

Natural Resources Management

Department Information

- **Department Location:**
Morrill Hall 307A
- **Department Phone:**
701-231-8180
- **Department Web Site:**
www.ndsu.edu/snrs/
- **Credential Offered:**
B.S.
- **Official Program Curriculum:**
bulletin.ndsu.edu/undergraduate/program-curriculum/natural-resources-management/

With increasing human pressure and a growing need to balance competing demands, we need new and better ways to manage society's impacts on the environment. The natural resources management (NRM) program prepares students for careers requiring an understanding of the social, economic, biological, and physical aspects of solving problems associated with the management of natural resources for their highest and best uses for society while maintaining the integrity of life-sustaining ecological systems.

The Program

The NRM program is part of the School of Natural Resource Sciences at North Dakota State University. We are a management-oriented, interdisciplinary program that integrates the social, economic, physical, and biological aspects of natural resources. The program draws upon the courses and resources across the various colleges at the University. An undergraduate program leading to a Bachelor of Science, a graduate program leading to a Master of Science, a doctoral program leading to a Doctor of Philosophy, as well as a professional degree program, called a Master of Natural Resources Management are available.

Through the NRM program, students acquire a broad background in natural resources, as well as in-depth study in one or two emphasis areas of interest. The program exposes students to many disciplines—exactly the interdisciplinary approach society must take if it is to find solutions to complex environmental problems. The undergraduate program curriculum is divided into 90 core credits required of all students, and 38 emphasis credits selected by the individual student from seven areas of interest.

NRM Core – This group of courses provides each student a broad foundation in the social, biological and physical/earth sciences. The NRM core also satisfies NDSU's General Education requirements and includes 40 credits along with 40 core credits, 38 emphasis credits, and 10 credits of free electives.

NRM Emphasis – During the third and fourth years of the program, students focus on a specific area of interest—an emphasis. The majority of courses are selected from a diverse group of approved electives. NRM offers seven emphasis areas.

- **Biotic Resources Science** – deals with basic scientific principles that govern the interrelationship between biotic (e.g., plants, animals) and abiotic factors (e.g., climate, soils) in major ecosystems and the use of these principles for environmentally sound management of natural resources and agroecosystems
- **Environmental Communication** – is designed for environmentally oriented students preparing for careers in communications fields such as journalism, public relations, broadcast media and the internet
- **Natural Resources Economics** – prepares students for management, administrative, regulatory and policy positions that require a broad understanding of natural resources management and allocation
- **Physical/Earth Resources Science** – leads to an understanding of the physical and chemical aspects of ecosystems. Topics of study include hydrology, water management and quality, waste management, soil properties, energy resources and land-use management
- **Pollution Control** – focuses on the principles and practices of managing natural resources for pollution control. Topics include the technical aspects of pollution as they relate to water, air/solids, earth/soils, and the impact of environmental pollution on biotic factors
- **Social Sciences** – concentrates on human factors (social, anthropological, political) in environmental management and environmental disaster management, while recognizing constraints and opportunities presented by physical and biological factors
- **Sustainability and Resiliency** – focuses on how to build capacity to deal with change; prepares students through system, strategic, and anticipatory thinking

The Faculty

The NRM main faculty are part of the School of Natural Resource Sciences and are dedicated to the NRM program. NRM is an inter-college/interdisciplinary program actively engaging faculty from across the University in the coordination of the program classroom teaching and advising.

Financial Aid and Scholarships

Summer job opportunities in natural resources management fields are plentiful. Internship programs leading to full-time employment with several federal agencies are available. Natural resources management offers three scholarships each year ranging from \$250 to \$500 each. Additional scholarships are available through the College of Agriculture, Food Systems, and Natural Resources. Student loan, grant and work-study information is available from the Office of Financial Aid and Scholarships and One Stop.

Career Opportunities

Policy makers, elected officials at all levels of government, business leaders, farmers and ranchers are facing ever more complex, multidisciplinary and international problems dealing with natural resources and the environment. NRM graduates are prepared with the skills and knowledge for examining these problems from a holistic ecological perspective and a global social perspective. Federal government employment opportunities include U.S. Department of Agriculture, U.S. Department of the Interior, Fish and Wildlife Service, Geological Survey, Bureau of Indian Affairs, Bureau of Reclamation, Army Corps of Engineers, National Park Service, Agency for International Development, Peace Corps and more. State government opportunities include departments of natural resources, water management agencies, parks and recreation agencies, agriculture departments, health departments, Public Service Commission, Cooperative Extension Service, state Agricultural Experiment Stations and university and secondary school education. Many positions also are available with local government units. Private sector employment opportunities include mining and forest product companies, consulting firms, water organizations and non-profit conservation and environmental organizations.

