

MARINE BIOLOGY, B.S.

Juneau

The B.S. degree in Marine Biology provides students with the opportunity to learn biological principles and skills in lecture, laboratory and field courses with a core curriculum in Marine Biology. Student research is 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. Additional information about the marine biology program can be found at https://uas.alaska.edu/arts_sciences/naturalsciences/biology/index.html (https://uas.alaska.edu/arts_sciences/naturalsciences/biology/).

Admission Requirements

Applicants will be considered for full admission to the B.S. in Marine 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	
CHEM S103	*Introduction to General Chemistry (or High school chemistry) ¹	
MATH S151	*College Algebra for Calculus (may be met by placement examination)	
WRTG S111	*Writing Across Contexts	

¹ With a C (2.00) or higher

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 requirements for GERs in Marine Biology are listed below. The degree must include 44 credits 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	46
Marine Biology Core Classes	11
Biology Electives	6
General Electives	21

Code	Title	Credits
General Education Requirements		
Must include the following:		36
BIOL S115	*Fundamentals of Biology I	
BIOL S116	*Fundamentals of Biology II	
MATH S251	*Calculus I	

Major Requirements		
BIOL S215	Introduction to Marine Biology	3
BIOL S271	Ecology	4
BIOL S310	Animal Physiology	4
BIOL S362	Genetics	4
BIOL S482	Evolution	4
CHEM S105 & S105L	*General Chemistry I and General Chemistry I Laboratory	4
CHEM S106 & S106L	*General Chemistry II and General Chemistry II Laboratory	4
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	

Marine Biology Core Classes		
Select 10-12 credits of the following:		
BIOL S349	Biological Oceanography	
BIOL S373	Conservation Biology	
BIOL S375	Current Topics in Biology: (Topics in Marine Mammalogy) ¹	
BIOL S380	Marine Ornithology and Herpetology	
BIOL S384	Marine Mammalogy	
BIOL S405	Invertebrate Zoology	
BIOL S410	Marine Animal Physiology	
BIOL S427	Introduction to Ichthyology	
BIOL S481	Marine Ecology	

Biology Electives		
Select six credits of the following:		6
BIOL S239	Introduction to Plant Biology	
BIOL S311	Communicating Science	

BIOL S355	Experimental Design and Data Analysis
BIOL S349	Biological Oceanography
BIOL S373	Conservation Biology
BIOL S375	Current Topics in Biology: ¹
BIOL S380	Marine Ornithology and Herpetology
BIOL S384	Marine Mammalogy
BIOL S396	Field Studies in Behavior and Ecology ²
BIOL S398	Individual Research ²
BIOL S405	Invertebrate Zoology
BIOL S410	Marine Animal Physiology
BIOL S427	Introduction to Ichthyology
BIOL S441	Animal Behavior
BIOL S475	Field Studies in Biology: ¹
BIOL S480	Aquatic Pollution
BIOL S481	Marine Ecology
BIOL S492	Biology Seminar ¹
BIOL S498	Research in Biology ²
ENVS S414	Biogeochemistry
ENVS S416	Biogeography and Landscape Ecology

All Marine Biology students have the option of pursuing a Fisheries Science Emphasis, which will satisfy up to 21 of the 22 General Elective requirements.

Fisheries Science Emphasis Requirements 19-21

Must include (13 credits):

BIOL S110	Introduction to Marine Fisheries Science ³
BIOL S427	Introduction to Ichthyology
FISH F288	(Fish and Fisheries of Alaska) ³
FISH F487	(Fisheries Management) ³

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

General Electives

To include upper-division courses as needed to meet up to 22 44 upper division credits required for degree.

¹ Only 4 credits from BIOL S375, 4 credits from BIOL S475, and 2 credits from BIOL S492 may be applied toward the Biology Electives. Others may be applied toward General Electives. Only 2 credits from BIOL S375: Topics in Marine Mammalogy may be applied to the Marine Biology Core Classes credit requirement.

² Up to 6 credits total from BIOL S396, BIOL S398, BIOL S498 may be applied.

³ 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.

3. Improve oral and written scientific communication skills.
4. Gain practical experiences in basic biological research.

Upon completion, students will be able to:

1. Gain a broad background in biological sciences.
2. Develop critical thinking skills.