FOREST, FISHERIES, AND GEOMATICS SCIENCES

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.
More Info (https://one.uf.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.

School Information

The School of Forest, Fisheries, and Geomatics Sciences is a unit within the Institute of Food and Agricultural Sciences (IFAS) and the College of Agricultural and Life Sciences (CALS). The school is home to three distinct yet integrated program areas: Fisheries and Aquatic Sciences (http://sfrc.ufl.edu/fish/), Forest Resources and Conservation (http://sfrc.ufl.edu/forest/), and Geomatics (http://sfrc.ufl.edu/geomatics/). The school's faculty, staff, and students conduct research, teaching, and extension that cuts across a wide range of environments and disciplines.
Website (http://sfrc.ufl.edu/)

CONTACT

Email (jgilley1@ufl.edu) | 352.846.0850 (tel) | 352.392.1707 (fax)

P.O. Box 110410
1745 McCarty Drive
136 NEWINS-ZIEGLER HALL
GAINESVILLE FL 32611-0410
Map (http://campusmap.ufl.edu/#/index/0832)

Curriculum

- Combination Degrees
- Environmental Policy, Law, and Regulation Certificate
- Fire Ecology and Management Certificate
- Fisheries and Aquatic Sciences Minor
- Forest Health Management Certificate
- Forest Resources and Conservation
- Forest Resources and Conservation Minor
- Geomatics
- Geomatics Certificate
- Mapping with Small Unmanned Aerial Systems Certificate
- Marine Sciences | CALS
- Natural Resource Conservation
- Recreation Resources Management Certificate
- Urban Forestry Certificate

Courses

FAS 4175 Algae Biology and Ecology 3 Credits
Grading Scheme: Letter Grade
The biology and ecology of aquatic algae, including evolution, classification, structure, photosynthesis, growth, and reproduction. Emphasis on the ecological role of algae in different aquatic ecosystems (e.g. open ocean, estuaries, coral reefs, rocky intertidal), their impacts (e.g. harmful algae blooms, food webs), and their applications (e.g. food, biochemical).
Prerequisite: BSC 2010 and BSC 2010L, or equivalent.
Attributes: Artificial Intelligence

FNR 2071 Forests for the Environment 3 Credits
Grading Scheme: Letter Grade
Examine society's interaction with forests, focusing on issues and how they affect how individuals, communities, and institutions make decisions. Issues will be reviewed in terms of human behavior, policy options, and media messages.
Attributes: General Education - Social Science, Satisfies 6000 Words of Writing Requirement

FNR 2610 Can Big Data Save the Earth? 3 Credits
Grading Scheme: Letter Grade
There is more pressure than ever before on our environmental resources: sometimes we find solutions, but sometimes we also generate unintended consequences. At the same time, technological advances are generating ever more amounts of data - also environmental data. Remote sensing, satellite technology, sensor technology, telemetry and data storage ensure that we have biological data over various time and space scales. The challenge arises how we use this data to do good; increase our understanding, find solutions, and avoid unintended consequences. This course addresses the question: can big data save the earth? We will explore complexity in biological and socio-ecological systems, the nature of causality, models and their relation to sustainability and natural resources management. We will connect data science and its tools to biology and ecosystems through project-based enquiry, by exploring and using real-life data sets, asking big questions and answering them. 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.
Prerequisite: Quest 1 course with a minimum grade of C.
Attributes: Quest 2, General Education - Biological Science

FNR 3002C Foundations of Natural Resources and Conservation 1 Credit
Grading Scheme: Letter Grade
Overview of current and historical views of forest conservation, utilization and policy; principles of forest biology, ecology, Silviculture and management relevant to future courses and careers; basic field research, communications and computer skills.
Prerequisite: 3FY or instructor permission.

FNR 3003C Silviculture 4 Credits
Grading Scheme: Letter Grade
Principles governing establishment, treatment and control of forest stands; natural and artificial regeneration systems; intermediate cuttings and cultural operations.
Prerequisite: FNR 3500C.

FNR 3004 Forests, Conservation, and People 3 Credits
Grading Scheme: Letter Grade
General background for non-FRC students interested in management, use and conservation of forest resources. Topics include resource description, historical perspectives, current issues, forest biology, and management principles.
Prerequisite: Junior standing or higher.

FNR 3020 Professional Practice in Natural Resources 1 Credit
Grading Scheme: Letter Grade
Prepare for professional success by emphasizing careers involving fieldwork. Addresses securing the student's first position (resume, interviewing, etc.), professional ethics and practice (ethical frameworks, work-life balance, etc.), and avenues for advancement (references, professional organizations, etc.). Intended for Forest Resources and Conservation, Natural Resource Conservation and related majors.
Prerequisite: junior College of Agricultural and Life Sciences student with a major of Forest Resources and Conservation or Natural Resource Conservation.

