ENVIRONMENTAL SCIENCE

Description
An important facet of environmental science is restoration activities that initiate or accelerate the recovery of an ecosystem that has been degraded, damaged, or contaminated by human activity or natural agents. Restoration begins with a thorough understanding of the soil-water environment. Students interested in environmental science must declare an option and can choose between:

- Soil Science Option
- Lake and Stream Restoration Option

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 sciences, and 2 units of world language. Students must also meet performance requirements: a 3.0 cumulative high school grade point average OR an ACT composite of 20 or higher, writing portion not required OR a score of 1040 or higher on the SAT Critical Reading and Math sections 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.

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 world 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 the 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 ensures that a student will meet the minimum curriculum requirements of the College.

World Languages/Language Requirement
Two units of a world language are required. This requirement is usually met with two years of high school language.

Experiential Learning
All undergraduates in the College of Agricultural Sciences and Natural Resources must take an Experiential Learning (EL) designated course. This may include 0-credit courses designed to document co-curricular activities recognized as Experiential Learning.

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.

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 the 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
- Nebraska Indian Community College
- 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 provide transcripts and complete the Application for Degree form via MyRED. Students without MyRED access may apply for graduation in

**Cooperative Degree Programs**
Academic credit from the University and a cooperating institution are 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 and a 3+1 program leading to a bachelor of science in Applied Science.

**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.** Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

**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 (>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 the University of Nebraska–Lincoln and participate in prior-approved education abroad programs.
The 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 the 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. Students transferring from a community college, but without admission to a Joint Academic Transfer Program, may be eligible to fulfill the requirements as stated in the catalog for an academic year in which they were enrolled at the community college prior to attending the University of Nebraska-Lincoln. This decision should be made in consultation with academic advisors, provided the student a) was enrolled in a community college during the catalog year they are utilizing, b) maintained continuous enrollment at the previous institution for 1 academic year or more, and c) continued enrollment at the University of Nebraska-Lincoln within 1 calendar year from their last term at the previous institution. 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 the University of Nebraska–Lincoln 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 science will be able to:

1. Describe in detail the chemical and biological processes 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

<table>
<thead>
<tr>
<th>College Integrative Course and ACE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCIL 101 Science and Decision-Making for a Complex World</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 3

<table>
<thead>
<tr>
<th>Natural Resources Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 220 Introduction to Energy Systems</td>
</tr>
<tr>
<td>NRES 218 Introduction to Geospatial Technologies</td>
</tr>
<tr>
<td>NRES 220 Principles of Ecology</td>
</tr>
<tr>
<td>SOIL 153 / PLAS 153 Soil Resources</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 13

<table>
<thead>
<tr>
<th>Natural Sciences (ACE 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one CASNR approved Life Sciences sequence from the following:</td>
</tr>
<tr>
<td>BIOS 101 &amp; BIOS 101L General Biology and General Biology Laboratory</td>
</tr>
<tr>
<td>LIFE 120 &amp; LIFE 120L Fundamentals of Biology I and Fundamentals of Biology I laboratory</td>
</tr>
<tr>
<td>PLAS 131 &amp; PLAS 133 Plant Science and Horticultural Plant Science Laboratory or PLAS 131 Plant Science and Plant Sciences Laboratory</td>
</tr>
</tbody>
</table>

Complete both of the following chemistry sequences:
CHEM 109A & CHEM 109L
General Chemistry I
and General Chemistry I Laboratory

CHEM 110A & CHEM 110L
General Chemistry II
and General Chemistry II Laboratory

Select one of the following:
AGST 109 Physical Principles in Agriculture and Life Sciences (ACE 4)
PHYS 141 Elementary General Physics I
PHYS 151 Elements of Physics
PHYS 211 General Physics I

Credit Hours Subtotal: 16-17

Mathematics and Statistics
STAT 218 Introduction to Statistics (ACE 3)

Select one of the following:
MATH 102 Trigonometry
MATH 103 College Algebra and Trigonometry
MATH 104 Applied Calculus
MATH 106 Calculus I

Credit Hours Subtotal: 6-8

Communications
Select one Written Communication (ACE 1) course from the following:
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:
ALEC 102 Interpersonal Skills for Leadership
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 with Animation

