Environmental and Conservation Sciences Doctorate

Department Information

- **Department Web Site:**
  ndsu.edu/ecs/ (http://ndsu.edu/ecs/)
- **Application Deadline:**
  Fall semester international applications - May 1; Spring semester international applications- August 1; Domestic applications must be received at least one month prior to the start of the semester
- **Credential Offered:**
  Ph.D.
- **English Proficiency Requirements:**
  TOEFL ibt 79; IELTS 6.5; Duolingo 105
- **Program Overview:**
  ndsu.edu/programs/graduate/environmental-and-conservation-sciences (http://ndsu.edu/programs/graduate/environmental-and-conservation-sciences/)

Apply Now (https://ndsugrad.my.site.com/Application/TX_SiteLogin/?startURL=/Application/TargetX_Portal__PB)

Each Ph.D. student will complete at least 27 credits of didactic courses plus the ECS graduate seminar for 1 credit. The didactic courses will include: 3 core courses (9 credits), UNIV 720 Scientific Integrity, a minimum of 14-15 credits from a chosen track, and 2-3 credits of electives from another track or other NDSU courses numbered 601-689, 691; 700-789, 791 or 800-889, 891. The 15 track credits must be from at least 2 course categories. Two of the three courses must come from outside of the student's chosen track. Of the 27 didactic course credits, a total of 15 must be at the 700-800 level. A total of 90 credits are required.

Code	Title	Credits
Environmental Social Sciences Track		
ECON 681	Natural Resource Economics	3
ECS 770	Environmental Law and Policy	3
HIST 634	Environmental History	3
or HIST 710	Research Seminar in North American History	
or HIST 780	Readings in World History	
NRM 631	National Environmental Policy Act & Environental Impact Assessment	3
NRM 702	Natural Resources Management Planning	3
SOC 631	Environmental Sociology	3
Environmental Sciences Track		
CE 770	Hazardous Waste Site Remediation	3
GEOL 614	Hydrogeology	3
MICR 652	Microbial Ecology	3
PH 720	Environmental Health	3
Conservation Biology Track		
BOT 862		3
BOT 864		3
ZOO 675		3
ZOO 850		

CONSERVATIVE BIOLOGY TRACK - TOTAL 18 CREDITS

Code	Title	Credits
Biodiversity		
Select 3-9 credits of the following:		
BIOL 681	Wetland Science	

BOT 717	
ENT 750	Systematic Entomology
RNG 716	Agrostology
ZOO 650	
ZOO 652	
ZOO 654	
ZOO 658	
Ecology and Evolution	
Select 3-9 credits of the following:	
BIOL 850	Advanced Ecology
BIOL 859	Evolution
BOT 660	
BOT 862	
BOT 864	
ENT 765	
ENT 770	Writing a Scientific Literature Review
GEOL 640	
MICR 652	Microbial Ecology
PLSC 631	Intermediate Genetics
PLSC 751	Advanced Plant Genetics
PLSC 781	
RNG 765	Analysis Of Ecosystems
SOIL 610	Soils and Land Use
SOIL 647	Microclimatology
ZOO 662	
ZOO 670	
ZOO 850	
ZOO 860	
ZOO 870	
Human Dimensions and Management	
Select 3-9 credits of the following:	
ANTH 662	Anthropology and the Environment
COMM 783	Advanced Organizational Communication I
CE 678	Water Quality Management
ECON 682	Environmental Economics
POLS 642	Global Policy Issues
POLS 650	Politics of the Developing Countries
RNG 656	Ecological Restoration
ZOO 675	
ZOO 676	
ZOO 677	
ZOO 850	
Research Tools	
Select 3-9 credits of the following:	
CE 677	Applied Hydrology
GEOG 655	Introduction to Geographic Information Systems
GEOG 656	Advanced Geographic Information Systems
GEOL 660	Biogeochemistry
GEOL 760	Advanced Biogeochemistry
PLSC 724	Field Design I
PSYC 640	Experimental Methods
RNG 650	Range Plants

SOC 701	Quantitative Methods
SOIL 784	
STAT 661	Applied Regression Models
STAT 662	Introduction to Experimental Design
STAT 663	Nonparametric Statistics
STAT 665	Meta-Analysis Methods
STAT 670	Statistical SAS Programming
STAT 730	Biostatistics
STAT 761	Advanced Regression
STAT 770	Survival Analysis

