BS in Environmental Sciences with Emphasis in Land and Soil

Degree Program Description

The Environmental Science degree with an emphasis in Land and Soil combines interests in monitoring environmental change, conserving and managing soil and biological organisms, sustainably managing soil, improving environmental quality with the shaping of new policies and educating others about the natural environment and environmental issues. Example careers include Environmental Specialist, Environmental Technician, Land Manager, and Soil Scientist. Employment may occur in a variety of sectors, including federal, state, county and city government agencies, non-government agencies (NGOs), and private consulting firms.

Major Program Requirements

The degree combines interests in monitoring environmental change, conserving and managing soil and biological organisms, sustainably managing soil, and improving environmental quality with the shaping of new policies and educating others about the natural environment and environmental issues. Example careers include Environmental Specialist, Environmental Technician, Land Manager, and Soil Scientist. Employment may occur in a variety of sectors, including federal, state, county and city government agencies, non-government agencies (NGOs), and private consulting firms.

Students earning a Bachelor of Science in Environmental Sciences are required to complete all University general education (http://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/), University graduation (http://catalog.missouri.edu/academicdegreerequirements/universityrequirements/), and degree requirements, including selected foundational courses, which may fulfill some University general education requirements.

Foundational

MATH 1100	College Algebra	3-5
or MATH 1160	Precalculus Mathematics	
MATH 1400	Calculus for Social and Life Sciences I	3-5
or MATH 1500	Analytic Geometry and Calculus I	
CHEM 1400 & CHEM 1401	College Chemistry I and College Chemistry I Laboratory	4
Business Elective (select from ABM, FINPLN, MANGMT, MRKTNG)		3
ABM 2123	Quantitative Applications in Agricultural and Natural Resource Sciences	3
or STAT 1200	Introductory Statistical Reasoning	
ENV_SC 1100	Introduction to Environmental Science	3
AGSC_COM 2220	Verbal Communication in Agriculture, Food and Natural Resources	3
ATM_SC 1050	Introductory Meteorology	3
NAT_R 2325	Introduction to Geographic Information Systems	3
or GEOG 3040	Introduction to Geographic Information Systems GIS	
ENV_SC 4560	Observing the Earth from Space	3
or ABM 1200	Applied Computer Applications	

Core Emphasis Area

Biological Science		
BIO_SC 1200	General Botany with Laboratory	3
or PLNT_SCI 2110	Who Runs the World? Plants.	
BIO_SC 1500	Introduction to Biological Systems with Laboratory	5
FOREST 4320	Forest Ecology	5
or BIO_SC 3650	General Ecology	
Chemistry		
CHEM 1410 & CHEM 1411	College Chemistry II and College Chemistry II Laboratory	4
Geology		
GEOL 1100	Introduction to the Earth with Laboratory	4
or GEOL 1200	Environmental Geology with Laboratory	
GEOL 2400	Surficial Earth Processes and Products with Laboratory	4
Policy/Regulation		
NAT_R 4353	Natural Resource Policy/Administration	3
or ENV_SC 4400W	Environmental Law, Policy, and Justice - Writing Intensive	
Soil Science		
SOIL 2100	Introduction to Soils	3
SOIL 2106	Soil Science Laboratory	2
Physics		
SOIL 4305	Environmental Soil Physics	3
SOIL 4306	Environmental Soil Physics Laboratory	4
or PHYSCS 1210	College Physics I	
Additional Emphasis Area Requirements		
FOREST 2151	Dendrology	4
ENV_SC 2600	Sustainability Foundations: An Introduction to Sustainability	3
ENV_SC 3250	Pollutant Fate and Transport	3
SOIL 4313	Soil Fertility and Plant Nutrition	3-4
or FOREST 4330	Practice of Silviculture	
or F_W 4600	Ecosystem Management	
ENV_SC 4940	Environmental Science Internship	3
UpperLevel Disciplinary Electives		**15**
Select from the following courses to achieve an additional 15 credits. Must take at least one Atmospheric, Environmental, or Soil Science course, and one course that involved computer modeling.		
ATM_SC 3600	Climates of the World	3
AG_S_TCH 4360	Precision Agriculture Science and Technology	3
AG_S_TCH 4420	Surface Water Management	3
ENV_SC 4305	Environmental Soil Physics	3
ENV_SC 4306	Environmental Soil Physics Laboratory	2
ENV_SC 4312	Environmental Soil Microbiology	3
ENV_SC 4318	Environmental Soil Chemistry	3
ENV_SC 4320	Hydrologic and Water Quality Modeling	3
ENV_SC 4450	Environmental Hydrology	3
F_W 4500	Animal Population Dynamics and Management	3
ENV_SC 4600W	Sustainability Science Problem Solving - Writing Intensive	3

F_W 4600W	Ecosystem Management - Writing Intensive	3
FOREST 3207	Forest Fire Control and Use	3
FOREST 4380	Forest Resource Management	3
FOREST 4390	Watershed Management and Water Quality	3
GEOG 3610	Physical Geography of the United States	3
GEOG 3630	Earth Surface Systems	3
GEOG 3830	Remote Sensing	3
GEOG 4710	Spatial Analysis in Geography	3
GEOG 4940	Advanced Geographic Information Systems (GIS II)	3
NAT_R 4110	Natural Resource Biometrics	4
NAT_R 4385	Landscape Ecology and GIS Analysis I	3
PLNT_SCI 3270	Forage Crops	3
PLNT_SCI 3275	Grain Crops	3
SOIL 4313	Soil Fertility and Plant Nutrition	3
Capstone Experience		**4**
SOIL 4320	Genesis of Soil Landscapes	4

Electives approved by professional advisor to complete 120 total credits.

Semester Plan

First Year					
Fall	**CR**	**Spring**	**CR**		
HIST 1100 or POL_SC 1100	3	ENGLSH 1000	3		
ENV_SC 1100	3	MATH 1100	3		
BIO_SC 1200	5	BIO_SC 1500	5		
ATM_SC 1050	3	SOIL 2100	3		
	14		**14**		
Second Year					
Fall	**CR**	**Spring**	**CR**		
CHEM 1400 & CHEM 1401	4	CHEM 1410 & CHEM 1411	4		
AGSC_COM 2220	3	Emphasis Area Elective	3		
FOREST 4320	5	GEOL 1200	4		
ENV_SC 2600	3	SOIL 2106	2		
		Business Elective	3		
	15		**16**		
Third Year					
Fall	**CR**	**Spring**	**CR**	**Summer**	**CR**
STAT 1200	3	NAT_R 2325	3	ENV_SC 4940	3
FOREST 2151	4	ENV_SC 3250	3		
ABM 1200	3	MATH 1400	3		
ENV_SC 3290	3	Humanities Elective-Lower Level WI	3		
		Emphasis Area Elective	4		
	13		**16**		**3**
Fourth Year					
Fall	**CR**	**Spring**	**CR**		
SOIL 4320	4	FOREST 4330	4		
ENV_SC 4305	3	Emphasis Area Elective-Upper Level WI	3		
ENV_SC 4306	2	Humanities Elective	3		
Emphasis Area Elective	3	NAT_R 4353	3		
GEOL 2400	4				
	16		**13**		

Total Credits: 120