

**SOIL, ENVIRONMENTAL & ATMOSPHERIC SCIENCES B.S. DEGREE WITH  
EMPHASIS IN ENVIRONMENTAL SCIENCE  
(128 credit hours)**

**University Requirements (34 credits)**

ENGLISH 1000 - Exposition and Argumentation (3 credits) FSpS  
Course to fulfill State Law Requirement (3 credits)  
*(History 1100, 1200, or 1400 or Political Science 1100 or 1700)*  
AG EC 1041 - Applied Microeconomics (3 credits) FSp **or**  
AG EC 2070 - Environmental Economics & Policy (WI) (3 credits) Sp  
RU SOC 1000 - Rural Sociology (3 credits) FSp **or**  
RU SOC 1120 - Population and Ecology (3 credits) FSp  
RU SOC 2010 - Leadership in Today's World (3 credits) FSp **or**  
RU SOC 2225 - Science, Technology, & Society (3 credits) Sp  
COMMUN 1200 - Public Speaking (3 credits) FSpS **or**  
AG ED 2220 - Verbal Communication in Agriculture, Food & Natural Res. (3 credits) FSp  
Humanistic Studies and Fine Arts electives (6 credits)  
MATH 1100 - College Algebra for Calculus Bound Students (3 credits) FSpS  
STAT 2530 - Statistical Methods in Natural Resources (3 credits) Sp **or**  
STAT 1400 - Elementary Statistics for Life Sciences (3 credits) FSp  
CHEM 1320 - General Chemistry I w/Lab (4 credits) FSpS

**Departmental Quantitative Skills (3 credits)**

MATH 1400 - Calculus for Social and Natural Sciences I (3 credits) FSpS **or**  
MATH 1500 - Analytical Geometry and Calculus I (5 credits) FSpS \*  
*Recommended elective for Hydrology Track -*  
MATH 1700 - Calculus II (5 credits) FSp \*

**Departmental Sciences (30-31 credits)**

Biological Science (15 credits)

BIO SC 1200 - General Botany w/Lab (5 credits) FS  
BIO SC 1500 - Introduction to Biological Systems w/Lab (5 credits) FSpS  
BIO SC 3650 - General Ecology (WI) (5 credits) F **or**  
FOREST 4320 - Forest Ecology (WI) (5 credits) F

Chemistry (4 credits)

CHEM 1330 - General Chemistry II w/Lab (4 credits) FSpS  
*Recommended electives -*  
CHEM 2030 - Survey of Organic Chemistry (3 credits) F **or**  
CHEM 2100 - Organic Chemistry I (3 credits) FSpS **and**  
CHEM 2110 - Organic Chemistry II (3 credits) FSpS **and**  
CHEM 2130 - Organic Chemistry Lab I (2 credits) FSp

Geology (4 credits)

GEOL 1100 - Principles of Geology w/Lab (4 credits) FSpS **or**  
GEOL 1200 - Environmental Geology w/Lab (4 credits) FSp

Physics (4 or 5 credits)

ENV SC 4305 – Environmental Soil Physics (3 credits) F **and**  
ENV SC 4306 – Environmental Soil Physics Laboratory (2 credits) F **or**  
PHYSCS 1210 - College Physics I (4 credits) FSpS\* **or**  
PHYSCS 2750 – University Physics I (5 credits) FSp\*  
*Recommended elective for Hydrology Track*  
PHYSCS 1220 – College Physics II (4 credits) FSp \* **or**  
PHYSCS 2760 – University Physics II (5 credits) FSp \*

Policy/Regulation (3 credits)

NAT R 4353 - Natural Resource Policy/Administration (seniors only) (3 credits) Sp **or**  
CV ENG 4250 - Environmental Regulatory Compliance (3 cr) F (odd years) **or**  
RU SOC 4310- Sociology of Agriculture and Natural Resources (3 credits) Sp

**Departmental Requirements (23 credits)**

Atmospheric Science/Soil Science (8 credits)

