

BIOLOGY (BACHELOR OF SCIENCE, B.S.)

Overview

A Bachelor of Science in Biology provides a strong foundation in science while allowing you to tailor a focus to match your interests. It is ideal for students seeking a career as a professional biologist or researcher or planning to apply to graduate school, medical, dental or veterinary medicine school.

General Biology students study life and living organisms, including their physical and chemical structure, function, development and evolution. A degree in Biology opens opportunities in hundreds of areas. Our students go on to be teachers, researchers, doctors, dentists, conservationists, ecologists, environmentalists, paleontologists and so much more. Being a biology major leads to numerous opportunities for lab and field research, teaching assistant positions, and presenting and publishing original research.

The concentration in Health Science is designed to prepare students for entry into graduate and professional schools in many medical fields, including medicine, veterinary, dental and more. We also have program agreements for early entry or pre-admission into select chiropractic, osteopathic and allopathic medical schools.

Requirements

Students who choose this bachelor degree program will have no more than 6 years from admission or subsequent declaration to meet the requirements listed below. If certification, accreditation or statutory requirements change and additional requirements become effective during this time, the new requirements take precedence.

Code	Title	Credit Hours
General Studies		
	students must complete general studies courses/ (http://catalog.missouriwestern.edu/undergraduate/science-and-health/biology/bachelor-general-studies/)	42
Core Requirements		
BIO 105	Principles of Organismal Biology	4
BIO 106	Principles of Cell Biology	4
BIO 205	Genetics	4
BIO 225	Ecology	4
CHE 111	General Chemistry I	5
CHE 120	General Chemistry II with Qualitative Analysis	5
CHE 310	Organic Chemistry I	3
CHE 311	Organic Chemistry Laboratory I	2
CHE 370	Biochemistry I	4
MAT 111	Introductory Statistics	3-4
or MAT 111E	Introductory Statistics	
MAT 116	College Algebra	3
PHY 110	College Physics I	4
	Select one of the following:	24-25
	Major in Biology (No Concentration)	
	Major in Biology (Health Science Concentration)	

Major in Biology (No Concentration)

Code	Title	Credit Hours
Select 24 additional credit hours from biology courses numbered 300 or higher from the following:		24
BIO 307	Plant Morphology	
BIO 308	History and Philosophy of the Natural Sciences	
BIO 310	Molecular Cell Biology	
BIO 311	Animal Physiology	
BIO 318	Ornithology	
BIO 325	Introduction to Paleontology	
BIO 349	Plant Systematics and Applications	
BIO 357	Ichthyology	
BIO 360	Development of Federal Wildlife Law	
BIO 375	Pathophysiology	
BIO 385	Herpetology	
BIO 390	Microbiology	
BIO 411	Developmental Biology	
BIO 415	Invertebrate Biology	
BIO 416	Vertebrate Biology	
BIO 417	Medical Parasitology	
BIO 418	Mammalogy	
BIO 419	Animal Behavior	
BIO 420	Biology Teaching Practicum ¹	
BIO 421	Immunology	
BIO 425	Biology Internship ¹	
BIO 430	Molecular Basis of Disease	
BIO 440	Plant Physiology	
BIO 441	Virology	
BIO 450	Independent Research/Project ¹	
BIO 455	Entomology	
BIO 456	Aquatic Ecology	
Total Credit Hours		24

¹ No more than four credit hours combined of BIO 420 Biology Teaching Practicum, BIO 425 Biology Internship, and BIO 450 Independent Research/Project.

Concentration:
Health Science (p.)

Health Science Concentration

The courses required for this concentration should prepare the student interested in a health and preprofessional program to apply and, if admitted, to succeed in the health professional program of their choice. Students selecting the Health Science concentration must be aware that additional courses may be needed to complete the admission requirements for the health professional program that they are interested in.

Code	Title	Credit Hours
Health Science Electives		24-25
Select five courses from the following:		20-21
BIO 250	Anatomy and Physiology	
BIO 310	Molecular Cell Biology	

BIO 311	Animal Physiology
BIO 390	Microbiology
BIO 411	Developmental Biology
BIO 416	Vertebrate Biology
BIO 417	Medical Parasitology
BIO 421	Immunology
BIO 430	Molecular Basis of Disease
BIO 441	Virology

Science Electives:

Select three to four credit hours of biology or chemistry courses numbered 300 or higher ¹	3-4
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¹ No more than four credit hours combined of BIO 420 Biology Teaching Practicum, BIO 425 Biology Internship, and BIO 450 Independent Research/Project.

1. Earn an overall GPA of at least 2.0 and a major GPA of at least 2.0.

University Graduation Requirements

1. Earn a minimum of 120 credit hours (100 level and higher, maximum of 6 CED credit hours applicable).
2. Earn a minimum of 30 credit hours in upper-division courses. Lower-division transfer courses accepted as meeting upper-division departmental course requirements cannot be used to fulfill this requirement.
3. Earn 30 of the last 45 credit hours at MWSU in institutional coursework (exclusive of credit by examination).
4. Participate in required departmental and campus wide assessments.
5. Fulfill the Missouri Constitution requirement.
6. Successfully pass the Missouri Higher Education Civics Achievement exam.