

Natural Resources (NR)

NR 203/PRT 203/IDS 203 Humans and the Environment (3 credit hours)

Solutions-focused examination of the varied, complex, and evolving frameworks used to make sense of how individuals & societies connect with the biophysical environment. Emphasis on current issues and relevance of interdisciplinary training to careers including environmental planning and policy, sustainable tourism, parks and recreation management, conservation, environmental education, and climate resilience. Topics include: population dynamics, public land and common resources, renewable natural resources, pollution, water resources, energy and non-renewable resources.

GEP Interdisciplinary Perspectives

Typically offered in Fall, Spring, and Summer

NR 219 Natural Resource Markets (3 credit hours)

A brief overview of financial markets relevant to natural resources and real assets. An introduction to traditional and non-traditional markets including timber markets, carbon and bioenergy markets, conservation banking, and wetland and stream mitigation credits. Investment analysis criteria and market and non-market valuation of natural resources.

GEP Social Sciences

Typically offered in Spring only

NR 293 Independent Study in Natural Resources (1-6 credit hours)

Independent Study for Natural Resources students at the freshman and sophomore level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Fall, Spring, and Summer

NR 294 Independent Study in Natural Resources (1-6 credit hours)

Independent Study for Natural Resources students at the freshman and sophomore level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a Course Agreement for Students Enrolled in Non-Standard Courses be completed by the student and faculty member prior to registration by the department.

Typically offered in Fall, Spring, and Summer

NR 295 Special Topics in Natural Resources (1-3 credit hours)

Special Topics in Natural Resources at the 200 level for offering of courses on an experimental basis.

Typically offered in Fall, Spring, and Summer

NR 300 Natural Resource Measurements (4 credit hours)

Theory and practice of measuring, analyzing, and describing the characteristics of natural ecosystems. Surveying and mapping, inventory of vegetation, soils, wildlife habitat, and hydrology. Sampling, data analysis, and presentation of data. Use of geographic information systems to store, analyze, and present environmental data. Intensive instruction and practice in communication of technical information

Prerequisite: (PB 360 or BIO 360) and ST 311

Typically offered in Spring only

NR 301 Practicum for Professional Development I (1 credit hours)

Instruction in professional report writing and presentation, resume preparation and interview skills, professional ethics and practices, job searching skills; review and critique of professional seminars and documents from NR 301 students; preparation for summer work experience.

Prerequisite: Junior standing, NR Majors

Typically offered in Fall and Spring

NR 350 International Sustainable Resource Use (4 credit hours)

Study of sustainable use of natural resources in a global economy with consideration of consumption choices, sustainable production issues, conservation of various managed landscapes, and cross cultural perspectives. Specific topics vary somewhat by year and study location. Travel in North America in even years and to Sweden in odd years. Domestic or international travel overnight. Depending upon travel location, possible additional expense for passport, health certificate, insurance and domestic or international travel.

Prerequisite: Sophomore standing

Typically offered in Summer only

NR 360 Internship Experience (3 credit hours)

Internship experience with a natural resource agency or company. Most internships require working and living off-campus. Individualized/Independent Study and Research courses require a Course Agreement for Students Enrolled in Non-Standard Courses be completed by the student and faculty member prior to registration by the department.

Prerequisite: NR 301 and Junior standing

Typically offered in Fall, Spring, and Summer

NR 400/NR 500 Natural Resource Management (4 credit hours)

Theory and practice of integrated natural resource management. Quantitative optimization, economics of multiple-use, compounding and discounting, optimal rotations, linear programming. Public and private management case studies and team projects.

Prerequisite: Senior standing in NR or ES or ETM or FOM or FWCB

Typically offered in Spring only

NR 406 Conservation of Biological Diversity (3 credit hours)

Population biology concepts fundamental to understanding the properties of the objects of conservation. Genetic diversity in agriculture, forestry, and animal breeding; the ethical and international policy issues in preservation and management.

Prerequisite: Junior standing

Typically offered in Fall only

NR 420/FOR 520/NR 520/FOR 420 Watershed and Wetlands Hydrology (4 credit hours)

Principles of hydrologic science; classification and assessment of watersheds and stream networks; hydrologic, erosion, and water quality processes in natural and managed watersheds; wetlands hydrology; hydrologic measurements and data analysis; applications of hydrology and water quality management for forest agriculture, and urban ecosystems; watershed restoration. Emphasis field study of watersheds and hydrologic measurements. Two weekend field trips are required. Credit will not be given for both FOR(NR)420 and FOR(NR)520.

