BIOLOGY (BA)

Exploration and Discovery

The BA program in Biology is a broad overview of the principles of biology and the functions of biological systems with supportive courses in mathematics, physics, and chemistry. It can be used to fulfill the goals of students primarily interested in biology or those who plan to go on to professional programs or graduate degrees in the biological sciences. For the latter case, it should be noted that some professional/graduate schools require a full year each of organic chemistry, physics, and calculus; this program is less restrictive. Thus, 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
BI 3060	Genetics	4
BI 3130	Evolution	4
BI 3240	Conservation (DICO,GACO) (Remove INCO,INCP)	3
BI 4980	Biology Seminar	2
Complete 16 credits of Biology from the following (at least 8 of which must be at the 3000/4000 level): [1]		16
BI	2000 level Biology electives (not BIDI)	
BI	3000/4000 level Biology electives (not BIDI)	
Writing in the Discipline Connection (WRCO)		**4**
BI	3000/4000 level Biology elective (not BIDI)	
CH 1050	Laboratory Safety	1
CH 2335	General Chemistry I (QRCO)	4
CH 2340	General Chemistry II	4
Physical Science Group		
Complete one course from the following:		4
CH 3370	Organic Chemistry I	
PH 2110	College Physics I	
PH 2510	University Physics I	
Mathematics Foundations		
MA 1800	College Algebra [2]	3
MA 2130	Precalculus (QRCO)	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
Foreign Language (https://coursecatalog.plymouth.edu/undergraduate-programs/foreign-language/) [4]		6-8
Electives		18-31
Total Credits		**120**

1. Excluding required 3000/4000-level Biology courses
2. Or equivalent Math Placement Score
3. Directions must total a minimum of 16 credits.
4. The foreign language requirement for all BA degrees calls for 0-8 credits: one year of one language (6-8 credits); or one 3000/4000 level world language course (3 credits); or being a native speaker of a language other than English (zero credits). American Sign Language I and II fulfill this requirement. However, American Sign Language does not satisfy the Global Awareness Connection.

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 (or Math placement score)	0-3
MA 2130 or MA 2550	Precalculus (QRCO) or Calculus I (QRCO)	4
Directions (choose from CTDI, PPDI, SSDI) 4-8 (https://coursecatalog.plymouth.edu/general-education/) [1]		4
GACO (https://coursecatalog.plymouth.edu/general-education/#GACO)	Foreign Language 6-8	3-4
	Credits	**28-32**
Year Two		
BI 2270	Integrative Biology (WECO)	4
CH 2335	General Chemistry I (QRCO)	4
CH 2340	General Chemistry II	4

BI	2000/3000/4000 level Biology elective (not BIDI) [3]	4
Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) [1]		4-8
GACO (https://coursecatalog.plymouth.edu/general-education/#GACO)	Foreign Language [2]	3-4
Elective		0-8
	Credits	**23-36**
Year Three		
BI 3060	Genetics	4
BI 3240	Conservation (DICO,GACO)	3
BI	2000/3000/4000 level Biology elective (not BIDI) [3]	4
BI	3000/4000 level Biology elective (not BIDI) [3]	4
Complete one Physical Science Group Course from the following:		4
CH 3370	Organic Chemistry I	
PH 2110	College Physics I	
PH 2510	University Physics I	
Directions (choose from CTDI, PPDI, SSDI) (https://coursecatalog.plymouth.edu/general-education/) [1]		4-8
Electives		0-9
	Credits	**23-36**
Year Four		
BI 3130	Evolution	4
BI 4980	Biology Seminar	2
BI	3000/4000 level Biology electives (not BIDI) [3]	4
BI	3000/4000 level Biology WRCO	4
Directions (choose from CTDI, PPDI,SSDI) (https://coursecatalog.plymouth.edu/general-education/) [1]		0-4
Electives		12-16
	Credits	**26-34**
	Total Credits	**120**

1. Required to take one each of CTDI, SSDI, and PPDI and then fulfill 16-17 credits total of Directions courses. SIDI courses are waived and do not count toward Directions course total for Biology majors.
2. Fluency in a foreign language can substitute. See Foreign Language (https://coursecatalog.plymouth.edu/undergraduate-programs/foreign-language/) page for details.
3. Excluding Integrative Biology, Genetics, Conservation, Evolution, and Biology Seminar which are required courses.

Learning Outcomes

Our BS programs require more background in chemistry and physics in support of this outcome, while our BA program allows for greater breadth.

- 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