



<b>DEGREE SHEET / 2016-2017 CATALOG</b>		
Student name:		
Eagle ID:		
Eagle Email:		
Phone:		
<p><b>BACHELOR OF SCIENCE (BS) ENVIRONMENTAL SCIENCE</b></p> <p>The Environmental Science program at Northern bridges education in traditional practices in agriculture and forestry to modern day environmental monitoring procedures. Course work ranges from wildlife and range science to ecotoxicology and radiation protection. Our students gain hands-on experiences in areas from research with the on-campus Sostenga farm, forestry experiments at the wildfire ecology research lab in El Rito, environmental monitoring in the Valles Caldera, and sampling of local waterways relating to Stream Ecology. The environmental sciences at Northern provide students with a strong background for graduate school and to compete for positions with federal, state, and local land management agencies, Los Alamos National Laboratories, and within private industry.</p>		
<b>GENERAL EDUCATION REQUIREMENTS (38 Credits)</b>	<b>SEMESTER</b>	<b>GRADE</b>
<b>AREA I: COMMUNICATIONS (9 Credits)</b>		
ENG 111 English Composition I (3) <i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i>		
SPCH 130 Public Speaking (3) <i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i>		
ENG 116 Technical Writing (3) <i>Pre-requisite: ENG 111</i>		
<b>AREA II: MATHEMATICS (3 Credits)</b>		
MATH 150 College Algebra (3) <i>Pre-requisite: Math 130 or adequate score on the Course Placement Evaluation</i>		
<b>AREA III: LABORATORY SCIENCES (8 Credits)</b>		
ES 112/L Introduction to Environmental Science with Lab (4) <i>Pre-requisite: None</i>		
CHEM 110/L Introduction to Chemistry with Lab (4) <i>Pre-requisites: MATH 102 and ENG 109</i>		
<b>AREA IV: SOCIAL/BEHAVIORAL SCIENCES (6 - 9 Credits)</b> <i>Students must complete a minimum of 15 credit hours spread between areas IV and V.</i>		

<b>AREA V: HUMANITIES AND FINE ARTS (6 - 9 Credits)</b> <i>Students must complete a minimum of 15 credit hours spread between areas IV and V.</i>		
PHIL 220 Ethics (3) <i>Pre-requisite: None</i>		
Foreign Language (3)		
<b>AREA VI: FIRST YEAR EXPERIENCE (3 Credits)</b>		
FYE 101 First Year Experience (3) <i>Pre-requisite: ENG 108</i>		
<b>PROGRAM REQUIREMENTS (83 Credits)</b>		
<b>REQUIRED SCIENCE COURSES (35 CREDITS)</b>		
MATH 145 Introduction to Probability and Statistics (3) <i>Pre-requisite: MATH 130</i>		
MATH 155 Trigonometry and Pre-Calculus (4) <i>Pre-requisite: MATH 150</i>		
MATH 162 Calculus (4) <i>Pre-requisite: MATH 155</i>		
CHEM 121/L General Chemistry I with Lab (4) <i>Pre-requisites: MATH 130, high school chemistry, or ACT score of 19 or higher in natural science and ENG 111</i>		
CHEM 122/L General Chemistry II with Lab (4) <i>Pre-requisite: CHEM 121/L</i>		
BIOL 203/L Ecology and Evolution with Lab (4) <i>Pre-requisites: ENG 111, MATH 150, and CHEM121/L</i>		
BIOL 204/L Plant and Animal Form and Function with Lab (4) <i>Pre-requisites: MATH 150, BIOL 201/L, and CHEM121/L</i>		
Take one of the following:		
BIOL 201/L Introduction to Molecular and Cell Biology with Lab (4) <i>Pre-requisites: ENG 111 and CHEM 121/L</i>		
BIOL 210/L Microbiology with Lab (4) <i>Pre-requisite: BIOL 110/L</i>		
CHEM 210/L Integrated Organic and Biochemistry with Lab (4) <i>Pre-requisite: CHEM 110/L or CHEM 121/L</i>		
Take one of the following:		
BIOL 202/L Principles of Genetics with Lab (4) <i>Pre-requisite: BIOL 201/L</i>		
ES 201/L Environmental Physical and Chemical Process (4) <i>Pre-requisites: BIOL 201/L and CHEM 121/L</i>		