ATM SC 1050 - Introduction to Meteorology (3 credits) FSp  
SOIL 2100 - Introduction to Soils (3 credits) F (2015, 2016) Sp 2017  
SOIL 2106 - Soil Science Laboratory (2 credits) FSp

Computer Science (3 credits)

AFNR 1120 - Computing and Information Technology (2 credits) FSp  
AFNR 2120-Working with Data Using Excel (1 credit) FSp **or**  
CMP SC 1050 - Algorithm Design and Programming I (3 credits) FSpS **or**  
NAT R 4325 - Introduction to GIS (3 credits) Sp **or**  
GEOG 3040 - Geographic Information Systems I (3 credits) FSp

Environmental Science Emphasis Area Requirements (9 credits)

ENV SC 1100 - Introduction to Environmental Science (3 credits) F  
ENV SC 3290 - Soils and the Environment (WI) (3 credits) F  
ENV SC 3250 – Pollutant Fate and Transport (3 credits) Sp

Capstone Experience (3 credits)

ENV SC 4320 - Hydrologic and Water Quality Modeling (3 credits) F

**Concentration Specific (24-25 credits)**

Hydrology Track

FOREST 4390 - Watershed Management & Water Quality (3 credits) F  
NAT R 3290 – Hydrologic Measurements Techniques (1 credit) F  
ENV SC 4940 - Environmental Science Internship (3 credits) FSpS  
Select 6 classes (18 credit hours) from the following list (must take at least one course from  
Environmental Science or Soil Science and a course from another department)  
AGSM 4420 - Surface Water Management (3 credits) FSp  
ATM SC 4400 - Micrometeorology (3 credits) F  
ATM SC 4520 – Environmental Biophysics (3 credits) F  
ATM SC 4590 – Radar Meteorology (3 credits) Sp  
BIO EN 4150 - Soil and Water Conservation Engineering (3 credits) F  
CV ENG 3200 - Fundamentals of Environmental Engineering (4 credits) Sp  
CV ENG 3700 - Fluid Mechanics (3 credits) Sp  
CV ENG 3702 - Hydrology (4 credits) Sp  
ENV SC 4305 - Environmental Soil Physics (3 credits) F  
ENV SC 4306 – Environmental Soil Physics Laboratory (2 credits) F  
ENV SC 4318 – Environmental Soil Chemistry (3 credits) Sp  
F&W 3400 - Water Quality & Natural Resource Management (3 credits) Sp

GEOG 3630 - Earth Surface Systems (3 credits) F  
GEOG 4630 - River and Stream Dynamics (3 credits) Sp  
GEOL 4100 – Groundwater Hydrology (3 credits) F  
SOIL 4308 - Soil Conservation (3 credits) Sp  
SOIL 4320 – Genesis of Soil Landscapes (4 credits) F