Prerequisite: SSC 200 and (FOR 260 or PB 360 or AEC 360)

Typically offered in Fall only

NR 421/NR 521 Wetland Science and Management (3 credit hours)

This course is designed to familiarize students with relevant science, technology and policy necessary to understand wetlands and their unique roles in natural and human-modified environments. The course covers wetland definitions and systems of classification used by scientists and policy-makers. Students will learn about relevant hydrological, ecological and pedological processes, and methods for assessing ecological functions of wetlands. Students will practice identifying and delineating wetlands in accordance with federal and state regulatory programs and procedures. Students will learn about evolving efforts to integrate wetland science into federal and state regulatory frameworks. Two daylong field trips are required.

Prerequisite: SSC 200, (PB 360 or AEC 360 or FOR 260), and FOR 339
Typically offered in Spring only

NR 425/ES 525/NR 525/ES 425 Water Quality and Health (3 credit hours)

The water we drink is intricately linked to our wellbeing. This course provides an introduction to contaminants in drinking water supplies and disparities in safe water access, globally and nationally. We will review how contaminants enter water systems, their effects on health and methods for their detection and removal. We will cover case studies of local, domestic and international water safety crises (e.g., lead, PFAS) and waterborne disease epidemics (e.g., cholera).

Prerequisite: Junior Standing
Typically offered in Spring only

NR 460/NR 560 Renewable Natural Resource Management and Policy (3 credit hours)

The interaction of legal principles and governmental institutions in the development and implementation of natural resource policy and management. Legal principles, constitutional provisions and the location and organization of governmental programs. Examples from both historic and current case studies.

Prerequisite: Junior standing.
GEP Social Sciences
Typically offered in Fall only

NR 484 Environmental Impact Assessment (4 credit hours)

Impact assessment principles, practices, and their evolution. Lectures and field practicums concerning problems addressed by environmental assessment practitioners. Practical implications of current regulatory requirements, especially endangered species and wetlands.

Prerequisite: Senior standing
Typically offered in Fall only

NR 491/FOR 491 Special Topics in Forestry and Related Natural Resources (1-4 credit hours)

Independent (or group) study or research of a forestry or related natural resources topic with a faculty supervisor of the student's choice. Also courses offered on a trial basis.

Typically offered in Fall and Spring

NR 492 Special Topics in Natural Resources Lab (1-6 credit hours)

Offered as needed to present materials not normally available in regular course offerings or for offering of new courses on a trial basis.

Typically offered in Fall, Spring, and Summer

NR 493 Independent Study in Natural Resources (1-6 credit hours)

Independent Study for Natural Resources students at the advanced level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Fall, Spring, and Summer

NR 494 Independent Study in Natural Resources (1-6 credit hours)

Independent Study for Natural Resources students at the advanced level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Summer only

NR 500/NR 400 Natural Resource Management (4 credit hours)

Theory and practice of integrated natural resource management. Quantitative optimization, economics of multiple-use, compounding and discounting, optimal rotations, linear programming. Public and private management case studies and team projects.

Prerequisite: Senior standing in NR or ES or ETM or FOM or FWCB
Typically offered in Spring only

NR 510 Military Land Sustainability (3 credit hours)

An introduction and overview of the factors that influence natural resource conservation and management on Department of Defense lands within a temporal, geographic, and environmental context and perspective. Students will gain knowledge of natural resource management and military land sustainability by reviewing (1) military land uses and training/test requirements, (2) major policies/laws impacting training/testing activities on DoD lands, and (3) planning approaches to military sustainability.

Typically offered in Fall only

NR 511 Managing Natural Resources in an Arena of Conflict (3 credit hours)

Public policy issues, such as management of natural resources, are pervasive with conflicts. Surpassing political, jurisdictional, institutional, and geographic boundaries, natural resources and environmental issues can represent multiple dimensions of uncertainties and complexities. Effective management of public issues then is an important task (and topic) for natural resource professionals who are often required to develop management strategies to resolve or at best, reduce the level of the conflict. This course examines theories and approaches for managing natural resource conflict, with emphasis on the field of public or alternative dispute resolution (ADR) and its spectrum of collaborative approaches. Undergraduate degree or instructor approval required.

Typically offered in Fall only

NR 512 Land Use Policy & Management (3 credit hours)

Graduate course reviewing the history, formation and implementation of major natural resource laws and policies that impact land uses. This course will provide an overview of federal laws and policies that affect decision making by land managers. Weekly lectures will be followed by student presentations of a selected case study of their choosing in the final weeks of the course. Current natural resource / land management (including forestry, air, water, wildlife, climate change and energy) programs and institutions are discussed, analyzed and related to current land use and management policy challenges.

Restriction: undergraduate degree or instructor approval

Typically offered in Spring only

NR 520/FOR 420/NR 420/FOR 520 Watershed and Wetlands Hydrology (4 credit hours)

Principles of hydrologic science; classification and assessment of watersheds and stream networks; hydrologic, erosion, and water quality processes in natural and managed watersheds; wetlands hydrology; hydrologic measurements and data analysis; applications of hydrology and water quality management for forest agriculture, and urban ecosystems; watershed restoration. Emphasis field study of watersheds and hydrologic measurements. Two weekend field trips are required. Credit will not be given for both FOR(NR)420 and FOR(NR)520.

