

Earth, Energy, and Environmental Sciences - Environmental Science Emphasis, B.S.

Program Description

The Earth, Energy, and Environmental Sciences major is an interdisciplinary study of the relevant natural science disciplines, with emphases in either the Geosciences or the Environmental Sciences. This program provides knowledge and experience through lecture, laboratory, and field courses that immerse the students into the world around them. Students will analyze and solve problems associated with use of energy, water, and mineral resources; in protection of the environment; in planning for the impact of natural hazards; and in sustainable approaches to societal development. The region and ecosystems that surround Utah Tech University provide the ideal laboratory to apply concepts to the earth, energy, and environmental issues that impact the future of humanity. Emphases in the Geosciences and the Environmental Sciences are available depending on the student interests.

Program Curriculum

120 credits

Utah Tech General Education Requirements

All Utah Tech General Education requirements must be fulfilled. A previously earned degree may fulfill those requirements, but courses must be equivalent to Utah Tech's minimum General Education standards in American Institutions, English, and Mathematics.

Code	Title	Hours
General Education Core Requirements (catalog.utahtech.edu/programs/generaleducation/#gerequirementstext)		
English		3-7
Mathematics		3-5
American Institutions		3-6
Life Sciences		3-10
Physical Sciences		3-5
Laboratory Science		0-1
Fine Arts		3
Literature/Humanities		3
Social & Behavioral Sciences		3
Exploration		3-5

Earth, Energy, & Environmental Science Core Requirements

Code	Title	Hours
ENVS 1210 & ENVS 1215	Introduction to Environmental Science and Introduction to Environmental Science Laboratory	4
ENVS 2210	Environmental Pollution and Remediation Techniques	3
ENVS 3280	Environmental Policy, Regulations, Health, and Safety	3
ENVS 3410	Air Quality and Control Technologies	3
ENER 2310	Energy and the Environment	3
ENER 4310	Energy Technology and Sustainability	3
GEO 1110 & GEO 1115	Physical Geology (PS) and Physical Geology Lab (LAB)	4
GEO 2050	Earth Materials	4
GEO 3400	Water Resources	3
GEOG 2410	Paleoclimatology	3
GEOG 3600 & GEOG 3605	Introduction to Geographic Information Systems and Introduction to Geographic Information Systems Laboratory	4
CHEM 1210 & CHEM 1215	Principles of Chemistry I (PS) and Principles of Chemistry I Lab (LAB)	5
CHEM 1220 & CHEM 1225	Principles of Chemistry II and Principles of Chemistry II Lab	5

BIOL 1610 & BIOL 1615	Principles of Biology I (LS) and Principles of Biology I Lab (LAB)	5
MATH 1210	Calculus I (MA) (Prerequisite: MATH 1010 and MATH 1050 and MATH 1060 or MATH 1080 or equivalent placement score)	4
PHYS 2210 & PHYS 2215	Physics/Scientists Engineers I (PS) and Physics/Scientists Engineers I Lab (LAB)	5
ENGL 2201	Literature and the Land (HU, GC)	3

Environmental Science Emphasis Requirements

Code	Title	Hours
ENVS 2700R	Field Methods in Environmental Science	1
ENVS 2990R	Seminar in Environmental Science	1
ENVS 3510	Waste Management	3
ENVS 4080	Environmental Monitoring and Characterization	4
ENVS 4800R	Independent Research	1
ENVS 4910	Senior Seminar	1
BIOL 1620 & BIOL 1625	Principles of Biology II and Principles of Biology II Lab	5
BIOL 3040 & BIOL 3045	General Ecology and General Ecology Lab	4
BIOL 3750 & BIOL 3755	Microbial Ecology and Microbial Ecology Laboratory	4
BIOL 4200 & BIOL 4205	Plant Taxonomy (ALPP) and Plant Taxonomy Lab (ALPP)	4

Electives

Code	Title	Hours
Choose 1 of the following courses:		
ENVS 3910	Costa Rica Natural History	3
ENVS 3920	Peruvian Amazon Natural History	3
ENVS 3930	South Africa Natural History	3
GEO 3000	Advanced Geologic Investigation of Grand Canyon, Zion, and Bryce National Parks	3
GEO 3910	Applied Geologic Investigation of Iceland	3
GEOG 3930	Remote Sensing of Landscape: China	3

Graduation Requirements

1. Complete a minimum of 120 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at Utah Tech for institutional residency.
4. Cumulative GPA 2.0 or higher.
5. Grade C- or higher in all required courses.