

ENVIRONMENTAL BIOLOGY (BS)

Exploration and Discovery

The BS in Environmental Biology focuses on organismal, evolutionary, ecological, and field biology. This degree prepares students for careers in the environmental biology field, including environmental consulting, environmental education, and work for governmental agencies. Note that some professional/graduate schools require a full year of physics and that students should work closely with their academic advisor to plan their coursework.

Degree Requirements

| Course | Title | Credits |
|---|---|---------|
| Major Requirements | | |
| BI 1110 | Biological Science I (TECO) | 4 |
| BI 1120 | Biological Science II | 4 |
| BI 2270 | Integrative Biology (WECO) | 4 |
| GE 2050 | GIS I: Introduction to Geographic Information Systems (QRCO,TECO) | 4 |
| BI 3060 | Genetics | 4 |
| BI 3130 | Evolution | 4 |
| BI 3240 | Conservation (DICO,GACO) | 3 |
| BI 4050 | Ecology (QRCO,WRCO) | 4 |
| BI 4800 | Current Environmental Issues | 3 |
| BI 4970 | | 1 |
| BI | 3000/4000 level Biology electives (not BIDI) | 12 |
| CH 1050 | Laboratory Safety | 1 |
| CH 2335 | General Chemistry I (QRCO) | 4 |
| CH 2340 | General Chemistry II | 4 |
| CH 3370 | Organic Chemistry I | 4 |
| CH 3600 | Environmental Chemistry (INCO) | 4 |
| Organisms | | |
| Complete two courses from the following: | | 8 |
| BI 2030 | Invertebrate Zoology | |
| BI 2040 | Vertebrate Zoology | |
| BI 2070 | Botany | |
| Physics | | |
| PH 2410 | | 3 |
| or PH 2210 | | |
| PH 2430 | | 1 |
| Mathematics Foundations | | |
| MA 2130 | Precalculus (QRCO) | 4 |
| or MA 2550 Calculus I (QRCO) | | |
| General Education (https://coursecatalog.plymouth.edu/general-education/) | | |
| EN 1400 | Composition | 4 |
| IS 1115 | Tackling a Wicked Problem | 4 |
| CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI) | Creative Thought Direction | 3-4 |

| | | |
|--|----------------------------|------------|
| PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI) | Past and Present Direction | 3-4 |
| SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI) | Self and Society Direction | 3-4 |
| Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) ¹ | | 4-8 |
| Electives | | 17 |
| Total Credits | | 120 |

¹ Directions should total 16-17 credits because SIDI is waived for BS Environmental Biology.

Recommended Course Sequence

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

To complete the bachelor's degree in 4 years, you must successfully complete a minimum of 15 credits each semester or have a plan to make up credits over the course of the 4 years. For example, if you take 14 credits one semester, you need to take 16 credits in another semester. Credits completed must count toward your program requirements (major, option, minor, certificate, general education or free electives).

| Course | Title | Credits |
|---|---|--------------|
| Year One | | |
| BI 1110 | Biological Science I (TECO) | 4 |
| BI 1120 | Biological Science II | 4 |
| CH 1050 | Laboratory Safety | 1 |
| EN 1400 | Composition | 4 |
| IS 1115 | Tackling a Wicked Problem | 4 |
| Mathematics Foundations Course: | | 0-4 |
| MA 1800 | College Algebra | |
| MA 2130 | Precalculus (QRCO) | |
| or MA 2300 or Statistics I (QRCO) | | |
| Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) | | 3-4 |
| Electives | | 4 |
| Credits | | 24-29 |
| Year Two | | |
| BI 2270 | Integrative Biology (WECO) | 4 |
| CH 2335 | General Chemistry I (QRCO) | 4 |
| CH 2340 | General Chemistry II | 4 |
| Complete two Organisms Courses from the following: | | 8 |
| BI 2030 | Invertebrate Zoology | |
| BI 2040 | Vertebrate Zoology | |
| BI 2070 | Botany | |
| GE 2050 | GIS I: Introduction to Geographic Information Systems (QRCO,TECO) | 4 |
| Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) | | 3-4 |

| | | |
|---|--|--------------|
| Elective | | 3-4 |
| | Credits | 30-32 |
| Year Three | | |
| BI 3060 | Genetics | 4 |
| BI 3130 | Evolution | 4 |
| BI 3240 | Conservation (DICO,GACO) | 3 |
| CH 3370 | Organic Chemistry I | 4 |
| BI | 3000/4000 level Biology electives (not BIDI) | 4 |
| Physical Science Elective complete 4 credits from the following: | | 3 |
| PH 2210 | and | |
| & PH 2430 | and Organic Chemistry II | |
| & CH 3380 | | |
| PH 2410 | and | |
| & PH 2430 | and Organic Chemistry II | |
| & CH 3380 | | |
| CH 3650 | Environmental Chemistry | |
| Directions (choose from CTDI, PPD, SSDI) (https://coursecatalog.plymouth.edu/general-education/) | | 6-8 |
| Elective | | 4 |
| | Credits | 32-34 |
| Year Four | | |
| BI 3130 | Evolution | 4 |
| BI 4050 | Ecology (QRCO,WRCO) | 4 |
| BI 4800 | Current Environmental Issues | 3 |
| BI 4980 | Biology Seminar | 2 |
| BI | 3000/4000 level Biology electives (not BIDI) | 4 |
| INCP (https://coursecatalog.plymouth.edu/general-education/#INCP) | Integrated Capstone | 4 |
| Directions (choose from CTDI, PPD, SSDI) (https://coursecatalog.plymouth.edu/general-education/) ² | | 0-4 |
| Electives | | 5-9 |
| | Credits | 26-34 |
| | Total Credits | 120 |

¹ General Chemistry should only be taken in the first year if the student has suitable math skills.

² Directions should total 17-16 credits because SIDI is waived for BS Environmental Biology.

Learning Outcomes

- An understanding of the scientific method as the means to increase understanding of the natural world through hypothesis-testing.
- An aptitude for critically reading scientific literature, including primary research journals.
- Proficiency in writing, especially in scientific format.
- An ability to present scientific information orally with emphasis on clear interpretation of scientific data.
- Proficiency in techniques specific to a subdiscipline of biology, including but not limited to laboratory, field, and statistical techniques.
- An understanding of the critical issues facing the environment at local, regional, national, and global scales.

- Biological literacy allowing for the evaluation of new information and emerging issues.
- Readiness for post-graduate experiences in graduate school, professional school, or biology employment

Career Pathways

Biologists study living organisms and their relationships to the environment from molecules, to cells, to ecosystems. Most specialize in a particular discipline within biology, sometimes by pursuing a specialized degree like Environmental Biology or Cell and Molecular Biology. Some go on to attain further education in graduate school or a health professional school for medicine, public health, or pharmacy. There are as many job opportunities as areas of study.

For more information, visit Career Services in the Global Education Office.

Sample Job Titles include: Biochemist, Botanist, Ecologist, Fishery Biologist, High School Science Teacher, Marine Biologist, Microbiologist, Zoologist, Veterinarian, Medical doctor, Physician Assistant, Nurse Practitioner, Doctor of Osteopathic Medicine, Research Scientist, Wildlife Biologist, Pharmacist, Dentist, Medical scientist, Virologist

See the U.S. Department of Labor Outlook for a complete list.

Useful Skills for Jobs in the Biology Fields

- Research skills such as data collection, laboratory techniques, and working in teams
- Ability to problem-solve and think critically
- Written and verbal communication skills to convey technical and scientific data to both scientific and non-scientific communities