ENVIRONMENTAL RESTORATION SCIENCE

Description

Environmental restoration initiates or accelerates the recovery of an ecosystem that has been degraded, damaged or contaminated from human activity or natural agents. Environmental restoration begins with a thorough understanding of the soil-water environment. Students interested in environmental restoration science must declare an option and can choose between either the Soil Science or Lake and Stream Restoration.

College Requirements

College Admission

Requirements for admission into the College of Agricultural Sciences and Natural Resources (CASNR) are consistent with general University admission requirements (one unit equals one high school year): 4 units of English, 4 units of mathematics, 3 units of natural sciences, 3 units of social studies, and 2 units of foreign language. Students must also meet performance requirements (ACT composite of 20 or higher OR combined SAT score of 950 or higher OR rank in the top one-half of graduating class; transfer students must have a 2.0 (on a 4.0 scale) cumulative grade point average and 2.0 on the most recent term of attendance. For students entering the PGA Golf Management degree program, a certified golf handicap of 12 or better (e.g., USGA handicap card) or written ability (MS Word file) equivalent to a 12 or better handicap by a PGA professional or high school golf coach is required. For more information, please visit: http://pgm.unl.edu/requirements.

Admission Deficiencies/Removal of Deficiencies

Students who are admitted to CASNR with core course deficiencies must remove these deficiencies within the first 30 credit hours at the University of Nebraska–Lincoln, or within the first calendar year at Nebraska, whichever takes longer, excluding foreign languages. Students have up to 60 credit hours to remove foreign language deficiencies. College-level coursework taken to remove deficiencies may be used to meet degree requirements in CASNR.

Deficiencies in the required entrance subjects can be removed by completion of specified courses in the University or by correspondence.

The Office of Admissions, Alexander Building (south entrance), City Campus, provides information to new students on how deficiencies can be removed.

College Degree Requirements

Curriculum Requirements

The curriculum requirements of the College consist of three areas: ACE (Achievement-Centered Education); College of Agricultural Sciences and Natural Resources Core; and Degree Program requirements and electives. All three areas of the College Curriculum Requirements are incorporated within the description of the Major/Degree Program sections of the catalog. The individual major/degree program listings of classes insures that a student will meet the minimum curriculum requirements of the College.

Foreign Languages/Language Requirement

Two units of a foreign language are required. This requirement is usually met with two years of high school language.

Minimum Hours Required for Graduation

The College grants the bachelors degree in programs associated with agricultural sciences, natural resources and related programs. Students working toward a degree must earn at least 120 semester hours of credit. A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.

Grade Rules

Removal of C-, D and F Grades

Only the most recent letter grade received in a given course will be used in computing a student's cumulative grade point average if the student has completed the course more than once and previously received a grade or grades below C in that course.

The previous grade (or grades) will not be used in the computation of the cumulative grade point average, but it will remain a part of the academic record and will appear on any transcript.

A student can remove from his/her cumulative average a course grade of C-, D+, D, D- or F if the student repeats the same course at the University of Nebraska and receives a grade other than P (pass), I (incomplete), N (no pass), W (withdrew), or NR (no report). If a course is no longer being offered, it is not eligible for the revised grade point average computation process.

For complete procedures and regulations, see the Office of the University Registrar website at http://www.unl.edu/regrec/course-repeats.

Pass/No Pass

Students in CASNR may take any course offered on a Pass/No Pass basis within the 24-hour limitation established by the Faculty Senate. However, a department may specify that the Pass/No Pass status of its courses be limited to non-majors or may choose to offer some courses for letter grades only.

GPA Requirements

A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.

Transfer Credit Rules

To be considered for admission, a transfer student, Nebraska resident or nonresident, must have an accumulated average of C (2.0 on a 4.0 scale) and a minimum C average in the last semester of attendance at another college. Transfer students who have completed less than 12 credit hours of college study must submit either ACT or SAT scores.