FNR 3073 Florida's Forest Communities 2 Credits
Grading Scheme: Letter Grade
Learn to recognize Florida forest communities and the dominant trees and common plants that grow in them. Using the principles of plant taxonomy and tree identification skills, identify common Florida forest trees by using visual physical plant characteristics coupled with habitat cues and tree species groupings. Finally, learn to apply these classifications to describe the conditions that underlie forest community distributions in Florida.
Prerequisite: Junior or senior standing.
Attributes: Artificial Intelligence

FNR 3131C Dendrology/Forest Plants 3 Credits
Grading Scheme: Letter Grade
Provides a basic understanding of the classification, nomenclature, morphology, ecological relationships, associations and uses of the major forest tree and shrub species of North America.
Prerequisite: refer to the department.
Attributes: Artificial Intelligence

FNR 3133C Tree Biology 3 Credits
Grading Scheme: Letter Grade
Studies tree structure and function with relationships to forest environments and forestry practices.
Prerequisite: BOT 2010C or BSC 2011.

FNR 3400C Forest Resources Information Systems 3 Credits
Grading Scheme: Letter Grade
Introduces the concepts, principles, and applications of geographic information systems, remote sensing and global positioning systems that emphasize applications in forest resource management.
Prerequisite: MAC 1105 or MAC 1140.

FNR 3410C Natural Resource Sampling 3 Credits
Grading Scheme: Letter Grade
Basic concepts of sampling. Design of cost-effective sample surveys. Sampling methodology applicable to natural resources: simple random, stratified, systematic, multi-phase and multi-stage. Cluster sampling, ratio, regression and difference estimation. Line transects. Computer simulation of sampling methods. Introduces remote sensing, geographic information and global positioning systems.
Prerequisite: STA 2023.

FNR 3411 Forest Mensuration 3 Credits
Grading Scheme: Letter Grade
Forest resource measurements, log and tree content estimation, forest inventory techniques, and stand growth and yield.
Prerequisite: FNR 3410C or the equivalent.

FNR 3500C Forest Ecology 3 Credits
Grading Scheme: Letter Grade
Ecological principles and their application to the management of forests; major sections include tree population, forest community dynamics, and ecosystem processes.
Prerequisite: BSC 2010 or BSC 2010L.

FNR 3602 Society and Natural Resources 3 Credits
Grading Scheme: Letter Grade
Local-to-global and individual-to-institutional perspectives on natural resource values, sustainability, diversity, and social change with consideration of potential paths for working with complex human and natural resource systems.
Prerequisite: Junior standing or higher.

FNR 3622 Fire Ecology and Management 2 Credits
Grading Scheme: Letter Grade
Detailed study of the role, occurrence and function of wildland fires in natural ecosystems and the use of prescribed burning to simulate those functions. Key topics include factors that influence natural fires, effects of fires on the environment, management and control of wildfires, and the use of prescribed burning. Students will plan and conduct several prescribed burns.
Prerequisite: FNR 3500C or PCB 3034C or PCB 4043C, or the equivalent.

FNR 3622L Fire Ecology and Management Laboratory 1 Credit
Grading Scheme: Letter Grade
Laboratory to assess, design and participate in the application of prescribed fire in forest ecosystem research and management.
Corequisite: FNR 3622 encouraged strongly.

FNR 4010 Ecology and Restoration of Longleaf Pine Ecosystems 3 Credits
Grading Scheme: Letter Grade
History, structure, importance, ecology, restoration and management techniques, ownership patterns and policy implications.
Prerequisite: FNR 3500C or PCB 3034C or PCB 4043C, or the equivalent.

FNR 4070C Environmental Education Program Development 3 Credits
Grading Scheme: Letter Grade
Applies a comprehensive approach to program development, from needs assessment to evaluation, to non-formal environmental opportunities. Analyzes existing and developing programs and emphasizes the role of participation and indicators in meeting environmental objectives. Requires field trips.
Prerequisite: junior standing or higher.

FNR 4080 Sustainable Ecotourism Development 3 Credits
Grading Scheme: Letter Grade
Interdisciplinary and applicable study of the tools and techniques managers and planners use to provide sustainable ecotourism opportunities in Florida and worldwide. Topics include integrating ecotourism with other resource uses, landscape level ecotourism planning, sustainable community development, minimizing and monitoring ecotourism impacts, and creating a diversity of ecotourism opportunities.
Prerequisite: Senior standing.

FNR 4304C Urban Forestry 3 Credits
Grading Scheme: Letter Grade
Introduces the nature, scope, and components of the urban forest, including biology, culture, protection, and aspects of management, planning, and policy.
Prerequisite: FNR 3131C or equivalent and FNR 3500C or equivalent.

