ABBREVIATIONS AND NOTES:

Pre-requisite: complete with grade of a C (not C-) or higher before taking the course for which it is required.

C = Co-requisite: take either before or at the same time as the course for which they are required.

(HL) = Higher Level Course  ℗ = Only offered on even years  ℘ = Only offered on odd years

PLE = a field course offered at the Pymatuning Lab of Ecology. Any field course can satisfy one (but only one) lab requirement for the BIOSC major. Not all field courses are offered every summer.

Writing (W): pre-req is ENGCMP 0200 / W’s are restricted by major / W’s with lab or seminar are 1 credit add-ons.

BIOSC 1010: pre-reqs are ENGCMP 0200; BIOSC 0350 or 0370 or 1000 or 1810 or 1130; Junior or Senior Level; BIOSC major

Physiology: you cannot receive credit for more than ONE of these physiology courses: BIOSC 1070, 1080, 1250, 1435

### CORE COURSES for major

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Cr</th>
<th>Term(s)</th>
<th>Pre- or Co-Req (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0350</td>
<td>Genetics</td>
<td>3</td>
<td>F, Sp, Sm</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>0370</td>
<td>Ecology</td>
<td>3</td>
<td>F, Sp, Sm</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1000</td>
<td>Biochemistry</td>
<td>3</td>
<td>F, Sp, Sm</td>
<td>BIOSC 0160, CHEM 0310</td>
</tr>
<tr>
<td>1810</td>
<td>Macromolecular Structure &amp; Function</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160, CHEM 0310</td>
</tr>
<tr>
<td>1820</td>
<td>Metabolic Pathways &amp; Regulation</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 1810</td>
</tr>
<tr>
<td></td>
<td><strong>BIOSC 1810+1820 = biochemistry (1000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FALL TERM --- UPPER DIVISION COURSES to satisfy electives for major

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Cr</th>
<th>Term(s)</th>
<th>Pre- or Co-Req (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0390</td>
<td>Ecology Lab ( +1 cr. 0391 W, Fall only)</td>
<td>1</td>
<td>F, Sm @ PLE</td>
<td>BIOSC 0370, BIOSC 006X</td>
</tr>
<tr>
<td>1005</td>
<td>Introduction to Biochemistry Lab</td>
<td>1</td>
<td>F</td>
<td>BIOSC 1000</td>
</tr>
<tr>
<td>1010</td>
<td>Communicating in the Biological Sciences (W)</td>
<td>2</td>
<td>F, Sp, Sm</td>
<td>See Notes</td>
</tr>
<tr>
<td>1070</td>
<td>Human Physiology (Honors) (see notes)</td>
<td>4</td>
<td>F</td>
<td>BIOSC 0160, CHEM 0120, Cum GPA 3.25</td>
</tr>
<tr>
<td>1120</td>
<td>Biostatistics</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160, core BIOSC, STAT 1000</td>
</tr>
<tr>
<td>1200</td>
<td>Vertebrate Morphology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1205</td>
<td>Vertebrate Morphology Lab</td>
<td>1</td>
<td>F</td>
<td>BIO 1200, BIOSC 006X</td>
</tr>
<tr>
<td>1221</td>
<td>Urban Ecological Field Studies</td>
<td>1</td>
<td>F</td>
<td>BIOSC 0370, BIOSC 006X</td>
</tr>
<tr>
<td>1250</td>
<td>Human Physiology (see notes)</td>
<td>3</td>
<td>F, Sp, Sm</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1320</td>
<td>Population Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0370</td>
</tr>
<tr>
<td>1350</td>
<td>Plant Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1375</td>
<td>Tropical Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1500</td>
<td>Cell Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 1000 or 1810</td>
</tr>
<tr>
<td>1510</td>
<td>Cell Biology Lab (+1 cr. 1511 W)</td>
<td>1</td>
<td>F</td>
<td>BIOSC 1500, BIOSC 006X</td>
</tr>
<tr>
<td>1540</td>
<td>Computational Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1545</td>
<td>Mathematics of Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 0160, MATH 0220</td>
</tr>
<tr>
<td>1630</td>
<td>Computational Biology Seminar (W)</td>
<td>2</td>
<td>F</td>
<td>BIOSC 1540, ENGCMP 0200, COMPBIO major</td>
</tr>
<tr>
<td>1850</td>
<td>Microbiology</td>
<td>3</td>
<td>F, Sp, Sm</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1855</td>
<td>Introduction to Microbiology Lab</td>
<td>1</td>
<td>F, Sp, Sm</td>
<td>BIOSC 1850, BIOSC 006X</td>
</tr>
<tr>
<td>1860</td>
<td>Microbiology Lab [Micro Majors] (+1 cr. 1861 W)</td>
<td>2</td>
<td>F</td>
<td>BIOSC 1850, BIOSC 006X, MICRO major</td>
</tr>
<tr>
<td>1865</td>
<td>Microbial Physiology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 1850; 1000 or 1810</td>
</tr>
<tr>
<td>1940</td>
<td>Molecular Biology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 1810 or 1000; 0350</td>
</tr>
<tr>
<td>1950</td>
<td>Molecular Genetics Lab (+1 cr. 1951 W)</td>
<td>2</td>
<td>F</td>
<td>BIOSC 1940, BIOSC 006X</td>
</tr>
<tr>
<td>1999</td>
<td>Medical Microbiology</td>
<td>3</td>
<td>F</td>
<td>BIOSC 1850</td>
</tr>
</tbody>
</table>