Ordinarily, credits earned at an accredited college are accepted by the University. The College, however, will evaluate all hours submitted on an application for transfer and reserves the right to accept or reject any of them. Sixty (60) is the maximum number of hours the University will accept on transfer from a two-year college. Ninety (90) is the maximum number of hours the University will accept from a four-year college. Transfer credit in the degree program must be approved by

the degree program advisor on a Request for Substitution Form to meet specific course requirements, group requirements, or course level requirements in the major. At least 9 hours in the major field, including the capstone course, must be completed at the University of Nebraska–Lincoln regardless of the number of hours transferred.

The College will accept no more than 10 semester hours of C-, D+, D and D- grades from other schools. The C-, D+, D and D- grades can only be applied to free electives. This policy does not apply to the transfer of grades from UNO or UNK to the University of Nebraska–Lincoln.

Joint Academic Transfer Programs

The College of Agricultural Sciences and Natural Resources has agreements with many institutions to support joint academic programs. The transfer programs include dual degree programs and cooperative degree programs. Dual degree programs offer students the opportunity to receive a degree from a participating institution and also to complete requirements for a bachelor of science degree in CASNR. Cooperative programs result in a single degree from either the University of Nebraska–Lincoln or the cooperating institution.

Dual Degree Programs

A to B Programs

The A to B Program, a joint academic program offered by the CASNR and participating community colleges, allows students to complete the first two years of a degree program at the participating community college and continue their education and study in a degree program leading toward a bachelor of science degree.

The A to B Program provides a basic knowledge plus specialized coursework. Students transfer into CASNR with junior standing.

Depending on the community college, students enrolled in the A to B Program may complete the requirements for an associate of science at the community college, transfer to the University of Nebraska–Lincoln, and work toward a bachelor of science degree.

Participating community colleges include:

- Central Community College
- Metropolitan Community College
- Mid-Plains Community College
- Nebraska College of Technical Agriculture
- Northeast Community College
- Southeast Community College
- Western Nebraska Community College

3+2 Programs

Two specialized degree programs in **animal science** and **veterinary science** are offered jointly with an accredited college or school of veterinary medicine. These two programs permit CASNR animal science or veterinary science students to receive a bachelor of science degree from the University of Nebraska–Lincoln with a degree in animal science or veterinary science after successfully completing two years of the professional curriculum in veterinary medicine at an accredited veterinary school. Students who successfully complete the 3+2 Program, must complete the Application for Degree form and provide transcripts to the Credentials Clerk, Office of the University Registrar, 107 Canfield Administration Building. Students should discuss these degree programs with their academic advisor.

Cooperative Degree Programs

Academic credit from the University and a cooperating institution is applied towards a four-year degree from either the University of Nebraska–Lincoln (University degree-granting program) or the cooperating institution (non University degree-granting program). All have approved programs of study.

UNL Degree-Granting Programs

A University of Nebraska–Lincoln degree-granting program is designed to provide students the opportunity to complete a two-year program of study at one of the four-year institutions listed below, transfer to CASNR and complete the requirements for a bachelor of science degree.

Chadron State College. Chadron State College offers a 2+2 program leading to a grassland ecology and management degree program and a transfer program leading to a bachelor of science in agricultural education in the teaching option.

Wayne State College. Wayne State College offers a 3+1 program leading to a bachelor of science in plant biology in the ecology and management option.

University of Nebraska at Kearney. Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

University of Nebraska at Omaha. The University of Nebraska at Omaha (UNO) cooperates with CASNR in providing four-semester pre-agricultural sciences, pre-natural resources, pre-food science and technology, pre-horticulture and pre-turfgrass and landscape management transfer programs.

A student enrolled in these programs may transfer all satisfactorily completed academic credits identified in the suggested program of study, and enter CASNR to study toward a degree program leading to a bachelor of science degree. The total program would require a minimum of four years or eight semesters (16 credit hours/semester or 120 credit hours).

Nebraska CASNR faculty teach horticulture and food science and technology courses at UNO to assist an urban population in better understanding the food processing, horticulture, and landscape horticulture industries.

For more information, contact the CASNR Dean's Office, 800-472-8800, ext. 2541.