Prerequisite: SSC 200 and (FOR 260 or PB 360 or AEC 360)

Typically offered in Fall only

NR 521/NR 421 Wetland Science and Management (3 credit hours)

This course is designed to familiarize students with relevant science, technology and policy necessary to understand wetlands and their unique roles in natural and human-modified environments. The course covers wetland definitions and systems of classification used by scientists and policy-makers. Students will learn about relevant hydrological, ecological and pedological processes, and methods for assessing ecological functions of wetlands. Students will practice identifying and delineating wetlands in accordance with federal and state regulatory programs and procedures. Students will learn about evolving efforts to integrate wetland science into federal and state regulatory frameworks. Two daylong field trips are required.

Prerequisite: SSC 200, (PB 360 or AEC 360 or FOR 260), and FOR 339

Typically offered in Spring only

NR 525/ES 425/NR 425/ES 525 Water Quality and Health (3 credit hours)

The water we drink is intricately linked to our wellbeing. This course provides an introduction to contaminants in drinking water supplies and disparities in safe water access, globally and nationally. We will review how contaminants enter water systems, their effects on health and methods for their detection and removal. We will cover case studies of local, domestic and international water safety crises (e.g., lead, PFAS) and waterborne disease epidemics (e.g., cholera).

Prerequisite: Junior Standing

Typically offered in Spring only

NR 548 Historical Environments (3 credit hours)

Course examines how we know and what we know about historical environments. Compares and contrasts contributions by various disciplines and interdisciplinary approaches to historical ecology and environmental history. Readings drawn from science, social science and humanities literature. Individual investigation projects required.

Typically offered in Spring only

NR 554 Introduction to Data Analysis in Natural Resources (3 credit hours)

Data examination, cleaning, summary and visualization, statistical analyses options using various procedures of the SAS software and R with an emphasis on natural resource applications. Interpretation of statistical analyses outputs. Discussions of individual data problems. Hands-on use of computers and the SAS and R software.

Pre or Co-requisite of ST512

Typically offered in Spring only

NR 560/NR 460 Renewable Natural Resource Management and Policy (3 credit hours)

The interaction of legal principles and governmental institutions in the development and implementation of natural resource policy and management. Legal principles, constitutional provisions and the location and organization of governmental programs. Examples from both historic and current case studies.

Prerequisite: Junior standing.

GEP Social Sciences

Typically offered in Fall only

NR 571 Current Issues in Natural Resource Policy (3 credit hours)

Seminar providing an overview of current natural resource issues for the world and the U.S. Population, sustainable development, food and agriculture, forests, rangelands, biodiversity, energy resources, water resources, atmosphere and climate, international policies and instructions.

Typically offered in Fall only

NR 595 Special Topics in Natural Resources (1-6 credit hours)

Individual students or groups of students, under direction of a faculty member, may explore natural resources related topics of special interest not covered by existing courses. Format may consist of lecture, lab, readings and independent study, problems, or research not related to thesis. Also used to develop and test new 500-level courses. This course can be taken as a stand-alone course or in conjunction with the same topic of NR 596.

Typically offered in Fall and Spring

NR 596 Special Topics in Natural Resources Lab (1-6 credit hours)

Offered as needed to present materials not normally available in regular course offerings or for offering of new courses on a trial basis. This course can be taken as a stand-alone course or in conjunction with the same topic of NR 595.

Typically offered in Fall, Spring, and Summer

NR 601 Graduate Seminar (1 credit hours)

Weekly seminar in which students registered for course present the results of research and special projects. Invitation to all graduate students and faculty in department to attend and join discussion.

Typically offered in Fall and Spring

NR 610 Special Topics in Natural Resources (1-6 credit hours)

Individual students or groups of students, under direction of a faculty member, may explore natural resources related topics of special interest not covered by existing courses. Format may consist of readings and independent study, problems, or research not related to thesis. Also used to develop and test new 600-level courses.

Typically offered in Fall and Spring

NR 685 Master's Supervised Teaching (1-3 credit hours)

Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment, and evaluate the student upon completion of the assignment.

Prerequisite: Master's student

Typically offered in Summer only

NR 693 Master's Supervised Research (1-9 credit hours)

Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Master's student

Typically offered in Fall, Spring, and Summer

NR 695 Master's Thesis Research (1-9 credit hours)

Thesis Research

Prerequisite: Master's student

Typically offered in Fall, Spring, and Summer

NR 696 Summer Thesis Research (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Master's student

Typically offered in Summer only