These classes DON’T count towards BIOSC credits for major; they DO count as part of 120 credits for degree:

- BIOSC 0100, 0200, 08XX are Non-majors courses

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Cr</th>
<th>Term(s)</th>
<th>Pre- or Co-Req (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0041+0042</td>
<td>Anatomy for the Health Prof. with Lab</td>
<td>3+1</td>
<td>F, Sm</td>
<td>Must take as co-reqs</td>
</tr>
<tr>
<td>1690</td>
<td>Experience in Undergraduate Teaching</td>
<td>variable</td>
<td>F, Sp, Sm</td>
<td>By arrangement only</td>
</tr>
<tr>
<td>1900</td>
<td>Biological Sciences Peer Advising</td>
<td>1</td>
<td>F, Sp</td>
<td>By arrangement only</td>
</tr>
<tr>
<td>1901</td>
<td>Independent Study</td>
<td>variable</td>
<td>F, Sp, Sm</td>
<td>By arrangement only</td>
</tr>
<tr>
<td>1903/1904</td>
<td>Undergraduate Research/Honors</td>
<td>variable</td>
<td>F, Sp, Sm</td>
<td>By arrangement only</td>
</tr>
<tr>
<td>1906</td>
<td>Research Communication</td>
<td>1</td>
<td>Sp ℘</td>
<td>006X, 0160*, 1903 or 1904</td>
</tr>
<tr>
<td>1907</td>
<td>Research Deconstruction</td>
<td>1</td>
<td>Sp ℘</td>
<td>006X, 0160*, 1903 or 1904</td>
</tr>
</tbody>
</table>

Spring Courses on back →
Summer Courses on back →
<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Cr</th>
<th>Term(s)</th>
<th>Pre- or Co-Req (©)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0351</td>
<td>Genetics Lab</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 0350, BIOSC 006X</td>
</tr>
<tr>
<td>0352</td>
<td>Introduction to Molecular Genetics Lab</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 0350, BIOSC 006X</td>
</tr>
<tr>
<td>1010</td>
<td>Communicating in the Biological Sciences (W)</td>
<td>2</td>
<td>Sp, Sm, F</td>
<td>See Notes</td>
</tr>
<tr>
<td>1130</td>
<td>Evolution</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0350</td>
</tr>
<tr>
<td>1250</td>
<td>Human Physiology (see notes)</td>
<td>3</td>
<td>Sp, Sm, F</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1255</td>
<td>Physiology Lab</td>
<td>1</td>
<td>Sp, Sm</td>
<td>BIOSC 1250 or 1070, BIOSC 006X</td>
</tr>
<tr>
<td>1275</td>
<td>Genomics</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0350</td>
</tr>
<tr>
<td>1280</td>
<td>Experimental Microbial Genetic Engineering</td>
<td>3</td>
<td>Sp*odd</td>
<td>BIOSC 0350, 1850</td>
</tr>
<tr>
<td>1285</td>
<td>Genomics Lab</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 0350, BIOSC 006X</td>
</tr>
<tr>
<td>1290</td>
<td>Genetic Engineering Lab (+1 cr. 1291 W)</td>
<td>1</td>
<td>Sp*odd</td>
<td>BIOSC 1855 or 1860, BIOSC 006X</td>
</tr>
<tr>
<td>1435</td>
<td>Environ. Physiology of Animals (see notes)</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0370</td>
</tr>
<tr>
<td>1440</td>
<td>Animal Behavior</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0370</td>
</tr>
<tr>
<td>1455</td>
<td>Human Endocrinology</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 1250</td>
</tr>
<tr>
<td>1470</td>
<td>Biophysical Chemistry</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0160, MATH 230</td>
</tr>
<tr>
<td>1520</td>
<td>Developmental Biology</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 0350</td>
</tr>
<tr>
<td>1530</td>
<td>Developmental Bio. Lab (+1 cr. 1531 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 1520, BIOSC 006X</td>
</tr>
<tr>
<td>1542</td>
<td>Computational Genomics</td>
<td>3</td>
<td>Sp*even</td>
<td>BIOSC 1540, CS 0008 or 0011</td>
</tr>
<tr>
<td>1544</td>
<td>Simulation and Modeling</td>
<td>3</td>
<td>Sp*odd</td>
<td>BIOSC 1540, CS 0008 or 0011</td>
</tr>
<tr>
<td>1550</td>
<td>Ecology /Evolution Seminar (+1 cr. 1551 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 0350, 0370, 1130</td>
</tr>
<tr>
<td>1560</td>
<td>Cell &amp; Devel. Biol. Seminar (+1 cr. 1561 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 1500, 1520</td>
</tr>
<tr>
<td>1570</td>
<td>Microbiology Seminar (+1 cr. 1571 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 1865</td>
</tr>
<tr>
<td>1580</td>
<td>Biochemistry Seminar (+1 cr. 1581 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 1810, 1820</td>
</tr>
<tr>
<td>1640</td>
<td>Computational Biology Research</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 1540, CS 0008 or 0011, COMPBIO major</td>
</tr>
<tr>
<td>1740</td>
<td>Virology Lab (+1 cr. 1741 W)</td>
<td>1</td>
<td>Sp</td>
<td>BIOSC 0350, 1000,1850 or instructor permission</td>
</tr>
<tr>
<td>1820</td>
<td>Metabolic Pathways &amp; Regulation</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 1810</td>
</tr>
<tr>
<td>1830</td>
<td>Biochemistry Lab (+1 cr. 1831 W)</td>
<td>3</td>
<td>Sp</td>
<td>BIOSC 1810, 1820, BIOSC 006X</td>
</tr>
<tr>
<td>1850</td>
<td>Microbiology</td>
<td>3</td>
<td>Sp, Sm, F</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1855</td>
<td>Introduction to Microbiology Lab</td>
<td>1</td>
<td>Sp, Sm, F</td>
<td>BIOSC 1850, BIOSC 006X</td>
</tr>
</tbody>
</table>

