

# Earth Science

## Earth Science

The Earth Science department is in the [College of Science](#). To find the most up-to-date information, including Program Learning Outcomes for degree programs offered by the Earth Science department, visit their website.

[Earth Science](#)

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### FACULTY

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**WANG, Weihong** *Associate Professor*

**ZANAZZI, Alessandro** *Associate Professor*

## Degrees & Programs

### Physical Science, A.S.

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#### Requirements

Students interested in a physical science are encouraged to earn a baccalaureate degree (BS). The AS-PHSC degree is meant to prepare students on the path to a physical science baccalaureate degree (BS) such as geology (BS-GEOL), physics (BS-PHYS), or chemistry (BS-CHEM).

#### Total Program Credits: 60

General Education Requirements:		37 Credits
	<a href="#">ENGL 1010</a> Introduction to Academic Writing CC	3
or	<a href="#">ENGL 1005</a> Literacies and Composition Across Contexts CC (5)	
	<a href="#">ENGL 2010</a> Intermediate Academic Writing CC	3
	<a href="#">MATH 1050</a> College Algebra QL	4
or	<a href="#">MATH 1055</a> College Algebra with Preliminaries QL (5)	
Complete one of the following:		3
	<a href="#">HIST 2700</a> US History to 1877 AS (3)	
and	<a href="#">HIST 2710</a> US History since 1877 AS (3)	
	<a href="#">HIST 1700</a> American Civilization AS (3)	
	<a href="#">HIST 1740</a> US Economic History AS (3)	
	<a href="#">POLS 1000</a> American Heritage SS (3)	

	<a href="#">POLS 1100</a> American National Government AS (3)	
Complete the following:		
	<a href="#">PHIL 2050</a> Ethics and Values IH	3
or	<a href="#">PHIL 205G</a> Ethics and Values IH GI (3)	
	<a href="#">HLTH 1100</a> Personal Health and Wellness TE	2
or	<a href="#">EXSC 1097</a> Fitness for Life TE (2)	
Distribution Courses		
	Biology	3
	Physical Science: Complete one of the following pair of courses	7
	<a href="#">PHYS 2210</a> Physics for Scientists and Engineers I PP (4)	
and	<a href="#">PHYS 2220</a> Physics for Scientists and Engineers II PP (4)	
or	<a href="#">CHEM 1210</a> Principles of Chemistry I PP (4)	
and	<a href="#">CHEM 1220</a> Principles of Chemistry II PP (4)	
or	<a href="#">GEO 1010</a> Introduction to Geology PP (3)	
or	<a href="#">GEO 1030</a> Natural Disasters and the Environment PP (3)	
or	<a href="#">GEO 1040</a> The Dinosaurian World PP (3)	
or	<a href="#">GEO 1050</a> Geology of National Parks PP (3)	
and	<a href="#">CHEM 1210</a> Principles of Chemistry I PP (4)	
	Humanities	3
	Fine Arts	3
	Social/Behavioral Science	3
Discipline Core Requirements:		11 Credits
Complete one of the following		11
Recommended for students most interested in physics:		
	<a href="#">MATH 1210</a> Calculus I QL (4)	
	<a href="#">MATH 1220</a> Calculus II (4)	
	<a href="#">PHYS 2215</a> Physics for Scientists and Engineers I Lab (1)	
	<a href="#">PHYS 2225</a> Physics for Scientists and Engineers II Lab (1)	
	Any 1000 or 2000 level PHYS elective (1)	
Recommended for students most interested in chemistry:		
	<a href="#">CHEM 1215</a> Principles of Chemistry I Laboratory (1)	
	<a href="#">CHEM 1225</a> Principles of Chemistry II Laboratory (1)	
	<a href="#">CHEM 2310</a> Organic Chemistry I (4)	
	<a href="#">CHEM 2315</a> Organic Chemistry I Laboratory (1)	
	<a href="#">CHEM 2320</a> Organic Chemistry II (4)	
	<a href="#">CHEM 2325</a> Organic Chemistry II Laboratory (1)	
Recommended for students most interested in earth science:		
	<a href="#">CHEM 1215</a> Principles of Chemistry I Laboratory (1)	
	<a href="#">CHEM 1220</a> Principles of Chemistry II PP (4)	