<b>REQUIRED ENVIRONMENTAL SCIENCE COURSES (26 CREDITS)</b>		
ES 203 Introduction to GIS/GPS and Cartography (3) <i>Pre-requisite: Permission of Instructor</i>		
ES 225 Principles of Agriculture Ecology (3) <i>Pre-requisites: ES 112/L and BIOL 203/L</i>		
ES 319 Principles of Wildlife Science and Management (3) <i>Pre-requisites: ES 112/L and BIOL 203/L</i>		
ES 336/L Environmental Sampling and Instrumentation (4) <i>Pre-requisites: ES 112/L and BIOL 201/L or CHEM 122/L</i>		
ES 338 Environmental Laws and Regulations (3) <i>Pre-requisite: ES 112/L</i>		
ES 380 Undergraduate Research Experience (3) <i>Pre-requisite: Permission of Instructor</i>		
ES 480 Senior Capstone (3) <i>Pre-requisite: Permission of Instructor</i>		
BIOL 472 Undergraduate Seminar in Biology (1) <i>Pre-requisite: Permission of Instructor</i>		
Take one of the following:		
ES 317 Rangeland Management (3) <i>Pre-requisites: ES 112/L and BIOL 203/L</i>		
ES 318 Silviculture (3) <i>Pre-requisites: ES 112/L and BIOL 203/L</i>		
<b>ADDITIONAL PROGRAM REQUIREMENTS (22 Credits)</b> <i>The remaining 22 credit hours MUST be upper division (300-499) ES courses. Please seek departmental advisement to tailor your course selection to your individual career objectives.</i>		
<b>TOTAL CREDITS 121</b>		
<b>ADVISOR APPROVAL</b>	<b>DATE</b>	

## SUGGESTED SEQUENCE OF COURSES

### **FIRST SEMESTER (17 Credits)**

ENG 111 English Composition I (3)  
CHEM 110/L Introduction to Chemistry with Lab (4)  
ES 112/L Introduction to Environmental Science with Lab (4)  
MATH 150 College Algebra (3)  
FYE 101 First Year Experience (3)

### **SECOND SEMESTER (17 Credits)**

ENG 116 Technical Writing (3)  
MATH 155 Trigonometry and Pre-Calculus (4)  
CHEM 121/L General Chemistry I with Lab (4)  
ES 203 Introduction to GIS/GPS and Cartography (3)  
PHIL 220 Ethics (3)

### **THIRD SEMESTER (16 Credits)**

BIOL 203/L Ecology and Evolution with Lab (4)  
CHEM 122/L General Chemistry II with Lab (4)  
MATH 162 Calculus (4)  
BIOL 201/L Introduction to Molecular and Cell Biology with Lab (4)  
OR  
BIOL 210/L Microbiology (4)  
OR  
CHEM 210/L Integrated Organic and Biochemistry with Lab (4)

### **FOURTH SEMESTER (14 Credits)**

BIOL 204/L Plant and Animal Form and Function with Lab (4)  
SPCH 130 Public Speaking (3)  
ES 225 Principles of Agriculture Ecology (3)  
ES 201/L Environmental Physical and Chemical Processes with Lab (4)  
OR  
BIOL 202/L Principles of Genetics with Lab (4)

### **FIFTH SEMESTER (14 Credits)**

MATH 145 Introduction to Probability and Statistics (3)  
ES 336/L Environmental Sampling and Instrumentation (4)  
Upper Division Elective (4)  
Area IV or V Social and Behavioral Sciences or Humanities and Fine Arts (3)

### **SIXTH SEMESTER (15 Credits)**

Upper Division Elective (3)  
Upper Division Elective (3)  
Upper Division Elective (3)  
Area IV Social and Behavioral Sciences (3)  
ES 317 Rangeland Management (3)  
OR  
ES 318 Silviculture (3)

**SEVENTH SEMESTER (15 Credits)**

ES 319 Principles of Wildlife Management (3)  
ES 380 Undergraduate Research Experience (3)  
Upper Division Elective (3)  
Upper Division Elective (3)  
Foreign Language (3)

**EIGHTH SEMESTER (13 Credits)**

BIOL 472 Undergraduate Seminar in Biology (1)  
ES 338 Environmental Laws and Regulations (3)  
ES 480 Senior Capstone (3)  
Upper Division Elective (3)  
Area IV Social and Behavioral Science (3)

# EDUCATIONAL PLANNING FORM (Semester)

<b>FALL SEMESTER</b>	<b>SPRING SEMESTER</b>	<b>SUMMER</b>
<b>Total Units</b>	<b>Total Units</b>	<b>Total Units</b>
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