

MINOR IN AQUATIC AND FISHERY SCIENCES

Enrollment in the Aquatic and Fishery Sciences minor is open to all UW students who have reached 90 credits. The minor is designed for students who wish to understand aquatic animals and habitats and responsible utilization of aquatic resources. This minor could increase opportunities for employment in such positions as fisheries observers, resource managers, commercial fishing and aquaculture operations, or researchers in studies of endangered species and habitat quality. It would be especially appropriate for those with programs in Forest Resources, Oceanography, Biology, Zoology or the Program on the Environment.

The courses span the areas of fisheries biology, ecology, conservation and management, marine biology, freshwater ecology, aquaculture, and research methods. There is enough flexibility to let students pursue individual interests, while emphasizing the development of writing and quantitative skills. There is also a balance between lecture courses and lab and field experiences.

Students who minor in Aquatic and Fishery Sciences are recommended to take basic science courses in general and organic chemistry, biology (either BIOL 161-162 or 180, 200, and 220) and at least pre-calculus before beginning some of the Aquatic and Fishery Sciences courses. Please pay attention to prerequisites and recommended courses.

REQUIRED COURSES (28 CREDITS)

(1) FISH 210

FISH 210 METHODS IN FISHERIES & AQUATIC SCIENCES: THEORY AND APPLICATIONS (5) Comprehensive survey of the theory and techniques of field research in aquatic sciences. Topics emphasize sampling design, data collection, and interpretation across a broad suite of topics and approaches. Field trips and laboratory sections are mandatory. Recommended: 10 credits in biology. (Natural World)

(2) Two of the following: Fish 310, Fish 311, FISH 312, Fish 323, Fish 324 (one must be 5 credits)

FISH 310 BIOLOGY OF SHELLFISHES (5) Commercially important mollusks, crustaceans, and other harvested invertebrates highlighted with respect to systematics, anatomy, reproductive strategies, feeding, and growth. Examples of species that demonstrate variability in recruitment and complex life cycles. Laboratories, field trips. Recommended: 10 credits of biology/zoology. (Natural World)

FISH 311 BIOLOGY OF FISHES (3/5) Lecture and laboratory, of the morphological, physiological, behavioral, and ecological diversity of fishes of the world; designed to provide a basic foundation for advanced courses in all areas of finfish fisheries. 3-credit option does not include laboratory. Recommended: 10 credits biological science. Offered: jointly with ZOOL 311; W. (Natural World)

FISH 312 FISHERIES ECOLOGY (3/5) Ecological characteristics of fishes and shellfishes in the important freshwater and marine habitats of North America. Relationship between physical aspects of the habitats and community structure. Impacts of human activities on diversity and abundance. Recommended: FISH 210; FISH 311. Offered: Sp. (Natural World)

FISH 323 CONSERVATION AND MANAGEMENT OF AQUATIC RESOURCES (3/5) Topics include population growth rates, extinction risk, dynamics of populations at low densities, meta-populations, marine reserves, endangered species classification, sustainable harvesting and management institutions. Case studies such as salmon, albatross and whales, are examined as representative of conservation issues in aquatic sciences. Sampling, experimental design, computer skills and research writing. (Natural World)

FISH 324 BIOLOGY AND CULTURE OF AQUATIC ORGANISMS: SUSTAINABILITY AND THE ENVIRONMENT (5) Explores sustainability of the environment and culture of aquatic animal and plant species. Key issues covered include: aquatic and near-shore ecosystem conservation, relationship with fisheries, species selection, culture practices, animal health, water quality, transfer regulations, and human health and safety. Extended polyculture project and term paper. Recommended: 10 credits biology. (Natural World)

(3) Q SCI 381 or equivalent.

Q SCI 381 INTRODUCTION TO PROBABILITY AND STATISTICS (5) Applications to biological and natural resource problems stressing the formulation and interpretation of statistical tests. Random variables, expectations, variances, binomial, hypergeometric, Poisson, normal, chi-square, "t" and "F" distributions. Prerequisite: either MATH 120, a minimum score of 2 on advanced placement test, or a minimum score of 67% on MATHPC placement test. Offered: AWSpS. (Natural World or Q/SR)

(4) Credits to bring total to 28 (including a minimum of 2 courses of 300 and 400 and 500-level FISH courses, examples are following):

FISH 340 GENETICS AND MOLECULAR ECOLOGY (5)
FISH 350 SCALE AND PROCESS IN MARINE BIOLOGY (3) HONORS
FISH 351 FIELD INVESTIGATIONS IN MARINE BIOLOGY (5) HONORS
FISH 404 DISEASES OF AQUATIC ANIMALS (5)
FISH 420 ECOLOGY OF MARINE FISHES (4)
FISH 428 RESTORATION OF FISH COMMUNITIES AND HABITATS IN RIVER ECOSYSTEMS (5)
FISH 434 ECOLOGICAL EFFECTS OF WASTE WATER (3/5)
FISH 439 ATTAINING A SUSTAINABLE SOCIETY (1/3)
FISH 444 CONSERVATION GENETICS (5)
FISH 447 WATERSHED ECOLOGY AND MANAGEMENT (3)
FISH 450 SALMONID BEHAVIOR AND LIFE HISTORY (3/5)
FISH 453 SPATIAL INFORMATION TECHNOLOGIES IN ECOSYSTEM SCIENCES (3)
FISH 455 FISH AND WILDLIFE TOXICOLOGY (3/5)
FISH 456 INTRODUCTION TO QUANTITATIVE FISHERY SCIENCE (5)
FISH 457 DESIGN AND EVALUATION OF MARINE PROTECTED AREAS (4)
FISH 458 FISHERIES STOCK ASSESSMENT (4)
FISH 475 MARINE MAMMALOGY (3/5)
FISH 478 TOPICS IN SUSTAINABLE FISHERIES (3)
FISH 480 MARINE RESOURCE CONSERVATION AND MANAGEMENT (3)
FISH 490 AQUATIC MICROBIOLOGY (3/5)
FISH 491 AQUATIC ECOLOGICAL RESEARCH IN ALASKA (12)
FISH 492 FRIDAY HARBOR LABS APPRENTICESHIP (9/15)
FISH 498 INTERNSHIP/EXPERIENTIAL LEARNING (1-15)
FISH 499 UNDERGRADUATE RESEARCH (1-15)
(up to 3 credits of 498 or 499 may count toward AFS minor)

FOR ADDITIONAL INFORMATION

Contact the Aquatic and Fishery Sciences Student Services Office, e-mail safs@u.washington.edu.