Nebraska Wesleyan University

Biology (B.S.)

Catalog

2019-2020

Program Description

The B.S. and the B.A. in biology provide students with the experience and knowledge necessary to have a successful career. A B.S. in biology requires 28 approved hours from Math, Physics, and Chemistry department courses . 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

1. Biology

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

Biology Core	12 hours
BIO 1400FYW Introduction to Biological Inquiry	4 hours
BIO 2200 Genetics and Cell Biology	4 hours
BIO 2300 Ecology and Evolution	4 hours
Biology Electives	**20 hours**
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).	
Capstone	**2 hours**
BIO 4980A Senior Thesis and BIO 4980B Senior Thesis or BIO 4990A Senior Research and BIO 4990B Senior Research	

Biology Electives

Area A. Cellular, Developmental and Molecular Biology	
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)	4 hours
BIO 3800 Molecular Genetics and BIO 3850 Molecular Genetics Lab (lab course)	4 hours
BIO 4190 Histology (lab course)	4 hours
BIO 4750 Immunology and BIO 4760 Laboratory in Immunology (lab course)	4 hours
Area B. Population and Ecological Biology	

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)	6 hours
BIO 3550 Tropical Ecosystems	3 hours
BIO 3640 Animal Behavior and BIO 3650 Laboratory in Animal Behavior (lab course)	4 hours
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	3 hours
Area C. Applied Biology	
BIO 2970 Internship	1 hour
BIO 2980 Practicum	2-3 hours
BIO 3000 An Introduction to Biomedical Ethics	2 hours
BIO 3200 Advanced Human Anatomy and Physiology I (lab course)	4 hours
BIO 3210 Advanced Human Anatomy and Physiology II (lab course)	4 hours
BIO 3950/BIO 4950 Independent Study	1 -2 hours
BIO 3970 Internship	2-3 hours
BIO 3980 Practicum	2-3 hours
BIO 4700 Pathophysiology	3 hours
Area D. Global Experience in Biology	
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
Area E. Additional Courses	
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.

Required Supporting Area	**27-29 hours**
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

Required Supporting Area	27-29 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 1600 Calculus I or MATH 1300 Statistics	3-5 hours