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	<a href="#">CHEM 1225</a>	Principles of Chemistry II Laboratory (1)	
	<a href="#">GEO 1015</a>	Introduction to Geology Laboratory (1)	
	<a href="#">GEO 1220</a>	Historical Geology (3)	
	<a href="#">GEO 1225</a>	Historical Geology Laboratory (1)	
Elective Requirements:			12 Credits
Complete 12 credits from the following (not to include any course being used to fill one of the requirements above). Consult with an advisor to determine which courses best match your long-term educational and career goals.			12
	<a href="#">CHEM 1210</a>	Principles of Chemistry I PP (4)	
	<a href="#">CHEM 1215</a>	Principles of Chemistry I Laboratory (1)	
	<a href="#">CHEM 1220</a>	Principles of Chemistry II PP (4)	
	<a href="#">CHEM 1225</a>	Principles of Chemistry II Laboratory (1)	
	<a href="#">CHEM 2310</a>	Organic Chemistry I (4)	
	<a href="#">CHEM 2315</a>	Organic Chemistry I Laboratory (1)	
	<a href="#">CHEM 2320</a>	Organic Chemistry II (4)	
	<a href="#">CHEM 2325</a>	Organic Chemistry II Laboratory (1)	
	<a href="#">ENVT 1110</a>	Introduction to Environmental Management PP (3)	
	<a href="#">ENVT 2730</a>	Introduction to Soils (4)	
	<a href="#">GEO 1010</a>	Introduction to Geology PP (3)	
or	<a href="#">GEO 1030</a>	Natural Disasters and the Environment PP (3)	
or	<a href="#">GEO 1040</a>	The Dinosaurian World PP (3)	
or	<a href="#">GEO 1050</a>	Geology of National Parks PP (3)	
	<a href="#">GEO 1080</a>	Introduction to Oceanography PP (3)	
	<a href="#">GEO 1220</a>	Historical Geology (3)	
	<a href="#">GEO 1225</a>	Historical Geology Laboratory (1)	
	<a href="#">GEO 2500</a>	Introduction to Field Geology	
	<a href="#">GEOG 1000</a>	Introduction to Physical Geography PP (3)	
	<a href="#">GEOG 1800</a>	Mapping the World with Geospatial Technology PP	
	<a href="#">MATH 1060</a>	Trigonometry QL (3)	
	<a href="#">MATH 1210</a>	Calculus I QL (4) (MATH 1060 is a prerequisite for this course.)	
	<a href="#">MATH 1220</a>	Calculus II (4)	
	<a href="#">MATH 2210</a>	Calculus III (3)	
	<a href="#">MATH 2270</a>	Linear Algebra (3)	
	<a href="#">MATH 2280</a>	Ordinary Differential Equations (3)	
	<a href="#">METO 1010</a>	Introduction to Meteorology PP (3)	
	<a href="#">METO 1060</a>	Fundamentals of Weather Forecasting PP (3)	
	<a href="#">PHYS 2210</a>	Physics for Scientists and Engineers I PP (4)	
	<a href="#">PHYS 2215</a>	Physics for Scientists and Engineers I Lab (1)	
	<a href="#">PHYS 2220</a>	Physics for Scientists and Engineers II PP (4)	

	<a href="#">PHYS 2225</a>	Physics for Scientists and Engineers II Lab (1)	
	<a href="#">STAT 1040</a>	Introduction to Statistics QL (3)	

## Graduation Requirements:

1. Completion of a minimum of 60 semester credits.
2. Overall grade point average of 2.0 (C) or above (departments may require a higher GPA).
3. Residency hours: minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.

## Physical Science, A.S.

### Careers

#### Program Learning Outcomes

1. Develop broad foundational knowledge in the physical sciences by correctly using evidence, experiment and observation, interpretation, and physical concepts.
2. Demonstrate patterns of critical, scientific, and quantitative reasoning in application to problems or issues related to the physical sciences.
3. Follow practices necessary to safely and ethically use laboratory or other measurement equipment used in the physical sciences.
4. Graduate with a breadth of physical science knowledge enabling students to select and proceed with a BS degree program within the physical sciences.

### Related Careers

- Natural Sciences Managers
- Secondary School Teachers, Except Special and Career/Technical Education

## Geographic Information Systems, Certificate of Proficiency

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### Requirements

The Certificate of Proficiency in Geographic Information Systems (GIS) provides students with a focused program of study in the fundamentals required to succeed in a wide range of careers in geospatial science. GIS includes the hardware, software, and data required to capture, store, display, and analyze geographically referenced information. Students in the certificate program learn the theory and methodology of geospatial data collection, storage and management, interpretation, and visualization through courses in cartography, remote sensing, GIS theory and applications, and geospatial field methods. In directed class projects students apply geospatial data techniques to real-world problems while gaining firsthand experience in project design and management.

#### Total Program Credits: 19

Discipline Core Requirements:			19 Credits
	<a href="#">GEOG 3400</a>	Environmental Remote Sensing*	3
or	<a href="#">SURV 1220</a>	Remote Sensing and Photogrammetry (3.0)	
	<a href="#">GEOG 3600</a>	Introduction to Geographic Information Systems	4
or	<a href="#">GIS 3600</a>	Introduction to Geographic Information Systems (4.0)	

	GIS 3620	Advanced Geographic Information Systems	3
or	GEOG 3650	Advanced Geographic Information Systems (4.0)	
	GEOG 4100	Geospatial Field Methods	3
or	EGDT 2400	Surveying Applications and Field Techniques II (3.0)	
Complete 6 credits from the following courses:			6
	CS 1400	Fundamentals of Programming (3.0)	
	GEOG 482R	GIS Internship (1-3)	
	GEOG 489R	Student Research in Geography (1-4)	
	GIS 3630	Geographic Information Systems Application Development (3.0)	
	SURV 1340	Fundamentals of Boundary Law (3.0)	
	SURV 2030	Geodesy (3.0)	
	SURV 3210	Advanced Photogrammetry (3.0)	
	EGDT 1040	Fundamentals of Technical Engineering Drawing (3.0)	
Or any courses with the following prefix: GEOG, SURV, GIS, EGDT subject to department approval			

**Graduation Requirements:**

- Grade of C- or higher in all courses used to satisfy requirements of the certificate.

