Natural Resources Management

Department Information

- **Department Web Site:**
  www.ndsu.edu/snrs/ (http://www.ndsu.edu/snrs/)
- **Credential Offered:**
  B.S.; Minor
- **Sample Program Guide:**
  catalog.ndsu.edu/programs-study/undergraduate/natural-resources-management/#planofstudytext (http://catalog.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 30 credits must be NDSU resident credits. Resident credits include credits registered and paid for at NDSU.
6. At least 36 credits presented for graduation must be in courses numbered 300 or higher.
7. Students presenting transfer credit must meet the NDSU residence credits and the minimum upper level credit. Of the 30 credits earned in residence, a minimum of 15 semester credits must be in courses numbered 300 or above, and 15 semester credits must be in the student's curricula for their declared major.

For complete information, please refer to the Degree and Graduation Requirements (http://catalog.ndsu.edu/past-bulletin-archive/2024-25/academic-policies/undergraduate-policies/degree-and-graduation/) section of this Bulletin.

University General Education Requirements

A list of university approved general education courses and administrative policies are available here (http://catalog.ndsu.edu/past-bulletin-archive/2024-25/academic-policies/undergraduate-policies/general-education/#genedcoursestext).

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

*
Courses for category D & G are satisfied by completing D & G designated 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.

MAJOR REQUIREMENTS

Code	Title	Credits
Required Core Courses for Natural Resources Management:		
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
BIOL 151 & 151L	General Biology II and General Biology II Laboratory	4
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory	4
ECON 201	Principles of Microeconomics (May satisfy general education category B and G)	3
ENGL 321	Writing in the Technical Professions	3
or ENGL 324	Writing in the Sciences	
or ENGL 459	Researching and Writing Grants and Proposal	
ENT 210	Insects, Humans and the Environment	3
PHIL 215	Contemporary Moral Issues (May satisfy general education category A)	3
or PHIL 225	Environmental Ethics	
MATH 103	College Algebra	3
NRM 150	Natural Resource Management Orientation	1
NRM 225	Natural Resources & Agrosystems	3
NRM 421	Environmental Outreach Methods	3
NRM/RNG/SOIL 462	Natural Resource and Rangeland Planning	3
RNG 136	Introduction to Range Management	3
RNG 213	Rangeland Sampling Techniques	3
RNG 452	Managing Natural and Rangeland Resources using GIS	3
EMGT, POLS, or SOC Elective		3
SOIL 210	Introduction to Soil Science	3
STAT 330	Introductory Statistics	3
Emphasis: Students must select one of the NRM emphasis areas listed below to complete the major requirements.		45-50
Total Credits		**100-105**

NATURAL RESOURCES MANAGEMENT EMPHASIS AREAS

- Declaring an Emphasis- Students should formally declare an emphasis area with the **Office of Registration & Records** no later than the beginning of their junior year. The emphasis area is recorded on the academic transcript with the degree.

Water, Habitat, and Environmental Management Emphasis

Code	Title	Credits
BIOL 364	General Ecology	3
BIOL 475	Conservation Biology	3
or BIOL 476	Wildlife Ecology and Management	
ECON 481	Natural Resource Economics	3
NRM 264	Natural Resource Management Systems	3
NRM 402	River and Stream Resource Management	3
or NRM 454	Wetland Resources Management	
or SOIL 410	Soils and Land Use	
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	3
NRM 453	Rangeland Resources Watershed Management	3
Select a minimum of 29 credits from the approved electives below:		29
BIOL 359	Evolution	
BIOL 414	Plant Systematics	

BIOL 450	Invertebrate Zoology
BIOL 452	Ichthyology
BIOL 454	Herpetology
BIOL 456	Ornithology
BIOL 458	Mammalogy
BIOL 460	Animal Physiology
BIOL 461	Plant Ecology
BIOL 462	Physiological Ecology
BIOL 463	Animal Behavior
BIOL 472	Structure and Diversity of Plants and Fungi
BIOL 477	Wildlife and Fisheries Management Techniques
BIOL 480	Ecotoxicology
BIOL 481	Wetland Science
ENT 350	General Entomology
MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab
NRM 401	Urban-Ecosystem Management
NRM 420	Sustainable Scenarios in Natural Resources Management
PLSC 219	Introduction to Prairie & Community Forestry
PLSC 315	Genetics
PLSC 315L	Genetics Laboratory
PLSC 323	Principles of Weed Science
PLSC 355	Woody Landscape Plants
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 456	Ecological Restoration
RNG 458	Grazing Ecology
RNG 450	Range Plants
SOIL 217	Introduction to Meteorology & Climatology
SOIL 351	Soil Ecology
SOIL 410	Soils and Land Use
SOIL 433	Soil Ecohydrology and Physics
SOIL 444	Soil Genesis and Survey
Total Credits	**50**

