

BIOLOGY (BA)

Program Mission

The mission of the Biology Program is to prepare majors to appreciate and understand biological diversity across levels of organization and apply biological principles and the scientific method to think critically and solve problems in an evidence-based manner. Majors will engage in collaborative and creative experimental- and literature-driven research, which involves measuring data, generating questions, using statistical tools, and drawing evidence-based inferences. Graduates will effectively communicate their work in both written and oral form. They will be prepared to enter graduate and professional schools, to teach at the secondary-school level, or to enter the work force.

Program Outcomes

1. Majors will demonstrate above average comprehension (relative to their peers at other institutions) of cell biology, molecular biology, genetics, organismal biology, population biology, evolution, and ecology.
2. Majors will be able to use good scientific practices to ask research questions and collect, organize, analyze, and interpret data.
3. Majors will demonstrate proficiency in oral and written communication of scientific information.
4. Biology Education students will demonstrate knowledge of biology and the ability to teach it.
5. Majors will be able to present biological information to diverse audiences in relevant ways, taking into account differences in background and experience.

Program Requirements

Code	Title	Hours
Required Courses		
BIOL-1121	General Biology I	5
BIOL-1122	General Biology II	4
BIOL-3305	Biological Statistics	4
BIOL-3310	Biology III- Mechanisms of Evolution	3
Five 4-credit-hour "BIOL" prefixed laboratory courses numbered above BIOL-3311 ¹		
BIOL-COMP	Senior Comprehensive Exam	0
Required Supporting Courses		
Required supporting courses that should be taken before all biology courses numbered above 3311 are as follows:		
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Laboratory	1
CHEM-1210	General Chemistry II Lecture	3
CHEM-1211	General Chemistry II Lab	1
CHEM-2200	Organic Chemistry I Lecture	3
CHEM-2201	Organic Chemistry I Lab	1
CHEM-2210	Organic Chemistry II Lecture	3
CHEM-2211	Organic Chem II Lab	1
Select one of the following:		
MATH-1300	Calculus I (recommended)	4
MATH-1250	Pre-Calculus	
Select one of the following sequences:		
		4

Sequence One (recommended)		
PHYS-2000 & PHYS-2001	College Physics I and College Physics I Lab	
Sequence Two		
PHYS-2100 & PHYS-2101	Classical Physics I and Classical Physics I Lab	
Select one of the following sequences:		4
Sequence One (recommended)		
PHYS-2010 & PHYS-2011	College Physics II and College Physics Lab II	
Sequence Two		
PHYS-2110 & PHYS-2111	Classical Physics II and Classical Physics II Lab	
Total Hours		64

¹ With BIOL-3305 Biological Statistics and BIOL-3310 Biology III- Mechanisms of Evolution prerequisite to all other 3300- and 4400-level courses

Recommendations:

Four to six semesters of research are recommended. A minor in chemistry is recommended.

Suggested Sequence of Courses for a Bachelor of Arts Degree in Biology

Course	Title	Hours
Freshman Year		
First Semester		
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Laboratory	1
BIOL-1121	General Biology I	5
ENGL-1010	English Composition	3
MATH-1300	Calculus I	4
GNST-1000	BC Experience	1
Hours		17
Second Semester		
CHEM-1210	General Chemistry II Lecture	3
CHEM-1211	General Chemistry II Lab	1
BIOL-1122	General Biology II	4
Aesthetic Foundation		3
THEO-1100	Introduction to Theology	3
EXSC-1115	Wellness for Life	1
EXSC Fitness Course		1
Hours		16
Sophomore Year		
First Semester		
CHEM-2200 & CHEM-2201	Organic Chemistry I Lecture and Organic Chemistry I Lab	4
PHIL-1750	Principles of Nature	3
PHYS-2000 & PHYS-2001	College Physics I and College Physics I Lab	4
BIOL-3310	Biology III- Mechanisms of Evolution	3

Faith Foundation		3
Hours		17
Second Semester		
CHEM-2210 & CHEM-2211	Organic Chemistry II Lecture and Organic Chem II Lab	4
PHYS-2010 & PHYS-2011	College Physics II and College Physics Lab II	4
BIOL-3305	Biological Statistics	4
BIOL-4486	Research ¹	1
Person and Community Foundation		3
Hours		16
Junior Year		
First Semester		
Historical Foundation		3
Foreign Language		4
Advanced Biology		4
Aesthetic Foundation		3
Elective		3
BIOL-4486	Research ¹	1
Hours		18
Second Semester		
Historical Foundation		3
Foreign Language		4
Advanced Biology		4
Faith Foundation		3
Philosophical Inquiry Foundation		3
BIOL-4486	Research ¹	1
Hours		18
Senior Year		
First Semester		
Advanced Biology		4
Advanced Biology		4
Global Perspective		3
BIOL-4486	Research ¹	1
CHEM-3500 & CHEM-3501	Biochemistry I and Biochemistry I Laboratory ¹	4
BIOL-COMP	Senior Comprehensive Exam	0
Hours		16
Second Semester		
Advanced Biology		4
Advanced Biology		4
Philosophical Inquiry Foundation		3
Elective		3
BIOL-4486	Research ¹	2
Hours		16
Total Hours		134

¹ Denotes courses that are recommended courses, but not required for the major.