

BIOLOGY, B.S.

Juneau

The Bachelor of Science degree in Biology provides students with the opportunity to learn biological principles and skills in lecture, laboratory and field courses. Student research is also emphasized throughout the program. Program faculty are actively involved in a wide range of disciplines, including marine ecology, evolution, marine mammalogy, invertebrate physiology, cryobiology, biological oceanography, aquatic contaminant studies, and marine fisheries. Students have the option to choose a Fisheries Science Emphasis or to pursue General Electives. The location of the University provides students with a “natural laboratory” that includes extensive marine habitat, rainforest, wetlands, and ice fields all within walking distance of the classrooms. A small student-to-professor ratio ensures a more personal approach to learning than is possible at larger universities. The Bachelor of Science program in biology comprises a core curriculum generally found nationwide in bachelor of science biology programs. Additional information about the biology program can be found at https://uas.alaska.edu/arts_sciences/naturalsciences/biology/index.html (https://uas.alaska.edu/arts_sciences/naturalsciences/biology/). Program assessment plans are posted on the Program Assessment website (<https://uas.alaska.edu/provost/academic-affairs/assessment/>).

Admission Requirements

Applicants will be considered for full admission to the B.S. in Biology, and be assigned a faculty advisor, after completion of the following:

Code	Title	Credits
BIOL S115 & BIOL S116	*Fundamentals of Biology I and *Fundamentals of Biology II	8
MATH S151	*College Algebra for Calculus ¹	4
WRTG S111	*Writing Across Contexts	3
High school chemistry or CHEM S103 with a C (2.00) or higher.		

¹ May be met by placement examination.

Candidates must complete the General Education Requirements (GERs) (<http://catalog.uas.alaska.edu/general-education-requirements/>), the Alaska Native Knowledge Graduation Requirement (<http://catalog.uas.alaska.edu/certificate-degree-programs/bachelors-degrees/#alaskanativeknowledgegraduationrequirementtext>), as well as the specific program requirements listed below for a minimum of 120 credit hours. Courses in a degree program may be counted only once. Courses used to fulfill the major requirements cannot be used to fulfill the GERs. Specific recommendations for the GERs in Biology are listed below. Degree must include 44 credit hours of upper-division (300 or above) courses, 24 of which must be completed at UAS.

Requirement	Hours
Minimum Credit Hours	120
General Education Requirements	36
Alaska Native Knowledge Graduation Requirement	3
Major Requirements	43
Biology Electives	20
General Electives	21

Code	Title	Credits
General Education Requirements		
Complete all General Education Requirements which must include the following:		36
BIOL S115	*Fundamentals of Biology I	
BIOL S116	*Fundamentals of Biology II	
MATH S251	*Calculus I ¹	

Major Requirements		
BIOL S271	Ecology	4
BIOL S310	Animal Physiology	4
BIOL S362	Genetics	4
BIOL S482	Evolution	4
CHEM S105	*General Chemistry I	3
CHEM S105L	General Chemistry I Laboratory	1
CHEM S106	*General Chemistry II	3
CHEM S106L	General Chemistry II Laboratory	1
CHEM S321	Organic Chemistry I	4
CHEM S342	Biochemistry	4
STAT S200	*Elementary Statistics	3
Select one of the following Physics sequences:		8
PHYS S123 & PHYS S124	*College Physics I and *College Physics II	
PHYS S211 & PHYS S212	*General Physics I and *General Physics II	

Biology Electives		
Select from the following for a minimum of 20 credits:		20
BIOL S215	Introduction to Marine Biology	
BIOL S239	Introduction to Plant Biology	
BIOL S311	Communicating Science	
BIOL S349	Biological Oceanography	
BIOL S355	Experimental Design and Data Analysis	
BIOL S373	Conservation Biology	
BIOL S375	Current Topics in Biology: ²	
BIOL S380	Marine Ornithology and Herpetology	
BIOL S384	Marine Mammalogy	
BIOL S396	Field Studies in Behavior and Ecology ³	
BIOL S398/S498	Individual Research ³	
BIOL S405	Invertebrate Zoology	
BIOL S410	Marine Animal Physiology	
BIOL S427	Introduction to Ichthyology	
BIOL S441	Animal Behavior	

BIOL S475	Field Studies in Biology: ²
BIOL S480	Aquatic Pollution
BIOL S481	Marine Ecology
BIOL S492	Biology Seminar ²
ENVS S414	Biogeochemistry
ENVS S416	Biogeography and Landscape Ecology

All Biology students have the option of pursuing a Fisheries Emphasis, which will satisfy up to 21 of the 21 General Elective requirements.

Fisheries Science Emphasis Requirements 19-21

Must include (13 credits): 13

BIOL S110	Introduction to Marine Fisheries Science ⁴
BIOL S427	Introduction to Ichthyology
FISH F288	(Fish and Fisheries of Alaska) ⁴
FISH F487	(Fisheries Management) ⁴

Select two additional electives in BIOL (UAS) or FISH (UAF) with advisor permission (6-8 credits).

General Electives

Include upper-division courses as needed to meet 44 up to 21 upper division credits required for degree.

¹ Prerequisites include MATH S151 and MATH S152

² Only 4 credits from BIOL S375, 4 credits from BIOL S475, and 2 credits from BIOL S492 may be applied toward the biology electives. Additional credits may be applied toward electives.

³ Up to 6 credits total from BIOL S396, BIOL S398, BIOL S498 may be applied.

⁴ May be applied toward the Biology Electives and General Electives for students not pursuing the emphasis. FISH courses available from UAF distance or face-to-face at the Lena Point CFOS facility.

Upon completion, students will be able to:

1. Gain a broad background in biological sciences.
2. Develop critical thinking skills.
3. Improve oral and written scientific communication skills.
4. Gain practical experiences in basic biological research.