Non University of Nebraska–Lincoln Degree-Granting Programs

CASNR cooperates with other institutions to provide coursework that is applied towards a degree at the cooperating institution. Pre-professional programs offered by CASNR allow students to complete the first two or three years of a degree program at the University prior to transferring and completing a degree at the cooperating institution.

Chadron State College–Range Science. The 3+1 Program in range science allows Chadron State College students to pursue a range science degree through Chadron State College. Students complete three years of coursework at Chadron State College and one year of specialized range science coursework (32 credit hours) at CASNR.

Dordt College (Iowa)–Agricultural Education: Teaching Option. This program allows students to pursue an Agricultural Education Teaching Option degree leading toward a bachelor of science in agricultural education. Students at Dordt College will complete 90 credit hours in the Agricultural Education: Teaching Option Transfer Program.

Residency

Students must complete at least 30 of the total hours for their degree using University of Nebraska–Lincoln credits. At least 18 of the 30 credit hours must be in courses offered through CASNR[1] (>299) including the appropriate ACE 10 degree requirement or an approved ACE 10 substitution offered through another Nebraska college and excluding independent study regardless of the number of hours transferred. Credit earned during education abroad may be used toward the residency requirement if students register through UNL and participate in prior-approved education abroad programs. University of Nebraska–Lincoln open enrollment and summer independent study courses count toward residence.

1 *Includes courses taught by CASNR faculty through interdisciplinary prefixes (e.g., LIFE, MBIO, ENVR, SCIL, EAEP, HRTM, ENSC) and CASNR crosslisted courses taught by non-CASNR faculty.*

Online and Distance Education

There are many opportunities to earn college credit online through the University of Nebraska–Lincoln. Some of these credits may be applicable not only as elective credits, but also toward the fulfillment of the College's education requirements. Credits earned online may count toward residency. However, certain offerings may not be counted toward scholarship requirements or academic recognition criteria.

For further information, contact:

Office of Online and Distance Education
University of Nebraska–Lincoln
305 Brace Labs
Lincoln, NE 68588-0109
402-472-4681
http://online.unl.edu/

Independent Study Rules

Students wishing to take part in independent studies must obtain permission; complete and sign a contract form; and furnish copies of the contract to the instructor, advisor, departmental office, and the Dean's Office. The contract should be completed before registration. Forms are available in 103 Agricultural Hall or online at the CASNR website.

Independent study projects include research, literature review or extension of coursework under supervision and evaluation of a departmental faculty member.

Students may only count 12 hours of independent study toward their degrees and no more than 6 hours can be counted during their last 36 hours earned, excluding senior thesis, internships, and courses taught under an independent study number.

Other College Degree Requirements

Capstone Course Requirement

A capstone course is required for each CASNR degree program. A capstone course is defined as a course in which students are required to integrate diverse bodies of knowledge to solve a problem or formulate a policy of societal importance.

ACE Requirements

All students must fulfill the Achievement Centered Education (ACE) requirements. Information about the ACE program may be viewed at ace.unl.edu (https://ace.unl.edu).

The minimum requirements of CASNR reflect the common core of courses that apply to students pursuing degrees in the college. Students should work with an advisor to satisfy ACE outcomes 1, 2, 3, 4, 6 and 10 with the college requirements.

Catalog Rule

Students must fulfill the requirements stated in the catalog for the academic year in which they are first admitted to the University of Nebraska–Lincoln or when they were first admitted to a Joint Academic Transfer Program. In consultation with advisors, a student may choose to follow a subsequent catalog for any academic year in which they are admitted to and enrolled as a degree-seeking student at Nebraska in the College of Agricultural Sciences and Natural Resources. Students must complete all degree requirements from a single catalog year. The catalog which a student follows for degree requirements may not be more than 10 years old at the time of graduation.

