

# Natural Resources Management

## Department Information

- **Department Location:**  
Morrill Hall
- **Department Phone:**  
701-231-8180
- **Department Web Site:**  
[www.ndsu.edu/nrm/](http://www.ndsu.edu/nrm/)
- **Plan Of Study Sample:**  
[bulletin.ndsu.edu/programs-study/undergraduate/natural-resources-management/#planofstudytext](http://bulletin.ndsu.edu/programs-study/undergraduate/natural-resources-management/#planofstudytext)

## Major Requirements

### Major: Natural Resources Management

Degree Type: B.S.

Minimum Degree Credits to Graduate: 120

### University Degree Requirements

1. Satisfactory completion of all requirements of the curriculum in which one is enrolled.
2. Earn a minimum total of 120 credits in approved coursework. Some academic programs exceed this minimum.
3. Satisfactory completion of the general education requirements as specified by the university.
4. A minimum institutional GPA of 2.00 based on work taken at NDSU.
5. At least 36 credits presented for graduation must be in courses number 300 or higher.
6. Transfer Students: Must earn a minimum of 60 credits from a baccalaureate-degree granting or professional institution.
  - a. Of these 60, at least 36 must be NDSU residence credits as defined in #7.
  - b. Within the 36 resident credits, a minimum of 15 must be in courses numbered 300 or higher and 15 credits in the major field of study.
7. At least 36 credits must be NDSU resident credits. Residence credits include credits registered and paid for at NDSU.

For complete information, please refer to the Degree and Graduation Requirements (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/degree-and-graduation>) section of this Bulletin.

### University General Education Requirements

Code	Title	Credits
<b>Communication (C)</b>		<b>12</b>
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing <sup>†</sup>		
<b>Quantitative Reasoning (R) <sup>†</sup></b>		<b>3</b>
<b>Science and Technology (S) <sup>†</sup></b>		<b>10</b>
<b>Humanities and Fine Arts (A) <sup>†</sup></b>		<b>6</b>
<b>Social and Behavioral Sciences (B) <sup>†</sup></b>		<b>6</b>
<b>Wellness (W) <sup>†</sup></b>		<b>2</b>
<b>Cultural Diversity (D) <sup>*†</sup></b>		
<b>Global Perspectives (G) <sup>*†</sup></b>		
Total Credits		39

\* May be satisfied by completing courses in another General Education category.

† General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review major requirements to determine if specific courses can also satisfy these general education categories.

- A list of university approved general education courses and administrative policies are available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2019-20/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

## Major Requirements

Code	Title	Credits
<b>Required Core Courses for Natural Resources Management:</b>		
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
BIOL 151 & 151L	General Biology II and General Biology II Laboratory	4
BIOL 364	General Ecology	3
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory (May satisfy general education category S)	4
ECON 201	Principles of Microeconomics (May satisfy general education category B and G)	3
ECON 481	Natural Resource Economics	3
GEOL 105	Physical Geology (May satisfy general education category S and G)	3
HIST 434 or HIST 435	Environmental History World Environmental History	3
NRM 150	Natural Resource Management Orientation	1
NRM 225	Natural Resources & Agrosystems (May satisfy general education category S)	3
NRM/SOIL 264	Natural Resource Management Systems	3
NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
NRM 462	Natural Resource and Rangeland Planning	3
RNG 452 or GEOG 455	Geographic Information Systems in Range Survey Introduction to Geographic Information Systems	3
SOIL 210	Introduction to Soil Science	3
STAT 330	Introductory Statistics (May satisfy general education category R)	3
Select one of the following: (May satisfy general education category B)		3
EMGT 101	Emergencies, Disasters, and Catastrophes	
SOC 110	Introduction to Sociology	
Select one of the following:		3
EMGT 261	Disaster Preparedness	
EMGT 262	Disaster Mitigation	
EMGT 263	Disaster Response	
EMGT 264	Disaster Recovery	
POLS 422	State and Local Politics	
POLS 442	Global Policy Issues	
SOC 431	Environmental Sociology	
<b>NRM Emphasis Area: Students must select one of the seven NRM emphasis areas to complete the major. See below.</b>		<b>38</b>
Total Credits		<b>93</b>

## Natural Resources Management Emphasis Areas

- Select and complete one emphasis area as part of the Natural Resources Management major.
- Declaring an Emphasis- Students should formally declare an emphasis area with the Office of Registration & Records (<https://www.ndsu.edu/registrar>) by the beginning of their junior year. The emphasis area is recorded on the academic transcript with the degree.