## Footnotes:

\*Earth Science majors are encouraged to take GEOG 3400

### Geographic Information Systems, Certificate of Proficiency Careers

- Prior to graduation, our students will develop the necessary technical knowledge in Earth system science, geology, environmental science and management, geoscience education and geography, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in professional careers related to their degree programs or in associated graduate programs.
- Students will demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports.
- Our students will develop skills to critically evaluate scientific questions and address those questions using both logical, laboratory, geospatial, and other creative approaches.
- Our students will graduate with knowledge of the relevant agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated laws and regulations relevant to their field of study.
- Our students will graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction. Additionally, they will know of the primary responsibilities and the expectations of them within their chosen professional track such that they are successful in the eyes of their employer(s).

**Related Careers**

- Managers, All Other
- Cartographers and Photogrammetrists
- Geography Teachers, Postsecondary

## Water and Wastewater Operations, Certificate of Completion

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**Requirements**

The Certificate of Completion in Water and Wastewater Operations provides students with a focused program of study in the fundamentals required to succeed in a wide range of careers in water and wastewater treatment. Water and Wastewater Operations includes the equipment, biological principles, and chemical principles needed to produce water that is safe and pleasant to drink and reclaimed wastewater that is safe and beneficial to release into the environment. Students in the certificate program learn the theory and methodology of water purification through courses in environmental microbiology, the hydraulics of water, drinking water treatment and water reclamation. In classroom discussions, field trips, and lab exercises students apply principles of biology and chemistry to real-world problems while gaining experience in the techniques they will use in a typical treatment plant.

**Total Program Credits: 30**

Discipline Core Requirements:			24 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGL 1005	Literacies and Composition Across Contexts CC (5)	
	MATH 1050	College Algebra QL	4
	ENVT 1200	Environmental Worker Safety	3
	CHEM 1210	Principles of Chemistry I PP	4
	CHEM 1215	Principles of Chemistry I Laboratory	1
	ENVT 1270	Environmental Microbiology	3
	ENVT 1300	Environmental Lab and Sampling	2
	ENVT 3210	Water Quality and Reclamation	4
Elective Requirements:			6 Credits
Complete two of the following courses:			6
	ENVT 1510	Hazardous Materials Emergency Response (3)	
	ENVT 3280	Environmental Law (3)	
	ENVT 2560	Environmental Health (3)	
	ENVT 3010	Environmental Toxicology (3)	
	ENVT 3320	Hydraulics of Water (3)	
	ENVT 3330	Water Resources Management (3)	
	ENVT 3790	Applied Hydrology WE (4)	
	ENVT 3850	Environmental Policy WE (3)	

**Graduation Requirements:**

- Completion of a minimum of 31 credits.
- Overall grade point average of 2.0 (C) or above.
- Residency hours -- Minimum of 10 credits required through course attendance at UVU.

### Water and Wastewater Operations, Certificate of Completion Careers

- With completion of this certificate, our students will develop the necessary technical knowledge to work in fields related to water

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delivery and treatment and to attain and maintain professional certification related to this career field.

## Related Careers

- Water and Wastewater Treatment Plant and System Operators

## Earth Science, Minor

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### Requirements

The Minor in Earth Science can be combined with other university-wide bachelor's degrees. The minor provides students with broad academic knowledge of foundational scientific principles in this field of study. In addition to taking introductory lecture and lab courses in geology (4 credits) students will complete at least two lower division earth science courses (7 credits) and three upper division earth science courses (10 credits). Students can choose to specialize their minor with up to three classes in weather and climate, or a series of classes in geology and geochemistry, or a series of courses that focus on earth surface processes and hazards geology, or they can choose to take a very broad range of courses spanning topics such as environmental science, meteorology, oceanography, paleontology and Earth history, tectonics and others.

### Total Program Credits: 22

Discipline Core Requirements:		22 Credits
	<a href="#">GEO 1010</a> Introduction to Geology PP	3
or	<a href="#">GEO 1030</a> Natural Disasters and the Environment PP	
or	<a href="#">GEO 1040</a> The Dinosaurian World PP	
or	<a href="#">GEO 1050</a> Geology of National Parks PP	
	<a href="#">GEO 1015</a> Introduction to Geology Laboratory	1
Complete seven credits lower division electives from the following		7
	<a href="#">ENVT 1110</a> Introduction to Environmental Management PP (3)	
	<a href="#">ENVT 2710</a> Environmental Careers (1)	
	<a href="#">ENVT 2730</a> Introduction to Soils (4)	
	<a href="#">GEO 202R</a> Science Excursion (1)	
	<a href="#">GEO 204R</a> Natural History Excursion BB (3)	
	<a href="#">GEO 1020</a> Prehistoric Life BB (3.0)	
	<a href="#">GEO 1080</a> Introduction to Oceanography PP (3.0)	
	<a href="#">GEO 1220</a> Historical Geology (3)	
and	<a href="#">GEO 1225</a> Historical Geology Laboratory (1)	
	<a href="#">GEO 2070</a> Desert Natural History (3)	
	<a href="#">GEO 2500</a> Introduction to Field Geology (3)	
	<a href="#">GEOG 1000</a> Introduction to Physical Geography PP (3)	
	<a href="#">GEOG 1800</a> Mapping the World with Geospatial Technology PP (3)	
	<a href="#">GEOG 2000</a> Sustainability and Environment SS (3)	
	<a href="#">METO 1010</a> Introduction to Meteorology PP (3.0)	
	<a href="#">METO 1060</a> Fundamentals of Weather Forecasting PP (3.0)	
Complete eleven credits of upper division electives from the following:		11

