Program Progression Guide

Disclaimer: The 2017-2018 Purdue West Lafayette catalog is considered the source for academic and programmatic requirements for students entering programs during the Fall 2017, Spring 2018, and Summer 2018 semesters. The Program Progression Guide assists students in the development of an individualized 8-semester plan. Students are encouraged to use this guide, myPurduePlan* (online degree auditing tool) and the Student Educational Planner (SEP) as they work with their academic advisor towards the completion of their degree requirements.

Notification: Each student is ultimately responsible for knowing, monitoring and completing all degree requirements.

An undergraduate degree in the College of Science requires completion of the following degree requirements.

<table>
<thead>
<tr>
<th>University Degree Requirements</th>
<th>Minimum 2.0 Cumulative GPA</th>
<th>Minimum 120 Credits that fulfill degree requirements</th>
<th>32 Residency Credits (30000 and above) at a Purdue University campus</th>
</tr>
</thead>
</table>

**University Core Curriculum**

- Human Cultures: Behavioral/Social Science
- Human Cultures: Humanities
- Information Literacy
- Oral Communication
- Quantitative Reasoning
- Science
- Science, Technology & Society Selective
- Written Communication

**University Core Curriculum Course Listing**

**Required Major Program Courses**

Minimum 2.0 cumulative GPA 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.

**College of Science Core Curriculum**

- Freshman Composition – 3 credits
- Technical Writing and Presentation - 3 credits
- Teaming & Collaboration (NC)
- General Education - 9 credits
- Foreign Language & Culture – 9 credits
- Great Issues - 3 credits
- Laboratory Science - 8 credits
- Multidisciplinary - 3 credits
- Mathematics - 6-10 credits
- Statistics - 3 credits
- Computing - 3 credits

**Degree Electives**

Any Purdue or transfer course approved to meet degree requirements in accordance with individual departmental policies. Consult the No Count course list for courses, which may not be used to meet any College of Science degree requirement.

* This audit is not your academic transcript and it is not official notification of completion of degree or certificate requirements.

** University Core Curriculum Outcomes may be met through completion of the College of Science Core curriculum. Students should consult with their academic advisors and myPurdue Plan for course selections.
2017-18 Ecology, Evolution and Environmental Biology Degree Progression Guide

The Biology Department has suggested the following degree progression guide for the Ecology, Evolution and Environmental Biology Degree.

Students will work with their academic advisors to determine their best path to degree completion.

Course pre-requisites are specific to this degree plan.

<table>
<thead>
<tr>
<th>Credit</th>
<th>Fall 1st Year</th>
<th>Prerequisite</th>
<th>Credit</th>
<th>Spring 1st Year</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>2</td>
<td>BIOL 12100</td>
<td></td>
<td>3</td>
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<tr>
<td>2</td>
<td>BIOL 13500</td>
<td>CHM 12901 co-req</td>
<td>4</td>
<td>Organic Chem I Selective</td>
<td>CHM 11600 or 12901</td>
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<td>5</td>
<td>CHM 12901</td>
<td>ALEKS 85</td>
<td>3-5</td>
<td>Calculus II Selective</td>
<td>Calculus I</td>
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<td>3-4</td>
<td>ENGL 10600 or 10800</td>
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<td>1</td>
<td>Elective (BIOL 11500 pref)</td>
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<th>Credit</th>
<th>Spring 2nd Year</th>
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<tr>
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<td>BIOL 24200</td>
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<td>Chemistry Selective</td>
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<td>3</td>
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<td>Varies</td>
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<td>BIOL 28600</td>
<td>BIOL 12100</td>
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<td><strong>14-15</strong></td>
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<table>
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<tr>
<td>3</td>
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<td>PHYS 1 Selective</td>
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<td>3-4</td>
<td>Computer Science Selective</td>
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<td>COM 21700</td>
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<td>General Education III Selective</td>
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<td><strong>14-15</strong></td>
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<th>Credit</th>
<th>Spring 4th Year</th>
<th>Prerequisite</th>
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<td>Varies</td>
<td>3-4</td>
<td>BIOL 58000</td>
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<td>3-4</td>
<td>Biology Selective</td>
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<td>Great Issues Selective</td>
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<td>Base Lab Requirement</td>
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<td>1-3</td>
<td>Multidisciplinary Selective</td>
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<tr>
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<td>Free Elective</td>
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<td><strong>13-18</strong></td>
<td></td>
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<td><strong>12-14</strong></td>
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</table>

Courses in ( ) are recommended.

**College of Science Core Curriculum (SCC)**

- A. Freshman Composition
- B. Technical Writing and Presentation
- C. Teaming and Collaboration
- D. General Education
- E. Foreign Language and Culture
- F. Great Issues
- G. Laboratory Science
- H. Multidisciplinary
- I. Mathematics
- J. Statistics
- K. Computing

* Consult the University Core Requirement course list for approved courses.*
ECOLOGY, EVOLUTION AND ENVIRONMENTAL BIOLOGY
Fall 2017

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) or
   BIOL 19500 Biodiversity, Ecology & Evolution (3 cr.; fall)
2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring) or
   BIOL 19500 Organismal Development & Physiology (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
   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 and Evolution (2 cr.; spring)

9. 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)

10. BIOL 58000 Evolution (3 cr.; spring)
11. BIOL 58500 Ecology (3 cr.; fall)

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

13. 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.; spring)
   E. BIOL 59500 Disease Ecology (3 cr.; alternate fall)
   F. BIOL 59500 Sensory Ecology (3 cr.; alternate spring)
   G. BIOL 59700 Sex and Evolution (3 cr.; alternate fall)

14. Biology Selective: One course from the following:

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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Title</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
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<tbody>
<tr>
<td>BIOL 43900</td>
<td>Microbiology Lab</td>
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<td>X</td>
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<tr>
<td>BIOL 44201</td>
<td>Protein Expression</td>
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<tr>
<td>BIOL 44202</td>
<td>Animal Physiology</td>
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<td>X</td>
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<td>BIOL 44205</td>
<td>LabView</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>BIOL 44207</td>
<td>Protein Structure</td>
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<td></td>
<td></td>
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<tr>
<td>BIOL 44211</td>
<td>Anatomy &amp; Physiology</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>BIOL 44212</td>
<td>Microscopy &amp; Cell Bio</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>BIOL 44215</td>
<td>Physiology Measurements</td>
<td>X</td>
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<td>BIOL 54200</td>
<td>Neuropysiology</td>
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<td>BIOL 58210^4</td>
<td>Ecological Statistics</td>
<td>X</td>
<td>X</td>
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<tr>
<td>BIOL 59100^4</td>
<td>Field Ecology</td>
<td>X</td>
<td>X</td>
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<tr>
<td>BIOL 59500</td>
<td>CryoEM 3D Reconstruction</td>
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<td>BIOL 59500</td>
<td>Data Analysis in Neurosci</td>
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<tr>
<td>BIOL 59500</td>
<td>Theory of Molecular Methods</td>
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<tr>
<td>BIOL 59500</td>
<td>Neural Mech in Hlth Disease</td>
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</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:
   1. CHM 12901 General Chemistry with a Biological Focus (5 cr.; fall)

2. Organic Chemistry Selectives: (must choose one option)
   1. 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)
   2. 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:

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.