Environmental Sustainability, Outreach, and Policy Emphasis

Code	Title	Credits
BIOL 364	General Ecology	3
ECON 481	Natural Resource Economics	3
NRM 401	Urban-Ecosystem Management	3
NRM 420	Sustainable Scenarios in Natural Resources Management	3
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	3
POLS, SOC or EMGT	200 level or higher	6
Select a minimum of 29 credits from the approved electives listed below:		29
BIOL 461	Plant Ecology	
COMM 112	Understanding Media and Social Change	
COMM 133	Introduction to Agricultural Communication	
COMM 316	Conflict Communication	
ECON 482	Environmental Economics	
EMGT 101		
EMGT 281		
EMGT 361		
EMGT 362		

EMGT 363	
EMGT 410	
ENT 350	General Entomology
GEOL 201	Climate Change and Energy
GEOL 219	Oceanography
GEOL 300	Environmental Geology
GEOL 412	Geomorphology
GEOL 414	Hydrogeology
GEOL 460	Biogeochemistry
GEOG 470	Remote Sensing
NRM 322	Environmental Law and Policy
NRM 453	Rangeland Resources Watershed Management
PLSC 110	World Food Crops
PLSC 219	Introduction to Prairie & Community Forestry
POLS 115	American Government
POLS 215	Problems and Policies In American Government
POLS 442	Global Policy Issues
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 456	Ecological Restoration
RNG 458	Grazing Ecology
SOC 110	Introduction to Sociology
SOC 115	Social Problems
SOC 340	Social Research Methods
SOC 404	Community Assessment
SOC 405	Community Development
SOC 235	Cultural Diversity
SOC 431	Environmental Sociology
SOC 439	Social Change
SOIL 217	Introduction to Meteorology & Climatology
AGEC 347	Principles of Real Estate
AGEC 242	Introduction to Agricultural Management
AGEC 375	Applied Agricultural Law
AGEC 452	Food Laws & Regulations
AGEC 474	Cooperatives
MATH 144	Mathematics for Business
ECON 202	Principles of Macroeconomics
ECON 341	Intermediate Microeconomics
ECON 470	Public Economics
GEOL 465	Remote Sensing of the Environment
Total Credits	**50**

Rangeland Ecology Emphasis

Code	Title	Credits
ANSC 114	Introduction to Animal Sciences	3
BIOL 364	General Ecology	3
BIOL 452	Ichthyology	3
or BIOL 454	Herpetology	
or BIOL 456	Ornithology	
or BIOL 458	Mammalogy	
BIOL 461	Plant Ecology	3
BIOL 475	Conservation Biology	3
or BIOL 476	Wildlife Ecology and Management	

NRM 431	National Environmental Policy Act and Environmental Impact Assessment	3
NRM 453	Rangeland Resources Watershed Management	3
or NRM 454	Wetland Resources Management	
PLSC 380	Principles of Plant Physiology	3
RNG 450	Range Plants	3
RNG 451	Ecology of Fire-Dependent Ecosystems	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 351	Soil Ecology	3
or SOIL 410	Soils and Land Use	
or SOIL 444	Soil Genesis and Survey	
Select a minimum of 9 additional credits of 300 or 400 level courses from ENT, SOIL, RNG, or NRM:		9
Total Credits		**51**

Rangeland Livestock Production Emphasis

Code	Title	Credits
ANSC 114	Introduction to Animal Sciences	3
ANSC 220	Livestock Production	3
ANSC 223	Introduction to Animal Nutrition	2
ANSC 357	Animal Genetics	3
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	3
PLSC 315	Genetics	3
PLSC 320		3
PLSC 323	Principles of Weed Science	3
RNG 450	Range Plants	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 351	Soil Ecology	3
or SOIL 410	Soils and Land Use	
or SOIL 444	Soil Genesis and Survey	
Select a minimum of 9 additional credits of 300 or 400 level courses from ENT, SOIL, RNG, or NRM		9
Total Credits		**47**

Soil Science Emphasis

Code	Title	Credits
CHEM 240	Survey of Organic Chemistry	3
or BIOC 260	Elements of Biochemistry	
or MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab	
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	4
MATH 105	Trigonometry	3
PHYS 211 & 211L	College Physics I and College Physics I Laboratory	4
PLSC 110	World Food Crops	3
PLSC 225	Principles of Crop Production (or 300/400 level Range Sciences Course)	3
PLSC 380	Principles of Plant Physiology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 322	Soil Fertility and Fertilizers	3
SOIL 351	Soil Ecology	3
SOIL 410	Soils and Land Use	3

SOIL 433	Soil Ecohydrology and Physics	3
SOIL 444	Soil Genesis and Survey	3
SOIL/NRM 454	Wetland Resources Management	3
Select a minimum of 6 additional credits of 300 or 400 level classes from PLSC, RNG, NRM, ENT, PPTH, ABEN, or ASM		6
Total Credits		**50**