	<a href="#">ENVT 3790</a> Applied Hydrology WE (4.0)
	<a href="#">ENVT 3800</a> Energy Use on Earth (3)
	<a href="#">GEO 3000</a> Environmental Geochemistry (3)
	<a href="#">GEO 3070</a> Advanced Desert Natural History (3)
	<a href="#">GEO 3080</a> Earth Materials WE (3)
and	<a href="#">GEO 3085</a> Earth Materials Laboratory (1)
	<a href="#">GEO 3100</a> Isotope Geochemistry (3)
and	<a href="#">GEO 3105</a> Isotope Geochemistry Laboratory (1)
	<a href="#">GEO 3200</a> Geologic Hazards (4.0)
and	<a href="#">GEO 3205</a> Geologic Hazards Laboratory (1)
	<a href="#">GEO 3700</a> Structure and Tectonics (4.0)
	<a href="#">GEO 4500</a> Sedimentary Geology WE (4.0)
	<a href="#">GEO 4510</a> Paleontology (4.0)
	<a href="#">GEO 4080</a> Petrology (4)
	<a href="#">GEO 4085</a> Petrology Laboratory (1)
	<a href="#">GEO 4790</a> Hydrogeology (4)
	<a href="#">GEO 480R</a> Earth Science Seminar (0.5) (may be repeated once)
	<a href="#">GEO 490R</a> Special Topics in Geology (1-4) (Special Topics, Research and Internships) (Up to four credits can count toward the minor)
or	<a href="#">ENVT 495R</a> Special Projects in Environmental Management
or	<a href="#">ENVT 482R</a> Geologic Environmental Internship
or	<a href="#">GEOG 482R</a> GIS Internship
or	<a href="#">GEOG 489R</a> Student Research in Geography
or	<a href="#">GEOG 490R</a> Special Topics in Geography
or	<a href="#">GEO 482R</a> Geologic Environmental Internship
or	<a href="#">GEO 489R</a> Student Research
or	<a href="#">GEO 495R</a> Independent Study
	<a href="#">GEO 495R</a> Independent Study (1-4)
	<a href="#">GEOG 3000</a> Climate Change: Science and Society (3)
	<a href="#">GEOG 3500</a> Geomorphology WE (4.0)
or	<a href="#">GEO 3500</a> Geomorphology WE (4.0)
	<a href="#">GEOG 3600</a> Introduction to Geographic Information Systems (4.0)
	<a href="#">GEOG 3700</a> Wetland Studies (3)
	<a href="#">GEOG 3705</a> Wetland Studies Laboratory (1)

### Graduation Requirements

1. Grade of C- or higher in all courses used to satisfy requirements of the minor.

### Earth Science, Minor Careers

1. Knowledge of at least two of the core fields of earth science, including petrology, mineralogy, sedimentology, paleontology,

structural geology, engineering geology, hydrology, climatology, and meteorology.

2. Ability to communicate effectively both verbally and in writing.

### Related Careers

- Natural Sciences Managers
- Geoscientists, Except Hydrologists and Geographers
- Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary

## Environmental Science and Management, Minor

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### Requirements

Environmental science is the study of the Earth's surface, including its water and atmosphere, with a particular focus on their relationship to humans and other living things. Environmental science applies chemistry, physics, mathematics, and biology to answer questions about the Earth and its interrelationships with living things. Environmental management focuses on the maintenance of environmental resources, for example water resources. Environmental scientists may conduct studies in the field, in the laboratory using advanced analytical equipment, and in the office using specialized computer software. The program is preparation for a variety of career paths, including water monitoring, treatment, and pollution control with local, state, or federal agencies; environmental consulting with private industry; and other careers that draw on a background in the natural sciences, including law, public policy, and public health.