Select any additional ACE 1 or ACE 2 course
ALEC 136 Fundamentals of Agricultural and Environmental Sciences Communication
ALEC 207 Communicating Science with Public Audiences
ALEC 305 Presentation Strategies to Communicate Agricultural and Environmental Sciences
ALEC 350 Agriculture, the Environment & Science in the Media
JOMC 101 Principles of Mass Media
MLSC 102 Basic Leadership
& MLSC 202 and Leadership and Teamwork
MLSC 301 Leadership and Problem Solving

Credit Hours Subtotal: 9

Economics, Humanities and Social Sciences (ACE 6)
Select one of the following:
AECN 141 Introduction to the Economics of Agriculture
ECON 200 Economic Essentials and Issues
ECON 211 Principles of Macroeconomics
ECON 212 Principles of Microeconomics

Select one course each from ACE outcomes 5, 7, and 9

Credit Hours Subtotal: 12

Total Credit Hours: 59-62

1 If MATH 103 is taken, only 2 hours can be counted toward this requirement.

Specific Major Requirements
Requirements
NREE 357 / AECN 357 Natural Resource and Environmental Law
NRES 279 / PLAS 279 / SOIL 279 Soil Evaluation
NRES 300 / BIOS 300 / ENTO 300 Toxins in the Environment
NRES 319 Fundamentals of Environmental Sampling
NRES 320 Fundamentals of Environmental Sampling Laboratory
NRES 453 Hydrology
NRES 459 / Limnology
BIOS 459 / WATS 459
WATS 281 / GEOG 281 / NRES 281 Introduction to Water Science
WATS 354 / AGST 354 / SOIL 354 Soil Conservation and Watershed Management
WATS 361 / GEOL 361 / NRES 361 / SOIL 361 Soils, Environment and Water Quality

Select one of the following:
GEOL 100 Introduction to Geology
GEOL 101 Dynamic Earth
GEOL 106 Environmental Geology
GEOL 109 Oceanography
GEOL 120 Geology of National Parks and Monuments
GEOS 155 Elements of Physical Geography

Credit Hours Subtotal: 30-31

Option Electives and Requirements
Complete requirements
Credit Hours Subtotal: 18-23

Free Electives
Select 1-9 hours
Soil Science Option
This option provides students with an understanding of soil as a natural resource and component of all terrestrial ecosystems. The student will learn how soils influence ecological processes which take place above and below ground. Understanding 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 various special areas including soil microbiology, chemistry, physics, mineralogy, and morphology.

Soil Science Option Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 451</td>
<td>Soils, Water, and Environmental Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>NRES 477 / GEOL 467 / PLAS 477 / SOIL 477</td>
<td>Great Plains Field Pedology</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSEN 355</td>
<td>Introduction to Ecological Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 321 / BSEN 321</td>
<td>Principles of Environmental Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 455 / PLAS 455 / SOIL 455</td>
<td>Soil Chemistry and Mineralogy</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 460 / BIOS 460 / NRES 460 / PLAS 460</td>
<td>Soil Microbial Ecology</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 461 / NRES 461 / PLAS 461 / WATS 461</td>
<td>Soil Physics</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 269 / PLAS 269</td>
<td>Principles of Soil Management</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 453 / PLAS 453 / LARC 453</td>
<td>Urban Soil Properties and Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 14

Other Soil Science Option Electives

Select 5-9 hours from the following: 5-9

**Biological Systems Engineering Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSEN 455 / CIVE 455</td>
<td>Nonpoint Source Pollution Control Engineering</td>
<td>1</td>
</tr>
</tbody>
</table>

**Chemistry Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 251 / &amp; CHEM 253</td>
<td>Organic Chemistry I and Organic Chemistry I Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

**Civil Engineering Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE 321L / BSEN 321L</td>
<td>Environmental Engineering Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CIVE 422 / BSEN 422</td>
<td>Pollution Prevention: Principles and Practices</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 1-9

Total Credit Hours 49-63

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, and remediation of lakes and streams. Completion of this program also provides excellent preparation for graduate study.
Lake & Stream Restoration Option Requirements

Select one sequence from the following: 4

- PLAS 131 Plant Science
  & PLAS 132 and Agronomic Plant Science Laboratory
  or PLAS 131 Plant Science
  & Plant Sciences Laboratory
  & PLAS 134

- PLAS 278 Botany
- LIFE 121 Fundamentals of Biology II
  & LIFE 121L and Fundamentals of Biology II Laboratory