Plan of Study

Please note this is a sample plan of study and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Students are encouraged to work with their academic advisor on a regular basis to review degree progress and customize an individual plan of study.

First Year			
Fall	Credits	Spring	Credits
BIOL 150 & 150L	4	BIOL 151 & 151L	4
NRM 225	3	ENGL 120	3
NRM 150	1	HUM & Fine Arts and Cult Div Gen Ed	3
ENGL 110	4	Wellness Gen Ed	2
Math placement course	3	HUM & Fine Arts and Glob Persp Gen Ed	3
	15		15
Second Year			
Fall	Credits	Spring	Credits
COMM 110	3	CHEM 121 & 121L	4
ECON 201	3	NRM 264	3
GEOL 105	3	SOIL 210	3
EMGT 101 or SOC 110	3	STAT 330	3
POLS 115 or 215	3		
	15		13
Third Year			
Fall	Credits	Spring	Credits
ECON 481	3	HIST 434 or 435	3
NRM 431	3	RNG 452 or GEOG 455	3-4
BIOL 364	3	Emphasis core	9
Select one from EMGT, POLS or SOC	3		
Upper Level Writing Gen Ed	3		
	15		15-16

Fourth Year		
Fall	Credits Spring	Credits
NRM Emphasis Area	18 NRM 462	3
	NRM Emphasis Area	11
	18	14

Total Credits: 120-121

Natural Resources Management Emphasis Areas

Biotic Resources Science

Code	Title	Credits
Choose One Tract - Required 6 credits		6
CHEM TRACT		
CHEM 122	General Chemistry II	
CHEM 240	Survey of Organic Chemistry	
MANAGEMENT TRACT		
RNG 453/453	Rangeland Resources Watershed Management	
RNG 136	Introduction to Range Management	
Required 32 additional elective credits		32
Total Credits		38

Sustainability

Code	Title	Credits
Required 12 credits		
NRM 420	Sustainable Scenarios in Natural Resources Management	3
NRM 401	Urban-Ecosystem Management	3
SOC 431	Environmental Sociology	3
or SOC 404	Community Assessment	
or POLS 442	Global Policy Issues	
or POLS 453	Environmental Policy and Politics	
NRM 454	Wetland Resources Management	3
or NRM 402	River and Stream Resource Management	
or SOIL 410	Soils and Land Use	
or BIOL 475	Conservation Biology	
Required 26 additional elective credits		26
Total Credits		38

Physical/Earth Resources Science

Code	Title	Credits
Required 13 credits		
CHEM 122	General Chemistry II	3
CHEM 122L	General Chemistry II Laboratory	1
GEOL 300	Environmental Geology	3
or GEOG 412	Geomorphology	
SOIL 322	Soil Fertility and Fertilizers	3
or SOIL 351	Soil Ecology	
SOIL 410	Soils and Land Use	3
or SOIL 444	Soil Genesis and Survey	
Required 25 additional elective credits		25
Total Credits		38

Social Sciences

Code	Title	Credits
Required 10 credits		
SOC 340	Social Research Methods	3
SOC 341	Social Research Methods Laboratory	1
SOC 404	Community Assessment	3
SOC 405	Community Development	3
Required 28 additional elective credits		28
Total Credits		38

Pollution Control

Code	Title	Credits
Required 23 credits		
MATH 165	Calculus I	4
CHEM 122	General Chemistry II	3
CHEM 122L	General Chemistry II Laboratory	1
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3
CE 309	Fluid Mechanics	3
CE 370	Introduction to Environmental Engineering	3
CE 408	Water Resources and Supply	3
Required 15 additional elective credits		15
Total Credits		38

Environmental Communication

Code	Title	Credits
Required 16 credits		
COMM 112	Understanding Media and Social Change	3
COMM 200	Introduction to Media Writing	3
NRM 421	Environmental Outreach Methods	3
COMM 485	Risk and Crisis Communication	3
COMM 325		0-4
or SOC 340 & SOC 341	Social Research Methods and Social Research Methods Laboratory	
Required 22 additional elective credits		22
Total Credits		34-38

Natural Resources Economics

Code	Title	Credits
Required 9 credits		
MATH 144	Mathematics for Business	4
ECON 341	Intermediate Microeconomics	3
STAT 331	Regression Analysis	2
Required 29 additional elective credits		29
Total Credits		38