### Total Program Credits: 21

Discipline Core Requirements:		10 Credits
Required Courses		
ENVT 1110	Introduction to Environmental Management PP	3
ENVT 2560	Environmental Health	3
ENVT 2710	Environmental Careers	1
ENVT 3850	Environmental Policy WE	3
Elective Courses:		11 Credits
Complete at least 11 credits from the following list, at least six need to have an ENVT designation. In addition, at least eight credits must be 3000-level or higher.		11
Environmental Science and Management		
ENVT 1200	Environmental Worker Safety (3)	
ENVT 1270	Environmental Microbiology (3)	
ENVT 1300	Environmental Lab and Sampling (3)	
ENVT 1510	Hazardous Materials Emergency Response (3)	
ENVT 2730	Introduction to Soils (4)	
ENVT 3010	Environmental Toxicology (3)	
ENVT 3210	Water Quality and Reclamation (3)	
ENVT 3280	Environmental Law (3)	
ENVT 3290	Environmental Reporting WE (3)	
ENVT 3320	Hydraulics of Water (3)	
ENVT 3330	Water Resources Management (3)	

ENVT 3530	Environmental Management Systems (3)	
ENVT 3550	Site Investigation (3)	
ENVT 3750	Land Use Planning (3)	
ENVT 3790	Applied Hydrology (4)	
ENVT 3800	Energy Use on Earth (3)	
ENVT 482R	Geologic Environmental Internship (1-3)	
ENVT 495R	Special Projects in Environmental Management (1-3)	
Geography		
GEOG 2000	Sustainability and Environment SS (3)	
GEOG 3400	Environmental Remote Sensing (3)	
GEOG 3500	Geomorphology WE (4)	
GEOG 3600	Introduction to Geographic Information Systems (4)	
GEOG 3650	Advanced Geographic Information Systems (4)	
GEOG 3700	Wetland Studies (3)	
GEOG 3705	Wetland Studies Laboratory (1)	
GEOG 4100	Geospatial Field Methods (3)	
Geology		
GEO 1010	Introduction to Geology PP (3)	
GEO 1015	Introduction to Geology Laboratory (1)	
GEO 1080	Introduction to Oceanography PP (3)	
GEO 1085	Introduction to Oceanography Laboratory (1)	
GEO 3000	Environmental Geochemistry (3)	
GEO 3100	Isotope Geochemistry (3)	
GEO 3105	Isotope Geochemistry Laboratory (1)	
GEO 3200	Geologic Hazards (4)	
GEO 3205	Geologic Hazards Laboratory (1)	
At most 4 credits of the following may be used towards elective requirements:		
BIOL 2500	Environmental Biology BB (3)	
BIOL 3700	General Ecology (3)	
BIOL 3800	Conservation Biology (3)	
BOT 4050	Plant Ecology (3)	
CHEM 3020	Environmental Chemistry (3)	
CHEM 3025	Environmental Chemistry Laboratory (3)	
ENST 3000	Introduction to Environmental Studies (3)	
Or other electives approved by the chair of the Earth Science Department		

### Graduation Requirements

1. Grade of C- or higher in all courses used to satisfy requirements of the minor.

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## Environmental Science and Management, Minor Careers

1. Develop the necessary technical knowledge in environmental science and technology management and the underlying foundational and interdisciplinary sciences to succeed in their professional careers.
2. Demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports.
3. Develop skills to critically evaluate scientific literature and scientific problems, identify existing and new scientific questions, and address those questions using both logical, laboratory, geospatial, and other creative approaches
4. Articulate how the relevant governmental agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated environmental laws and regulations relate to their field of study.
5. Illustrate that they have sufficient knowledge of the breadth of career opportunities available to them so that they can obtain career satisfaction.

### Related Careers

- Environmental Scientists and Specialists, Including Health
- Environmental Science Teachers, Postsecondary

## Geography, Minor

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### Requirements

The Minor in Geography allows students to focus on either of the major sub-disciplines of geography, namely physical geography or human geography, or to follow a broad curriculum in geography. The minor will also overlap with the coursework required of students seeking a Utah state teaching endorsement in geography.

### Total Program Credits: 20

Discipline Core Requirements:		10 Credits
Required Courses; Complete the following:		
<a href="#">GEOG 1000</a>	Introduction to Physical Geography PP	3
<a href="#">GEOG 130G</a>	Survey of World Geography GI SS	3
<a href="#">GEOG 3600</a>	Introduction to Geographic Information Systems	4
Elective Requirements:		10 Credits
Complete at least 10 credits from the following list, at least six of which must be 3000-level or higher:		10
<a href="#">ENVT 3800</a>	Energy Use on Earth (3)	
<a href="#">GEOG 1005</a>	Introduction to Physical Geography Lab (1)	
<a href="#">GEOG 140G</a>	Introduction to Human Geography SS GI (3)	
<a href="#">GEOG 1800</a>	Mapping the World with Geospatial Technology PP (3)	
<a href="#">GEOG 2000</a>	Sustainability and Environment SS (3)	
<a href="#">GEOG 2100</a>	Geography of the United States SS (3)	
<a href="#">GEOG 2500</a>	Geography of Latin America and the Caribbean (3)	

