

# Natural Resources Management

## Undergraduate Degree Program



*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, 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

Natural Resources Management (NRM) is an interdisciplinary major offered as a four-year Bachelor of Science (BS) degree. The curriculum is divided into 90 core credits required of all students, and 38 emphasis credits selected by the individual student from six 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 General Education requirements, the capstone experience, and includes 23 elective credits referred to as "Core 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 six 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 both natural and agro-ecosystems.

**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.

### The Faculty

Natural Resources Management is an inter-college/inter-disciplinary program actively engaging faculty from four colleges in the coordination of the program, classroom teaching and advising. The four colleges represented are: College of Agriculture, Food Systems, & Natural Resources; College of Engineering & Architecture; College of Arts, Humanities & Social Sciences; and College of Science & Mathematics.

### Financial Aid and Scholarships

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

### Career Opportunities

Policy makers, elected officials at all levels of government, business leaders, farmers and ranchers are facing ever more complex, interdisciplinary 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.

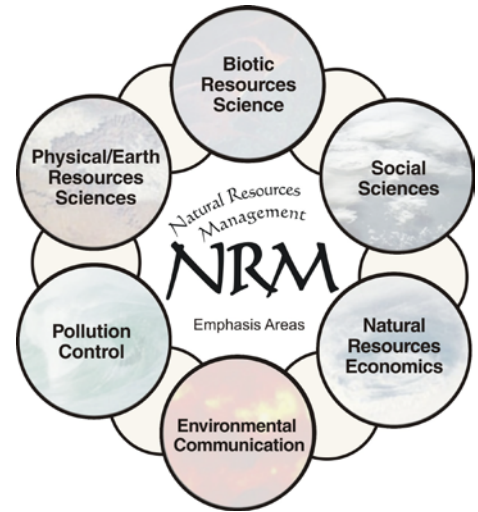
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### For more information:

Carolyn E. Grygiel, Ph.D., MBA, CPRM  
Director, Natural Resources Management  
College of Agriculture, Food Systems, & Natural Resources  
163 Hultz Hall - Fargo, ND 58105  
701-231-8180 - Carolyn.Grygiel@ndsu.edu

## Natural Resources Management (NRM)

This **sample curriculum** is not intended to serve as a curriculum guide for current students, but rather an example of course offerings for prospective students. For the curriculum requirements in effect at the time of entrance into the program, consult with the NRM Program Director.



- Students interested in the Pollution Control emphasis are strongly urged to complete College Algebra before entering the NRM program.
- Some Emphasis Elective courses have prerequisites not included in the NRM Core and should be taken as Core Electives. An NRM Emphasis Prerequisite List is available upon request.
- Several emphasis areas have one or more embedded minors. Obtain a Minor List from the Natural Resources Management office (Hultz Hall room 160).

## Sample Curriculum

		FALL			SPRING		
		Course	Units	Course		Units	
Freshman (<27 units)	AGRI 189	<i>Skills for Academic Success</i>	1	BIOL 111	<i>Concepts of Biology</i>	3	
	BIOL 124	<i>Environmental Science</i>	3	BIOL 111L	<i>Concepts of Biology Lab</i>	1	
	ENGL 110~	<i>College Composition I</i>	3	ENGL 120	<i>College Composition II</i>	3	
	GEOL 105	<i>Physical Geology</i>	3	NRM 225	<i>Natural/Agro-ecosystems</i>	3	
	NRM 150	<i>NRM Orientation</i>	1	SOIL 210	<i>Intro to Soil Science</i>	3	
	Core Elective	<i>(Wellness)</i>	2	Core Elective	<i>(Free Elective. MATH 103 may be required.)</i>	3	
	Core Elective	<i>SOC 110 Intro to Sociology (or POLS 110 Intro to Political Science)</i>	3				
<b>Total</b>			<b>16</b>	<b>Total 16</b>			
Sophomore (27-59 units)	BIOL 151	<i>General Biology II</i>	3	BIOL 364	<i>General Ecology</i>	3	
	BIOL 151L	<i>General Biology II Lab</i>	1	CHEM 121	<i>General Chemistry I</i>	3	
	CHEM 117	<i>Chemical Concepts &amp; Applications</i>	3	CHEM 121L	<i>General Chemistry I Lab</i>	1	
	CHEM 117L	<i>Chemical Concepts &amp; Applications Lab</i>	1	NRM 264	<i>Natural Resources Management Systems</i>	3	
	COMM 110	<i>Fundamentals of Public Speaking</i>	3	Core Elective	<i>(Humanities/Fine Arts)</i>	3	
	ECON 201	<i>Principles of Microeconomics</i>	3	EMPHASIS		3	
	Core Elective	<i>(Free Elective)</i>	3				
<b>Total</b>			<b>17</b>	<b>Total 16</b>			
Junior (60-89 units)	ECON 481	<i>Natural Resource Economics</i>	3	HIST 333	<i>US Environmental History (or HIST434)</i>	3	
	POLS 215	<i>Problems &amp; Policies in American Government (or POLS 360 or POLS 422)</i>	3	STAT 330^	<i>Introductory Statistics</i>	3	
	Core Elective	<i>(Upper-Division Writing)</i>	3	Core Elective	<i>SOC431 Environmental Sociology OR POLS453 Environmental Policy &amp; Politics</i>	3	
	EMPHASIS		7	EMPHASIS		7	
	<b>Total</b>			<b>16</b>	<b>Total 16</b>		
Senior (90+ units)	RNG 452	<i>GIS Range Survey</i>	3	NRM4 91	<i>Seminar (Capstone)</i>	2	
	NRM 431	<i>NEPA &amp; Environmental Impact Assessment</i>	2	EMPHASIS		13	
	Core Elective	<i>(Humanities/Fine Arts)</i>	3				
	EMPHASIS		8				
<b>Total</b>			<b>16</b>	<b>Total 15</b>			
						<b>Total Units: 128</b>	

^ **STAT 330:** Students in Pollution Control substitute MATH 166 Calculus II.

~ **ENGL 110:** First year students with a composite ACT score of  $\geq 21$  should register for ENGL 120 (unless transfer credit for ENGL 120 is received). If ENGL 120 is completed with a grade of 'C' or better, three credits will be awarded for ENGL 110 with a passing grade (P). For more details on NDSU's English Placement process, go to [www.ndsu.edu/cfwriters](http://www.ndsu.edu/cfwriters).