Learning Outcomes

Graduates of environmental restoration science will be able to:

1. Describe in detail, the chemical and biological process that act on a chemical once it is released into the soil-water environment.
2. Identify the contributing factors that can lead to ground or surface water contamination and offer corrective actions to mitigate the situation.
3. Use science-based principles to measure, describe, manage and improve soil-water environments.
4. Competitively pursue employment as an environmental scientist or soil scientist with government agencies or private-sector firms.

Major Requirements

College Core Requirements

Natural Resources Core		
SCIL 101	Science and Decision-Making for a Complex World	3
NRES 220	Principles of Ecology	3
NRES 312 / GEOG 312	Introduction to Geospatial Information Sciences	3
ENSC 220	Introduction to Energy Systems	3
SOIL 153 / AGRO 153 / HORT 153	Soil Resources	4
Select one capstone course (ACE 10) from the following:		3-4
ENVR 499A & ENVR 499B	Environmental Studies Senior Thesis I and Environmental Studies Senior Thesis II	
NRES 451	Soils, Water, and Environmental Chemistry	
WATS 475 / AGRO 475 / CIVE 475 / CRPL 475 / GEOL 475 / MSYM 475 / NRES 475 / POLS 475 / SOCI 475 / SOIL 475	Water Quality Strategy	
Credit Hours Subtotal:		19-20
Natural Sciences (ACE 4)		

Select one CASNR approved Life Sciences sequence from the following:		4
BIOS 101 & BIOS 101L	General Biology and General Biology Laboratory	
LIFE 120 & LIFE 120L	Fundamentals of Biology I and Fundamentals of Biology I laboratory	
CHEM 109	General Chemistry I (ACE 4)	4
CHEM 110	General Chemistry II	4
Select one of the following:		4-5
PHYS 141	Elementary General Physics I	
PHYS 151	Elements of Physics	
PHYS 211	General Physics I	
MSYM 109	Physical Principles in Agriculture and Life Sciences (ACE 4)	
Credit Hours Subtotal:		16-17
Mathematics and Statistics		
STAT 218	Introduction to Statistics	3
Select one of the following:		2-5
MATH 102	Trigonometry	
MATH 103	College Algebra and Trigonometry [1]	
MATH 104	Applied Calculus	
MATH 106	Calculus I	
Credit Hours Subtotal:		5-8
Communications		
Select one Written Communication (ACE 1) course from the following:		3
ENGL 150	Writing and Inquiry	
ENGL 151	Writing and Argument	
ENGL 254	Writing and Communities	
JGEN 200	Technical Communication I	
JGEN 300	Technical Communication II	
Select one Oral Communication (ACE 2) course from the following:		3
COMM 101	Communication in the 21st Century	
COMM 209	Public Speaking	
COMM 210	Communicating in Small Groups	
COMM 215	Visual Communication	
COMM 286	Business and Professional Communication	
MRKT 257	Sales Communication	
NRES 301	Environmental Communication Skills	
TMFD 121	Visual Communication and Presentation	
Select one Communication and Interpersonal Skills elective from the following:		3
ALEC 102	Interpersonal Skills for Leadership	
COMM 101	Communication in the 21st Century	
COMM 209	Public Speaking	
COMM 210	Communicating in Small Groups	
COMM 212	Debate	
COMM 215	Visual Communication	
COMM 286	Business and Professional Communication	
ENGL 150	Writing and Inquiry	
ENGL 151	Writing and Argument	
ENGL 252	Introduction to Fiction Writing	
ENGL 253	Introduction to Poetry Writing	
ENGL 254	Writing and Communities	
JGEN 120	Basic Business Communication	
JGEN 200	Technical Communication I	
JGEN 300	Technical Communication II	
MRKT 257	Sales Communication	
NRES 301	Environmental Communication Skills	
TMFD 121	Visual Communication and Presentation	
Credit Hours Subtotal:		9
Economics, Humanities and Social Sciences		
Select one of the following:		3
ECON 200	Economic Essentials and Issues	
ECON 211	Principles of Macroeconomics	
ECON 212	Principles of Microeconomics	
AECN 141	Introduction to the Economics of Agriculture (ACE 6)	
Select one course each from ACE outcomes 5, 7, 8, and 9		12
Credit Hours Subtotal:		15
Total Credit Hours		64-69

