

# FISHERIES AND AQUATIC SCIENCES

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Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.

More Info (<https://one.ufl.edu/soc/>)

*Unless otherwise indicated in the course description, all courses at the University of Florida are taught in English, with the exception of specific foreign language courses.*

## Courses

### FAS 2024 Sustainable Fisheries 3 Credits

**Grading Scheme:** Letter Grade

Fish biology, ecology, and habitats relevant to sustainable fisheries on a global and regional (Florida) scale. Discusses fisheries occurring from mountain rivers to ocean depths, with emphasis on resource use. Topics include invasives, aquaculture, dams, artificial reefs, bycatch, climate change, and marine protected areas. Intended for non-science and science majors. This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.

**Attributes:** General Education - Biological Science

### FAS 4014 Aquaculture I 3 Credits

**Grading Scheme:** Letter Grade

Overview of the field of aquaculture, including water quality, production systems, nutrition, spawning, and the common fish and invertebrate groups cultured in the United States. Entirely web-based with narrated PowerPoint lectures followed by readings and other resources for each learning topic. Includes weekly topics in asynchronous class discussions.

**Prerequisite:** Junior or senior standing.

### FAS 4105C Field Ecology of Aquatic Organisms 3 Credits

**Grading Scheme:** Letter Grade

This field-oriented course is intended to introduce students to the diverse aquatic habitats found in Florida, their associated flora and fauna, and serve as an introduction to the management issues facing state and federal conservation agencies. Students will gain an understanding of plant and animal community structure across a range of ponds, lakes, rivers, and nearshore coastal systems. Extensive field trips are required and comprise approximately 75% of the total class time.

**Prerequisite:** Junior or senior standing.

### FAS 4202C Biology of Fishes 4 Credits

**Grading Scheme:** Letter Grade

The general biology of fishes, with emphasis on trends in their evolution, integrative and sensory biology, physiology, feeding ecology, reproduction, growth and population dynamics as they relate to fisheries.

**Prerequisite:** BSC 2011 and BSC 2011L.

### FAS 4224 Applied Aquaculture Genetics 3 Credits

**Grading Scheme:** Letter Grade

The goal of this course is to provide students with the background knowledge and practical methodologies for the current technologies used for the genetic improvement of fish and shellfish aquaculture and fishery resource management. This course will be a combination of online lectures, group discussions, and video demonstrations to prepare students with the most updated advancements.

**Prerequisite:** BSC 2010 and BSC 2011 or PCB 3063 or equivalents.

### FAS 4270 Marine Ecological Processes 3 Credits

**Grading Scheme:** Letter Grade

The ecology of marine organisms and habitats with focus on how general ecological principles, and those unique to the marine environment, drive patterns and processes.

**Prerequisite:** BSC 2010 and BSC 2011 or equivalent.

### FAS 4271C Invasion Ecology of Aquatic Animals 3 Credits

**Grading Scheme:** Letter Grade

Comprehensive overview of invasion ecology which highlights aspects related to aquatic animals, including ecological concepts and debates underlying this developing field; biology and life history of nonnative aquatic animals, including characteristics of successful invaders; risk analysis methodology; and the conservation and regulatory implications of nonnative aquatic species.

**Prerequisite:** Junior standing or higher.

### FAS 4274 Freshwater Ecology 3 Credits

**Grading Scheme:** Letter Grade

Provides an understanding of the concepts in freshwater ecology which are important for controlling the traits, distribution, and abundance of aquatic organisms. Focuses on the major groups of organisms found in freshwater habitats, the physical and chemical properties that are important for structuring freshwater communities, and the ecological processes that affect freshwater communities and ecosystems.

**FAS 4304C Spatial Sciences for Marine Environmental Characterization 4 Credits****Grading Scheme:** Letter Grade

Exploration of the geospatial technologies, concepts, and methods required to acquire, analyze, and manage geographic data used in a context of marine habitat mapping. Emphasizes understanding and appreciation of maps as a mean of communication between stakeholders with different backgrounds and expertise.

**Prerequisite:** Junior standing.**FAS 4305C Introduction to Freshwater Fishery Science 4 Credits****Grading Scheme:** Letter Grade

An applied course that explores the multidisciplinary nature of fisheries science through a detailed examination of freshwater fish and habitats. Includes discussion of relevant fundamental concepts in ecology, chemistry, and geography. Applies practical skills in field sampling and data handling, as well as skills (e.g., grant writing, science communication) and contemporary issues (e.g., ethical uses of AI tools) pertinent to fishery management and research.

**Prerequisite:** Junior or Senior Standing.**FAS 4363 Marine Protected Areas 3 Credits****Grading Scheme:** Letter Grade

Presents the history and logic of marine protected areas (MPAs) and their advantages and disadvantages. Explains the science of MPAs as well as an overview of traditional approaches of fisheries management. Also emphasizes the importance of ecological principles when creating an MPA. Finally, presents an overview of sampling theory and the need for empirical data to document the success or failure of MPAs.

**Prerequisite:** BSC 2011.**FAS 4364 Marine Adaptations: Environmental Physiology 3 Credits****Grading Scheme:** Letter Grade

Focuses on the responses of species and habitats to stressors encountered in the marine environment, such as the physiological responses to salinity, hypoxia, ocean acidification, thermal stress, pollutants, nitrogen stress, UV radiation, and noise. Explore these physiological stressors as drivers of marine ecological processes in a wide array of marine habitats, as well as societal, economic, and management implications.

