

# Biology Major (BIO)

The mission of the Department of Biological Sciences is to provide a well- rounded education for its majors, which includes understanding core biological principles at the molecular, cellular, organismal, population, and ecosystem levels. The department also seeks to cultivate the analytical skills and curiosity about the biological world that will enable students to be successful professionals, thoughtful citizens, and caretakers of the earth.

Through a range of introductory and advanced courses, the B.S. degree program is designed to provide students with the academic preparation needed to succeed in professional schools in the health sciences (medicine, dentistry, veterinary medicine, pharmacy, physical therapy, nursing, etc.) and in graduate programs across the biological disciplines (zoology, botany, microbiology, cellular and molecular biology, evolution and ecology, etc.). In addition, the department provides an academic foundation that may lead to direct employment in education, industry, government, and many other fields.

Through its broad curriculum, the department helps students to achieve this preparation by requiring them to demonstrate:

- an understanding of the place biology holds in society and preparedness to successfully pursue a career path;
- an understanding of the scientific method, including construction of hypotheses, data collection and analysis and the formulation of conclusions;
- an understanding of the basic concepts of biology, including: the unity and diversity of life, biological molecules, the cell as a functioning structure, mechanisms of inheritance, principles of ecology, and processes of evolution; and
- an ability to understand and critique primary scientific literature and communicate effectively to peers in written and verbal form.

For more information about the Biology major leading to a teaching certification, please contact the Associate Dean of Undergraduate Education.

**Department:** [Biology](#)

**Type:** B.S.

Core Courses	22 hours
Required Course Selections	6-7 hours
Field Courses	
Capstone Courses	
Elective Courses	9-10 hours
Allied Courses	11 hours
Total	49

## Core Courses

Item #	Title	Credit Hour(s)
BIO111	Biological Principles	4
BIO212	Cellular and Molecular Biology	4
BIO214	Organismal Diversity	4
BIO314	Evolution and Ecology	4
BIO335	Genetics and Molecular Biology	4
BIO402	Seminar I	2

## Required Course Selections

## Field Courses

Select one of the following:

Note: BIO470 is accepted as a Field Course when offered as a May or Summer Term travel course.

Item #	Title	Credit Hour(s)
BIO300	Marine Biology	3
BIO316	Plant Taxonomy and Spring Flora	4
BIO320	Vertebrate Ecology	4
BIO327	Freshwater Biology	4
BIO470	Advanced Topics in Biology	1-4

## Capstone Courses

Select one of the following:

Item #	Title	Credit Hour(s)
BIO421	Developmental Biology	3
BIO423	Neurobiology	3
BIO433	Environmental Science and Natural Resources	3
BIO435	Conservation Biology	3

## Elective Courses

Select nine to ten additional credit hours among 300–400 level BIO courses (excluding BIO306) to bring the total hours for the major to forty-nine.

## Allied Courses

Item #	Title	Credit Hour(s)
CHE111	General Chemistry I	3
CHE111L	General Chemistry I Laboratory	1
CHE112	General Chemistry II	3
CHE113	General Chemistry II Lab	1
MAT111	Elementary Probability and Statistics	3
	<b>Total credits:</b>	<b>49</b>