Specific Major Requirements

Requirements		
NREE 357 / AECN 357	Natural Resource and Environmental Law	3
NRES 279 / AGRO 279 / SOIL 279	Soil Evaluation	1
NRES 300 / BIOS 300 / ENTO 300	Toxins in the Environment	3
NRES 319	Fundamentals of Environmental Sampling	2
NRES 320	Fundamentals of Environmental Sampling Laboratory	1
NRES 453	Hydrology	3
NRES 459 / BIOS 459 / WATS 459	Limnology	4
WATS 281 / GEOG 281 / NRES 281	Introduction to Water Science	3
WATS 354 / MSYM 354 / SOIL 354	Soil Conservation and Watershed Management	3
WATS 361 / AGRO 361 / GEOL 361 / NRES 361 / SOIL 361	Soils, Environment and Water Quality	3
Select one of the following:		3-4
NRES 108	Earth's Natural Resource Systems Laboratory	
GEOL 100	Introduction to Geology	
GEOL 101	Dynamic Earth	
GEOL 106	Environmental Geology	
GEOG 155	Elements of Physical Geography	

Credit Hours Subtotal:	29-30
Option Electives and Requirements	
Complete requirements	18-23
Credit Hours Subtotal:	18-23
Free Electives	
Select 1-9 hours	1-9
Credit Hours Subtotal:	1-9
Total Credit Hours	48-62

Emphasis Area Requirements

Soil Science Option

This option provides students an understanding of soil as a natural resource and as a component of all terrestrial ecosystems. The student will learn how soils influence ecological processes which take place above and below ground. An understanding of these processes will enable the student to deal with environmental management problems such as groundwater protection, natural resource management, urban and rural development issues, waste management, and pollution abatement. Careers focus on environmental assessment, soil conservation, and remediation of soil contamination. Students interested in preparing for graduate work in soils can aim toward a variety of special areas including soil microbiology, chemistry, physics, mineralogy, and morphology.

Soil Science Option Requirements

Select one of the following:		3
SOIL 460 / AGRO 460 / BIOS 460 / NRES 460	Soil Microbiology	
SOIL 461 / AGRO 461 / GEOL 461 / NRES 461 / WATS 461	Soil Physics	
CIVE 326 / BSEN 326	Introduction to Environmental Engineering	
BSEN 355	Introduction to Ecological Engineering	
Select two of the following:		6
NRES 451	Soils, Water, and Environmental Chemistry	
NRES 455 / AGRO 455 / SOIL 455	Soil Chemistry and Mineralogy	
SOIL 269 / AGRO 269	Principles of Soil Management	
SOIL 453 / AGRO 453 / HORT 453 / LARC 453	Urban Soil Properties and Management	
NRES 477 / AGRO 477 / GEOG 467 / SOIL 477	Great Plains Field Pedology	4
Credit Hours Subtotal:		13
Other Soil Science Option Electives		
Select 5-10 hours of the following:		5-10
Biological Systems Engineering Courses		
BSEN 455 / CIVE 455	Nonpoint Source Pollution Control Engineering [1]	
Chemistry Courses		
CHEM 251 & CHEM 253	Organic Chemistry I and Organic Chemistry I Laboratory	
Civil Engineering Courses		
CIVE 327 / BSEN 327	Environmental Engineering Laboratory [1]	
CIVE 421	Hazardous Waste Management and Treatment [1]	
CIVE 422 / BSEN 422	Pollution Prevention: Principles and Practices [1]	
CIVE 424	Solid Waste Management Engineering [1]	
CIVE 432	Bioremediation of Hazardous Wastes [1]	
Geology Courses		
GEOL 488 / NRES 488	Groundwater Geology	
GEOL 470	Field Techniques in Hydrogeology	
Natural Resource Courses		
NRES 279 / AGRO 279 / SOIL 279	Soil Evaluation [2]	
NRES 399	Independent Research	
NRES 412 / GEOG 412	Introduction to Geographic Information Systems	
NRES 418 / GEOG 418	Introduction to Remote Sensing	
NRES 427 / GEOG 427	Introduction to the Global Positioning System (GPS)	
NRES 451	Soils, Water, and Environmental Chemistry	
NRES 455 / AGRO 455 / SOIL 455	Soil Chemistry and Mineralogy	
NRES 496	Independent Study	
NRES 497	Career Experiences in Natural Resource Sciences	
Plant Pathology Courses		
PLPT 270 / AGRO 270 / HORT 270 / NRES 270	Biological Invaders	
Soil Courses		
SOIL 269 / AGRO 269	Principles of Soil Management	
SOIL 366 / AGRO 366	Soil Nutrient Relationships	
SOIL 453 / AGRO 453 / HORT 453 / LARC 453	Urban Soil Properties and Management	
Credit Hours Subtotal:		5-10
Total Credit Hours		18-23

