

# Fisheries

School of Fisheries and Ocean Sciences  
Fisheries Program  
(907) 474-7289  
www.sfos.uaf.edu/academics/

## B.S. Degree

Minimum Requirements for Degree: 130 credits

The fisheries undergraduate program offers broad basic education and training, preparing graduates to work in management, law enforcement, public information and education. The program provides a solid foundation for graduate study for students contemplating careers in research, administration, advanced management or teaching. The undergraduate program is offered only on the UAF Fairbanks campus.

Graduate students in fisheries attend classes and work with faculty in Juneau and/or Fairbanks. Students can develop academic programs in one of three subject areas: fisheries management (Juneau and Fairbanks), fish/invertebrate biology (Juneau and Fairbanks), and aquaculture (Juneau). Research assistantships are available. Applicants should contact the fisheries program for further information and application forms.

With a number of subarctic streams and lakes within easy reach, Fairbanks offers an excellent location for the study of interior Alaska aquatic habitats. Access to the marine environment from the Fairbanks campus is in Prince William Sound and Cook Inlet.

The Juneau Center, School of Fisheries and Ocean Sciences, houses the UAF fisheries science program near the Auke Bay National Marine Fisheries Service Laboratory north of Juneau. The Juneau Center has freshwater and seawater wet labs, computer labs and ready access to marine and freshwater habitats. The Fishery Industrial Technology Center, located in Kodiak, has new facilities for work in harvest technology, seafood technology, seafood biochemistry and microbiology.

Fisheries students in Fairbanks and Juneau have an opportunity to associate with personnel of federal and state conservation agencies and these agencies hire students for summer fieldwork. Bachelor of science candidates are strongly urged to obtain work experience in fisheries with public resource agencies or private firms. Faculty members can help students contact potential employers. Fisheries undergraduate students are asked each fall to describe their work experience of the previous year.

## Major—B.S. Degree

1. Complete the general university requirements. (See page 107. As part of the core curriculum requirements, complete MATH 200X or 272X.)
2. Complete the B.S. degree requirements. (See page 114. As part of the B.S. degree requirements, complete MATH 201X or STAT 401.)
3. Complete the following fisheries core requirements:\*
 

BIOL 105X—Fundamentals of Biology I**	4
BIOL 106X—Fundamentals of Biology II**	4
BIOL 271—Principles of Ecology	4
BIOL 310—Animal Physiology	4
BIOL 362—Principles of Genetics	4
BIOL 473W—Limnology (4)	
or MSL 411—Current Topics in Oceanographic Research (3)	3-4
CHEM 105X—General Chemistry**	4
CHEM 106X—General Chemistry**	4
CS or CIOS elective	3
ECON 200—Principles of Economics (4)	
or ECON 235—Introduction to Natural Resource Economics (3)	
or ECON 201—Principles of Economics I: Microeconomics (3)	
and ECON 202—Principles of Economics II: Macroeconomics (3)	3-6

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|---|-----|
| ENGL 314W/O/2—Technical Writing (3)                   |     |
| or ENGL 414W—Research Writing (3)                     | 3   |
| FISH 388—Marine and Freshwater Fishes of Alaska       | 3   |
| FISH 400W—Fisheries Science                           | 3   |
| FISH 401W/O/2—Fisheries Management                    | 3   |
| FISH 427—Ichthyology (4)                              |     |
| or BIOL 305—Invertebrate Zoology (5)                  | 4-5 |
| MSL 111X—The Oceans**                                 | 4   |
| NRM 101—Natural Resources Conservation and Policy (3) |     |
| or FISH 101—Introduction to Fisheries (3)             | 3   |
| PHYS 103X—College Physics**                           | 4   |
| PHYS 104X—College Physics**                           | 4   |
| STAT 200—Elementary Probability and Statistics (3)    |     |
| or STAT 300—Statistics (3)                            | 3   |
4. Complete electives\* from the following:\*\*\*\*
 

ANTH 242—Native Cultures of Alaska	3
BA 307—Personnel Management	3
BIOL 305—Invertebrate Zoology	5
BIOL 317—Comparative Anatomy of Vertebrates	4
BIOL 328O—Biology of Marine Organisms	3
BIOL 342—Microbiology	4
BIOL 407—Aquatic Entomology	3
BIOL 418W—Developmental Biology	3
BIOL 442W/O/2—Bacteriology and Immunology	5
BIOL 471W—Population Ecology	3
BIOL 472—Community Ecology	3
BIOL 480—Water Pollution Biology	3
CHEM 212—Chemical Equilibrium and Analysis	3
CHEM 321—Organic Chemistry (3)	
and CHEM 322—Organic Chemistry (3)	
and CHEM 324W—Organic Laboratory (4)	10
CHEM 451—General Biochemistry	3
CHEM 452W—Biochemistry Laboratory	3
GEOG 205—Elements of Physical Geography	3
GEOG 302—Geography of Alaska	3
GEOG 338—Introduction to Geographic Information Systems	3
GEOG 402—Resources and Environment	3
GEOS 304—Geomorphology	3
JRN 101—Introduction to Mass Communications	3
JRN 311W—Magazine Article Writing	3
NRM 204—Public Lands Law and Policy	3
NRM 277—Introduction to Conservation Biology	3
NRM 303X—Environmental Ethics and Actions	3
NRM 370—Introduction to Watershed Management	3
NRM 407—Environmental Law	3
PS 201—Comparative Politics	3
PS 212—Introduction to Public Administration	3
PS 263—Alaska Native Politics	3
PS 302—Congress and Public Policy	3
SOC 309—Urban Sociology	3
STAT 402—Scientific Sampling	3
WLF 303W—Wildlife Management Techniques	3
WLF 419O/2—Waterfowl and Wetlands Ecology and Management	4
  5. Minimum credits required

\* Student must earn a C grade or better in each course.