#### Land Management Track

ENV SC 4940 - Environmental Science Internship (3 credits) FSpS  
ENV SC 3330 – Land Use Management (3 credits) Sp 2017 **or**  
FOREST 2151 Dendrology (4 credits) F **and**  
FOREST 4330 - Practice of Silviculture (3 credits) Sp  
Select 6 classes (18 credit hours) from the following list (must take at least one course from Environmental Science or Soil Science and a course from another department)  
AGSM 4360 - Precision Agriculture Science and Technology (3 credits) Sp  
AGSM 4420 - Surface Water Management (3 credits) FSp  
ATM SC 3600 - Climates of the World (3 credits) Sp  
ATM SC 4400 - Micrometeorology (3 credits) F  
BIO EN 4150 - Soil and Water Conservation Engineering (3 credits) F  
CV ENG 4200 - Remote Sensing of the Environment (3 credits)  
ENV SC 4305 - Environmental Soil Physics (3 credits) F  
ENV SC 4306 – Environmental Soil Physics Laboratory (2 credits) F  
ENV SC 4312 - Environmental Soil Microbiology (3 credits) Sp even years  
ENV SC 4318 – Environmental Soil Chemistry (3 credits) Sp  
F&W 4600- Ecosystem Management (4 credits) F  
F&W 4800 - Environmental Toxicology (3 credits) Sp  
FOREST 3207 - Forest Fire Control and Use (2 credits) F  
FOREST 4370 - Wildland Fire Management (3 credits) Sp  
FOREST 4360 - Forest Information Systems (3 credits) F  
FOREST 4390 - Watershed Management & Water Quality (3 credits) F  
GEOG 3610 - Physical Geography of the US (3 credits) FSp  
GEOG 3040 – Geographic Information Systems I (3 credits) FSp  
GEOG 3630 - Earth Surface Systems (3 credits) F  
GEOG 3830 - Remote Sensing (3 credits) F  
GEOG 4710 - Spatial Analysis in Geography (3 credits) F  
GEOG 4940 - Geographic Information Systems II (3 credits) Sp  
NAT R 4325 - Introduction to GIS (3 credits) Sp  
PLNT S 3270 - Forage Crops (3 credits) F  
PLNT S 3275 - Grain Crops (3 credits) F  
RU SOC 4341 - Building Communities from the Grassroots (3 credits) FSp  
RU SOC 4370 - Environmental Sociology (3 credits) F even years  
SOIL 4308 - Soil Conservation (3 credits) Sp odd years  
SOIL 4313 - Soil Fertility and Plant Nutrition (3 credits) Sp  
SOIL 4320 - Genesis of Soil Landscapes (4 credits) F even years

### Water Quality Track

F&W 3400 - Water Quality & Natural Resource Management (3 credits) Sp  
ENV SC 4940 - Environmental Science Internship (3 credits) FSpS  
Select 6 classes (18 credit hours) from the following list (must take at least one course from Environmental Science or Soil Science and a course from another department)  
AGSM 4420 - Surface Water Management (3 credits) FSp  
ATM SC 3600 - Climates of the World (3 credits) Sp  
ATM SC 4400 - Micrometeorology (3 credits) F  
BIO EN 4150 - Soil and Water Conservation Engineering (3 credits) F  
CV ENG 4200 - Remote Sensing of the Environment (3 credits)  
ENV SC 3330 – Land Use Management (3 credits) Sp  
ENV SC 4305 - Environmental Soil Physics (3 credits) F  
ENV SC 4306 – Environmental Soil Physics Laboratory (2 credits) F  
ENV SC 4312 - Environmental Soil Microbiology (3 credits) Sp even years  
ENV SC 4318 – Environmental Soil Chemistry (3 credits) Sp  
F&W 4100 - Limnology (3-4 credits) F  
F&W 4800 - Environmental Toxicology (3 credits) Sp  
FOREST 4360 - Forest Information Systems (3 credits) F  
FOREST 4390 - Watershed Management & Water Quality (3 credits) F  
GEOG 3040 – Geographic Information Systems I (3 credits) FSp  
GEOG 3830 - Remote Sensing (3 credits) F  
GEOG 4940 - Geographic Information Systems II (3 credits) Sp  
GEOL 4100 – Ground Hydrogeology (3 credits) F  
GEOL 4300 - Introduction to Low-Temperature Geochemistry (3 credits) Sp  
NAT R 4325 - Introduction to GIS (3 credits) Sp  
PLNT S 4720 - Aquatic Entomology (3 credits)  
RU SOC 4370 - Environmental Sociology (3 credits) F even years  
SOIL 4308 - Soil Conservation (3 credits) Sp odd years  
SOIL 4313 - Soil Fertility and Plant Nutrition (3 credits) Sp  
SOIL 4320 - Genesis of Soil Landscapes (4 credits) F even years

### **Electives (12-14 credits)**

*Remaining hours from university, quantitative, science, and department to complete 128 credit hours total requirement.*

### Additional Notes on the Hydrology Track

Courses noted with an \* indicate math and physics courses necessary to meet federal requirements for a hydrologist (GS-1315). The following classes are also strongly recommended for individuals in the Hydrology Track as they are prerequisites for some hydrology track courses:

GEOG 2610 - Introduction to Physical Geography (3 credits) Sp  
MATH 2300 – Calculus III (3 credits) Sp