

Biology BS

Chair: Dennis D. Wykoff, Ph.D.
Assistant Chair: Vik Iyengar, Ph.D
Office Location: 147 Mendel Science Center
Telephone: 610-519-4830
[Website](#)

About

Biology is a broad-based program designed for students interested in life sciences. The program fulfills entry requirements for medical and other allied health programs as well as for graduate work in many areas of biology and related fields. The program also provides excellent preparation for careers in health sciences, research, and/or education.

Program: [Biology](#)
Type: Bachelor of Science

PRIMARY MAJOR (122 credits)

Required Major Courses (70 credits)

The biology major requires a minimum of 70 credits in biology and cognate courses with at least five biology laboratory courses at the 3000-level and higher.

Program Notes:

- Combined BS/MS in Biology: Five-year double degree program. See departmental website for details regarding admission, requirements, the program of study, etc.
- Research opportunities: Undergraduate majors may opt to work with faculty to complete undergraduate research either informally or more formally in a senior or honors thesis project. A completed senior thesis satisfies the requirement for a capstone and an upper-level BIO lab elective.

Course	Title	Credits
BIO 2105	General Biology I	4
BIO 2106	General Biology II	4
BIO 3351	Genetics	4
BIO 5300	Biology Capstone	3
	Organismal Biology Elective	4
	Ecology/Evolutionary/Population Biology Elective	4
	Cellular/Molecular Biology Elective	4
	Upper-Level BIO Lab Elective	8
	Additional BIO Elective	2

Required Cognate Courses:

Course	Title	Credits
CHM 1151	General Chemistry I	4
CHM 1103	General Chemistry Lab I	1
CHM 1152	General Chemistry II	4
CHM 1104	General Chemistry Lab II	1
CHM 2211	Organic Chemistry I	3
CHM 2201	Organic Chemistry Lab I	1
CHM 2212	Organic Chemistry II	3
CHM 2202	Organic Chemistry Lab II	1
MAT 1312	Biocalculus	4
	Biology Math Elective	3
PHY 1100	General Physics I	3
PHY 1101	General Physics I Lab	1
PHY 1102	General Physics II	3
PHY 1103	General Physics II Lab	1

Core Curriculum Requirements (33 credits)

Biology Majors meet the following core requirements in the major and therefore are omitted from the summary below:

- Core Math (3 cr)
- Natural Science (8 cr)

Course	Title	Credits
ACS 1000	Ancients	3
ACS 1001	Moderns	3
THL 1000	Faith, Reason, and Culture	3
PHI 1000	Knowledge, Reality, Self	3
ETH 2050	The Good Life:Eth & Cont Prob	3
	Literature and Writing Seminar (1 course)	3
	History (1 course)	3
	Social Sciences (2 courses)	6
	Fine Arts (1 course)	3
	Upper-Level Theology (1 course)	3
	Language Requirement	
	Diversity Requirement (2 courses)	

Free Elective Requirement (19 credits)

Students with a Biology primary major have nineteen (19) required free elective credits.

Degree Credit Summary

- **Major Credits:** 70 credits
- **Core Credits:** 33 credits
- **Free Electives Credits:** 19 credits
- **Total Required Credits:** 122 Credits

Note: The above credit totals are based on the minimum number of required credits in each degree area. The minimum number of required credits in each area listed above must be met. Credits taken beyond the required minimum for one area may not be applied to another area.

SECONDARY MAJOR

Students who declare Biology as a **secondary major** must complete the Required Major Courses to achieve this major. Students are able to count any eligible course taken in their primary major, the core curriculum, minors, concentrations, or free electives toward these requirements.

Category Descriptions

Organismal Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000 level in Organismal Biology from the list below.

7205, 7905; BIO 4251 + 4252, BIO 8251 + 8252; Or any course with the Bio Organismal [BIOO] attribute of 4 or more credits may also count toward fulfillment of this requirement.

Course	Title	Credits
BIO 3055	Human Physiology	4
BIO 3155	Comparative Anatomy	4
BIO 3405	Higher Vertebrates	4
BIO 3455	Histology	4
BIO 3525	Entomology	4
BIO 3905	Vascular Plants	4

Ecology/Evolutionary/Population Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000-level in Ecology/Evolutionary/Population Biology from those listed below.

BIO 7555, 8455, BIO 4451 + 4452, BIO 7151 + 7152, or any course with the EcoEvoPop [BIOP] attribute of four or more credits may also count toward fulfillment of this requirement.

Course	Title	Credits
BIO 3015	Animal Behavior	4
BIO 3255	Evolutionary Ecology	4
BIO 3385	Global Change Ecology	4
BIO 3485	Marine Biology	4
BIO 4305	Evolution	4

Cellular/Molecular Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000 level in Cellular/Molecular Biology from the list below.

BIO 7905; BIO 7321 + 7322; BIO 7960 + 7962; BIO 8051 + 8052; BIO 8171 + 8172; BIO 8295, 8555, 8705; or any course with the CellMolecular [BIOC] attribute may also count toward fulfillment of this requirement.

Course	Title	Credits
BIO 3595	General Microbiology	4
BIO 4105	Medical Microbiology	4
BIO 4205	Cell Biology	4
BIO 4285	Developmental Biology	4
BIO 4355	Experimental Genetics	4
BIO 4505	Molecular Biology	4
BIO 4605	Neurobiology	4

Upper-Level BIO Lab Elective

Credits: 8

Choose 2 additional BIO laboratory courses.

Select from: BIO 3000:9999 (with the exception of BIO 6509-6511), CHM 4603 + 4621, HON 5000, 6000.

Additional BIO Elective

Credits: 2

Two additional credits fulfilled either through a research experience or another approved course. Select from BIO 2000:9999, CHM 4611; 4622, 4621

Biology Math Elective

Credits: 3

Choose one additional MAT course from the following:

Course	Title	Credits
MAT 1314	Modeling for the Life Sciences	3
MAT 1505	Calculus II	4
STAT 1313	Statistics for Life Sciences	3
STAT 4310	Stat Methods	3