NATURAL RESOURCES COURSES

Warner College of Natural Resources

NR 120A 03(3-0-0). Environmental Conservation. F, S. (GT-SC2, A.UCC 3A). Credit not allowed for both NR 120A and NR 120B. Overview of natural resources environmental concerns including population, pesticides, energy, and pollution. (NT-O)

NR 120B 04(3-3-0). Environmental Conservation. F. S. Prerequisite: Participation in University Honors Program. Credit not allowed for both NR 120B and NR 120B. Overview of natural resources environmental concerns including population, pesticides, energy, and pollution.

NR 120A 01(2-2-0). Introduction to Geographic Information Systems. S. Prerequisite: Junior standing. Fundamentals of geographic information systems (GIS) and remote sensing (RS) with natural resource applications. (GIS/GIS)

NR 120B 03(3-0-0). Global Environmental Systems. A.UCC 3A). F, S, SS. Studies of the earth’s lithosphere, hydrosphere, atmosphere, and biosphere systems, and their interrelations with human dimensions. ($)

NR 150 03(3-0-0). Oceanography. (A.UCC 3A). F, S, SS. Introduction to the geology, physics, chemistry, and biology of the world ocean; oceanic relationships with various human dimensions.

NR 192 0(0-0-2). First Year Seminar in Environmental Studies. F. Introduction to the disciplines involved in natural resources through exposure to current issues.

NR 220 05(2-6-0). Natural Resources Ecology and Measurements. SS. Prerequisite: BZ 110 and BZ 111 or BZ 120 or LIFE 103; MATH 118. Ecology of Rocky Mountain ecosystems. Basic measurements and integrated management of natural resources. Pingree Park Campus. ($)

NR 224/AGRI 224 03(2-0-1). Integrated Resource Management I. F. Prerequisite: AGRI 192. Credit not allowed for both NR 224 and AGRI 224. Introduction to integrated ranch system concepts through describing complex organizations and building decisions support systems.

NR 300 03(2-0-1). Biological Diversity. S. Prerequisite: NR 120A or NR 120B or one course in biology. Biological diversity examined in context of species; extinction. Principles, techniques of conservation biology utilized to understand and resolve issues.

NR 319 04(2-4-0). Geospatial Applications in Natural Resources. F. S. Prerequisite: Junior standing. Introduction to global positioning systems (GPS), geographic information systems (GIS) and remote sensing (RS) with natural resource applications.

NR 320 03(3-0-0). Natural Resources History and Policy. A.UCC 3D). F, S. History, values and institutions, and policy process guiding natural resources management and conservation.

NR 322 04(2-4-0). Introduction to Geographic Information Systems. F, S. Fundamental concepts of spatial data handling and computer-assisted map analysis.

NR 323/GR 323 03(2-2-0). Remote Sensing and Image Interpretation. F. Credit allowed for only one of the following: NR323, GR 323, NR 503, GR 503. Remote sensing systems and applications; characteristics of photographic, scanner and radar images; imagery interpretation.

NR 326 03(3-0-0). Forest Vegetation Management. F. Prerequisite: NR 220. Credit not allowed for both NR 326 and F 325. Ecologically-based management to restore and manage forests.

NR 330 03(3-0-0). Human Dimensions in Natural Resources. F. Prerequisite: NR 120A or NR 120B.

NR 353/BZ 353 03(3-0-0). Global Change Ecology, Impacts and Mitigation. S. Prerequisite: LAND 220/LIFE 220 or LIFE 320. Credit not allowed for both BZ 353 and NR 353. Ecological impacts of human-induced global change, and the strategies that can/are being used to adapt to and mitigate these impacts.

NR 355 03. Contemporary Environmental Issues. F, S, SS. Prerequisite: One course in biology. Offered as telecourse only. Fundamental concepts of energy, population, and ecology applied to range of contemporary environmental issues. (NT-T)

NR 365 03(3-0-0). Environmental Education. F. Principles of interpretation related to natural resource management and public informal education.