**Prerequisite:** BSC 2010 and BSC 2011 or equivalent; courses in animal physiology and ecology are recommended.**FAS 4405 Aquariums, Water and Aquaculture 3 Credits****Grading Scheme:** Letter Grade

Culture methods of fish and shellfish, species selection, biological and environmental principles, case histories and future trends.

**Prerequisite:** BSC 2010 and BSC 2010L, or instructor permission.**FAS 4900 Supervised Extension Experience in Fisheries and Aquatic Sciences 0-3 Credits****Grading Scheme:** S/U

Firsthand, authentic extension experiences in fisheries and aquatic sciences under the supervision of a faculty member. Projects may involve program planning, development, implementation, and evaluation.

**Prerequisite:** Instructor permission.**FAS 4905 Individual Study 1-4 Credits****Grading Scheme:** Letter Grade

Individual study of a selected topic in fisheries and aquatic sciences as contracted with the instructor at the start of the term.

**Prerequisite:** instructor permission.**FAS 4911 Supervised Research in Fisheries and Aquatic Sciences 0-3 Credits****Grading Scheme:** S/U

Firsthand, authentic research in fisheries and aquatic sciences under the supervision of a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery, or application.

**Prerequisite:** Instructor permission.**FAS 4915 Honors Thesis Research in Fisheries and Aquatic Sciences 0-3 Credits****Grading Scheme:** S/U

Independent research in fisheries and aquatic sciences leading to an honors thesis. Student will be mentored by a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery or application.

**Prerequisite:** junior standing, upper division GPA of 3.75 or higher and completed honors thesis proposal on file.**FAS 4932 Topics in Fisheries and Aquatic Sciences 1-4 Credits****Grading Scheme:** Letter Grade

Selected topics in fisheries biology, aquaculture and associated aquatic sciences not offered in other courses.

**Prerequisite:** instructor permission.**FAS 4933 Seminar in Fisheries and Aquatic Sciences 1 Credit****Grading Scheme:** Letter Grade

Introduces contemporary topics in the field of fisheries and aquatic sciences and develops listening and writing skills.

**Prerequisite:** Instructor permission.

**PEN 1136 Openwater Scuba Diving 2 Credits****Grading Scheme:** Letter Grade

Beginning scuba diving including compass navigation, openwater diving environment, dive preparation and five openwater dives. Payment of required additional course fees and successful completion results in national certification as Openwater Scuba Diver.

**Prerequisite:** swim test.**PEN 2138C Advanced Scuba Diving 3 Credits****Grading Scheme:** Letter Grade

Provides advanced SCUBA training. Topics include physics, physiology, decompression, and oceanography/ecology. Pool sessions cover rescue, double cylinders, full facemasks, night/limited visibility techniques, search, recovery, salvage techniques, and underwater task loading. Completion results in NAUI certification in Advanced SCUBA, Enriched Air Nitrox, SCUBA Rescue, First Aid, CPR, and Oxygen Provider.

**Prerequisite:** PEN 1136 or equivalent.**PEN 2146C Science Diver 2 Credits****Grading Scheme:** Letter Grade

Training to achieve completion of the required hours for the Scientific Diver classification through the American Academy of Underwater Scientists (AAUS).

**Attributes:** Artificial Intelligence**PEN 3135C Scuba Leadership I 1 Credit****Grading Scheme:** Letter Grade

This 4-week course provides high-level recreational SCUBA training as well as introductory professional leadership level training in accordance with National Association of Underwater Instructors (NAUI) Divemaster standards. This course is taught consecutively following PEN 3139C and is a prerequisite for PEN 4145C and part of the progression for NAUI professional Instructor certification.

**Prerequisite:** PEN 2138C or instructor approval.

**Corequisite:** The 10-week Master Diver is required in order to take the following 4-week Scuba Leadership I. Students can take the 10-week Master Diver without subsequently taking Scuba Leadership I.

**PEN 3139C Master Scuba Diver 3 Credits****Grading Scheme:** Letter Grade

This 10-week course provides high-level recreational SCUBA training in accordance with National Association of Underwater Instructors (NAUI) Master Diver standards. This course is a prerequisite for PEN 4145C. Successful students can earn NAUI Master Diver credentials.

**Prerequisite:** PEN 2138C or instructor approval(see qualifications section of syllabus).**PEN 4145C Scuba Leadership II: Research Divemaster 3 Credits****Grading Scheme:** Letter Grade

This 15-week advanced course builds upon the professional leadership level training of Scuba Leadership 1 in accordance with National Association of Underwater Instructors (NAUI) Divemaster standards. This includes gear repair and maintenance, planning and leading dives, conducting discover scuba sessions, and assisting with instruction. This course is part of the progression for NAUI professional Instructor certification.

**Prerequisite:** PEN 3135C and PEN 3139C.**PLS 4613 Aquatic Weed Control 3 Credits****Grading Scheme:** Letter Grade

Florida's aquatic weed problems and methods of chemical, biological, mechanical and physical weed control. Topics include plant biology/ecology, herbicide residue, lake reclamation, fish-plant interactions and laws regulating aquatic weed control.

**Prerequisite:** refer to the department.