

# FISHERIES AND OCEAN SCIENCES WITH A CONCENTRATION IN FISHERIES SCIENCE, B.S.

The goal of the B.S. in Fisheries and Ocean Science with a Concentration in Fisheries Science degree program is to educate undergraduate students in fisheries sciences, with a particular emphasis on the biology, assessment, and management of fish and invertebrate populations and their associated physical, chemical, geological, and biological marine and freshwater environments, in preparation for a career in the fisheries in Alaska and elsewhere. This degree is offered jointly between UAS and UAF; students have the option of completing their degree at Juneau or Fairbanks, most courses listed below can be taken at either university, and many are offered distance or online. 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. The B.S. in Fisheries and Ocean Science with a Concentration in Fisheries Science prepares students for graduate studies in related fields, and provides students with the knowledge base, skill sets and hands-on experience to obtain positions in state, federal, Alaska Native, Native American, and nongovernmental fisheries and natural resources conservation and management agencies in Alaska and throughout North America.

## Admission Requirements

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

1. MATH S151 (may be met by placement examination)
2. WRTG S111
3. BIOL S115 and BIOL S116
4. High school chemistry or CHEM S103 with a C (2.00) or higher.

## Degree Requirements

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 Fisheries are listed

below. The degree must include 44 credits of upper-division (300 or above) courses, 24 of which must be completed at UAS or UAF.

Code	Title	Credits
<b>Minimum Credit Hours</b>		<b>120</b>
General Education Requirements		36
Alaska Native Knowledge Graduation Requirement		3
Must include:		
BIOL S115	*Fundamentals of Biology I	4
BIOL S116	*Fundamentals of Biology II	4
MATH S251	*Calculus I	4
<b>Major Requirements</b>		<b>66-68</b>
BIOL S110	Introduction to Marine Fisheries Science	
BIOL S215	Introduction to Marine Biology	
BIOL S271	Ecology	
BIOL S310	Animal Physiology	
BIOL S362	Genetics	
BIOL S427	Introduction to Ichthyology	
BIOL S491	Internship (Biology Internship)	
or BIOL S498	Research in Biology	
CHEM S105	*General Chemistry I	
CHEM S106	*General Chemistry II	
ECON S202		
FISH F102	(Fact or Fishin': Case Studies in Fisheries) <sup>1</sup>	
FISH F103	(The Harvest of the Sea) <sup>1</sup>	
FISH F261	(Introduction to Fisheries Utilization) <sup>1</sup>	
or FT S222	Alaska Salmon Culture II	
FISH F288	(Fish and Fisheries of Alaska) <sup>1</sup>	
FISH F487	(Fisheries Management) <sup>1</sup>	
STAT S200	*Elementary Statistics	
STAT S401	Regression and Analysis of Variance	
Select one of the following:		3
FISH F315	(Freshwater Fisheries Techniques) <sup>1</sup>	
FISH F414	(Field Methods in Marine Ecology and Fisheries) <sup>1</sup>	
Select one of the following:		3
FISH F425	(Fish Ecology) <sup>1</sup>	
FISH F426	(Behavioral Ecology of Fishes) <sup>1</sup>	
FISH F428	(Physiology of Fishes) <sup>1</sup>	
Select one of the following:		3
PHYS S123	*College Physics I	
or PHYS S211	*General Physics I	
Select one of the following:		3
GEOG S312	Culture and Ecology <sup>2</sup>	
or SOC S404	Environmental Sociology	
<b>Upper-Division Electives <sup>3</sup></b>		<b>12-14</b>
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: <sup>4</sup>
BIOL S380	Marine Ornithology and Herpetology
BIOL S384	Marine Mammalogy
BIOL S396	Field Studies in Behavior and Ecology
BIOL S405	Invertebrate Zoology
BIOL S410	Marine Animal Physiology
BIOL S441	Animal Behavior
BIOL S475	Field Studies in Biology: <sup>4</sup>
BIOL S480	Aquatic Pollution
BIOL S481	Marine Ecology
BIOL S482	Evolution
BIOL S491 or BIOL S498	Internship (Biology Internship) Research in Biology
BIOL S492	Biology Seminar <sup>4</sup>

**Physical Science 4**

Complete 4 credits of electives from Chemistry, Geology, Environmental Sciences, or Physics

<sup>1</sup> *FISH courses available from UAF (<https://catalog.uaf.edu/courses/fish/>).*

<sup>2</sup> *SOC S101 pre-requisite for SOC S404; take as GER.*

<sup>3</sup> *Or other upper-division electives from UAF: Fisheries (<https://catalog.uaf.edu/courses/fish/>), Marine Science and Limnology (<https://catalog.uaf.edu/courses/msl/>), or Natural Resources Management (<https://catalog.uaf.edu/courses/nrm/>).*

<sup>4</sup> *Only 4 credits from BIOL S375, 4 credits from BIOL S475, and 2 credits from BIOL S492 may be applied toward the Electives.*

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.