NR 375 01(1-0-0). Environment and Natural Resources Leadership. S. Environmental and natural resources leadership history, skills, and styles. Creation of leadership path and organization prescriptions.

NR 383/AGRI 383 02(0-2-1). U.S. Travel-Integrated Resource Management. S. Credit not allowed for both NR 383 and AGRI 383. Evaluation of integrated ranch management decision alternatives in conjunction with professional resource managers. ($)

NR 387 01(1-0-0). Internship I. Preparation for field experience in natural resources management.

NR 400 03(2-0-1). Public Relations in Natural Resources. F, S, SS. Prerequisite: NR 320. Effective public relations and public information programs applicable to natural resource professions.

NR 401 02(0-4-0). Techniques in Public Relations. F, S. Prerequisite: SPCM 200. Effective communications methods related to natural resource professions; preparation of graphics, organization of programs using slide show format.

NR 420 04(3-3-0). Integrated Ecosystem Management. F, S. Prerequisite: LAND 220/LIFE 220 or LIFE 320; NR 220; NR 320; senior standing. Natural resource management exercises; quantitative integration techniques, group dynamics. ($)

NR 421 03(3-0-0). Natural Resources Sampling. S. Prerequisite: NR 220; STAT 201 or STAT 301. Designs, techniques, problems in sampling natural resource populations; analysis, interpretation of data.

NR 422 04(2-4-0). GIS Applications in Natural Resource Management. F, S. Prerequisite: NR 322. Development and implementation of GIS projects and problems in spatial data analysis.

NR 423 01(5-1-0). Applications of Global Positioning Systems. F, S. Prerequisite: NR 322 or NR 505. Introduction to concepts and use of global positioning systems with applications to natural resources.

NR 424/AGRI 424 03(2-0-1). Integrated Resource Management II. S. Prerequisite: NR 224/AGRI 224. Credit not allowed for both NR 424 and "Alternate year offering (odd);* Alternate year offering (even);* Field trips; $ Special course fee; NT Approved for nontraditional course offering (C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcourse/BState Guarantee Transfer course, the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
NR 425 03(3-0-0). Natural Resource Policy and Sustainability. S. Prerequisite: F 325; NR 320. Principles, concepts, and operating examples of sustainable resource management with a concentration on forest policies and practices.

NR 432 01. Foundations of National Forest Lands Program. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. History of U.S. public land law and evolution of National Forests. Nature, policy, trend, and needs of lands program; its integration into management. (NT-C)

NR 433 04. Special Uses Management. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. Authorities, application, and administration: agriculture, aviation, community, public information, industrial, water, treasure trove, and cultural uses. (NT-C)

NR 434 03. Linear Uses and FERC Licenses. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. Rights-of-way authorities and management; road and trail grants and easements; communication uses; Federal Energy Regulatory Commission licenses. (NT-C)

NR 435 05. Valuation and Landownership Adjustment. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. Authorities, coordination, valuation, title; land purchase, donation, exchange, interchange, transfers, sales, condemnation, and negotiation. (NT-C)

NR 436 03. Right-of-Way Acquisition. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. Need, authority, policy, planning, acquiring, negotiating, and managing rights-of-way; cost-share agreements. (NT-C)

NR 437 03. Boundaries, Status, Claims, and Withdrawals. F, S, SS. Prerequisite: Written consent of instructor. Offered as correspondence course only. Administration of landownership status, title encumbrances, withdrawals, title claims, Native American rights and claims, property boundary management. (NT-C)

NR 440 03(2-2-0). Land Use Planning. F. Integration of natural resource, social, institutional factors in regional resource planning. (NT-O)

NR 444 03(3-0-0). Fire Economics and Policy. S. Prerequisite: AREC 202 or ECON 202. Development of wildlife and fuel management economics integrated with critical federal policies. +NR 460 03(3-0-0). Wilderness Management. S. Prerequisite: LAND 220/LIFE 220; NRRT 231. Management of wilderness in the U.S. National Wilderness Preservation System and equivalent international wildlands. ($)

NR 484 Var [1-5]. Supervised College Teaching. Prerequisite: Written consent of instructor.


