Program Progression Guides

**Disclaimer:** The 2024-25 Purdue West Lafayette catalog is considered the source for academic and programmatic requirements for students entering programs during the Fall 2024, Spring 2025, and Summer 2025 semesters. The Program Progression Guide assists students in the development of an individualized 8-semester plan. Students are encouraged to use this guide and MyPurduePlan* (online degree auditing tool) 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></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum 2.0 Cumulative GPA</td>
<td>Minimum 120 Credits that fulfill degree requirements</td>
</tr>
</tbody>
</table>

**University Core Curriculum**
https://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html

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

**Civic Literacy Proficiency**
https://www.purdue.edu/provost/about/provostInitiatives/civics/

**Required Major Program Courses (see following pages)**
Departmental specific requirements, including 2.0 average GPA in classes required to fulfill biology requirements.  
Minimum 2.0 cumulative GPA  
Must have a 500-level BIOL course (2-3 credit approved BIOL lecture)

**College of Science Core Curriculum**
https://www.purdue.edu/science/Current_Students/curriculum_and_degree_requirements/college-of-science-core-requirements.html?

• Written Communication – 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  
• STS (Science, Tech & Society) - 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. The College of Science has identified courses that are below the disciplinary level of each program and major area of study. While similar, **Not Recommended** course lists vary between departments.

* 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.
# 2024-25 Ecology, Evolution, and Environmental Biology

## Degree Progression Guide

The Department of Biological Sciences 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-requisite notes are specific to this degree plan (not all pre-requisites are listed for every course).

<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>
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<tr>
<td>5</td>
<td>CHM 12901</td>
<td>ALEKS 85 or Calc Placement</td>
<td>4</td>
<td>CHM 25500-25501</td>
<td>D or better in CHM 12901</td>
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<tr>
<td>2</td>
<td>BIOL 13500 or 145xx</td>
<td>(BIOL 121 or 131) &amp; CHM 12901 co-req</td>
<td>3-5</td>
<td>Calculus II selective</td>
<td>C- or better in Calculus I</td>
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<td>3-5</td>
<td>Calculus I selective</td>
<td>ALEKS 75 or 85</td>
<td>3-4</td>
<td>Science Core Option</td>
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<tr>
<td>1</td>
<td>Elective (BIOL 11500 pref.)</td>
<td>BIOL 12100 co-req</td>
<td>3</td>
<td>Science Core Option</td>
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<tr>
<td>16-18</td>
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<thead>
<tr>
<th>Credit</th>
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<th>Prerequisite</th>
<th>Credit</th>
<th>Spring 2nd Year</th>
<th>Prerequisite</th>
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<tr>
<td>3</td>
<td>BIOL 23100</td>
<td>BIOL 13100 and CHM 12901 co-req</td>
<td>3</td>
<td>BIOL 24100</td>
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<td>2</td>
<td>BIOL 23200</td>
<td>BIOL 23100 co-req</td>
<td>2</td>
<td>BIOL 24200</td>
<td>BIOL 24100 co-req</td>
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<td>4</td>
<td>CHM 25600-25601</td>
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<td>3</td>
<td>CHM 33900</td>
<td>C- or better in CHM 25600</td>
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<td>CHM 33901</td>
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<td>2</td>
<td>BIOL 28600</td>
<td>BIOL 12100</td>
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<td>Free Elective (BIOL 29300 pref)</td>
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<th>Prerequisite</th>
<th>Credit</th>
<th>Spring 3rd Year</th>
<th>Prerequisite</th>
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<tr>
<td>3</td>
<td>BIOL 58601 Ecology</td>
<td>BIOL 28600</td>
<td>3</td>
<td>Ecology Selective I</td>
<td>varies</td>
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<td>1</td>
<td>BIOL 58602 Lab in Ecology</td>
<td>BIOL 58601 co-req</td>
<td>3</td>
<td>PHYS II Selective</td>
<td>PHYS I</td>
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<td>PHYS I Selective</td>
<td>BIOL, CHM, Calc 2 (varies)</td>
<td>3-4</td>
<td>Science Core Option</td>
<td></td>
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<tr>
<td>3</td>
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<td>Science Core Option</td>
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<td>Science Core Option</td>
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<td>3-4</td>
<td>Science Core Option</td>
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<table>
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<th>Credit</th>
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<th>Prerequisite</th>
<th>Credit</th>
<th>Spring 4th Year</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>3-4</td>
<td>Intermediate Biology Selective</td>
<td>BIOL 23100 &amp; 24100</td>
<td>3</td>
<td>BIOL 58000</td>
<td>BIOL 24100 &amp; 28600</td>
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<td>2-4</td>
<td>Ecology Selective II</td>
<td>varies</td>
<td>3</td>
<td>Science Core Option—STAT 50300 rec.</td>
<td>C- or better in calc II</td>
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<td>Science Core Option – CS 17700 rec.</td>
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<td>Elective</td>
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<td>Elective</td>
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<td>3</td>
<td>Elective</td>
<td></td>
<td>3</td>
<td>Elective</td>
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<tr>
<td>15-18</td>
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</tbody>
</table>