## Biotic Resources Science

Code	Title	Credits
Required. Select two of the following:		6
CHEM 122	General Chemistry II	
CHEM 240	Survey of Organic Chemistry	
RNG 136	Introduction to Range Management	
RNG/NRM 453	Rangeland Resources Watershed Management	
Select a minimum of 32 credits from the approved electives list below for Biotic Resources:		32

BIOL 414	Plant Systematics	
BIOL 476	Wildlife Ecology and Management	
NRM 401	Urban-Ecosystem Management	
NRM 420	Sustainable Scenarios in Natural Resources Management	
PLSC 219	Introduction to Prairie & Community Forestry	
PLSC/BOT/ZOO 315	Genetics	
BIOL 460	Animal Physiology	
BIOL 450	Invertebrate Zoology	
BIOL 452	Ichthyology	
BIOL 454	Herpetology	
BIOL 456	Ornithology	
BIOL 458	Mammalogy	
BIOL 462	Physiological Ecology	
BIOL 463	Animal Behavior	
BIOL 475	Conservation Biology	
BIOL 477	Wildlife and Fisheries Management Techniques	
ENT 350	General Entomology	
MICR 202L	Introductory Microbiology Lab	
MICR 202	Introductory Microbiology	
NRM 402	River and Stream Resource Management	
NRM 421	Environmental Outreach Methods	
PLSC/BOT/ZOO 315L	Genetics Laboratory	
PLSC 323	Principles of Weed Science	
PLSC 355	Woody Landscape Plants	
PLSC 380	Principles of Plant Physiology	
RNG 326	Modeling of Range and Agro-Ecosystems	
RNG/BOT 450	Range Plants	
RNG/NRM 454	Wetland Resources Management	
RNG 456	Range Habitat Management	
RNG 458	Grazing Ecology	
SOIL 217	Introduction to Meteorology & Climatology	
Total Credits		38

**Sustainability**

Code	Title	Credits
Required:		
NRM 401	Urban-Ecosystem Management	3
NRM 420	Sustainable Scenarios in Natural Resources Management	3
Select one:		3
POLS 442	Global Policy Issues	
POLS 453	Environmental Policy and Politics	
SOC 404	Community Assessment	
SOC 431	Environmental Sociology	
Select one:		3
BIOL 475	Conservation Biology	
NRM 402	River and Stream Resource Management	
NRM 454	Wetland Resources Management	
SOIL 410	Soils and Land Use	
Select a minimum of 26 credits from the approved electives:		26
ANTH 462	Anthropology and the Environment	
ANTH 459	Global Cultural Heritage	
ANTH 464	Disaster and Culture	

BIOL 271	Wildlife Ecology and Conservation: An undergraduate research course
BIOL 475	Conservation Biology
BIOL 476	Wildlife Ecology and Management
BIOL 480	Ecotoxicology
BIOL 481	Wetland Science
ECON 482	Environmental Economics
EMGT 101	Emergencies, Disasters, and Catastrophes
EMGT 261	Disaster Preparedness
EMGT 262	Disaster Mitigation
EMGT 263	Disaster Response
EMGT 264	Disaster Recovery
ENT 350	General Entomology
GEO 300	Environmental Geology
HIST 435	World Environmental History
NRM 322	Environmental Law and Policy
NRM 402	River and Stream Resource Management (If not used above)
NRM 421	Environmental Outreach Methods
NRM 453	Rangeland Resources Watershed Management
PLSC 110	World Food Crops
PLSC 219	Introduction to Prairie & Community Forestry
POLS 442	Global Policy Issues (If not used above)
POLS 453	Environmental Policy and Politics (If not used above)
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 456	Range Habitat Management
RNG 458	Grazing Ecology
RNG 460	Plant Ecology
SOC 404	Community Assessment (If not used above)
SOC 405	Community Development
SOC 235	Cultural Diversity
SOC 431	Environmental Sociology (If not used above)
SOC 443	International Disasters
SOIL 217	Introduction to Meteorology & Climatology
SOIL 351	Soil Ecology
SOIL 410	Soils and Land Use (If not used above)

Total Credits	38
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### Physical/earth Resources Science

Code	Title	Credits
Required:		
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory	4
GEO 300 or GEOG 412	Environmental Geology Geomorphology	3
SOIL 322 or SOIL 351	Soil Fertility and Fertilizers Soil Ecology	3
SOIL 410 or SOIL 444	Soils and Land Use Soil Genesis and Survey	3
Select a minimum of 25 credits from the approved electives list below for Physical/Earth Resources Science:		25
ABEN 464	Resource Conservation and Irrigation Engineering	
ASM 354	Electricity and Electronic Applications	
RNG 136	Introduction to Range Management	
GEO 105L	Physical Geology Lab	