[1] *Engineering courses are recommended, however, because of prerequisites students wishing to enroll in these courses should first seek counsel from their advisor and then request permission from instructor.*

[2] *This course can be taken more than once.*

Lake and Stream Restoration Option

This option is designed for students considering careers in water quality, aquatic ecology, or limnology. The student will learn the important biotic, physical and chemical processes that occur within lakes and streams and be prepared to environmentally manage problems related to water quality. Students will also be prepared to implement pollution abatement procedures or management practices associated with lake and stream restoration. Careers focus on environmental assessment, water conservation, remediation of lakes and streams. Completion of this program also provides excellent preparation for graduate study.

Lake & Stream Restoration Option Requirements		
AGRO 131 / HORT 131 & AGRO 132	Plant Science and Agronomic Plant Science Laboratory	4
Select one sequence of the following:		4
LIFE 120 & LIFE 120L	Fundamentals of Biology I and Fundamentals of Biology I laboratory	
LIFE 121 & LIFE 121L	Fundamentals of Biology II and Fundamentals of Biology II Laboratory	
NRES 481 / BIOS 481 / WATS 481	Stream and River Ecology	4
NRES 470	Lake and Reservoir Restoration	3
or BSEN 355	Introduction to Ecological Engineering	
Credit Hours Subtotal:		15
Other Lake & Stream Restoration Option Electives		
Select 4-9 hours of the following:		4-9
Biological Sciences Courses		
BIOS 381	Invertebrate Zoology	
BIOS 454 / NRES 454	Ecological Interactions	
BIOS 457 / GEOL 457	Ecosystem Ecology	
Biological Systems Engineering Courses		
BSEN 422 / CIVE 422	Pollution Prevention: Principles and Practices [1]	
BSEN 455 / CIVE 455	Nonpoint Source Pollution Control Engineering [1]	
Entomology Courses		
ENTO 402 / BIOS 485 / NRES 402 & ENTO 402L / BIOS 485L / NRES 402L	Aquatic Insects and Identification of Aquatic Insects	
Chemistry Courses		
CHEM 251 & CHEM 253	Organic Chemistry I and Organic Chemistry I Laboratory	
Natural Resources Courses		
NRES 211	Introduction to Conservation Biology	
NRES 312 / GEOG 312	Introduction to Geospatial Information Sciences	
NRES 388 / AGRI 388	Employment Seminar	
NRES 412 / GEOG 412	Introduction to Geographic Information Systems	
NRES 418 / GEOG 418	Introduction to Remote Sensing	
NRES 419 / GEOL 418 / WATS 418 & NRES 419L / GEOL 418L / WATS 418L	Chemistry of Natural Waters and Chemistry of Natural Waters Laboratory	
NRES 420 / AGRO 419 / GEOL 419 / GEOG 419	Applications of Remote Sensing in Agriculture and Natural Resources	
NRES 421 / GEOG 421	Field Techniques in Remote Sensing	
NRES 427 / GEOG 427	Introduction to the Global Positioning System (GPS)	
NRES 431	Waterfowl Ecology and Management	
NRES 463	Fisheries Science	
NRES 464 / BIOS 464	Fisheries Biology	
NRES 468 / BIOS 458 / WATS 468	Wetlands	
NRES 475 / AGRO 475 / CIVE 475 / CRPL 475 / GEOL 475 / MSYM 475 / POLS 475 / SOCI 475 / SOIL 475 / WATS 475	Water Quality Strategy	
NRES 484 / AGRO 484 / GEOG 484 / GEOL 484 / WATS 484	Water Resources Seminar	
NRES 489	Ichthyology	
NRES 497	Career Experiences in Natural Resource Sciences	
Plant Pathology Courses		
PLPT 270 / AGRO 270 / HORT 270 / NRES 270	Biological Invaders	
Credit Hours Subtotal:		4-9
Total Credit Hours		19-24

