Natural Resources Management (NRM)

NRM 150. Natural Resource Management Orientation. 1 Credit.
Introduction to natural resources management issues, concepts, and careers.

NRM 199. Special Topics. 1-5 Credits.

NRM 225. Natural Resources & Agrosystems. 3 Credits.
Introduction to scientific theories and their relation to natural resources and agriculture. Influence of these theories on current perspectives toward the environment. 3 lectures. Cross-listed with RNG 225.

NRM 264. Natural Resource Management Systems. 3 Credits.
General principles of natural resource management, including soil and water conservation, soil and wind erosion, use of tillage and vegetation for conservation, drainage, irrigation, and soil and water quality. 3 lectures. Prereq: MATH 103, MATH 104 or MATH 107. Cross-listed with ASM 264 and SOIL 264.

NRM 291. Seminar. 1-3 Credits.

NRM 322. Environmental Law and Policy. 3 Credits.
This course explores selected environmental laws with discussions of federal, state, and local laws; management of natural resources via regulatory policies; and the legal system including levels of government, types of law, and mechanisms for regulating externalities. Prereq: Junior standing.

NRM 379. Global Seminar. 1-6 Credits.
NDSU instructed experience or field study in a foreign country. Conducted in English for residence credit. Pre-requisite: Prior approval by International Student and Study Abroad Services and major department. May be repeated. Standard Grading.

NRM 391. Seminar. 1-3 Credits.

NRM 394. Individual Study. 1-5 Credits.

NRM 397. Fe/Coop Ed/Internship. 1-4 Credits.

NRM 401. Urban-Ecosystem Management. 3 Credits.
An interdisciplinary management survey examining the urban/rural interface and environmental and social factors driving the process of urbanization as a sustainable ecosystem. {Also offered for graduate credit - see NRM 601.}.

NRM 402. River and Stream Resource Management. 3 Credits.
The structure and function of river and stream ecosystems: biotic and abiotic functioning, stream and river ecological theories, management and monitoring practices. {Also offered for graduate credit - see NRM 602.}.

NRM 420. Sustainable Scenarios in Natural Resources Management. 3 Credits.
An interdisciplinary course to investigate the key competencies needed for sustainable social-ecological systems and how sustainable scenarios can be built for the future management of natural resources. {Also offered for graduate credit - see NRM 620.}.

NRM 421. Environmental Outreach Methods. 3 Credits.
Introduction to philosophies, theories, and methods common to environmental education and outreach. Prereq: Junior or senior standing. {Also offered for graduate credit - see NRM 621.}.

NRM 431. National Environmental Policy Act and Environmental Impact Assessment. 3 Credits.
This course will give students insight into the process of NEPA, its development and how to implement NEPA in the world today. The course will also discuss in-depth the processes for completing environmental assessments and environmental impact statements. Prereq: Junior or senior standing. {Also offered for graduate credit - see NRM 631.}.

NRM 452. Managing Natural and Rangeland Resources using GIS. 3 Credits.
The application of Geographic Information Systems to managing natural and rangeland resources will be investigated. Different natural and rangeland resource datasets, analysis methods, and software packages will be utilized. Cross-listed with RNG 452 and SOIL 452. Dual-listing: NRM 652.

NRM 453. Rangeland Resources Watershed Management. 3 Credits.
Study of the management of physical/biological settings and processes along with human activities on water and watersheds considering preventative and restorative strategies in a rangeland setting. Prereq: RNG 136 or NRM 225. Cross-listed with RNG 453. {Also offered for graduate credit - see NRM 653.}.

NRM 454. Wetland Resources Management. 3 Credits.
Principles of wetland systems, wetland management, wetland functions, wetland delineation, wetland assessment, and wetland improvement. Prereq: SOIL 210. Cross-listed with RNG 454 and SOIL 454. F (even years) {Also offered for graduate credit - see NRM 654.}.

NRM 456. Ecological Restoration. 3 Credits.
This course reviews ecological concepts inherent to ecosystem structure and function, including plant, soil, and animal ecology, and ecosystem response to disturbance. Furthermore, the course will illustrate how this ecological knowledge is used along with socioeconomic information to develop and implement effective restoration projects in both terrestrial and aquatic ecosystems. Cross-listed with RNG 456 and SOIL 456. Dual-listing: RNG 656, NRM 656 and SOIL 656.

NRM 457. Applied Analysis Tools for Natural Resources and Agriculture. 2 Credits.
This course provides an introduction to using R for applied purposes in natural resources and agriculture, from importing and manipulating data to visualization. Dual-listing: NRM 657.

NRM 462. Natural Resource and Rangeland Planning. 3 Credits.
Capstone experience for School of Natural Resources Sciences majors: students use advanced planning tools and different management strategies to demonstrate integrated knowledge in managing public and private natural resources. Prereq: at least senior standing and must be a Natural Resources Management, Range Science or Soil Science major. Cross-listed with RNG and SOIL. {Also offered for graduate credit - see NRM 662.}.

NRM 470. Landscape Genetics. 2 Credits.
This course covers the theory and application of landscape genetics, a combination of population genetics and landscape ecology, for the management of aquatic and terrestrial systems. Dual-listing: NRM 670.

NRM 471. Landscape Genetics Lab. 1 Credit.
This lab explores how Landscape Genetics theory and computational methods are applied to real-world research and management challenges. Students will gain hands-on experience analyzing genetic data in relation to landscapes, helping to address ecological and conservation questions. Coreq: NRM 470. Dual-listing: NRM 671.

NRM 491. Seminar. 1-5 Credits.

NRM 493. Undergraduate Research. 1-5 Credits.

NRM 494. Individual Study. 1-5 Credits.

