ENVIRONMENTAL SCIENCE MAJOR WITH ENVIRONMENTAL GEOLOGY OPTION, BACHELOR OF SCIENCE (BS)

Environmental Science is an interdisciplinary field that combines physical, chemical and biological sciences with social, political and economic understanding needed to study the environment and address environmental problems. The Environmental Science program integrates classroom work in biology, chemistry, geology and social sciences (economics and planning) with extensive field, lab and research experience. All students take a core of Environmental Science courses complemented by a concentration in one of the three core sciences (biology, chemistry, and geology). Motivated students have the opportunity to obtain a double major in both Environmental Science and their concentration area. Graduates leave Eastern with the necessary professional and technical skills for employment in the environmental profession or entry into graduate or professional school.

Major Requirements for Environmental Science

All Environmental Science students must take a junior year (ENVS 300) and a final senior year environmental seminar (ENVS 400). After declaring environmental science as a major each student should meet with an advisor as soon as possible. Students should start the program with the necessary mathematics background to enter into the calculus or statistics sequence (i.e. MATH 141 or equivalent). It is recommended that students take ENVS 100, BIOL 171–BIOL 173, CHEM 151–CHEM 153 and GEOL 120 and GEOL 121 within the first two years. Students must maintain an overall GPA ≥2.50 to remain in the program.

Note: some course options may not result in there being 60 upper division credits required for graduation within the major–advisor consultation is required.

Note: may only count BIOL 380 once.

Environmental Science Required Courses		
BIOL 171	BIOLOGY I	5
BIOL 172	BIOLOGY II	5
BIOL 173	BIOLOGY III	5
BIOL 270	BIOLOGICAL INVESTIGATION	3
BIOL 440	ECOLOGY	4
CHEM 151	GENERAL CHEMISTRY	5
CHEM 152	GENERAL CHEMISTRY	5
CHEM 153	GENERAL CHEMISTRY	5
DSCI 245	DATA ANALYSIS FOR BUSINESS (may only count BIOL 380 once)	4-5
or BIOL 380	DATA ANALYSIS FOR BIOLOGISTS	
or MATH 380	ELEMENTARY PROBABILITY AND STATISTICS	
DSCI 346	ADVANCED DATA ANALYSIS FOR BUSINESS (may only count BIOL 380 once)	4-5
or BIOL 380	DATA ANALYSIS FOR BIOLOGISTS	
or MATH 161	CALCULUS I	
ECON 100	GENERAL EDUCATION ECONOMICS	5
ENVS 100	INTRODUCTION TO ENVIRONMENTAL SCIENCE	5
ENVS 300	ENVIRONMENTAL SCIENCE JUNIOR SEMINAR	1
ENVS 400	ENVIRONMENTAL SCIENCE SENIOR SEMINAR	1
GEOG 323	GIS FOR ENVIRONMENTAL SCIENCES	3
GEOL 120	PHYSICAL GEOLOGY - THE SOLID EARTH	5
GEOL 121	PHYSICAL GEOLOGY - SURFICIAL PROCESSES	5
GEOL 320	ENVIRONMENTAL GEOLOGY	4-5
or GEOL 380	WORLD RESOURCES AND POPULATION	
GEOL 470	HYDROGEOLOGY	4
PLAN 431	ENVIRONMENTAL IMPACT STATEMENTS	3
Environmental Geology–Required Geology Courses		
GEOL 122	HISTORICAL GEOLOGY	5
GEOL 311	EARTH MATERIALS	4
GEOL 360	GEOLOGIC HAZARDS	4
GEOL 411	SEDIMENTOLOGY AND STRATIGRAPHY	4
GEOL 462	PRINCIPLES OF GEOCHEMISTRY	5
or GEOL 466	ISOTOPIC TRACERS IN THE ENVIRONMENT	
GEOL 475	ENGINEERING GEOLOGY OF SOILS: INTRODUCTION TO GEOTECHNICAL ENGINEERING	4
Capstone		
GEOL 490A	SENIOR CAPSTONE: WATER AND THE WEST, WATER RESOURCE ENGINEERING IN ARID LANDS	4
or GEOL 490B	CAPSTONE: ENVIRONMENTAL GEOCHEMISTRY	
or ENVS 490	CAPSTONE: ENVIRONMENTAL GEOCHEMISTRY	
Electives-upper division with advisor's consent		4
Total Credits		115-118

For information on General Education, see Undergraduate Degree (http://catalog.ewu.edu/archives/2016-2017/undergraduate-degree) .

Student Learning Outcomes—students will

- develop an integrated knowledge of major concepts in the area of environmental sciences and an understanding of fundamental roles that biology, chemistry, and geology play in environmental science;
- demonstrate knowledge of the interrelationships among the physical and biological components of ecosystems;
- use epistemologically sound quantitative techniques for the analysis of biotic and abiotic samples and systems;
- demonstrate effective oral, graphical, and written communication abilities, and critical thinking skills as related to the environmental sciences;
- develop sufficient preparation in the environmental sciences to successfully compete in a graduate or professional program, or to realize employment in an environmental sciences-related career.