NR 493 01(0-0-1). Seminar on GIS and Remote Sensing Applications. S. Prerequisite: NR 322 or NR 323/GR 323. Techniques, use of remote sensing, GIS technologies for forest, range, wildlife, water, geology, recreation, and other resource management applications.

NR 495 Var. Independent Study.

NR 501 03. Leadership and Public Communications. F, S, SS. Prerequisite: Introductory course to natural resource management fields, communication course (speech, writing, journalism). Offered as correspondence course only. Two-way communication skills used to involve publics, write for various media, and understand role of leadership within natural resources profession. (NT-C)

NR 503/GR 503 04(3-3-0). Remote Sensing and Image Analysis. F. Credit allowed for only one of the following: NR503, GR 503, NR 323, GR 323. Interpretation and analysis of photographe data; multispectral scanner, and radar data; sensor systems; applications to resource management.

NR 504 04(2-6-0). Computer Analysis of Remote Sensing Data. S. Prerequisite: GR 323/NR 323 or GR 503/NR 503. Computer-aided analysis techniques for extracting resource information from aerial and satellite remote sensing data.

NR 505 04(2-4-0). Concepts in GIS. F. Prerequisite: STAT 301 or STAT 511. Concepts of geographic information systems and spatial data analysis.

NR 506 04(2-4-0). GIS Methods for Resource Management. S. Prerequisite: NR 505. Current methods in applied geographic information systems and spatial data analysis.

NR 512 03(2-2-0). Spatial Statistical Modeling-Natural Resources. F. Prerequisites: NR 322; NR 323/GR 323, STAT 301. Statistical techniques used to model natural and environmental resources; GIS, remote sensing, and spatial statistics.

NR 515 03. Natural Resource Policy and Biodiversity. F, S, SS. Prerequisite: Political science, introductory course to natural resources management fields. Offered as correspondence course only. Review evolution of natural resource policy, administration, and law emphasizing interdisciplinary concept of managing for biodiversity. (NT-C)

NR 520 03(3-0-0). Applied Optimization in Resource Management. S. Prerequisite: One course in each of the following subjects: calculus and economics. Design optimization models to integrate economics, ecology, ecology and social concerns in natural resource management. "NR 521 02(2-0-0). Natural Resource Administration. F. Prerequisite: NR 320. Administration of forest and natural resource projects in developed and developing countries.

NR 522 03(0-6-0). Wilderness Ecosystem Planning. S. Prerequisite: Written consent of instructor. Expertise developed in preparing effective implementation plans for park and wilderness ecosystems.

NR 523/STAT 523 03(3-0-0). Quantitative Spatial Analysis. S. Prerequisite: STAT 301 or STAT 307. Credit not allowed for both NR 523 and STAT 523. Techniques in spatial analysis: point pattern analysis, spatial autocorrelation, trend surface and spectral analysis.

NR 525 03(3-0-0). World Natural Resources. S. Prerequisite: Written consent of instructor. Interdisciplinary approach to overview global problems and solutions in natural resources.

NR 526 04(4-0-0). Techniques for Ecosystem Management. S. Prerequisite: Enrollment in Continuing Education in Ecosystem Management (CEEM) program. Offered only through the Division of + Alternate year offering (odd); * Alternate year offering (even); + Field trips; $ Special course fee; NT Approved for nontraditional course offering (C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode/BState Guarantee Transfer course, the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
Continuing Education.
Assessing the biophysical and sociopolitical environment and decision-making techniques used in ecosystem management. (NT)

NR 527 03(2-0-1). Methods-Human Dimensions of Natural Resources. SS.
Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.
Human dimensions research in areas of problem identification, research process, survey methods, sampling, validity and reliability.