<a href="#">GEOG 3000</a>	Climate Change in Science and Society (3)	
<a href="#">GEOG 3110</a>	Urban Geography WE (3)	
<a href="#">GEOG 3200</a>	Geography of Utah (3)	
<a href="#">GEOG 3300</a>	Biogeography (4)	
<a href="#">GEOG 3350</a>	Geography of Africa (3)	
<a href="#">GEOG 3400</a>	Environmental Remote Sensing (3)	
<a href="#">GEOG 3430</a>	Political Geography (3)	
<a href="#">GEOG 3500</a>	Geomorphology WE (4)	
<a href="#">GEOG 3650</a>	Advanced Geographic Information Systems (4)	
<a href="#">GEOG 3700</a>	Wetland Studies (3)	
<a href="#">GEOG 3705</a>	Wetland Studies Laboratory (1)	
<a href="#">GEOG 3800</a>	Environmental History of the United States (3)	
<a href="#">GEOG 4100</a>	Geospatial Field Methods (3)	
At most one of the following courses may be used towards elective requirements:		
<a href="#">ANTH 3260</a>	Archeological Method and Theory (3)	
<a href="#">ANTH 3850</a>	Ethnographic Methods WE (3)	
<a href="#">BIOL 3700</a>	General Ecology (3)	
<a href="#">BIOL 3800</a>	Conservation Biology (3)	
<a href="#">BOT 4050</a>	Plant Ecology (3)	
<a href="#">ENGL 373R</a>	Literature of Cultures and Places (3)	
<a href="#">ENST 3000</a>	Introduction to Environmental Studies (3)	
<a href="#">ENVT 3330</a>	Water Resources Management (3)	
<a href="#">ENVT 3850</a>	Environmental Policy WE (3)	
<a href="#">ANTH 3150</a>	Culture Ecology and Health (3)	
<a href="#">PHIL 3530</a>	Environmental Ethics (3)	
<a href="#">SOC 4020</a>	Survey Research Design (3)	
Or other advisor-approved electives		

### Graduation Requirements:

1. Grade of C- or higher in all courses used to satisfy requirements of the minor.

## Geography, Minor Careers

1. Technical Knowledge: Prior to graduation, our students will develop the necessary technical knowledge in Earth systems and geography, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in professional careers related to their degree programs or in associated graduate programs.
2. Skill in oral and written communication: Our students will demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports. This includes orally presenting the results of research to technical and non-technical audiences and write technical and non-technical reports based upon original research and reviews of other literature and reports.
3. Skill in problem solving and reasoning: Our students will develop skills to critically evaluate scientific questions and address those

questions using both logical, laboratory, geospatial, and other creative approaches.

4. Knowledge of agencies, laws, and regulations: Our students will graduate with knowledge of the relevant agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated laws and regulations relevant to their field of study. Their knowledge will be sufficiently deep that they understand where and how to seek additional information to further educate themselves and conduct their work with accordance to all agencies, laws, and regulations.
5. Knowledge of Professional Options and Responsibilities: Our students will graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction. Additionally, they will know of the primary responsibilities and the expectations of them within their chosen professional track such that they are successful in the eyes of their employer(s).

**Related Careers**

- Managers, All Other
- Geographers
- Geography Teachers, Postsecondary

**Earth Science Education, B.S.**

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**Requirements**

Earth Science is the study of the Earth, including its water and atmosphere, and their relationship to humans and other living things. Earth Science applies chemistry, physics, mathematics and biology to scientific problems of the Earth. The Earth Science Education program prepares students to receive a Utah State teaching credential with an endorsement in Earth Science. Through careful choice of courses, students may also earn endorsements in the other physical sciences.

**Total Program Credits: 121**

Matriculation Requirements:		
<ol style="list-style-type: none"> <li>1. Complete the following courses: GEO 1010 Introduction to Geology PP, GEO 1015 Introduction to Geology Lab, MATH 1050 College Algebra QL (or MATH 1055 College Algebra with Preliminaries QL), MATH 1060 Trigonometry QL, BIOL 1010 General Biology BB with a grade of "C" or higher in each.</li> <li>2. Complete a minimum of 30 semester hours of college credit.</li> <li>3. Apply to the department of Earth Science for admission.</li> </ol>		
Secondary Education Requirements:		
<ol style="list-style-type: none"> <li>1. ENGL and MATH QL courses must have a grade C or higher</li> <li>2. GPA of 3.0 or higher with no grade lower than a C in content area courses.</li> <li>3. Completion of all General Education requirements and 70% of content area courses.</li> <li>4. Pass LiveScan Criminal Background Check.</li> </ol>		
General Education Requirements:		30 Credits
	ENGL 1010 Introduction to Academic Writing CC	3
or	ENGL 1005 Literacies and Composition Across Contexts CC (5)	
	ENGL 2010 Intermediate Academic Writing CC	3
	MATH 1050 College Algebra QL	4
or	MATH 1055 College Algebra with Preliminaries QL (5)	
Complete one of the following:		3

