

BIOLOGICAL SCIENCES WITHOUT CONCENTRATION B.S.

Program Requirements

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Minimum Requirements for Biological Sciences without Concentration B.S.: 120 credits

Students must earn a C- grade or better in each course.

Code	Title	Credits
General University Requirements		
Complete the general university requirements. (http://catalog.uaf.edu/bachelors/#gurbachelorsdegreestext)		
General Education Requirements		
Complete the general education requirements. (http://catalog.uaf.edu/bachelors/#generaleducationrequirementsstext)		35-40
As part of the general education requirements, complete the following:		
MATH F230X	Essential Calculus with Applications or MATH F251X Calculus I	
CHEM F105X	General Chemistry I and CHEM F106X and General Chemistry II	
B.S. Degree Requirements		
Complete the B.S. degree requirements. (http://catalog.uaf.edu/bachelors/#bachelorofsciencetext)		15
As part of the B.S. requirements, complete the following:		
BIOL F115X	Fundamentals of Biology I	
BIOL F116X	Fundamentals of Biology II	
STAT F200X	Elementary Statistics	
Biological Sciences Program Requirements		
Complete the following:		
BIOL F260	Principles of Genetics	4
BIOL F360	Cell and Molecular Biology	3
BIOL F371	Principles of Ecology	4
BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
CHEM F325	Organic Chemistry II	3-4
or CHEM F449	General Biochemistry: Metabolism	
PHYS F123X	College Physics I	4
or PHYS F211X	General Physics I	
PHYS F124X	College Physics II	3-4
or PHYS F212X	General Physics II	
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	
Complete one of the following:		4-8

BIOL F111X and BIOL F112X	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
BIOL F310	Animal Physiology	
BIOL F342	Microbiology	
BIOL F430	Plant Physiology and Development	
Electives ¹		
<i>Organismal elective</i>		
Complete one additional course from the following:		3-4
List D		
<i>Biology electives</i>		
Complete four additional courses from the following:		12-16
Lists A, B, C, D or E		
Capstone ²		
BIOL F400	Research Capstone in Biological Sciences	0
Satisfactory completion of a capstone research project, which can be done either working individually with a faculty member or within one of the following courses: ^{3,4}		
BIOL F440	Behavioral Neuroscience Research Capstone	
BIOL F441	Animal Behavior	
BIOL F466	Advanced Cell and Molecular Laboratory	
BIOL F472	Community Ecology	
BIOL F473	Limnology	
BIOL F491	The Human Microbiome	
Electives		
General Electives		6-22
Total Credits		120

¹ BIOL F397, BIOL F497, URSA F388 or URSA F488 courses may be substituted by petition for a maximum of two required elective courses in biology (3-4 credits of independent study or research per substituted course). The subject area of the independent study or research will determine which biological subject areas the credits satisfy.

² Fulfills the baccalaureate capstone requirement.

³ Students working individually with a faculty member may, for example, take BIOL F497, or may work with a faculty member taking without course credits.

⁴ Capstone courses may be double counted as electives.

Biology Elective Course Lists

Courses that satisfy upper-division elective credit may require prerequisites.

LIST A - CELL AND MOLECULAR BIOLOGY

Code	Title	Credits
BIOL F342	Microbiology	4
BIOL F360	Cell and Molecular Biology	3
BIOL F417	Neurobiology	3
BIOL F435	Introduction to Biology of Cancer	3
BIOL F460	Principles of Virology	3
BIOL F462	Infectious Diseases	3
BIOL F463	Immunology	3

BIOL F466	Advanced Cell and Molecular Laboratory	3
CHEM F325	Organic Chemistry II	4
CHEM F449	General Biochemistry: Metabolism	3
CHEM F450	Information Storage and Transfer: Molecules and Pathways	3
CHEM F470	Cellular and Molecular Neuroscience	3
CHEM F474	Neurochemistry	3

LIST B - PHYSIOLOGY

Code	Title	Credits
BIOL F310	Animal Physiology	4
BIOL F312	Medical Physiology	3
BIOL F335	Principles of Epidemiology	3
BIOL F342	Microbiology	4
BIOL F412	Exercise Physiology	3
BIOL F417	Neurobiology	3
BIOL F430	Plant Physiology and Development	3
BIOL F440	Behavioral Neuroscience Research Capstone	3
BIOL F441	Animal Behavior	4
BIOL F455	Environmental Toxicology	3
BIOL F457	Environmental Microbiology	3
BIOL F462	Infectious Diseases	3
WLF F305	Wildlife Diseases	3

LIST C - ECOLOGY AND EVOLUTIONARY BIOLOGY

Code	Title	Credits
BIOL F371	Principles of Ecology	4
BIOL F385	Global Change Biology	3
BIOL F415	Systematic and Comparative Biology	4
BIOL F418	Biogeography	3
BIOL F431	Population Genetics	3
BIOL F441	Animal Behavior	4
BIOL F446	Freshwater Habitat Dynamics	3
BIOL F457	Environmental Microbiology	3
BIOL F469	Landscape Ecology and Wildlife Habitat	3
BIOL F471	Population Ecology	3
BIOL F472	Community Ecology	4
BIOL F473	Limnology	4
BIOL F476	Ecosystem Ecology	4
BIOL F486	Vertebrate Paleontology	3
BIOL F487	Conceptual Issues in Evolutionary Biology	3
BIOL F488	Arctic Vegetation Ecology: Geobotany	3
BIOL F489	Vegetation Description and Analysis	3
BIOL F491	The Human Microbiome	4
WLF F301	Design of Wildlife Studies	3
WLF F421	Ecology and Management of Large Mammals	3

LIST D - ORGANISMAL BIOLOGY

Code	Title	Credits
BIOL F239	Introduction to Plant Biology	4
BIOL F331	Systematic Botany	3
BIOL F406	Entomology	4
BIOL F418	Biogeography	3
BIOL F425	Mammalogy	3
BIOL F426	Ornithology	3
BIOL F427	Ichthyology	4
BIOL F486	Vertebrate Paleontology	3
BIOL F489	Vegetation Description and Analysis	3

LIST E - BIOMEDICAL SCIENCE

Code	Title	Credits
BIOL F312	Medical Physiology	3
BIOL F335	Principles of Epidemiology	3
BIOL F402	Biomedical and Research Ethics	3
BIOL F412	Exercise Physiology	3
BIOL F417	Neurobiology	3
BIOL F435	Introduction to Biology of Cancer	3
BIOL F440	Behavioral Neuroscience Research Capstone	3
BIOL F455	Environmental Toxicology	3
BIOL F460	Principles of Virology	3
BIOL F462	Infectious Diseases	3
BIOL F463	Immunology	3
BIOL F466	Advanced Cell and Molecular Laboratory	3
BIOL F491	The Human Microbiome	4
CHEM F450	Information Storage and Transfer: Molecules and Pathways	3
CHEM F470	Cellular and Molecular Neuroscience	3
CHEM F474	Neurochemistry	3
WLF F305	Wildlife Diseases	3