# BIOLOGY - SECONDARY MAJOR

## Requirements for a Secondary Major in Biology

Thirty-five semester hours including the following: ¹

### Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 1305 &amp; BIO 1105</td>
<td>Modern Concepts of Bioscience and Modern Concepts of Bioscience Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>or BIO 1405</td>
<td>Investigations of Modern Biology Concepts I</td>
<td></td>
</tr>
<tr>
<td>BIO 1306 &amp; BIO 1106</td>
<td>Modern Concepts of Bioscience, continued and Modern Concepts of Bioscience Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>or BIO 1406</td>
<td>Investigations of Modern Biology Concepts II</td>
<td></td>
</tr>
<tr>
<td>BIO 2306 &amp; BIO 2106</td>
<td>Genetics and Genetics Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIO 3303</td>
<td>Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3366</td>
<td>Foundations of Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 4001</td>
<td>Achievement Test</td>
<td>0</td>
</tr>
</tbody>
</table>

Select at least one hour from the following: ¹

- BIO 3100: Seminar in Biology
- BIO 3103: Ecology Laboratory
- BIO 3300: Advanced Topics in Biology
- BIO 3V9R: Research
- BIO 4199: Scientific Communication

Select three hours from each group: ¹

#### Group 1

- BIO 3324 & BIO 3124: Entomology and Laboratory for Entomology
- BIO 3429: Comparative Chordate Anatomy
- BIO 4301: Immunology
- BIO 4302 & BIO 4102: General Microbiology and General Microbiology Lab
- BIO 4304 & BIO 4104: Medical Entomology and Medical Entomology Laboratory
- BIO 4308 & BIO 4108: Genes and Development and Genes and Development Laboratory
- BIO 4323 & BIO 4123: Parasitology and Laboratory for Parasitology
- BIO 4416
- BIO 4422: Ichthyology
- BIO 4428: Ornithology

#### Group 2

- BIO 3322 & BIO 3122: Human Physiology and Human Physiology Lab
- BIO 3342: Molecular Cell Biology
- BIO 4307: Biochemistry and Physiology of the Cell
- BIO 4317 & BIO 4117: Plant Physiology and Plant Physiology Lab
- BIO 4431

### Required Courses in Other Fields

- CHE 1301 & CHE 1101: Basic Principles of Modern Chemistry I and General Chemistry Laboratory I | 4 |
- CHE 1302 & CHE 1102: Basic Principles of Modern Chemistry II and General Chemistry Laboratory II | 4 |
- CHE 3331: Organic Chemistry I | 3 |
- CHE 3332: Organic Chemistry II | 3 |
- CHE 3238: Organic Chemistry Laboratory | 2 |
- MTH 1321: Calculus I | 3 |
- MTH 1322: Calculus II | 3 |
- or STA 2381: Introductory Statistical Methods |

Select one of the following sequences: ¹

- PHY 1408 & PHY 1409: General Physics for Natural and Behavioral Sciences I and General Physics for Natural and Behavioral Sciences II |
- PHY 1420 & PHY 1430: General Physics I and General Physics II |
- PHY 1420 & PHY 1409: General Physics I and General Physics for Natural and Behavioral Sciences II |

### Total Hours

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 4418</td>
<td>Biology of Wetland and Aquatic Vascular Plants</td>
<td></td>
</tr>
</tbody>
</table>

### Subtotal

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

### Group 3

- BIO 3320: Climate Change Biology
- BIO 4310: Biogeography
- BIO 4365: Topics in Evolution
- BIO 4381: Restoration Ecology
- BIO 4405: Limnology
- BIO 4406: Aquatic Biology

### Group 4

- BIO 3350: Genomics and Bioinformatics
- BIO 4306 & BIO 4106: Molecular Genetics and Genomics and Molecular Genetics and Genomics Laboratory
- BIO 4333: Science Leadership: Improvement of Science Education

Four hours of 3000-4000 level BIO courses | 4 |

### Total Hours

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>65</td>
</tr>
</tbody>
</table>

¹ A grade of “C” or better in all BIO courses used in the major and a GPA of 2.0 or higher on all BIO courses completed.

² A grade of “C” or better in all courses required in other fields.