

# BIOLOGY (BS)

## 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
<b>Required Courses</b>		
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
Six 4-credit-hour "BIOL" prefixed laboratory courses numbered above BIOL-3311 <sup>1</sup>		24
<b>Required Supporting Courses</b>		
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
Select one of the following:		4
MATH-1300	Calculus I (recommended)	
MATH-1250	Pre-Calculus	
Select one of the following:		4
PHYS-1100	Concepts in Physics (recommended)	
PHYS-2000 & PHYS-2001	College Physics I and College Physics I Lab	

PHYS-2100 Classical Physics I  
& PHYS-2101 and Classical Physics I Lab

**Total Hours** 60

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

## Suggested Sequence of Courses for a Bachelor of Science Degree in Biology

Course	Title	Hours
<b>Freshman Year</b>		
<b>First Semester</b>		
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-1250 or MATH-1300	Pre-Calculus or Calculus I	4
GNST-1000	BC Experience	1
<b>Hours</b>		<b>17</b>
<b>Second Semester</b>		
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
<b>Hours</b>		<b>14</b>
<b>Sophomore Year</b>		
<b>First Semester</b>		
CHEM-2200	Organic Chemistry I Lecture	3
CHEM-2201	Organic Chemistry I Lab	1
PHYS-1100	Concepts in Physics	4
PHIL-1750	Principles of Nature	3
BIOL-3310	Biology III- Mechanisms of Evolution	3
<b>Hours</b>		<b>14</b>
<b>Second Semester</b>		
CHEM-2210	Organic Chemistry II Lecture <sup>1</sup>	3
CHEM-2211	Organic Chem II Lab <sup>1</sup>	1
Global Perspective		3
Faith Foundation		3
BIOL-3305	Biological Statistics	4
EXSC-1115	Wellness for Life	1
EXSC Fitness Course		1
BIOL-4486	Research <sup>1</sup>	1
<b>Hours</b>		<b>17</b>
<b>Junior Year</b>		
<b>First Semester</b>		
Historical Foundation		3
Foreign Language		4
Advanced Biology		4
Aesthetic Foundation		3

Elective		3
BIOL-4486	Research <sup>1</sup>	1
<b>Hours</b>		<b>18</b>
<b>Second Semester</b>		
Historical Foundation		3
Foreign Language		4
Advanced Biology		4
Faith Foundation		3
Philosophical Inquiry Foundation		3
BIOL-4486	Research <sup>1</sup>	1
<b>Hours</b>		<b>18</b>
<b>Senior Year</b>		
<b>First Semester</b>		
Advanced Biology		4
Advanced Biology		4
Person and Community Foundation		3
CHEM-3500 & CHEM-3501	Biochemistry I and Biochemistry I Laboratory <sup>1</sup>	4
BIOL-4486	Research <sup>1</sup>	1
BIOL-COMP	Senior Comprehensive Exam	0
<b>Hours</b>		<b>16</b>
<b>Second Semester</b>		
Advanced Biology		4
Advanced Biology		4
Philosophical Inquiry Foundation		3
Elective		3
BIOL-4486	Research <sup>1</sup>	2
<b>Hours</b>		<b>16</b>
<b>Total Hours</b>		<b>130</b>

<sup>1</sup> Denotes courses that are recommended courses, but not required for the major.