	HIST 2700 US History to 1877 AS (3)	
and	HIST 2710 US History since 1877 AS (3)	
	HIST 1700 American Civilization AS (3)	
	HIST 1740 US Economic History AS (3)	
	POLS 1000 American Heritage SS (3)	
	POLS 1100 American National Government AS (3)	
Complete the following:		
	PHIL 2050 Ethics and Values IH	3
	HLTH 1100 Personal Health and Wellness TE (2)	
or	EXSC 1097 Fitness for Life TE	2
Distribution Courses		
	BIOL 1010 General Biology BB	3
Physical Science <sup>1</sup>		
Additional Biology or Physical Science <sup>1</sup>		
	Humanities Distribution	3
	Fine Arts Distribution	3
	Social/Behavioral Science	3
Discipline Core Requirements:		91 Credits
	ASTR 1040 Elementary Astronomy PP	3
	GEOG 3700 Wetland Studies	3
or	BIOL 2500 Environmental Biology BB (3)	
	CHEM 1210 Principles of Chemistry I PP	4
	CHEM 1215 Principles of Chemistry I Laboratory	1
	CHEM 1220 Principles of Chemistry II PP	4
	CHEM 1225 Principles of Chemistry II Laboratory	1
	GEO 1010 Introduction to Geology PP	3
	GEO 1015 Introduction to Geology Laboratory	1
	GEO 1220 Historical Geology	3
	GEO 1225 Historical Geology Laboratory	1
	GEO 3700 Structure and Tectonics	4
	GEO 3080 Earth Materials WE	3
and	GEO 3085 Earth Materials Laboratory	1
	GEO 4500 Sedimentary Geology WE	4
	GEO 480R Earth Science Seminar (must be taken twice)	1
	METO 1010 Introduction to Meteorology PP	3
	METO 3100 Climate and the Earth System	3
	SCIE 4210 Science Teaching Methods I	3
	SCIE 4220 Teaching Methods in Science II	3
	PHYS 2010 College Physics I PP	4
	PHYS 2015 College Physics I Lab	1
	PHYS 2020 College Physics II PP	4
	PHYS 2025 College Physics II Lab	1
Education Courses		
	EDSC 1010 Introduction to Education	2
	EDSC 3000 Educational Psychology	3

## Earth Science

EDSC 325G	Equitable Technology Integration GI	2
EDSC 4200	Classroom Management I	2
EDSC 4250	Classroom Management II	2
EDSC 4440	Content Area Literacies	3
EDSC 445G	Multicultural Instruction ESL GI	3
EDSC 455G	Secondary Curriculum Instruction and Assessment GI	3
EDSC 4850	Student Teaching--Secondary	8
EDSC 4990	Teacher Performance Assessment Project WE	2
EDSP 340G	Exceptional Students GI	2

### Graduation Requirements:

1. Completion of a minimum of 121 semester credits.
2. Overall GPA of 3.0 (B) or above with no grade lower than a C in major required content courses and no grade lower than a B- in Licensure and Methods courses. (Departments may require a higher GPA.)
3. Residency hours -- minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.
5. Grade of C or higher in all GEO, BIOL, and METO courses.
6. Successful completion of at least one Global/Intercultural course.

Note: \*This requirement is fulfilled with the core requirements.

### Earth Science Education, B.S.

#### Careers

1. Prior to graduation, our students will develop the necessary technical knowledge in Earth Science Education, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in a professional career related to their degree programs or in associated graduate programs.
2. Our students will demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports and presenting content matter to students as educators. This includes orally presenting the results of research to technical and non-technical audiences and write technical and non-technical reports based upon original research and reviews of other literature and reports.
3. Our students will develop skills to critically evaluate scientific literature and scientific problems, identify existing and new scientific questions, and address those questions using both logical, laboratory, geospatial, and other creative approaches applied to classroom teaching.
4. Our students will graduate with knowledge of the relevant agencies (e.g., NAGT, NAME, USDE, EPA, BLM, USGS, UGS, etc.) and the associated standards, laws, and regulations relevant to the field of education and earth science. Their knowledge will be sufficiently deep that they understand where and how to seek additional information to further educate themselves and conduct their work with accordance to all agencies, standards, laws, and regulations.
5. Our students will graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction. Additionally, they will know of their primary responsibilities and the expectations of them within their chosen professional track such that they are successful in the eyes of their employer(s).

#### Related Careers

- Agricultural Sciences Teachers, Postsecondary

- Biological Science Teachers, Postsecondary
- Forestry and Conservation Science Teachers, Postsecondary
- Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
- Chemistry Teachers, Postsecondary
- Environmental Science Teachers, Postsecondary
- Physics Teachers, Postsecondary
- Education Teachers, Postsecondary
- Middle School Teachers, Except Special and Career/Technical Education
- Secondary School Teachers, Except Special and Career/Technical Education

## Environmental Science and Management, B.S.

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### Requirements

Environmental Science is the study of the Earth's surface, including its water and atmosphere, with a particular focus on their relationship to humans and other living things. Environmental Science applies chemistry, physics, mathematics, geography, biology and geology to answer questions about the Earth and its interrelationships with living things. Environmental Management focuses on the maintenance of environmental resources, for example the management of water resources, geological resources, or air quality. Environmental scientists may conduct studies in the field, in the laboratory using advanced analytical equipment, and in the office using specialized computer software. The program is preparation for a variety of career paths, including water monitoring, treatment, and pollution control with local, state or federal agencies; environmental and hydrological consulting with private industry; and other careers that draw on a background in the natural sciences, including law, public policy, and public health.

