HONOURS BSC IN BIOLOGY
(RESEARCH FOCUS) -
CELLULAR/MOLECULAR
OPTION

Recent discoveries and new technologies are revolutionizing the biological sciences, placing increasing emphasis on integrating knowledge across all levels of organization, from molecules to ecosystems.

Our programs give students both the intellectual tools and the hands-on experience they need to generate new knowledge and contribute to debates on issues as diverse as land management, conservation and endangered species, disease prevention and management, stem cell research and genetically modified organisms.

Learning takes place through traditional classroom instruction, innovative laboratory projects with state-of-the-art technologies and a strong basic research program in which undergraduate students at all levels are intensively mentored in a research lab.

The Honours program in biology provides the opportunity for in-depth study within one or more biological disciplines. Students can concentrate in a particular area by choosing one of three options—cellular and molecular biology, physiology and ecology, evolution and behaviour. This route includes a compulsory independent research project designed to prepare students for graduate studies. Alternatively, students can choose to pursue diverse interests by selecting a general course of study that will include a number of advanced courses.

The major in biology introduces students to cell biology, genetics, evolution, ecology and physiology (both plant and animal). The major is combined with either another major or a minor and allows students to pursue diverse interests while opening the door to graduate studies or a career in the life sciences.

The minor in biology is a flexible program that allows students to select a subset of biology courses.

This program is offered in English and in French.

Program Requirements
The extended French stream is available with this program.

Compulsory Courses at the 1000 level
BIO 1130 Introduction to Organismal Biology 3 Units
BIO 1140 Introduction to Cell Biology 3 Units
CHM 1311 Principles of Chemistry 3 Units
CHM 1321 Organic Chemistry I 3 Units
GEO 1111 Introduction to Earth Systems 3 Units
MAT 1330 Calculus for the Life Sciences I 3 Units
MAT 1332 Calculus for the Life Sciences II 3 Units
PHY 1321 Principles of Physics I 3 Units

Compulsory Courses at the 2000 level
BCH 2333 Introduction to Biochemistry 3 Units
BIO 2129 Ecology 3 Units
BIO 2133 Genetics 3 Units

Compulsory Courses at the 3000 level
BIO 2135 Animal Form and Function 3 Units
BIO 2137 Introduction to Plant Science: Biodiversity to Biotechnology 3 Units
CHM 2120 Organic Chemistry II 3 Units
MAT 2379 Introduction to Biostatistics 3 Units

Optional Courses
3 course units from:
- BIO 3151 Molecular Biology Laboratory 3 Units
- BIO 3152 Cell Biology Laboratory 3 Units

6 course units from:
- BCH 3120 General Intermediary Metabolism 6 Units
- BIO 3102 Molecular Evolution 3 Units
- BIO 3119 Population Genetics 3 Units
- BIO 3124 General Microbiology 3 Units
- BIO 3126 General Microbiology Laboratory 3 Units
- BIO 3147 Developmental Biology 3 Units
- BIO 3360 Computational Tools for Biological Sciences 3 Units
- BCH 4172 Topics in Biotechnology 1.5 Units
- BIO 4115 Topics in Molecular Genetics 1.5 Units
- BIO 4140 Plant Developmental Biology 3 Units
- BIO 4144 Plant Biochemistry and Molecular Biology 3 Units
- BIO 4145 Eukaryotic Microbiology 3 Units
- BIO 4175 Membrane Physiology 3 Units
- BIO 4537 Génétique évolutive humaine 3 Units
- BPS 3101 Genomics 3 Units
- BPS 4104 Bioinformatics Laboratory 3 Units

9 optional course units in English (ENG) at the 1000 or 2000 level 3 Units
9 optional course units in biology (BIO), biopharmaceutical science (BPS) or environmental science (EVS), ITI 1120, BCH 3120, BCH 3125, BCH 3356, BCH 4122, BCH 4125, BCH 4188 9 Units
9 elective course units offered by the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management 9 Units

Elective Courses
15 elective course units 15 Units
Total: 120 Units