Select one from the following: 3-4

- NRES 468 / BIOS 458 / WATS 468 /
  BSEN 468
- BSEN 355 Introduction to Ecological Engineering
- NRES 481 / BIOS 481 / WATS 481

ACE 10

NRES 451 Soils, Water, and Environmental Chemistry
  or WATS 475 Water Quality Strategy

NRES 475 /
- CIVE 475 /
- CRPL 475 /
- GEOL 475 /
- AGST 475 /
- PLAS 475 /
- POLS 475 /
- SOIL 475

Credit Hours Subtotal: 14-16

Other Lake & Stream Restoration Option Electives

Select 4-10 hours from the following: 4-10

Biological Sciences Courses

- BIOS 381 Invertebrate Zoology
- BIOS 454 / Ecological Interactions
- NRES 454
- BIOS 457 / Ecosystem Ecology
- GEO 457

Biological Systems Engineering Courses

- BSEN 422 / Pollution Prevention: Principles and
  CIVE 422 Practices 1
- BSEN 455 / Nonpoint Source Pollution Control
  CIVE 455 Engineering 1

Entomology Courses

- ENTO 402 / Aquatic Insects
  BIOS 485 / and Identification of Aquatic Insects
  NRES 402
  & ENTO 402L /
  BIOS 485L /
  NRES 402L

Chemistry Courses

- CHEM 251 Organic Chemistry I
  & CHEM 253 and Organic Chemistry I Laboratory

Natural Resources Courses

- GEOG 217 Principles of GIS
- NRES 211 Introduction to Conservation Biology
- NRES 218 Introduction to Geospatial Technologies
- NRES 388 / Employment Seminar
- AGRI 388

- NRES 418 / GEOG 418 Introduction to Remote Sensing
- NRES 419 / GEO 419 Chemistry of Natural Waters
  GEOL 418 / WATS 418

- NRES 420 / GEO 420 Applications of Remote Sensing in
  GEOL 419 Agriculture and Natural Resources
  GEOG 419
  PLAS 419

- 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 468 / BIOS 458 / WATS 468 /
  BSEN 468

- NRES 475 / AGST 475 / GEOL 475 / CRPL 475 /
  GEOL 475 / PLAS 475 /
  POLS 475 /
  SOIL 475 /
  WATS 475

- NRES 484 / GEOG 484 / GEOL 484 /
  PLAS 484 /
  WATS 484

- NRES 489 / BIOS 489 Ichthyology
- NRES 497 Career Experiences in Natural Resource
  Sciences

Plant Pathology Courses

- PLPT 270 / Biological Invaders
- NRES 270 /
  PLAS 270

Credit Hours Subtotal: 4-10

Total Credit Hours 18-26

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 Science Minor**

**Category 1 – Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 281 / GEOG 281 / WATS 281</td>
<td>Introduction to Water Science</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 153 / PLAS 153</td>
<td>Soil Resources</td>
<td>4</td>
</tr>
<tr>
<td>SOIL 361 / GEOL 361 / NRES 361 / PLAS 361 / WATS 361</td>
<td>Soils, Environment and Water Quality</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 477 / GEOG 467 / NRES 477 / PLAS 477</td>
<td>Great Plains Field Pedology</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 18

**Category 2 – Advanced Courses**

Select 6 hours from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 319</td>
<td>Fundamentals of Environmental Sampling</td>
<td></td>
</tr>
<tr>
<td>NRES 320</td>
<td>Fundamentals of Environmental Sampling Laboratory</td>
<td></td>
</tr>
<tr>
<td>NRES 451</td>
<td>Soils, Water, and Environmental Chemistry</td>
<td></td>
</tr>
<tr>
<td>NRES 477 / GEOG 467 / PLAS 477 / SOIL 477</td>
<td>Great Plains Field Pedology (if not taken in Category 1)</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 6

**Category 3 – Related Courses**

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 481</td>
<td>Stream and River Ecology</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 3-4

Total Credit Hours: 27-28

**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 Science - Lake & Stream Restoration**

**Environmental 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, Nebraska Department of Natural Resources - Lincoln, NE
- Soil Conservationist, Natural Resource Conservation Service - Central City, NE
- Ecologist, Forest Preserve District - Springfield, IL
- Young for Preventative Maintenance Associate, University of Nebraska-Lincoln - Lincoln, NE