\*\* Courses completed in the fisheries core may be used to meet the core natural sciences or B.S. degree natural science requirements but not both.

\*\*\* Courses completed in the fisheries core may be used to meet the core mathematics or B.S. degree mathematics requirements, but not both.

\*\*\*\* Recommended electives. Other courses may be substituted.

Note: Fisheries majors are encouraged to reinforce their fisheries qualifications by earning a minor in a program related to fisheries. Some examples are biology, business management, chemistry, economics, mathematics, natural resources management (animal science), northern studies, statistics and wildlife.

Note: Page numbers refer to the UAF 2005-2006 academic catalog, which can be viewed online at [www.uaf.edu/catalog/](http://www.uaf.edu/catalog/).

## Baccalaureate Core Requirements

All degrees (e.g. B.A., B.S., etc.) require additional courses.  
Refer to specific degree and program requirements.

### COMMUNICATION (9)

**Complete the following:**

ENGL 111X ..... (3) \_\_\_\_\_  
ENGL 190H may be substituted.

**Complete one of the following:**

ENGL 211X OR ENGL 213X ..... (3) \_\_\_\_\_

**Complete one of the following:**

COMM 131X OR COMM 141X ..... (3) \_\_\_\_\_

### PERSPECTIVES ON THE HUMAN CONDITION (18)

**Complete all of the following four courses:**

ANTH 100X/SOC 100X ..... (3) \_\_\_\_\_  
ECON 100X OR PS 100X ..... (3) \_\_\_\_\_  
HIST 100X ..... (3) \_\_\_\_\_  
ENGL/FL 200X ..... (3) \_\_\_\_\_

**Complete one of the following three courses:**

ART/MUS/THR 200X, HUM 201X OR ANS 202X ..... (3) \_\_\_\_\_

**Complete one of the following six courses:**

BA 323X, COMM 300X, JUST 300X, NRM 303X,  
PS 300X OR PHIL 322X ..... (3) \_\_\_\_\_

**OR** complete 12 credits from the above courses **PLUS**

- two semester-length courses in a single Alaska Native language or other non-English language **OR**
- three semester-length courses (9 credits) in American Sign Language taken at the university level.

### MATHEMATICS (3)

**Complete one of the following:**

MATH 107X, MATH 161X OR MATH 103X ..... (3-4) \_\_\_\_\_  
\* No credit may be earned for more than one of MATH 107X or 161X.

**OR** complete one of the following:\*

MATH 200X, MATH 201X, MATH 202X,  
MATH 262X OR MATH 272X ..... (4) \_\_\_\_\_  
\*Or any math course having one of these as a prerequisite

### NATURAL SCIENCES (8)

**Complete any two (4-credit) courses:**

ATM 101X ..... (4) \_\_\_\_\_  
BIOL 100X ..... (4) \_\_\_\_\_  
BIOL 103X ..... (4) \_\_\_\_\_  
BIOL 104X ..... (4) \_\_\_\_\_  
BIOL 105X ..... (4) \_\_\_\_\_  
BIOL 106X ..... (4) \_\_\_\_\_  
BIOL 111X ..... (4) \_\_\_\_\_  
BIOL 112X ..... (4) \_\_\_\_\_  
CHEM 100X ..... (4) \_\_\_\_\_  
CHEM 103X ..... (4) \_\_\_\_\_  
CHEM 104X ..... (4) \_\_\_\_\_  
CHEM 105X ..... (4) \_\_\_\_\_  
CHEM 106X ..... (4) \_\_\_\_\_  
GEOG 205X ..... (4) \_\_\_\_\_  
GEOS 100X ..... (4) \_\_\_\_\_  
GEOS 101X ..... (4) \_\_\_\_\_  
GEOS 112X ..... (4) \_\_\_\_\_  
GEOS 120X ..... (4) \_\_\_\_\_  
GEOS 125X ..... (4) \_\_\_\_\_  
MSL 111X ..... (4) \_\_\_\_\_  
PHYS 102X ..... (4) \_\_\_\_\_  
PHYS 103X ..... (4) \_\_\_\_\_  
PHYS 104X ..... (4) \_\_\_\_\_  
PHYS 115X ..... (4) \_\_\_\_\_  
PHYS 116X ..... (4) \_\_\_\_\_  
PHYS 175X ..... (4) \_\_\_\_\_  
PHYS 211X ..... (4) \_\_\_\_\_  
PHYS 212X ..... (4) \_\_\_\_\_  
PHYS 213X ..... (4) \_\_\_\_\_

### LIBRARY AND INFORMATION RESEARCH (0-1)

Successful completion of library skills competency test **OR**

LS 100X or 101X prior to junior standing ..... (0-1) \_\_\_\_\_

### UPPER-DIVISION WRITING AND ORAL COMMUNICATION (0)

**Complete the following:**

Two writing intensive courses designated (W) ..... (0) \_\_\_\_\_  
One oral communication intensive course designated (O) ..... (0) \_\_\_\_\_  
**OR** two oral communication intensive courses designated (O/2), at the upper-division level (see degree and/or major requirements) ..... (0) \_\_\_\_\_

**TOTAL CREDITS REQUIRED** ..... **38-39**