### Science Core Curriculum Options

**Options recommended for first- and second-year students**

- Written Communication\(^UC\)
- General Education\(^UC\) (9 credits needed)
- Foreign Language and Culture\(^UC\) (9 credits needed with JEDI)
- Science Tech and Society\(^UC\) (BIOL 12100)

**Options recommended for third- and fourth-year students**

- Technical Writing and Presentation\(^UC\) (COM 217 recommended)
- Statistics (STAT 50300)
- Computing (CS 17700 or CS 18000 also meet Teambuilding)
- Great Issues

\(^UC\) Select courses may also satisfy a University Core Curriculum requirement; see the University Core Requirement course list for approved courses. Students must have 32 credits at the 30000 level or above taken at Purdue.
ECOLOGY, EVOLUTION AND ENVIRONMENTAL BIOLOGY (EEEB)
Fall 2024

Graduation Requirements:
- A minimum 2.0 average in all biology courses required for this major.
- At least one approved 2-3 credit 500-level Biology course is required (excludes lab only courses such as BIOL 54200 & 5xxxx lab modules).
- A minimum of 32 credits at or above the 300-level completed at a Purdue campus
- 120 Total Credits Minimum

BIOLOGY CORE (19 credits):
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 Intro. to 1st Year Biology Lab (2 cr.; both) or BIOL 14503 First Yr Bio Lab Dis Ecol-Hnrs (2 cr.; alternate fall) or BIOL 14504 First Yr Lab Diet Disease Immun Sys-Hnrs (2 cr.; spring)
4. BIOL 14505 First Yr Lab Phages Folds-Hnrs (2 cr.; fall)
5. BIOL 23100 Biology III: Cell Structure and Function (3 cr.; fall)
6. BIOL 23200 Laboratory in Biology III: Cell Structure and Function (2 cr.; fall)
7. BIOL 24100 Biology IV: Genetics and Molecular Biology (3 cr.; spring)
8. BIOL 28600 Intro. to Ecology & Evolution (2 cr.; spring)

UPPER-LEVEL BIOLOGY COURSEWORK (14-18 credits):
Courses used to fulfill requirements for #9, #13 and #14 may NOT overlap with one another.

9. Intermediate Biology Selective: complete ONE of these courses (may NOT overlap with Ecology Selective II):
   A. BIOL 32800 Principles of Physiology (4 cr.; spring)
   B. BIOL 36700 Principles of Development (2 cr.; fall)
   C. BIOL 38700 Macromolecules (2 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 438002 General Microbiology (3 cr.; fall)

10. BIOL 58000 Evolution (3 cr.; spring)
11. BIOL 58601 Ecology (3 cr.; fall)

12. Base Lab Requirement:
    BIOL 58602 Laboratory in Ecology (1 cr.; fall) is required for all EEEB majors

13. Ecology Selective I: complete ONE of these courses (may NOT overlap with Ecology Selective II):
    A. BIOL 49500BMR Biodiversity & Museum Research (3 cr.; fall)
    B. BIOL 49500DSB Data Science for Biologists (3 cr.; fall)
    C. BIOL 52905 Disease Ecology (3 cr.; spring)
    D. BIOL 58210 Ecological Statistics (3 cr.; fall)
    E. BIOL 58705 Animal Communication (3 cr.; alt fall)
    F. BIOL 59100 Field Ecology (4 cr.; alt fall)
    G. BIOL 59200 Evolution of Behavior (3 cr.; spring)
    H. BIOL 59500BTL Building the Tree of Life (3 cr.; spring)

14. Ecology Selective II: complete ONE of these courses (may NOT overlap with Intermediate or Ecology Selective I):
    BIOL 32101 Experimental Design & Quant Analysis (3cr; summer)
    BIOL 438002 General Microbiology (3 cr.; fall)
    BIOL 43900 Microbiology Lab (2 cr.; fall)
    BIOL 483003 Environmental & Conservation Biology (3 cr.; alt spring)
    BIOL 49500BMR Biodiversity & Museum Research (3 cr.; fall)
    BIOL 49500DSB Data Science for Biologists (3 cr.; fall)
    BIOL 52905 Disease Ecology (3 cr.; spring)
    BIOL 58210 Ecological Statistics (3 cr.; fall)
    BIOL 58705 Animal Communication (3 cr.; alt fall)
    BIOL 59100 Field Ecology (4 cr.; alt fall)
    BIOL 59200 Evolution of Behavior (3 cr.; spring)
    BIOL 59500BTL Building the Tree of Life (3 cr.; spring)
    AGEC 52500 Environmental Policy Analysis (3 cr.; fall)
    ANTH 53500 Foundations of Biolog Anthropology (3 cr.; fall)
    ANTH 53600 Primate Ecology
    BTNY 30200 Plant Ecology (3 cr.; spring)
    BTNY 30500 Plant Evolution and Taxonomy (3 cr.; fall)
    BTNY 56100 Survey of Mathematical Biology (3 cr.; spring)
    CE 35000 Intro to Environmental Engineering (3 cr.; both)
    FNR 44700 Vertebrate Population Dynamics (4 cr.; fall)
    POL 52300 Environ Politics & Public Policy (3 cr.; fall)

Other courses may be considered for the Ecology Selective II requirement (#14). See your advisor for more information.

