

ENV AND NATURAL RESOURCE MGMT (ENRM)

ENRM 302. Riparian Ecology & Wetland Mgt. (3 Credits)

The focus of this course is on processing functions and structure of riparian and wetland areas and the multiple human influences on these areas. The options for management of these areas will be stressed. Lectures are used to introduce students to the principles and concepts; and lab exercises are used to visit and evaluate field sites for future management consideration. This course has an additional laboratory fee. Co-requisite: NATR 210 Prerequisites: NATR 101, NATR 115, or college-level course in ecology, ENRM matriculation or permission of instructor 3 credits (2 lecture hours, 3 laboratory hours) fall semester

ENRM 303. Fundamentals Geospatial System. (4 Credits)

This course is intended to cover the fundamentals of geospatial information systems. These include the geographic information system (GIS) which represents a computerized data management system designed to input, store, analyze and output geographically-referenced spatial data; the global navigation satellite system (GNSS) which combines globally-functional satellite constellations (including the U.S. Global Positioning System or GPS) with global and regional ground-based reference stations (at accurately surveyed locations) to enhance and broaden positioning; and remote sensing which is widely used to gather information about features on the earth's surface without being in physical contact with these features. The course is designed to provide students who possess limited geospatial technology and analysis background with the ability to gather spatially-distributed and geographically-references data, query data, analyze spatial relationships, and produce professional outputs. The specific topics covered include geospatial data models, geodesy, datums, map projections, and coordinate systems; mapping and cartographic output; data collection and entry; GNSS and coordinate surveying; aerial and satellite imagery; geospatial and tabular data analyses; basic geospatial analysis; advanced geospatial (including terrain) analyses; geospatial estimation; geospatial modeling; and data standards and quality. The laboratory work will focus on the practical application of geospatial information systems following the hands-on approach where the student is expected to gain practical knowledge on using QGIS, ArcGIS for Desktop, aerial and satellite imagery, and a number of positioning and navigation systems. Prerequisite: NATR 213 and ENRM matriculation, or permission of instructor 4 credits (2 lecture hours, 4 laboratory hours), spring semester

ENRM 305. Environment Law Policy Justice. (3 Credits)

The focus of this course is on the major federal environmental and related health and safety statutes currently in force. This course will also make general suggestions and give ideas on how one can identify potential environmental law problems and how to resolve them as effectively and efficiently as possible. Prerequisite: Bachelor degree standing or permission of instructor 3 credits (3 lecture hours) spring semester

ENRM 312. Field Sampling Design & Techniques. (3 Credits)

A comprehensive study of sampling theory and methodologies currently used in the environmental sciences. Course specifically addresses research sampling considerations and strategy design; sampling considerations for data accuracy and precision; sampling and characterization of terrestrial, wetland and aquatic ecosystems; vertebrate, invertebrate, and flora collection techniques; and watershed and catchment delineation. Course includes field dress and safety, data management, watercraft operation, system modeling and biometry, and reference collection curation. Prerequisites: NATR 250 or permission of instructor 3 credits (2 lecture hour, 3 laboratory hours), fall semester

ENRM 332. Environment Planning & NR Mgt. (3 Credits)

Current issues, theories, practices and trends associated with multiple-use environmental planning and natural resource management. Emphasis is on critical thinking processes for the identification, definition, and resolution of environmental problems; planning and the implementation of plans; and management strategies for specific management goals. Prerequisite: Junior standing or permission of instructor 3 credits (3 lectures hours), spring semester

ENRM 345. Surface & Groundwater Mgt.. (3 Credits)

An examination of the methods and strategies available for the delineation, assessment and characterization of confined and unconfined groundwater aquifers, as well as their recharge areas. Introduction to groundwater extraction and well functions. Surface water management issues, including watershed delineation and protection. Issues in surface and groundwater contamination and remediation. Approaches to water rights and allocation. Brownfields. Federal, state and local regulatory issues. Prerequisite: NATR 250 or permission of instructor 3 credits (2 lecture hours, 4 laboratory hours), spring semester

ENRM 350. Tropical Ecology. (3 Credits)

