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 4980	Biology Seminar	2
BI	3000/4000 level Biology electives (not already required in the major) [1]	8
CH 1050	Laboratory Safety	1
CH 2335	General Chemistry I (QRCO)	4
CH 2340	General Chemistry II	4
CH 3370	Organic Chemistry I	4
2000 Level Electives		
Complete two courses from the following:		8
BI 2030	Invertebrate Zoology	
BI 2040	Vertebrate Zoology	
BI 2070	Botany	
Physical Science Electives		
Complete 4 credits from the following:		4
PH 2110	College Physics I	
PH 2510	University Physics I	
CH 3380	Organic Chemistry II	
CH 3650	Environmental Chemistry	
Mathematics Foundations		
MA 1800	College Algebra (equivalent Math Placement Score or passing grade in higher level math course) [2]	0-3
MA 2130 or MA 2300	Precalculus (QRCO) Statistics I (QRCO)	3-4
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, SIDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) [3]		4-7
IS 4220	Signature Project (INCO,INCP)	4
Electives		16-20
Total Credits		**120**

1. Excluding Genetics, Conservation, Evolution, Ecology, Current Environmental Issues and Biology Seminar.
2. Math Placement Score can substitute such that only Precalculus or Statistics is required.
3. Directions must total a minimum of 16 credits.

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:		
MA 1800	College Algebra	0-3
MA 2130 or MA 2300	Precalculus (QRCO) or Statistics I (QRCO)	3-4
Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/)		3-4
Electives		4
	Credits	**27-32**
Year Two		
BI 2270	Integrative Biology (WECO)	4
CH 2335	General Chemistry I (QRCO)	4
CH 2340	General Chemistry II	4

Complete two 2000 Level Elective coursesfrom 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/) [2]		3-4
Electives		3
	Credits	**30-31**
Year Three		
BI 3060	Genetics	4
BI 3240	Conservation (DICO,GACO)	3
CH 3370	Organic Chemistry I	4
BI 3000/4000 level Biology elective [3]		4
Physical Science Elective choose from the following:		4
PH 2210 or PH 2410	or	
PH 2430		
CH 3380	Organic Chemistry II	
CH 3650	Environmental Chemistry	
Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/)		6-8
Electives		4
	Credits	**29-31**
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 [3]	4
INCP (https://coursecatalog.plymou general-education/#INCP)	Integrated Capstone	
Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) [2]		0-4
Electives		5-9
	Credits	**22-30**
	Total Credits	**120**

[1] Math Placement Score can substitute such that only Precalculus or Statistics is required.

[2] [2] Required to take one each of CTDI, SSDI, and PPDI and then fulfill 16 credits total of Directions courses. SIDI courses are waived and do not count toward Directions course total for Biology majors.

[3] [3] Excluding Genetics, Conservation, Evolution, Ecology, Current Environmental Issues, and Biology Seminar.

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