Footnotes are included on the last page.
Base Laboratory Requirement Chart: all EEEB majors must take BIOL 59500 Laboratory in Ecology

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Required Course</th>
<th>Obj. A</th>
<th>Obj. B</th>
<th>Usually Offered</th>
<th>Format</th>
<th>Pre-Req (PR) or Co-Req (CR) beyond core courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 32101</td>
<td>Experim Design &amp; Analysis-Hnrs (3cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Summer</td>
<td>online</td>
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<tr>
<td>BIOL 32800</td>
<td>Principles of Physiology (4cr)</td>
<td></td>
<td></td>
<td></td>
<td>Spring</td>
<td></td>
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<tr>
<td>BIOL 43900</td>
<td>Microbiology Lab (2cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Fall</td>
<td></td>
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<tr>
<td>BIOL 44212</td>
<td>Microscopy &amp; Cell Bio (1cr)</td>
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<td>X</td>
<td>X</td>
<td>Spring</td>
<td>5-wk module</td>
<td></td>
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<tr>
<td>BIOL 48300</td>
<td>Environmental &amp; Conservation Biology (3cr)</td>
<td>X</td>
<td>X</td>
<td></td>
<td>alt Spring '24</td>
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<tr>
<td>BIOL 495008MR</td>
<td>Biodiversity &amp; Museum Research (3cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Fall</td>
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<tr>
<td>BIOL 495000SB</td>
<td>Data Science for Biologists (3cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Fall</td>
<td></td>
<td>PR=28600</td>
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<tr>
<td>BIOL 49500TEC</td>
<td>Topics in Endocrinology &amp; Cancer (2cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>Spring</td>
<td></td>
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<tr>
<td>BIOL 51099</td>
<td>Neural Mechanisms in Health &amp; Disease (3cr)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>alt Spring '23</td>
<td>PR=32800 or 43600; CR=56200</td>
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<tr>
<td>BIOL 55101</td>
<td>Theory of Molecular Methods (3cr)</td>
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<td>X</td>
<td>X</td>
<td>alt Spring</td>
<td>PR=41500</td>
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<tr>
<td>BIOL 54200</td>
<td>Neurophysiology (1cr)</td>
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<td>X</td>
<td>X</td>
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<td>5-wk module</td>
<td>PR=32800 or CR=43600</td>
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<tr>
<td>BIOL 58210</td>
<td>Ecological Statistics (3cr)</td>
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<td>Fall</td>
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<td>BIOL 58602</td>
<td>Laboratory in Ecology (1cr)</td>
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<td>BIOL 59100</td>
<td>Field Ecology (4cr)</td>
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<td>X</td>
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<td>PR=58602</td>
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<td>BIOL 595008TL</td>
<td>Building the Tree of Life: Phylogenetics</td>
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<td>X</td>
<td>X</td>
<td>Spring</td>
<td>research experience recommended</td>
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<tr>
<td>BIOL 59500CRYO</td>
<td>CryoEM 3D Reconstruction (3cr)</td>
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<td>X</td>
<td>X</td>
<td>Fall</td>
<td>PR=PHYS 23300 or 17200</td>
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<td>BIOL 595008N</td>
<td>Data Analysis in Neuroscience (1cr)</td>
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<td>5-wk module</td>
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<td>BIOL 59500SBL</td>
<td>Structural Biology Lab (1cr)</td>
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<td>X</td>
<td>X</td>
<td>Spring</td>
<td>5-wk module</td>
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CHEMISTRY (17 credits) -- complete all of the following:

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

2. **Organic Chemistry (8 credits):**
   - CHM 25500 Organic Chemistry I (3 cr.; both) and
   - CHM 25501 Organic Chemistry Lab I (1 cr.; both) and
   - CHM 25600 Organic Chemistry II (3 cr.; both) and
   - CHM 25601 Organic Chemistry Lab II (1 cr.; both)

3. **Biochemistry (4 credits):**
   - CHM 33900 Biochemistry: A Molecular Approach (3 cr.; spring) and
   - CHM 33901 Biochemistry Laboratory (1 cr; spring)

PHYSICS (8 credits) -- One of these two options (PHYS 23300+23400 are recommended):

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)

STATISTICS (3 credits) -- STAT 50300 is required (3 cr.; fall, spring, summer); prerequisite is a C- or better in calculus 2

OTHER: all University Core, College of Science Core, and Civics Literacy Requirements must also be completed.

FREE ELECTIVES: Approximately 11-25 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 count for the Intermediate course or the Ecology Selective II course, but not both.
3. This course may count for the Ecology Selective II course and as the College of Science Great Issues requirement.

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EEEB 05/10/2024