
2. ANTA02H3 Introduction to Anthropology: Society, Culture and Language
3. Students intending to specialize in Evolutionary Anthropology must take ANTB14H3 and ANTB15H3. Students intending to specialize in Socio-Cultural Anthropology must take ANTB19H3 and ANTB20H3. These are prerequisites for upper level courses.
4. 6.0 credits at the B-level or above, of which at least 3.0 credits must be at the C- or D-level.

Note: Students pursuing the Socio-Cultural stream must ensure that as part of Requirement 4, they complete:

a. At least 1 credit in area studies courses ANTB05H3, ANTB16H3, ANTB18H3, ANTB65H3, ANTC89H3, ANT07H3
b. ATNC60H3

c. At least 0.5 credit from among ANTD05H3, AN TD06H3, ANTD15H3, ANTD24H3

d. Courses in Anthropological Linguistics (i.e. LINC27H3) may be counted towards fulfilling Requirement 4.

**Notes:**

ANTB19H3 and ANTB20H3 are prerequisites for C- and D-level courses in the Socio-Cultural Anthropology program.

© 2014 University of Toronto

www.utoronto.ca/ Calendar | University Switchboard: (416) 978-2011
University of Toronto, 27 King’s College Circle, Toronto, Ontario, Canada M5S 1A1