

BIOLOGICAL SCIENCES B.A.

Program Requirements

< Back to Department (<http://catalog.uaf.edu/academic-departments/biology-wildlife/>)

Minimum Requirements for Biological Sciences B.A.: 120 credits

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

B.A. IN BIOLOGICAL SCIENCES WITHOUT CONCENTRATION

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. 35-40
(<http://catalog.uaf.edu/bachelors/#generaleducationrequirementstext>)

As part of the general education requirements, complete the following:

CHEM F105X and CHEM F106X	General Chemistry I and General Chemistry II	
STAT F200X	Elementary Statistics	

B.A. Degree Requirements

Complete the B.A. degree requirements. (<http://catalog.uaf.edu/bachelors/#bachelorofartstext>) ¹ 37

Biological Sciences Program Requirements

Complete the following:

BIOL F115X	Fundamentals of Biology I	4
BIOL F116X	Fundamentals of Biology II	4
BIOL F260	Principles of Genetics	4
BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
PHYS F123X	College Physics I	3-4
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	

Biology Breadth Requirements

Complete two of the following: ² 6-12

BIOL F310	Animal Physiology	
or BIOL F111X and BIOL F112X	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
or BIOL F342	Microbiology	
or BIOL F430	Plant Physiology and Development	
BIOL F360	Cell and Molecular Biology	
BIOL F371	Principles of Ecology	

Electives

Complete three of the following: ³ 9-12

STO F401	Communicating Science	
or choose from Lists A, B, C, D or E		

Capstone ⁴

Complete the following:

BIOL F410	Integrative Capstone in Biological Sciences	3
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Electives	
General Electives	0-7
Total Credits	120-128

¹ Students should consider the UAF requirement for 39 upper-division credits when choosing courses to fulfill humanities, social science and minor degree credits.

² Because biology breadth courses for the B.A. degree serve as prerequisites for many upper-division biology electives, course choices should be made with consideration of the elective biology courses the student plans to complete.

³ 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.

⁴ Fulfills the baccalaureate capstone requirement.

⁵ Up to 7 credits of BIOL courses may be used for both the major and the minor (e.g., BIOL F371, BIOL F385 or others that appear in both the major and minor lists).

⁶ Biological Sciences majors may not count BIOL F103X toward the Environmental Change minor.

B.A. IN BIOLOGICAL SCIENCES WITH CONCENTRATION IN ENVIRONMENTAL CHANGE

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. 35-40
(<http://catalog.uaf.edu/bachelors/#generaleducationrequirementstext>)

As part of the general education requirements, complete the following:

CHEM F105X and CHEM F106X	General Chemistry I and General Chemistry II	
STAT F200X	Elementary Statistics	

B.A. Degree Requirements

Complete the B.A. degree requirements. (<http://catalog.uaf.edu/bachelors/#bachelorofartstext>) 37

As part of the B.A. requirements, complete the following: ¹
Minor in Environmental Change ^{5,6}

Biological Sciences Program Requirements

Complete the following:

BIOL F115X and BIOL F116X	Fundamentals of Biology I and Fundamentals of Biology II	8
BIOL F260	Principles of Genetics	4
BIOL F371	Principles of Ecology	4
BIOL F385	Global Change Biology	3
BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
PHYS F123X	College Physics I	3-4
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	

Electives

Complete one of the following:	3-4
STO F401 Communicating Science	
or choose from Lists A, B, C, D or E	

Complete one course from List C	3-4
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Complete one course from List D	3-4
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Capstone

Complete the following:	
BIOL F410 Integrative Capstone in Biological Sciences	3

Electives

General Electives	0-6
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Total Credits	120-123
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¹ Students should consider the UAF requirement for 39 upper-division credits when choosing courses to fulfill humanities, social science and minor degree credits.

² Because biology breadth courses for the B.A. degree serve as prerequisites for many upper-division biology electives, course choices should be made with consideration of the elective biology courses the student plans to complete.

³ 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.

⁴ Fulfills the baccalaureate capstone requirement.

⁵ Up to 7 credits of BIOL courses may be used for both the major and the minor (e.g., BIOL F371, BIOL F385 or others that appear in both the major and minor lists).

⁶ Biological Sciences majors may not count BIOL F103X toward the Environmental Change minor.

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 F483	Stream Ecology	3
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