NR 528 03(2-2-0). Analysis: Human Dimensions—Natural Resources. SS.
Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program; STAT 301 or STAT 307/ERHS 307 or STAT 311 or STAT 315.
Human dimensions analysis techniques: codebook development and data entry, univariate statistics, and bivariate/multivariate statistics.

NR 529 02(2-0-0). Concepts: Human Dimensions—Natural Resources. SS.
Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.
Concepts guiding human dimensions research: motivations/satisfactions, attitudes, values, attitude/behavior change and norms.

NR 530 01(1-0-0). Human Dimensions—Application. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.
Application of human dimensions information; incorporate information into decision-making process.

NR 531 01(1-0-0). Public Participation. SS. Prerequisite: B.S. degree; participant in Advancing Human Dimensions Expertise Among Fish and Wildlife Agencies training program.
Diagnostic tools for public involvement; appropriate methods for specific situations, issues, and stakeholders.

NR 535 03(0-0-3). Action for Sustainable Behavior. F, S. SS. Prerequisite: Graduate student or senior status; one course in human dimensions; one course in science. Offered as a correspondence course only.
Review sustainability issues and develop solutions considering environments; economics; psychology; sociology; law and politics; and administration. (NT-C)


*NR 541 02(2-0-0). Conservation Policy, Finance, and Governance. F. Prerequisite: Admission to the Conservation Leadership specialization.
Overview of conservation policy, finance, and governance issues at the local, national, and international levels.

*NR 542 02(2-0-0). Global Change and Conservation. F. Prerequisite: Admission to the Conservation Leadership specialization.
Potential ecological, societal, and economic impacts of global change across scales in the context of conservation.

*NR 543A 02(2-0-0). Catalyzing Change: Conflict and Conservation. F.
Prerequisite: Admission to the Conservation Leadership specialization.
Communication, conflict management, group decision-making theories and tools to effectively create change in the field of conservation.

*NR 543B 02(2-0-0). Catalyzing Change: Collaborative Conservation. S.
Prerequisite: Enrollment in the Conservation Leadership specialization.
Collaborative communication theories, methods, and tools to effectively create change in the field of conservation.

*NR 544 A-E. Conservation Methods. S. Prerequisite: Enrollment in the Conservation Leadership specialization.
Students must enroll in NR 544A-E concurrently.
A) Watershed sciences. 01(1-0-0). B) Ecological sciences. 01(1-0-0).
C) Social sciences. 01(1-0-0). D) Spatial information. 01(1-0-0). E) Integrative field work. Var [2-4].

*NR 545 02(2-0-0). Multi-level Views of Society and Conservation. S.
Prerequisite: Enrollment in the Conservation Leadership specialization.

Myriad and often opposing views of societal and environmental problems across cultures and across scales.

*NR 546 02(2-0-0). Human Ecosystem Context of Southern Mexico. SS.
Prerequisite: Enrollment in the Conservation Leadership specialization.
Background for conservation work in Southern Mexico: ecosystems, peoples, politics, and development.

*NR 547 02(2-0-0). Poverty and Sustainable Development: Mexico. SS.
Prerequisite: Enrollment in the Conservation Leadership specialization.
Theoretical and methodological tools to analyze the interactions between poverty and sustainable development in Mexico.

*NR 548 02(2-0-0). Conservation Planning and Management. SS.
Prerequisite: Enrollment in the Conservation Leadership specialization.
Fundamental theories and management practices of protected areas in the context of southern Mexico.

*NR 549 A Var[1-3]. Conservation/Systems Leadership. F (even), S (odd). Prerequisite: Admission to the Conservation Leadership specialization.
Conservation leadership development by exposure to leadership models, theories, case studies, assessments and trainings.

Effective environmental leadership across cultures through exposure to leadership models, theories, case studies, assessments and trainings.

NR 550 03(3-0-0). Sustainable Military Lands Management. F, S. SS.
Prerequisite: Completed undergraduate degree.
Overview of military lands in the U.S.—historical, geographical, environmental—and evolution of military lands as part of the federal lands system. (NT-O)

NR 551 03(3-0-0). Cultural Resource Mgmt on Military Lands. F, S. SS.
Prerequisite: Completed undergraduate degree; NR 550.
Intro to cultural resource laws and policies for broad range of heritage resources, prehistoric and historic, with emphasis on tools and techniques. (NT-O).

