HONOURS BSC IN BIOLOGY - 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 pursue careers in diverse fields such as conservation and endangered species; land-use management; ecotoxicology; academic, industry or government research; or health care. Learning takes place through traditional classroom instruction, innovative laboratory projects with state-of-the-art technologies, field-based courses around the world, and a strong research program in which undergraduate students of all years are intensively mentored in a research lab.

The honours in biology allows for in-depth study in one or more biological disciplines. Students can concentrate on a particular area by choosing one of three options: Cellular and Molecular Biology, Physiology, or Ecology, Evolution and Behaviour. This route includes a compulsory independent research project to equip students with advanced research, analysis and communication skills applicable to diverse careers. Students thinking of a career in research should consider the Research Focus, an immersive research experience in the third and fourth years. Alternatively, they can pursue diverse interests by selecting a general course of study that includes a number of advanced courses, and they can gain work experience while studying through the Co-Operative Education Programs.

The major in biology introduces students to cell biology, genetics, evolution, ecology and physiology (both plant and animal). It is combined with either another major or a minor. The major 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

Co-operative education is available with this program.

The extended French stream is available with this program.

Requirements for this program have been modified. Please consult the 2018-2019 calendars (http://catalogue.uottawa.ca/en/archives) for the previous requirements.

3 optional course units in English (ENG) at the 1000 or 2000 level

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIO 1130</td>
<td>Introduction to Organismal Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 1140</td>
<td>Introduction to Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHM 1311</td>
<td>Principles of Chemistry</td>
<td>3</td>
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<tr>
<td>CHM 1321</td>
<td>Organic Chemistry I</td>
<td>3</td>
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<tr>
<td>GEO 1111</td>
<td>Introduction to Earth Systems</td>
<td>3</td>
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<tr>
<td>MAT 1330</td>
<td>Calculus for the Life Sciences I</td>
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ECOLOGY/EVOLUTION/BEHAVIOUR OPTION - Block A

Required course units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIO 3122</td>
<td>Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 4009</td>
<td>Honours Research</td>
<td>9</td>
</tr>
<tr>
<td>BIO 4158</td>
<td>Applied Biostatistics</td>
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ECOLOGY/EVOLUTION/BEHAVIOUR OPTION - Block B

9 course units from:

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

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

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

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


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24 elective course units 24 Units
Total: 120 Units

Note(s)

Within your program of study, you must complete a minimum of 15 course units at the 3000 or 4000 level with a laboratory component. A complete list of courses having a laboratory component can be found below. Please note: if a course listed below has already been used to fulfill a compulsory or optional requirement in your program listed above, these course units count towards this total of 15 units.

**List of Optional Courses**

**List of Optional Courses with a Laboratory Component**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIM 4316</td>
<td>Modern Bioanalytical Chemistry</td>
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</tr>
<tr>
<td>BIO 3103</td>
<td>Field Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3126</td>
<td>General Microbiology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3137</td>
<td>Experiments in Animal Physiology</td>
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</tr>
<tr>
<td>BIO 3146</td>
<td>Ecophysiology of Plants</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3151</td>
<td>Molecular Biology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3152</td>
<td>Cell Biology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3154</td>
<td>Population and Community Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3158</td>
<td>Vertebrate Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3310</td>
<td>Plant Systematics and Diversity</td>
<td>3</td>
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<tr>
<td>BIO 3333</td>
<td>Entomology</td>
<td>3</td>
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<tr>
<td>BIO 3360</td>
<td>Computational Tools for Biological Sciences</td>
<td>3</td>
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<td>BIO 3924</td>
<td>Biology of Algae and Fungi</td>
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<td>Field Course in Ecology</td>
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<tr>
<td>BPS 4104</td>
<td>Bioinformatics Laboratory</td>
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<tr>
<td>BPS 4127</td>
<td>Advanced Techniques in Biosciences</td>
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