Honours BSc in Biology (Research Focus) - Ecology, Evolution, Behaviour 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 Organisal 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 3009 Research Practicum 6 Units

Compulsory Courses at the 4000 level
BIO 4009 Honours Research 9 Units
BIO 4187 Applied Biostatistics 3 Units
BIO 4920 Seminar I Evaluating Science 3 Units
BIO 4921 Seminar II Developing and Communicating Science 1.5 Units

Optional Courses
12 course units from:

- BIO 3102 Molecular Evolution 1.5 Units
- BIO 3103 Field Biology 3 Units
- BIO 3115 Conservation Biology 3 Units
- BIO 3117 Ecosystem Ecology 3 Units
- BIO 3119 Population Genetics 3 Units
- BIO 3122 Evolutionary Biology 3 Units
- BIO 3146 Ecophysiology of Plants 3 Units
- BIO 3154 Population and Community Ecology 3 Units
- BIO 3176 Animal Behaviour 3 Units
- BIO 3310 Plant Systematics and Diversity 3 Units
- BIO 3360 Computational Tools for Biological Sciences 3 Units
- BIO 3924 Biology of Algae and Fungi 3 Units
- BIO 4101 Pesticides and the Environment 3 Units
- BIO 4111 Plant-Animal Interactions 3 Units
- BIO 4122 Experiments in Animal Behaviour 3 Units
- BIO 4146 Ecotoxicology 3 Units
- BIO 4148 Phylogenetic Systematics 3 Units
- BIO 4150 Spatial Ecology 3 Units
- BIO 4156 Freshwater Ecology 3 Units
- BIO 4159 Evolutionary Ecology 3 Units
- BIO 4162 Tropical Ecology 3 Units
- BIO 4537 Génétique évolutive humaine 3 Units
- BIO 4551 Physiologie évolutive et écophysiologie 3 Units
- BIO 4910 Field Course in Ecology 3 Units

3 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
3 optional course units in biology (BIO), biopharmaceutical science (BPS) or environmental science (EVS) at the 3000 or 4000 level, BCH 3120, BCH 3125, BCH 3356, BCH 4122, BCH 4125, BCH 4188 3 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
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<tr>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>18 elective course units</td>
<td>18 Units</td>
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<td>Total:</td>
<td>120 Units</td>
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