NR 552 03(3-0-0). Ecology of Military Lands. F, S. SS. Prerequisite: Completed undergraduate degree; NR 550.
Landscape ecology of military lands with emphasis on ecological processes and principles as related to militarily-induced disturbances.

NR 555 02(2-0-0). Preparation of Grant Proposals. S. Prerequisite: STAT 301; one course in ecology.
Idea development, preparation, writing, and presentation of research proposals in natural resources.

NR 561 02(2-0-0). Habitat Evaluation Procedures. F, S. SS.
Prerequisite: General biological, natural resources, or planning course work.
Rationale, philosophy, and use of habitat as a mechanism for conducting environmental impact assessments.

NR 575 04(3-2-0). Systems Ecology. F. Prerequisite: MATH 255; RS 452; STAT 340.
Modeling and computer simulation for describing and integrating ecosystem concepts. * Alternate year offering (odds); + Alternate year offering (even); $ Special course fee; NT Approved for nontraditional course offering (C = correspondence, O = online, T = telecourse, V = videotape/DVD); GT-subcode/BSState Guarantee Transfer course, the subcode refers to the specific category the course fulfills. (See Introduction for more information.)
NR 578 03(3-0-0). Ecology of Disturbed Lands. S. Prerequisite: LAND 220/LIFE 220; SOCR 240. Credit not allowed for both RS 578 and NR 578. Analysis of basic and applied ecological principles involved in the restoration of drastically disturbed lands.

NR 592 Var. Seminar in Natural Resources.

NR 600 02(1-0-1). Advanced Public Relations in Natural Resources. S. Prerequisite: NR 400. Public relations aspects of current natural resource management programs; case history approach.

NR 621 03(1-4-0). Design of Geographic Information Systems. F. Prerequisite: CS 110; LAND 520 or NR 322. Algorithms, procedures, and applications of spatial data handling and spatial analysis.

NR 622 03(2-2-0). Analysis of Environmental Impact. F. Prerequisite: Written consent of instructor. Preparation and evaluation of environmental impact statements.

*NR 625 03(0-0-3). Community-Based Natural Resource Management. S. Prerequisite: 1 upper division course in natural resource ecology, management, or social science. History, theory, practice, and evaluation of community-based natural resource management.

NR 660 03(3-0-0). Biogeochemical Cycling in Ecosystems. S. Prerequisite: CHEM 245; SOCR 240; one course in advanced ecology. Biotic and abiotic processes responsible for distribution and fluxes of elements at ecosystem, landscape, and global scales.

NR 676 04(3-2-0). Ecological Models. S. Prerequisite: NR 575. Model development for ecosystems, subsystems; deterministic, stochastic models; validation, sensitivity analysis.

NR 678 04(3-0-1). Advanced Ecological Restoration. S. Prerequisite: BZ 450 or F 311 or LAND 220/LIFE 220; SOCR 240. Credit not allowed for both RS 478 and NR 678. Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.

NR 684 Var [1-5]. Supervised College Teaching. Prerequisite: Written consent of instructor.

NR 687 Var [1-8]. Natural Resources Internship. Prerequisite: Written consent of instructor. Field experience and exercises in international natural resources management.

NR 693 Var[1-2]. Natural Resources Stewardship Seminar. F. Prerequisite: Must be enrolled in the Master of Natural Resources Stewardship (Plan C) program. Invited speakers will present different perspectives on natural resources.

NR 793 01(0-0-1). Seminar on Remote Sensing and GIS. Prerequisite: NR 322 or NR 323/GR 323 or NR 503/GR 503 or NR 505. Techniques, use of remote sensing, GIS technologies for forest, range, wildlife, water, geology, recreation, and other resource management applications.