

Natural Resources Management Major

Major Requirements

Degree Type: B.S.
Minimum Credits Required: 120

University Degree Requirements

For complete details on these and other university degree requirements, refer to the Degree and Graduation Requirements (<https://catalog.ndsu.edu/academic-policies/undergraduate-policies/degree-and-graduation/>) section in the University Catalog.

1. Minimum of 120 semester credits (some programs may exceed this minimum).
2. Complete the University General Education requirements.
3. Minimum institutional GPA of 2.00 based on work taken at NDSU.
4. Minimum of 30 credits in resident at NDSU.
5. Minimum of 36 upper level credits (courses numbered 300 or higher).
6. Students with transfer credit must meet the NDSU 30 credits in residence (#4). Of these 30 credits in residence, a minimum of 15 credits must be in courses numbered 300 or above, and 15 credits must be in the student's declared major curricula.

University General Education Requirements

A list of university approved general education courses along with the administrative policies governing the requirement and the categories is available here (<https://catalog.ndsu.edu/academic-policies/undergraduate-policies/general-education/>).

Code	Title	Credits
Category C: Communication		12
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		
Category L: Digital Literacy		
Total Credits		39

MAJOR REQUIREMENTS

Code	Title	Credits
Core Requirements		
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	3
ENGL 321 or ENGL 324 or ENGL 459	Writing in the Technical Professions Writing in the Sciences Researching and Writing Grants and Proposal	3
ENT 210	Insects, Humans and the Environment	3
PHIL 215 or PHIL 225	Contemporary Moral Issues Environmental Ethics	3
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 or BIOL 476	Conservation Biology Wildlife Ecology and Management	3
ECON 481	Natural Resource Economics	3
NRM 264	Natural Resource Management Systems	3
NRM 402 or NRM 454 or SOIL 410	River and Stream Resource Management Wetland Resources Management Soils and Land Use	3
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 Taxonomy	
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	Fire Ecology and Rangeland Management	
RNG 456	Ecological Restoration	
RNG 458	Grazing Ecology and Rangeland Management	
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	
DREM 101	Emergencies, Disasters, and Catastrophes	
DREM 381	Disasters Through A Systems Lens	
DREM 361	Disaster Preparedness	
DREM 362	Disaster Mitigation	
DREM 363	Disaster Response	
DREM 410	Comprehensive Emergency Management Planning	
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	Fire Ecology and Rangeland Management	
RNG 456	Ecological Restoration	
RNG 458	Grazing Ecology and Rangeland Management	
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 and 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	Fire Ecology and Rangeland Management	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology and Rangeland Management	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	3
ANSC 357	Animal Genetics	3
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	3
PLSC 315	Genetics	3
PLSC 320	Integrated Forage and Cover Crops Production Management and Ecosystem Services	3

PLSC 323	Principles of Weed Science	3
RNG 450	Range Plants	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology and Rangeland Management	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		48

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	Sugarbeet Production	

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 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

¹ 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.