HONOURS BSC 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 fields as diverse 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 program 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. 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.

This program is offered in English and in French.

Program Requirements

Co-operative education is available with this program.

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2022-2023 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

Basic Skills

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

Compulsory Courses at the 1000 level

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<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 and Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHM 1311</td>
<td>Principles of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 1321</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>GEO 1111</td>
<td>Introduction to Earth Systems</td>
<td>3</td>
</tr>
<tr>
<td>MAT 1330</td>
<td>Calculus for the Life Sciences I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 1332</td>
<td>Calculus for the Life Sciences II</td>
<td>3</td>
</tr>
<tr>
<td>PHY 1321</td>
<td>Principles of Physics I</td>
<td>3</td>
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</table>

Compulsory Courses at the 2000 level

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BCH 2333</td>
<td>Introduction to Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO 2129</td>
<td>Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 2133</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO 2135</td>
<td>Animal Form and Function</td>
<td>3</td>
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</table>

Compulsory Courses at the 4000 level

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIO 4920</td>
<td>Seminar I Evaluating Science</td>
<td>1.5</td>
</tr>
<tr>
<td>BIO 4921</td>
<td>Seminar II Developing and Communicating Science</td>
<td>1.5</td>
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</tbody>
</table>

Optional Courses

Ecology/Evolution/Behaviour Option - Block A

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<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>
<td>3</td>
</tr>
</tbody>
</table>

Ecology/Evolution/Behaviour Option - Block B

9 course units from: 9 Units

- BIO 3102 | Molecular Evolution
- BIO 3103 | Field Biology
- BIO 3115 | Conservation Biology
- BIO 3117 | Ecosystem Ecology
- BIO 3119 | Population Genetics
- BIO 3128 | Biology of Algae and Fungi
- BIO 3146 | Ecophysiology of Plants
- BIO 3154 | Population and Community Ecology
- BIO 3176 | Animal Behaviour
- BIO 3310 | Plant Systematics and Diversity
- BIO 3360 | Computational Tools for Biological Sciences
- BIO 4111 | Plant-Animal Interactions
- BIO 4122 | Experiments in Animal Behaviour
- BIO 4146 | Ecotoxicology
- BIO 4150 | Spatial Ecology
- BIO 4156 | Freshwater Ecology
- BIO 4159 | Evolutionary Ecology
- BIO 4537 | Génétique évolutive humaine
- BIO 4551 | Physiologie évolutive et écophysiologie

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, SCI 3101 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, SCI 3101 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

Elective Courses

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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<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>
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<tr>
<td>BIO 3126</td>
<td>General Microbiology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3128</td>
<td>Biology of Algae and Fungi</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3137</td>
<td>Experiments in Animal Physiology</td>
<td>3</td>
</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>
</tr>
<tr>
<td>BIO 3333</td>
<td>Entomology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3360</td>
<td>Computational Tools for Biological Sciences</td>
<td>3</td>
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<tr>
<td>BIO 4004</td>
<td>Honours Research</td>
<td>3</td>
</tr>
<tr>
<td>BIO 4009</td>
<td>Honours Research</td>
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</tr>
<tr>
<td>BIO 4122</td>
<td>Experiments in Animal Behaviour</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 4158</td>
<td>Applied Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>BIO 4302</td>
<td>Animal Movement</td>
<td>3</td>
</tr>
<tr>
<td>BPS 4104</td>
<td>Bioinformatics Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BPS 4127</td>
<td>Advanced Techniques in Biosciences</td>
<td>3</td>
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</tbody>
</table>