During this field course, students will actively experience the wildlife, agriculture, fisheries, and unique ecosystems of Florida, and gain comprehensive insight into tropical ecology and conservation concepts and case studies of conservation biology. In addition, students will gain extensive experience in the field methods and techniques used by managers and researchers to study terrestrial and aquatic natural resource ecology and conservation in tropical regions. The focus of this course is an immersive 7-day field experience in Florida with trips to springs, state parks, national wildlife refuges, aquariums, tropical fish farms, and diverse aquatic ecosystems. In this course students will be introduced to the flora and fauna of the unique ecosystems of Florida such as everglades, springs, coral reefs including travel to the southernmost point of the United States. This course has an additional fee. Prerequisite: NATR 101 Ecology or NATR 153 Marine Biology with a passing grade or permission of the instructors. 3 credits (1 lecture hour, 2 laboratory hours)

ENRM 351. Tropical Ecology II. (3 Credits)

During this field course, students will actively experience the wildlife, agriculture, fisheries, and unique ecosystems of the Caribbean tropics, and gain comprehensive insight into tropical ecology and conservation concepts and case studies of conservation biology. In addition, students will gain extensive experience in the field methods and techniques used by managers and researchers to study sustainability in regions of the tropics. The focus of this course is an immersive field experience with a field base with trips to coral reefs, mangroves, blue holes, and diverse aquatic ecosystems. In this course students will be introduced to the flora and fauna of the unique ecosystems in the Caribbean such as mangroves, coral reefs, seagrass beds and participate in active research and data collection. This course requires a valid passport and following health travel regulations and requirements of the host country. This course has an additional fee. Prerequisite: NATR 101 Ecology or NATR 153 Marine Biology with passing grade or permission of the instructors. 3 credits (1 lecture, 2 laboratory hours)

ENRM 412. Ecosystem Adaptive Management. (3 Credits)

This is the capstone course of the Environmental & Natural Resources Management curriculum, building upon theory and analytical skills gained in prerequisite courses and closely integrated with ENRM 332 - Environmental Planning and Natural Resources Management. This course will integrate theory and technical management concepts with policy considerations so that terrestrial, aquatic and human system management issues may be approached at a systems-level rather than as individual mitigation or mediation efforts. This course has an additional laboratory fee. Prerequisite: ENRM 332 3 credits (2 lecture hours, 3 laboratory hours), fall semester

ENRM 420. Geospatial Tech Applications I. (1 Credit)

This course involves the presentation of two integrated teaching modules that focus on the application of geospatial technology to forest and wildlife management. The first module includes the application of geospatial technologies to the integrated management and monitoring of forest land. The second module utilizes the application of geospatial technology to assess habitat resources for wildlife management. The two modules incorporate the global positioning system (GPS), geographic information system (GIS), and remote sensing technologies combined with field-tested, scientifically-based principles providing an integrated approach to natural resources management. The two modules are vertically integrated where field measurements are combined based on common sampling points. Pre- or Co-requisite: ENRM 303; and ENRM matriculation or permission of the instructor 1 credit (1 lecture hour, 2 laboratory hours), 10-week course, spring semester

ENRM 421. Geospatial Tech Application II. (2 Credits)

This is a capstone course in the Environmental & Natural Resources Management BT program where students are expected to master the application of geospatial technology to natural resources management through independent and group projects where many of the college properties will be inventoried using the methodology covered in ENRM 420. The course follows integrated approaches to the management and monitoring of forest land as well as the assessment of habitat resources for wildlife management by focusing on a new college property each year. Geospatial technologies including the global positioning system (GPS), geographic information system (GIS), and remote sensing are combined with field-tested, scientifically-based principles providing an integrated approach to natural resources management of the forest. Prerequisite: ENRM 420, ENRM matriculation or permission of the instructor 2 credit (1 lecture hour, 5 laboratory hours), 10-week course, fall semester

ENRM 450. Environmental & Natural Resource Management Internship Orientation. (1 Credit)

This course is designed to prepare students for an internship and to assist them with the process of employment and career development. It prepares students for internship requirements such as goal definition, internship site identification, job application, performance evaluation and report writing. ENRM 450 formalizes internship planning and preparation to ensure that internships are procured, conducted in a professional manner, follow course guidelines, and satisfy the goals and objectives of students, faculty advisors and cooperating placement sites. 1 credit (2 lecture hours), 7-week course,

ENRM 470. Internship in Environmental & Natural Resource Management. (12 Credits)

This course involves supervised fieldwork at an approved placement site. Students carry out a planned program of educational work experiences under direct supervision of an owner, manager, or supervisor. Each intern is advised and monitored by a member of the faculty on a regular basis. Requirements include a journal, interim reports, supervisor evaluations, a summary report and an oral presentation. Prerequisite: ENRM 450 and permission of the instructor 15 credits