**Graduation Requirements:**

- A minimum 2.0 average in all biology courses required for this major
- A minimum of 32 credits at or above the 300-level completed at a Purdue campus
- At least one 500-level Biology course other than BIOL 54200
- 120 Total Credits

**BIOLOGY:**

1. BIOL 12100 Biology I: Diversity, Ecology and Behavior (2 cr.; fall)
2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring)
3. BIOL 13500 1st Year Biology Lab (2 cr.; both) or BIOL 14501 1st Year Biology Lab w/Neuro Research Project (2 cr.; fall) or BIOL 19500 Year I Bio Lab: Disease Ecology (2 cr.; alternate fall) or IT 22600 Biotechnology Lab (2 cr.; fall)
4. BIOL 23100 Biology III: Cell Structure and Function (3 cr.; fall)
5. BIOL 23200 Laboratory in Biology III: Cell Structure and Function (2 cr.; fall)
6. BIOL 24100 Biology IV: Genetics and Molecular Biology (3 cr.; spring)
7. BIOL 24200 Laboratory in Genetics and Molecular Biology (2 cr.; spring)
8. BIOL 28600 Intro. to Ecology & Evolution (2 cr.; spring)

**Intermediate Biology Selective:** Choose one of these eight options:

A. BIOL 32800 Principles of Physiology (4 cr.; spring)
B. BIOL 36700 Principles of Development (2 cr.; spring) plus BIOL 36701 Principles of Development Laboratory (1 cr.; spring)
C. BIOL 39500 Macromolecules (3 cr.; fall)
D. BIOL 41500 Intro. to Molecular Biology (3 cr.; spring)
E. BIOL 41600 Viruses & Viral Diseases (3 cr.; spring)
F. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
G. BIOL 43600 Neurobiology (3 cr.; fall)
H. BIOL 43800 General Microbiology (3 cr.; fall)

10. BIOL 58000 Evolution (3 cr.; spring)
11. BIOL 59500 Ecology (3 cr.; fall)
12. BIOL 59500 Laboratory in Ecology (1 cr.; fall)

**Lab Requirement:** Must meet Base Lab requirement as described on the back of this page.

**Ecology Selective:** One of these five courses:

A. BIOL 58210 Ecological Statistics (3 cr.; fall)
B. BIOL 58705 Animal Communication (3 cr.; alternate fall)
C. BIOL 59100 Field Ecology (4 cr.; alternate fall)
D. BIOL 59200 Evolution of Behavior (3 cr.; alternate spring)
E. BIOL 59500 Disease Ecology (3 cr.; fall)
F. BIOL 59500 Sensory Ecology (3 cr.; alternate spring)

**Biology Selective:** One course from the following:

BIOL 43800 General Microbiology (3 cr.; fall)
BIOL 43900 Microbiology Lab (2 cr.; fall)
BIOL 44400 Human Genetics (3 cr.; fall)
BIOL 48300 Environmental & Conservation Biology (3 cr.; alternate spring)
BIOL 58210 Ecological Statistics (3 cr.; fall)
BIOL 58705 Animal Communication (3 cr.; alternate fall)
BIOL 59100 Field Ecology (4 cr.; alternate fall)
BIOL 59200 Evolution of Behavior (3 cr.; alternate spring)
BIOL 59500 Disease Ecology (3 cr.; fall)
BIOL 59500 Sensory Ecology (3 cr.; alternate spring)
AGEC 52500 Environmental Policy Analysis (3 cr.; spring)
ANTH 53500 Foundations of Biological Anthropology (3 cr.; fall)
ANTH 53600 Primate Ecology (3 cr.; spring)
CE 35000 Environmental Engineering (3 cr.; both)
CE 35200 Biological Principles of Environmental Engineering (3 cr.; both)
ENTM 50000 Fundamentals of Entomology (3 cr.; fall)
FN R 44700 Vertebrate Population Dynamics (4 cr.; fall)
FNR 48800 Global Environmental Issues (3 cr.; fall)
POL 52300 Environmental Politics and Public Policy (3 cr.; fall)

Other courses may be considered for this elective requirement (#14). See your advisor for more information.