NRM 496. Field Experience. 1-15 Credits.

NRM 499. Special Topics. 1-5 Credits.

NRM 601. Urban-Ecosystem Management. 3 Credits.
An interdisciplinary management survey examining the urban/rural interface and environmental and social factors driving the process of urbanization as a sustainable ecosystem. {Also offered for undergraduate credit - see NRM 401.}.

NRM 602. River and Stream Resource Management. 3 Credits.
The structure and function of river and stream ecosystems: biotic and abiotic functioning, stream and river ecological theories, management and monitoring practices. {Also offered for undergraduate credit - see NRM 402.}.

NRM 620. Sustainable Scenarios in Natural Resources Management. 3 Credits.
An interdisciplinary course to investigate the key competencies needed for sustainable social-ecological systems and how sustainable scenarios can be built for the future management of natural resources. {Also offered for undergraduate credit - see NRM 420.}.

NRM 621. Environmental Outreach Methods. 3 Credits.
Introduction to philosophies, theories, and methods common to environmental education and outreach. {Also offered for undergraduate credit - see NRM 421.}.

NRM 631. National Environmental Policy Act & Environental Impact Assessment. 3 Credits.
The interaction and effects of the National Environmental Policy Act (NEPA) with national environmental policy; implementation of the NEPA; public opinion on the state of the environment; introduction to EIS (Environmental Impact Statements). {Also offered for undergraduate credit - see NRM 431.}.

NRM 652. Managing Natural and Rangeland Resources using GIS. 3 Credits.
The application of Geographic Information Systems to managing natural and rangeland resources will be investigated. Different natural and rangeland resource datasets, analysis methods, and software packages will be utilized. Cross-listed with RNG 652 and SOIL 652. Dual-listing: NRM 452.

NRM 653. Rangeland Resources Watershed Management. 3 Credits.
Study of the management of physical/biological settings and processes along with human activities on water and watersheds considering preventative and restorative strategies in a rangeland setting. Cross-listed with RNG 653. {Also offered for undergraduate credit - see NRM 453.}.

NRM 654. Wetland Resource Management. 3 Credits.
Principles of wetland systems, wetland management, wetland functions, wetland assessment, and wetland improvement. {Also offered for undergraduate credit - see NRM 454.}.

NRM 656. Ecological Restoration. 3 Credits.
This course reviews ecological concepts inherent to ecosystem structure and function, including plant, soil, and animal ecology, and ecosystem response to disturbance. Furthermore, the course will illustrate how this ecological knowledge is used along with socioeconomic information to develop and implement effective restoration projects in both terrestrial and aquatic ecosystems. Cross-listed with RNG 656 and SOIL 656. Dual-listing: NRM 456.

NRM 657. Applied Analysis Tools for Natural Resources and Agriculture. 2 Credits.
This course provides an introduction to using R for applied purposes in natural resources and agriculture, from importing and manipulating data to visualization. Dual-listing: NRM 457.

NRM 662. Natural Resource and Rangeland Planning. 3 Credits.
Capstone experience for School of Natural Resources Sciences majors: students use advanced planning tools and different management strategies to demonstrate integrated knowledge in managing public and private natural resources. Cross-listed with RNG and SOIL. {Also offered for undergraduate credit - see NRM 462.}.

NRM 670. Landscape Genetics. 2 Credits.
This course covers the theory and application of landscape genetics, a combination of population genetics and landscape ecology, for the management of aquatic and terrestrial systems. Dual-listing: NRM 470.

NRM 671. Landscape Genetics Lab. 1 Credit.
This lab explores how Landscape Genetics theory and computational methods are applied to real-world research and management challenges. Students will gain hands-on experience analyzing genetic data in relation to landscapes, helping to address ecological and conservation questions. Coreq: NRM 670. Dual-listing: NRM 471.

NRM 690. Graduate Seminar. 1-3 Credits.

NRM 695. Field Experience. 1-15 Credits.

NRM 696. Special Topics. 1-5 Credits.

NRM 701. Terrestrial Resources Management. 3 Credits.
Management and ecology of heterogeneous landscapes where ecosystem processes and human activities interact as dynamic components. Prereq: BOT 660 and BOT 754.

NRM 702. Natural Resources Management Planning. 3 Credits.
Presentation of the principles, practices and key policy issues of natural resources management and planning.

NRM 720. Natural Resource Administration & Policy. 2 Credits.
A comprehensive analysis of the theory of externalities and their application to the design of natural resources policy.

NRM 761. Current Issues in Natural Resource Management. 1 Credit.
The class will survey current issues in natural resource management. The survey will provide a way to stimulate critical thinking on those issues.

NRM 790. Graduate Seminar. 1-3 Credits.

NRM 791. Temporary/Trial Topics. 1-5 Credits.

NRM 792. Graduate Teaching Experience. 1-6 Credits.

NRM 793. Individual Study. 1-5 Credits.

NRM 794. Practicum. 1-10 Credits.

NRM 795. Field Experience. 1-15 Credits.

NRM 796. Special Topics. 1-5 Credits.

NRM 797. Master's Paper. 1-3 Credits.

NRM 798. Master's Thesis. 1-10 Credits.

NRM 892. Graduate Teaching Experience. 1-6 Credits.

NRM 895. Field Experience. 1-15 Credits.

NRM 898. Continuing Enrollment. 1-9 Credits.
For graduate students who have completed all necessary credits of course work including thesis (798) and dissertation (899) on their approved Plan of Study, but who have not yet completed and submitted their thesis or dissertation. This course does not count towards the credit requirements for the degree and is not financial aid eligible. Department consent required to enroll.

NRM 899. Doctoral Dissertation. 1-15 Credits.