Entomology Emphasis

Code	Title	Credits
BIOL 364	General Ecology	3
RNG 450	Range Plants	3
or BIOL 461	Plant Ecology	
or PLSC 380	Principles of Plant Physiology	
BIOL 450	Invertebrate Zoology	3
BIOL 475	Conservation Biology	3
ENT 350	General Entomology	3
ENT 431	Principles of Insect Pest Management	3
ENT 470	Insect Ecology	3
PLSC 110	World Food Crops	3
Select a minimum of 6 credits of approved electives from below:		6
PLSC 210	Horticulture Science	
PLSC 219	Introduction to Prairie & Community Forestry	
PLSC 315	Genetics	
PLSC 323	Principles of Weed Science	
PLSC 350		
PLSC 355	Woody Landscape Plants	
PLSC 365	Herbaceous Landscape Plants	
PLSC 370	Landscape Management	
PLSC 375	Turfgrass Management	
PLSC 412	Nursery Production and Management	
PLSC 415	Vegetable Crop Production	
PLSC 416	Fruit Crop Production	
PLSC 422	Greenhouse Production and Management	
PLSC 425	Potato Science	
PLSC 431	Intermediate Genetics	
PLSC 433	Weed Biology and Ecology	
PLSC 455	Cropping Systems:An Integrated Approach	
SOIL 351	Soil Ecology	
Select a minimum of 15 credits from the approved electives listed below:		15
BIOL 359	Evolution	
BIOL 463	Animal Behavior	
BIOL 476	Wildlife Ecology and Management	
MICR 202	Introductory Microbiology	
MICR 452	Microbial Ecology	
MICR 463	Clinical Parasitology	
NRM 401	Urban-Ecosystem Management	
NRM 402	River and Stream Resource Management	
NRM 420	Sustainable Scenarios in Natural Resources Management	
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	
NRM 453	Rangeland Resources Watershed Management	
NRM 454	Wetland Resources Management	
PLSC 315	Genetics	
PPTH 324	Introductory Plant Pathology	

PPTH 454	Diseases Of Field and Forage Crops
PPTH 455	Plant Disease Management
PPTH 457	Landscape Plant Pathology
PPTH 460	Fungal Biology
RNG 450	Range Plants
SOIL 410	Soils and Land Use
Total Credits	**45**

Accelerated Program in Natural resource Management

Code	Title	Credits
NRM 621	Environmental Outreach Methods	3
NRM 652	Managing Natural and Rangeland Resources using GIS	3
NRM 662	Natural Resource and Rangeland Planning	3
600 Level Electives	NRM/RNG/SOIL/ENT [1]	6
Total Credits		15

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Accelerated Electives must be advisor approved and the specific courses are to be identified on the Accelerated Declaration form.

Degree Requirements and Notes:

- **Acceptable Substitutions**: For the Water, Habitat, and Environmental Management; Environmental Sustainability, Outreach, and Policy; and Entomology emphasis areas there is a list of recommended emphasis electives: All other substitutions require advisor approval and a substitution form to be completed and submitted to the Office of Registration and Records (https://www.ndsu.edu/registrar/). Emphasis area courses may not be double-counted with the NRM core classes; a maximum of 3 credits of Field Experience (396/496) or Co-op Ed (397/497) may be counted as emphasis electives.
- **Accelerated Program in NRM Notes:**
  - If a student is interested in this option, they should speak with their Undergraduate Advisor. Students intending to pursue the Accelerated option will need a 3.0 overall GPA, as well as 60 completed credits (in-progress courses do not count). Students will be required to complete a ***Combined/Accelerated Program Declaration Form*** and apply to the Graduate School. Taking the GRE is not required.

Minor Requirements

Minor: Natural Resources Management

Required Credits: 18

Code	Title	Credits
Core Course		
NRM 225	Natural Resources & Agrosystems	3
Interdisciplinary Courses: Select 5 of the following:		15
BIOL 364	General Ecology	
BIOL 476	Wildlife Ecology and Management	
ECON 481	Natural Resource Economics	
EMGT 261		
EMGT 262		
ENT 350	General Entomology	
GEOL 105	Physical Geology	
GEOL 300	Environmental Geology	
HIST 434	Environmental History	
HIST 435	World Environmental History	
NRM 264	Natural Resource Management Systems	
NRM 401	Urban-Ecosystem Management	
NRM 402	River and Stream Resource Management	
NRM 420	Sustainable Scenarios in Natural Resources Management	
NRM 421	Environmental Outreach Methods	
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	

NRM/RNG 453	Rangeland Resources Watershed Management
NRM 454	Wetland Resources Management
NRM 456	Ecological Restoration
RNG 136	Introduction to Range Management
RNG 450	Range Plants
RNG 451	Ecology of Fire-Dependent Ecosystems
RNG 458	Grazing Ecology
SOC 405	Community Development
SOC 431	Environmental Sociology
SOIL 210	Introduction to Soil Science
SOIL 351	Soil Ecology
SOIL 410	Soils and Land Use
SOIL 433	Soil Ecohydrology and Physics
Total Credits	**18**

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.