**SUMMER TERM --- UPPER DIVISION COURSES to satisfy electives for major**

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Cr</th>
<th>Term(s)</th>
<th>Pre- or Co-Req (©)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0370+0390</td>
<td>Ecology + Ecology Lab</td>
<td>4</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160, BIOSC 006X</td>
</tr>
<tr>
<td>1010</td>
<td>Communicating in the Biological Sciences (W)</td>
<td>2</td>
<td>Sm, F, Sp</td>
<td>See Notes</td>
</tr>
<tr>
<td>1040</td>
<td>Ecological Management</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1140</td>
<td>Behavioral Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1160</td>
<td>Forest Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1170</td>
<td>Freshwater Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1180</td>
<td>Ecology of Amphibians and Reptiles</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1190</td>
<td>Aquatic Entomology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1220</td>
<td>Tropical Forest Ecology (Pitt in Ecuador)</td>
<td>3</td>
<td>Sm Abroad</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1230</td>
<td>Ornithology (Ecology of Birds)</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1250</td>
<td>Human Physiology (no credit if had 1070)</td>
<td>3</td>
<td>Sm, F, Sp</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1255</td>
<td>Physiology Lab</td>
<td>1</td>
<td>Sm, Sp</td>
<td>BIOSC 1250 or 1070, BIOSC 006X</td>
</tr>
<tr>
<td>1270</td>
<td>Ecology of Fish</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1300</td>
<td>Vertebrate Community Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1310</td>
<td>Wetland Ecology and Management</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1330</td>
<td>Field Botany</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1340</td>
<td>Field Entomology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1360</td>
<td>Ecology of Fungi</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1390</td>
<td>Field Techniques in Ecology &amp; Conservation</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1400</td>
<td>Disease Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0370</td>
</tr>
<tr>
<td>1410</td>
<td>Vertebrate Ecology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1420</td>
<td>Wildlife Management</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1430</td>
<td>Ecophysiology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1610</td>
<td>Conservation Biology</td>
<td>3</td>
<td>Sm @ PLE</td>
<td>BIOSC 0160</td>
</tr>
<tr>
<td>1850</td>
<td>Microbiology</td>
<td>3</td>
<td>Sm, F, Sp</td>
<td>BIOSC 0160, CHEM 0120</td>
</tr>
<tr>
<td>1855</td>
<td>Introduction to Microbiology Lab</td>
<td>1</td>
<td>Sm, F, Sp</td>
<td>BIOSC 1850, BIOSC 006X</td>
</tr>
</tbody>
</table>

Can also use ≤6 credits as BIOSC electives from:

- ANTH 1601, 1603, 1605
- CHEM 1830 (HL)
- NROSCI 1000, **1012 (HL), 1017 (HL)**
- MSNBIO 2614