Footnotes and other requirements are on the back of this page.
**Base Laboratory Requirement for all Biology Majors**

1. Each student will satisfy each of the following three learning objectives:
   - **Objective 1** – Research planning, literature review, and writing
   - **Objective 2** – Observation, experimentation
   - **Objective 3** – Analysis, simulation, and presentation

2. Objectives may be met by taking courses according to the following chart:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Title</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
</tr>
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<tbody>
<tr>
<td>BIOL 43900</td>
<td>Microbiology Lab</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>BIOL 44201</td>
<td>Protein Expression</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>BIOL 44202</td>
<td>Animal Physiology</td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>BIOL 44205</td>
<td>LabView</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>BIOL 44207</td>
<td>Protein Structure</td>
<td></td>
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<td>X</td>
</tr>
<tr>
<td>BIOL 44211</td>
<td>Anatomy &amp; Physiology</td>
<td>X</td>
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<td></td>
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<tr>
<td>BIOL 44212</td>
<td>Microscopy &amp; Cell Bio</td>
<td>X</td>
<td>X</td>
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<tr>
<td>BIOL 44215</td>
<td>Physiology Measurements</td>
<td>X</td>
<td>X</td>
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<tr>
<td>BIOL 54200</td>
<td>Neurophysiology</td>
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<td>X</td>
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<tr>
<td>BIOL 58210</td>
<td>Ecological Statistics</td>
<td>X</td>
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<tr>
<td>BIOL 59100</td>
<td>Field Ecology</td>
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<tr>
<td>BIOL 59500</td>
<td>CryoEM 3D Reconstruction</td>
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<td>X</td>
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<tr>
<td>BIOL 59500</td>
<td>Data Analysis in Neurosci</td>
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<td>X</td>
<td></td>
</tr>
<tr>
<td>BIOL 59500</td>
<td>Theory of Molecular Methods</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>BIOL 59500</td>
<td>Neural Mech in Hlth Disease</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

3. Students who successfully complete a Biology Honors Research Thesis have successfully met all three objectives.

4. Undergraduate Research may be used to meet these objectives. Student must get Research Mentor approval for each objective after that objective is completed. Student must also earn at least four credits of BIOL 49400 or 49900 research. Consult with your academic advisor for the forms used to obtain Research Mentor for each objective.

5. A combination of courses and research may be used to meet this requirement.

**CHEMISTRY**

1. **General Chemistry:**
   - CHM 12901 General Chemistry with a Biological Focus (5 cr.; fall)

2. **Organic Chemistry Selectives:** (must choose one option)
   - CHM 25500 Organic Chemistry (3 cr.; both) and CHM 25501 Organic Chemistry Lab (1 cr.; both) and
     CHM 25600 Organic Chemistry (3 cr.; both) and CHM 25601 Organic Chemistry Lab (1 cr.; both)
   - CHM 26505 Organic Chemistry (3 cr.; fall) and CHM 26300 Organic Chemistry Lab (1 cr.; fall) and
     CHM 26605 Organic Chemistry (3 cr.; spring) and CHM 26400 Organic Chemistry Lab (1 cr.; spring)

3. **Chemistry Selectives:** (must choose one of the following options)
   - A. Analytical Chemistry: BCHM 22100 Analytical Biochemistry (3 cr.; both) or CHM 32100 Analytical Chemistry I (4 cr.; fall)
   - B. Biochemistry: BCHM 56100 General Biochemistry I (3 cr.; both) or CHM 33900 Biochemistry: A Molecular Approach (3 cr.; spring) or CHM 53300 Introductory Biochemistry (3 cr.; fall)
   - C. Physical Chemistry: CHM 37200 Physical Chemistry (4 cr.; spring) or CHM 37300 Physical Chemistry (3 cr.; fall)

**PHYSICS Selectives:** One of these two options:

1. PHYS 23300 Physics for Life Sciences I (4 cr.; both) and PHYS 23400 Physics for Life Sciences II (4 cr.; both)
2. PHYS 17200 Modern Mechanics (4 cr.; both) and one of the following two choices:
   - A. PHYS 27200 Electric and Magnetic Interactions (4 cr.; both) or
   - B. PHYS 24100 Electricity and Optics (3 cr.; both) and PHYS 25200 Electricity and Optics Laboratory (1 cr.; spring)

**UNIVERSITY CORE and COLLEGE OF SCIENCE CORE REQUIREMENTS**

Composition and Presentation; Teambuilding and Collaboration; Language and Culture; Great Issues; General Education; Multidisciplinary Experience; Mathematics; Statistics; Computing (see handout).

**FREE ELECTIVES** Approximately 8-25 credits

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1. This course may count as the Intermediate Biology Selective and as the College of Science Teambuilding and Collaboration requirement.
2. BIOL 43800 may be used for requirement #9 or for requirement #14, but not both.
3. (Omitted)
4. This course may be used for #12, #13, or #14. It may be used for #12 and #13, or #12 and #14. It may not be used for #13 and #14.
5. This course may count for requirement #13 or #14, but NOT for both.
6. This course may count for the Biology Selective course and as the College of Science Great Issues requirement.
7. Students who select 12901 for General Chemistry must take CHM 33900 and 33901. CHM 33900 counts for the Chemistry Selective. Students who end up with Special Case approval for some other Gen Chem courses may choose the other Chem Selective options.