FNR 4343C Forest Water Resources 3 Credits
Grading Scheme: Letter Grade
Watershed hydrology, balances and models. Water quality parameters, processes and loading. Ecosystem and watershed functions. Watershed resources management.
Prerequisite: SWS 3022 and SWS 3022L, or the equivalent.

FNR 4503L Advanced Fire Ecology and Management 1 Credit
Grading Scheme: Letter Grade
Laboratory to assess, design, and participate in prescribed fires in forest ecosystem research and management. Students who already have their S130/190: Firefighter Type 2 training will apply principles, concepts, and issues related to wildland fire and integrate this information into the context of natural resource management, protection, and stewardship. Students will plan and conduct several prescribed burns.

FNR 4510 Global Forests 3 Credits
Grading Scheme: Letter Grade
Overview of important international issues and developments related to forest resource use and tree management systems in a wide variety of contexts.
Prerequisite: 4FY or higher.

FNR 4620C Forest Health Management 3 Credits
Grading Scheme: Letter Grade
Integrated, tree- and forest-oriented study of forest health emphasizing the ecological and economic roles of the biotic agents and abiotic factors that incite dysfunction and the biological and ecological basis for the maintenance of forest health through integrated management of these agents and the forest.
Prerequisite: 4 FY or higher.

FNR 4621 Forest Economics and Management 3 Credits
Grading Scheme: Letter Grade
Principles of forest management for timber, non-timber and timberland valuation: decision analysis, management plans, forest regulation and harvest scheduling.
Prerequisite: FNR 3003C and ECO 2023, or the equivalents.

FNR 4623C Integrated Natural Resource Management 3 Credits
Grading Scheme: Letter Grade
Integrative approach to the study of forest resource management for the production of multiple products, such as timber, recreation, wildlife, rangeland, utilizing the case study approach.
Prerequisite: FOR 3162C

FNR 4624C Field Operations for Management of Ecosystems 3 Credits
Grading Scheme: Letter Grade
Covers the common operations utilized by natural resource managers to manipulate ecosystems to reach a goal (commodity production, ecological enhancement, aesthetics, recreational opportunities, etc.). Addresses the use of heavy machinery, herbicides and prescribed fire; and the regulations, contracting markets and safety concerns governing each.
Prerequisite: FOR 3153C and FNR 3410C or WIS 4954C or FOR 3162C.

FNR 4660 Natural Resource Policy and Economics 3 Credits
Grading Scheme: Letter Grade
Factors in evolution of forest, range, and wildlife natural resources administration and policies in the United States; policy components; policy formation implementation, change processes; and economic criteria for evaluating the effectiveness of policies.
Prerequisite: Junior standing or higher.

FNR 4900 Supervised Extension Experience in Forest Resources and Conservation 0-3 Credits
Grading Scheme: S/U
Firsthand, authentic extension experiences in agricultural and life sciences under the supervision of a faculty member. Projects may involve program planning, development, implementation, and evaluation.
Prerequisite: Instructor permission.

FNR 4905 Individual Study in Natural Resources 1-4 Credits
Grading Scheme: Letter Grade
Individual study of a selected topic related to forest resources and conservation as contracted with the instructor at the start of the term.
Prerequisite: Instructor permission.

FNR 4911 Supervised Research in Forest Resources and Conservation 0-3 Credits
Grading Scheme: S/U
Firsthand, authentic research in forest resources and conservation under the supervision of a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery, or application.
Prerequisite: Instructor permission.

FNR 4915 Honors Thesis Research 0-3 Credits
Grading Scheme: S/U
Prerequisite: Instructor permission.

FNR 4934 Topics in Natural Resources 1-4 Credits
Grading Scheme: Letter Grade
Topics in forestry, wood science, range, recreation, wildlife, and fisheries. Topics include special issues and in-depth study of topics not in other courses.
Prerequisite: Instructor permission.

FNR 4941 Internship in Natural Resources 1-4 Credits
Grading Scheme: S/U
Supervision by a faculty member and a post-internship report are required.
Prerequisite: Undergraduate coordinator permission.

FNR 4950L Natural Resource Conservation Capstone 3 Credits
Grading Scheme: S/U
Provides students in the Natural Resource Conservation (NRC) major with an opportunity to plan and carry out a capstone experience which integrates the knowledge and expertise that they have gained through their undergraduate curriculum.
Prerequisite: Senior Standing and Natural Resource Conservation Major.

SWS 2003 Water for the Future 3 Credits
Grading Scheme: Letter Grade
This course focuses on the pressing question of how to best manage freshwater resources to meet the growing needs of society while maintaining healthy freshwater ecosystems. Successfully addressing water sustainability issues requires fundamental scientific approaches (e.G., from biology, geology, and chemistry) as well as approaches from other disciplines (e.G., environmental policy, economics, and engineering). We will draw from these approaches to inform students' understanding of water sustainability, approaches to managing water resources, and their ecological and economic consequences. 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