ADDENDUM 2004-2005
Faculty of Science

List of new programs and programs for which the requirements were modified this year.
For details please see below.

General Science
BSc General Science

Biochemistry, Microbiology and Immunology
Honours BSc in Biochemistry
# General Science

**BSc General Science**

Suggested course stream for full-time students

## Requirements of the first year:
A minimum of 30 credits from the following list of compulsory and elective courses with a maximum of eight credits in CSI:

### Fall

**Compulsory courses:**
- MAT1320  Calculus I  3
- PHY1101  Fundamentals of Physics I  3
  or
- PHY1301  Principles of Physics I  3

**Electives:**
- BIO1120  Introduction to Organismal Biology  4
- CHM1310  Principles of Chemistry  4
- CSI1100  Introduction to Computer Science I  4
- CSI1301  Computing Concepts for Business  4
- CSI1303  Introduction to Computing Concepts  4
- CSI1390  Introduction to Computers  3
- GEO1115  Introduction to Earth Materials  3
- PHY1201  Physics Laboratory  3
  (This course runs from September to April)

### Winter

**Compulsory courses:**
- MAT1323  Calculus and Matrix Algebra  3
  or
- MAT1322  Calculus II  3
  and
- MAT1341  Introduction to Linear Algebra  3
- PHY1102  Fundamentals of Physics II  3
  or
- PHY1302  Principles of Physics II  3

**Electives:**
- BIO1110  Introduction to Cell Biology  4
- CHM1320  Organic Chemistry I  4
- CSI1101  Introduction to Computer Science II  4
- CSI1102  Fundamentals of Software Design  4
- EVS1101  Introduction to Environmental Science  3
- GEO1111  Introduction to Earth Systems  3
- MAT1361  Logic and Discrete Mathematics  3

Minimum of 30 credits of 2000-level or higher courses in BCH, BIO, CHM, EVS, GEO, MAT, PHY  30

Minimum of 30 credits of 3000- or 4000-level courses in BCH, BIO, BPS, CHM, EVS, GEO, MAT, PHY  30
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG1100</td>
<td>*Workshop in Essay Writing</td>
<td>3</td>
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<tr>
<td>or</td>
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<tr>
<td>ENG1112</td>
<td>*Technical Report Writing</td>
<td>3</td>
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<tr>
<td>PHI2396</td>
<td>Bioethics</td>
<td>3</td>
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<td>or</td>
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<tr>
<td>PHI2398</td>
<td>Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Six credits of non-science electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

* Courses offered in both semesters
Biochemistry, Microbiology and Immunology

Honours BSc in Biochemistry

The schedule for the first three years is identical to that of the BSc with concentration in Biochemistry.

During the fourth year of the BSc with honours in Biochemistry, the student must either do a research project (BCH4040), or take nine additional credits of science electives**. The research project is highly recommended for students who intend to pursue a career in research, but a CGPA of 6.0 is required to be eligible to the project.

Suggested course stream for full-time students

**Compulsory courses in first year:** 34 cr.

**Fall:**
- BIO1120 Introduction to Organismal Biology 4 cr.
- CHM1310 Principles of Chemistry 4 cr.
- MAT1320 Calculus I 3 cr.
- PHY1201 Physics Laboratory 3 cr.
  (This course runs from September to April)
- PHY1301 Principles of Physics I 3 cr.

**Winter:**
- BIO1110 Introduction to Cell Biology 4 cr.
- CHM1320 Organic Chemistry I 4 cr.
- MAT1323 Calculus and Matrix Algebra 3 cr.
- PHY1302 Principles of Physics II 3 cr.

**Fall, Winter or Summer, preferably during the first year:**
- ENG1100 Workshop in Essay Writing 3 cr.

**Compulsory courses in second year:** 25 cr.

**Fall:**
- CHM2120 Organic Chemistry II 3 cr.
- CHM2126 Laboratory of Organic Chemistry II 2 cr.
- CHM2132 Physical Chemistry for the Life Sciences 3 cr.
- CHM2154 Analytical Chemistry 3 cr.
- MAT2378 Probability and Statistics for the Natural Sciences 3 cr.
  It is recommended to add one elective course* to this session.

**Winter:**
- BCH2140 Introduction to Biochemistry 3 cr.
- BCH2336 Biochemistry Laboratory I 2 cr.
- BIO2123 Genetics 4 cr.
- CHM2118 Laboratory of Analytical Chemistry 2 cr.
  It is recommended to add two elective courses* to this session.

**Compulsory courses in third year:** 21 cr.

**Fall:**
- BCH3170 Molecular Biology 3 cr.
- BCH3356 Molecular Biology Laboratory 3 cr.
- CHM3120 Intermediate Organic Chemistry 3 cr.
- CHM3122 Applications of Spectroscopy in Chemistry 3 cr.
  It is recommended to add two elective courses* to this session.

**Winter:**
BCH3120 General Intermediary Metabolism 3
BCH3125 Protein Structure and Function 3
BCH3346 Biochemistry Laboratory II 3
It is recommended to add three elective courses* to this session.

* Elective courses
These courses must be added to the compulsory courses to complete the formation. Some of these courses can be taken during the summer. Courses in engineering, physiology and pharmacology are also accepted as science electives.

Fifteen credits of science electives including at least six credits at the 3000-level 15
Nine credits of non-science electives 9

Compulsory courses in fourth year with a research project: 20

Fall:
BCH4032 Séminaire de biochimie%%Biochemistry Seminar 2
(This course runs from September to April)
BCH4040 **Projet de recherche - biochimie%%Honours Research - Biochemistry 9
(This course runs from September to April)
BCH4122 Macromolecules 3
It is recommended to add two elective courses** to this session.
BPS3101 Genomics 3
(This course can be replaced by BPS4101, offered in the winter term)

Winter:
BCH4125 Cellular Regulation and Control 3
BPS4101 Human Genome Structure and Function 3
(This course can be replaced by BPS3101, offered in the fall term)
It is recommended to add one elective course** to this session.

** Elective courses
Nine additional credits from the 3000- or 4000-level courses in biochemistry, biology, biopharmaceutical sciences, cellular and molecular medicine, chemistry, pharmacology, physiology, or from the 5000-level courses in microbiology or immunology.

*** Students who do not register to BCH4040 must take 18 credits (instead of nine) of the above elective courses** to complete the requirements for the fourth year of the Honours program in Biochemistry.