[1] *Because of prerequisites, students wishing to enroll in these courses should first seek counsel from their advisor and then request permission from instructor.*

Requirements for Minor Offered by Department

Environmental Restoration Science Minor

Category 1 — Required Courses		
NRES 281 / GEOG 281 / WATS 281	Introduction to Water Science	3
SOIL 153 / AGRO 153 / HORT 153	Soil Resources	4
SOIL 361 / AGRO 361 / GEOL 361 / NRES 361 / WATS 361	Soils, Environment and Water Quality	3
SOIL 477 / AGRO 477 / GEOG 467 / NRES 477	Great Plains Field Pedology	4
Credit Hours Subtotal:		14
Category 2 — Advanced Courses		
Select 6 hours of the following:		6
NRES 319	Fundamentals of Environmental Sampling	
NRES 320	Fundamentals of Environmental Sampling Laboratory	
NRES 451	Soils, Water, and Environmental Chemistry	
SOIL 354 / MSYM 354 / WATS 354	Soil Conservation and Watershed Management	
SOIL 455 / AGRO 455 / NRES 455	Soil Chemistry and Mineralogy	
SOIL 460 / AGRO 460 / NRES 460 / BIOS 460	Soil Microbiology	
SOIL 461 / AGRO 461 / GEOL 461 / NRES 461 / WATS 461	Soil Physics	
SOIL 453 / AGRO 453 / HORT 453 / LARC 453	Urban Soil Properties and Management	
WATS 475 / AGRO 475 / CIVE 475 / CRPL 475 / GEOL 475 / MSYM 475 / NRES 475 / POLS 475 / SOCI 475 / SOIL 475	Water Quality Strategy	
Credit Hours Subtotal:		6
Category 3 — Related Courses		
Select one of the following:		3-4
CIVE 326 / BSEN 326	Introduction to Environmental Engineering	
BSEN 355	Introduction to Ecological Engineering	
NRES 312 / GEOG 312	Introduction to Geospatial Information Sciences	
NRES 453	Hydrology	
NRES 459 / BIOS 459 / WATS 459	Limnology	
NRES 412 / GEOG 412	Introduction to Geographic Information Systems	
Credit Hours Subtotal:		3-4
Total Credit Hours		23-24

PLEASE NOTE
This document represents a sample 4-year plan for degree completion with this major. Actual course selection and sequence may vary and should be discussed individually with your college or department academic advisor. Advisors also can help you plan other experiences to enrich your undergraduate education such as internships, education abroad, undergraduate research, learning communities, and service learning and community-based learning.

Environmental Restoration Science - Lake & Stream Restoration

Environmental Restoration Science - Soil Science

Career Information

The following represents a sample of the internships, jobs and graduate school programs that current students and recent graduates have reported.

Jobs of Recent Graduates

- Technical Sales, LI-COR Biosciences - Lincoln NE
- Soil Scientist, USDA-NRCS - Powell WY
- Integrated Water Management Planner, The Nebraska Department of Natural Resources - Lincoln NE
- Soil Conservationist, Natural Resource Conservation Service - Central City NE
- Ecologist, Forrest Preserve Districtb - IL
- Young for Preventative Maintenance Associate, University of Nebraska-Lincoln - Lincoln NE