ENVIRONMENTAL SCIENCES TRACK-TOTAL 17 CREDITS

Code	Title	Credits
Water Sciences		
Select 3-9 credits of the following:		
ABEN 664	Resource Conservation and Irrigation Engineering	
ABEN 765	Small Watershed Hydrology and Modeling	
CE 610	Water & Wastewater Engineering	
CE 677	Applied Hydrology	
CE 676	Watershed Modeling	
CE 678	Water Quality Management	
CE 679	Advanced Water and Wastewater Treatment	
CE 776	Ground Water and Seepage	
CE 779	Watershed Water Quality Modeling	
CE 796	Special Topics	
GEOL 640		
ZOO 670		
Soil and Solid Waste		
Select 3-9 credits of the following:		
ABEN 696	Special Topics	
CE 672	Solid and Hazardous Waste Management	
CE 770	Hazardous Waste Site Remediation	
SOIL 610	Soils and Land Use	
SOIL 633	Soil Ecohydrology and Physics	
SOIL 733	Advanced Soil Nutrient Cycling	
Environmental Management		
Select 3-9 credits of the following:		
CE 672	Solid and Hazardous Waste Management	
CE 678	Water Quality Management	
COMM 783	Advanced Organizational Communication I	
RNG 656	Ecological Restoration	
ZOO 675		
ZOO 676		
ZOO 677		
Research Tools		
Select 3-9 credits of the following:		
ABEN 682	Instrumentation & Measurements	
ABEN 696	Special Topics	
CE 677	Applied Hydrology	
GEOG 655	Introduction to Geographic Information Systems	
GEOG 656	Advanced Geographic Information Systems	
GEOL 660	Biogeochemistry	

GEOL 760	Advanced Biogeochemistry
IME 660	Evaluation of Engineering Data
RNG 650	Range Plants
STAT 662	Introduction to Experimental Design
STAT 725	Applied Statistics
STAT 761	Advanced Regression

ENVIRONMENTAL AND SOCIAL SCIENCES TRACK-TOTAL 17 CREDITS

Code	Title	Credits
Social Science Theory		
Select 3-9 credits of the following:		
AGEC 741	Advanced Microeconomics	
ANTH 680	Development of Anthropological Theory	
COMM 711	Communication Theory	
ECON 640	Game Theory and Strategy	
POLS 720		
SOC 622	Development Of Social Theory	
SOC 723	Social Theory	
Cultural and Behavioral Aspects		
Select 3-9 credits of the following:		
AGEC 711	Applied Risk Analysis I	
ANTH 662	Anthropology and the Environment	
ANTH 664	Disaster and Culture	
ECON 656		
ECON 681	Natural Resource Economics	
ECON 682	Environmental Economics	
HIST 634	Environmental History	
POLS 642	Global Policy Issues	
POLS 653	Environmental Policy and Politics	
SOC 631	Environmental Sociology	
SOC 639	Social Change	
SOC 643		
Management Techniques		
Select 3-9 credits of the following:		
COMM 783	Advanced Organizational Communication I	
GEOL 660	Biogeochemistry	
NRM 631	National Environmental Policy Act & Environental Impact Assessment	
NRM 632		
NRM 653	Rangeland Resources Watershed Management	
NRM 701	Terrestrial Resources Management	
NRM 702	Natural Resources Management Planning	
RNG 654	Wetland Resources Management	
RNG 656	Ecological Restoration	
SOC 604	Community Assessment	
TL 755	City Logistics	
ZOO 675		
ZOO 676		
ZOO 850		
Research Tools		
Select 3-9 credits of the following:		
AGEC 701	Research Methods	
AGEC 739	Analytical Methods for Applied Economics	

BIOL 850	Advanced Ecology
COMM 700	Research Methods in Communication
COMM 701	Advanced Research Methods in Communication I
COMM 704	Qualitative Research Methods in Communication
COMM 707	Quantitative Research Methods in Communication
ECON 610	Econometrics
ECON 710	Advanced Econometrics
EMGT 614	
ENGL 656	Literacy, Culture and Identity
ENGL 758	Topics in Rhetoric, Writing, and Culture
GEOG 655	Introduction to Geographic Information Systems
GEOG 656	Advanced Geographic Information Systems
PSYC 640	Experimental Methods
RNG 652	Managing Natural and Rangeland Resources using GIS
RNG 765	Analysis Of Ecosystems
SOC 700	Qualitative Methods
SOC 701	Quantitative Methods
STAT 660	Applied Survey Sampling
STAT 661	Applied Regression Models
STAT 662	Introduction to Experimental Design
STAT 663	Nonparametric Statistics
STAT 665	Meta-Analysis Methods
STAT 670	Statistical SAS Programming
STAT 725	Applied Statistics
STAT 726	Applied Regression and Analysis of Variance
STAT 730	Biostatistics
STAT 761	Advanced Regression
STAT 770	Survival Analysis

Admission and Application Requirements

- Graduate School admission and application requirements are found on the Admission Information (http://catalog.ndsu.edu/graduate/admission-information/) page.
- In addition, this program requires applicants to have an ECS affiliated faculty member that has agreed to to admit the applicant to their lab and made arrangements for stipend and research funding.
  - Using the department website, applicants should contact ECS faculty members who share their research interests