

**Nebraska Wesleyan University**  
Catalog 2016-2017

Major:

## **Biology (B.S.)**

The B.S. and the B.A. in biology can both provide students with the experience and knowledge necessary to have a successful career. A B.S. in biology requires 28 hours of approved hours in the Natural Sciences Division. Competency in a modern language other than English is strongly encouraged. The B.S. tends to be the preferred option for most students as it also most closely matches the expectations and requirements of many professional and graduate schools.

Departments/Programs:

Biology

### **Biology Major (B.S., 34 hours plus a 28-hour supporting program)**

<b>Biology Core</b>	<b>12 hours</b>
BIO 1400FYW Introduction to Biological Inquiry	4 hours
BIO 2200 Genetics and Cell Biology	4 hours
BIO 2300 Ecology and Evolution	4 hours
<b>Biology Electives</b>	<b>20 hours</b>

Must have three lab courses, with at least one from Area A and one from Area B. Remaining hours from any area (A, B, C, D, E).

<b>Senior Comprehensive</b>	<b>2 hours</b>
BIO-4980A and BIO-4980B or BIO-4990A and BIO-4990B	

### **Biology Electives**

<b>Area A. Cellular, Developmental and Molecular Biology</b>	
BIO 3160 Medical Botany and BIO 3170 Medical Botany Lab (lab course)	4 hours
BIO 3440 Developmental Biology (lab course)	4 hours
BIO 3690 Microbiology (lab course)	3 hours
BIO 3800 Molecular Genetics and BIO-3850 (lab course)	4 hours
BIO 4190 Histology (lab course)	4 hours
BIO 4750 Immunology and BIO-4760 (lab course)	4 hours
<b>Area B. Population and Ecological Biology</b>	
BIO 3180 Plant Taxonomy (lab course)	4 hours
BIO 3220 Parasitology (lab course)	4 hours
BIO 3500 Conservation Biology (lab course)	4 hours
BIO 3530 Principles of Marine Biology and Oceanography and BIO 3540 Applied Marine Biology (lab course)	5 hours
BIO 3640 Animal Behavior and BIO 3650 Laboratory in Animal Behavior (lab course)	4 hours

<b>Area B. Population and Ecological Biology</b>	
BIO 3720 Physiological Ecology (lab course)	4 hours
BIO 4210 Ecology (lab course)	4 hours
BIO 4480 Vertebrate Zoology (lab course)	4 hours
BIO 4610 Evolution	4 hours
<b>Area C. Applied Biology</b>	
BIO 3000 An Introduction to Biomedical Ethics	2 hours
BIO 3200 Advanced Human Anatomy and Physiology I (lab course)	3 hours
BIO 3210 Advanced Human Anatomy and Physiology II (lab course)	3 hours
BIO 3970 Internship	1-3 hours
BIO 3950/BIO 4950 Independent Study	1 -2 hours
BIO 4700 Pathophysiology	3 hours
<b>Area D. Global Experience in Biology</b>	
BIO 3510 Tropical Biology of Costa Rica (lab course)	3 hours
BIO 3520 Tropical Biology of Belize (lab course)	3 hours
BIO 3540 Applied Marine Biology (lab course)	3 hours
<b>Area E. Additional Courses</b>	
BIO 3900/BIO 4900 Selected Topics	1-4 hours
BIO 3910 Directed Readings	1-2 hours

BIO 1080 Microbiology, BIO 1090 Introduction to Human Anatomy and Physiology I, and BIO 1100 Introduction to Human Anatomy and Physiology II may not fulfill biology major requirements.

<b>Required Supporting Area</b>	<b>28 hours</b>
CHEM 1110 Chemical Principles I and CHEM 1110L Chemical Principles I Laboratory	4 hours
CHEM 1120 Chemical Principles II and CHEM 1120L Chemical Principles II Laboratory	4 hours
CHEM 2100 Organic Chemistry I and CHEM 2100L Organic Chemistry I Laboratory	4 hours
CHEM 2110 Organic Chemistry II: Synthesis and Mechanisms and CHEM 2110L Organic Chemistry II Laboratory	4 hours
PHYS 1600 Principles of Physics I or PHYS 2000 General Physics I	4 hours
PHYS 1700 Principles of Physics II or PHYS 2100 General Physics II	4 hours
MATH 1500 Calculus for Management, Biological, and Social Sciences or MATH 1550 Calculus For Biologists or MATH 1600 Calculus I or MATH 1300 Statistics	4 hours