SOIL 444	Soil Genesis and Survey
NRM 401	Urban-Ecosystem Management
RNG/NRM 454	Wetland Resources Management
NRM 420	Sustainable Scenarios in Natural Resources Management
PHYS 211	College Physics I
CE 204	Surveying
MICR 202	Introductory Microbiology
SOIL 465	Soil And Plant Analysis
GEOL/CHEM 428	Geochemistry
ASM 225	Computer Applications in Agricultural Systems Management
PHYS 211L	College Physics I Laboratory
CHEM 240	Survey of Organic Chemistry
GEOL 414	Hydrogeology
MICR 202L	Introductory Microbiology Lab
NRM 402	River and Stream Resource Management
NRM 421	Environmental Outreach Methods
ASM 454	Principles and Application of Precision Agriculture
SOIL 217	Introduction to Meteorology & Climatology
SOIL 433	Soil Ecohydrology and Physics
SOIL 447	Microclimatology
SOIL 480	Soils and Pollution

Total Credits 38

### Environmental Communication

Code	Title	Credits
Required:		
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
Select one of the following:		4
COMM/POLS/CJ 325	Applied Research Methods	
SOC 340	Social Research Methods	
& SOC 341	and Social Research Methods Laboratory	
Select a minimum of 22 credits from the approved electives list below for Environmental Communication:		22
COMM 245	Principles of Broadcast Production	
COMM 260	Introduction to Web Design	
COMM 301	Rhetorical Traditions	
NRM 420	Sustainable Scenarios in Natural Resources Management	
COMM 433	Legal Communication	
COMM 442	Digital Media and Society	
COMM 445	Advanced Broadcast Production	
COMM 472	Public Relations Campaigns	
COMM 402	Contemporary Rhetoric	
COMM 261	Introduction to Web Development	
COMM 310	Advanced Media Writing	
COMM 362	Principles of Design For Media	
COMM 383	Organizational Communication I	
NRM 421	Environmental Outreach Methods	
COMM 436	Issues in Mass Communications	
COMM 443	Mass Media and Public Opinion	
COMM 450	Issues in Communication	

COMM 431	Communication Ethics and Law	
Total Credits		38

**Pollution Control**

Code	Title	Credits
Required:		
CE 309	Fluid Mechanics	3
CE 370	Introduction to Environmental Engineering	3
CE 408	Water Resources and Supply	3
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory	4
MATH 165	Calculus I	4
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3
Select a minimum of 15 credits from the approved electives list below for Pollution Control:		15

Air/Solids:		
CE 472	Solid Waste Management	
SOIL 217	Introduction to Meteorology & Climatology	
SOIL 447	Microclimatology	
Biotic:		
ABEN 499		
BIOL 461	Plant Ecology	
BIOL 476	Wildlife Ecology and Management	
BIOL 477	Wildlife and Fisheries Management Techniques	
MICR 350	General Microbiology	
MICR 350L	General Microbiology Lab	
PLSC 380	Principles of Plant Physiology	
Earth/Soils:		
CHEM 240	Survey of Organic Chemistry	
GEOL 300	Environmental Geology	
SOIL 322	Soil Fertility and Fertilizers	
SOIL 351	Soil Ecology	
SOIL 410	Soils and Land Use	
SOIL 433	Soil Ecohydrology and Physics	
SOIL 444	Soil Genesis and Survey	
SOIL 447	Microclimatology	
SOIL 465	Soil And Plant Analysis	
SOIL 480	Soils and Pollution	
Water:		
ABEN 464	Resource Conservation and Irrigation Engineering	
CE 410	Water and Wastewater Engineering	
CE 421	Open Channel Flow	
CE 477	Applied Hydrology	
CE 478	Water Quality Management	
GEOL 414	Hydrogeology	
RNG/NRM 453	Rangeland Resources Watershed Management	
GEOL/CHEM 428	Geochemistry	

Total Credits		38
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**Natural Resources Economics**

Code	Title	Credits
Required:		
MATH 144	Mathematics for Business	4

ECON 341	Intermediate Microeconomics	3
STAT 331	Regression Analysis	2
Select a minimum of 29 credits from the approved electives list below for Natural Resources Economics:		29
AGEC 339	Quantitative Methods & Decision Making	
AGEC 375	Applied Agricultural Law	
ECON 202	Principles of Macroeconomics	
ECON 343	Intermediate Macroeconomics	
ECON 456	History of Economic Thought	
ECON 470	Public Economics	
ECON 480	Industrial Organization	
GEOG 262	Geography of North America	
NRM 401	Urban-Ecosystem Management	
NRM 420	Sustainable Scenarios in Natural Resources Management	
POLS 220	International Politics	
POLS 442	Global Policy Issues	
POLS 452	Comparative Political Economy	
SOC 403	Sociology of The Great Plains	
SOC 439	Social Change	
AGEC 347	Principles of Real Estate	
AGEC 484	Agricultural Policy	
COMM 315	Small Group Communication	
ECON 324	Money and Banking	
ECON 410	Econometrics	
ECON 461	Economic Development	
ECON 472	International Trade	
ECON 482	Environmental Economics	
HNES 427	Leisure And Society	
NRM 402	River and Stream Resource Management	
NRM 421	Environmental Outreach Methods	
POLS 360	Principles of Public Administration	
POLS 444	International Law	
POLS 453	Environmental Policy and Politics	
SOC 431	Environmental Sociology	
Total Credits		38

## Social Sciences

Code	Title	Credits
Required:		
SOC 340 & SOC 341	Social Research Methods and Social Research Methods Laboratory	4
SOC 405	Community Development	3
SOC 404	Community Assessment	3
Select a minimum of 28 credits from the approved electives list below for Social Science:		28
ANTH 204	Archaeology and Prehistory	
ANTH 206	Introduction to Cultural Anthropology: Peoples of the World	
ANTH 446	Latin America & Caribbean: Afro-Latino/as, Gender, Indigeneity	
CJ 201	Introduction to Criminal Justice	
EMGT 261	Disaster Preparedness	
EMGT 263	Disaster Response	
EMGT 414	Spatial Analysis in Emergency Management	
EMGT 461	Business Continuity and Crisis Management	
EMGT 481	Disaster Analysis	

GEOG 262	Geography of North America	
NRM 401	Urban-Ecosystem Management	
NRM 421	Environmental Outreach Methods	
POLS 225	Comparative Politics	
POLS 422	State and Local Politics	
SOC 403	Sociology of The Great Plains	
SOC 422	Development Of Social Theory	
or ANTH 480	Development of Anthropological Theory	
SOC 418	Social Psychology	
SOC 431	Environmental Sociology	
SOC 443	International Disasters	
ANTH 205	Human Origins	
ANTH 433	Apes and Human Evolution	
ANTH 462	Anthropology and the Environment	
ANTH 481	Qualitative Methods in Cultural Anthropology	
EMGT 101	Emergencies, Disasters, and Catastrophes	
EMGT 262	Disaster Mitigation	
EMGT 264	Disaster Recovery	
EMGT 463	Voluntary Agency Disaster Services	
ENGL 474	Native American Literature	
NRM 420	Sustainable Scenarios in Natural Resources Management	
POLS 215	Problems and Policies In American Government	
POLS 360	Principles of Public Administration	
POLS 453	Environmental Policy and Politics	
SOC 439	Social Change	
SOC 465	Applied Demographics	
Total Credits		38

### Degree Notes:

- **Acceptable Substitutions:** The following courses are accepted as electives in all emphasis areas: NRM courses (may not be double-counted with the NRM Core); a maximum of 3 credits of Field Experience (396/496); a maximum of 3 credits of Co-op Ed (397/497). **All other substitutions require NRM advisor approval and a substitution form to be completed and submitted to the Office of Registration and Records** (<https://www.ndsu.edu/registrar>).

## Minor Requirements

### Natural Resources Management Minor

#### Minor Requirements

Required Credits: 19

Code	Title	Credits
<b>Core Courses</b>		
NRM 150	Natural Resource Management Orientation	1
NRM 225	Natural Resources & Agrosystems	3
NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
<b>Interdisciplinary Courses</b>		
Select four of the following:		12
ASM/NRM/SOIL 264	Natural Resource Management Systems	
BIOL 364	General Ecology	
BIOL 476	Wildlife Ecology and Management	
ECON 481	Natural Resource Economics	
EMGT 261	Disaster Preparedness	
EMGT 262	Disaster Mitigation	
ENT 350	General Entomology	



GEOL 105	Physical Geology
GEOL 300	Environmental Geology
HIST 434	Environmental History
NRM 421	Environmental Outreach Methods
NRM/RNG 453	Rangeland Resources Watershed Management
RNG 460	Plant Ecology
SOIL 210	Introduction to Soil Science
SOIL 217	Introduction to Meteorology & Climatology
SOC 431	Environmental Sociology
POLS 453	Environmental Policy and Politics
RNG 452	Geographic Information Systems in Range Survey (RNG 452 changing to NRM 452 GIS in NRM)
SOIL 410	Soils and Land Use
SOC 405	Community Development

**Minor Requirements and Notes:**

- Students must earn a 2.00 minimum GPA in the courses used to satisfy the minor requirements.
- A minimum of 8 credits must be taken at NDSU.