### Total Program Credits: 120

General Education Requirements:			36 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGL 1005	Literacies and Composition Across Context CC (5)	
	ENGL 2010	Intermediate Academic Writing CC	3
Complete one of the following:			4
	MATH 1210	Calculus I QL <sup>1</sup> (4)	
	MATH 1050	College Algebra QL <sup>2</sup> (4)	
	MATH 1080	Precalculus QL (5)	
Complete the following:			3
	HIST 1700	American Civilization AS (3)	
	HIST 1740	US Economic History AS (3)	
	HIST 2700	US History to 1877 AS (3)	
and	HIST 2710	US History since 1877 AS (3)	
	POLS 1000	American Heritage SS (3)	
	POLS 1100	American National Government AS (3)	
Complete the following:			
	HLTH 1100	Personal Health and Wellness TE	2
or	EXSC 1097	Fitness for Life TE (2)	
	PHIL 2050	Ethics and Values IH	3



or	PHIL 205G	Ethics and Values IH GI (3)	
Distribution Courses			
Complete one of the following:			3
	BIOL 1010	General Biology BB (3)	
or	BIOL 1610	College Biology I BB (4)	
	ENVT 1110	Introduction to Environmental Management	3
Third Science Distribution			3
Complete one of the following:			
	GEO 1010	Introduction to Geology PP (3)	
	GEO 1030	Natural Disasters and the Environment PP (3)	
	GEO 1040	The Dinosaurian World PP (3)	
	GEO 1050	Geology of Natural Parks PP (3)	
Fine Arts			3
Humanities			3
Social/Behavioral Science: (GEOG 2000 Recommended)			3
Discipline Core Requirements:			51 Credits
	GEO 1015	Introduction to Geology Laboratory	1
	CHEM 1210	Principles of Chemistry I PP	4
and	CHEM 1215	Principles of Chemistry I Laboratory	1
	CHEM 1220	Principles of Chemistry II PP	4
and	CHEM 1225	Principles of Chemistry II Laboratory	1
	ENVT 1270	Environmental Microbiology	3
or	MIRC 3150	Microbial Ecology WE	
	ENVT 1300	Environmental Lab and Sampling	2
	STAT 2040	Principles of Statistics QL	4
	PHYS 2010	College Physics I PP	4
or	PHYS 2210	Physics for Scientists and Engineers I PP	
	ENVT 2710	Environmental Careers	1
	ENVT 2730	Introduction to Soils	4
	ENVT 2560	Environmental Health	3
	ENVT 3210	Water Quality and Reclamation	4
	ENVT 3280	Environmental Law	3
	GEOG 3600	Introduction to Geographic Information Systems	4
	ENVT 3790	Applied Hydrology WE	4
	ENVT 3850	Environmental Policy WE	3
	GEO 480R	Earth Science Seminar (Must be taken twice)	1
Academic Track Requirements:			12 Credits
Select one of the following tracks:			12
<b>Environmental Management Track</b>			
	ENVT 1200	Environmental Worker Safety (3)	
	ENVT 1510	Hazardous Materials Emergency Response (3)	

Complete one of the following - Water and Pollution Management			
	ENVT 3010	Environment Toxicology (3)	
	CIVE 3320	Introduction to Water Resources (3) <sup>4</sup>	
	ENVT 3320	Hydraulics of Water (3)	
	ENVT 3330	Water Resources Management (3)	
Complete one of the following - Land and Environmental Management			
	ENVT 3530	Environmental Management Systems (3)	
	ENVT 3750	Land Use Planning (3)	
	ENVT 3770	Natural Resources Management (3)	
<b>Environmental Science Track</b>			
	METO 1010	Introduction to Meteorology PP (3)	
	GEOG 3400	Environmental Remote Sensing (3)	
Complete one of the following - Biological Sciences			
	BIOL 2500	Environmental Biology BB (3)	
	BIOL 3700	General Ecology (3) <sup>4</sup>	
	BIOL 3800	Conservation Biology (3)	
Complete one of the following - Environmental Sciences			
	GEO 3000	Environmental Geochemistry (3)	
	METO 3100	Climate and the Earth System (3)	
	GEOG 3700	Wetland Studies (3)	
	ENVT 3800	Energy Use on Earth (3)	
Elective Requirements:			21 Credits
Choose 21 credits, not already taken in the core or track, from the following list (at least 15 credits must be Upper Division): <sup>5</sup>			
	ENVT 1200	Environmental Worker Safety (3)	
	ENVT 1510	Hazardous Materials Emergency Response (3)	
	ENVT 3010	Environment Toxicology (3)	
	ENVT 3290	Environmental Reporting WE (3)	
	ENVT 3320	Hydraulics of Water (3)	
	CIVE 3320	Introduction to Water Resources (3) <sup>4</sup>	
	ENVT 3330	Water Resources Management (3)	
	ENVT 3530	Environmental Management Systems (3)	
	ENVT 3550	Site Investigation (3)	
	ENVT 3700	Current Topics in Environmental Management (3)	
	ENVT 3750	Land Use Planning (3)	
	ENVT 3770	Natural Resources Management (3)	
	ENVT 3800	Energy Use on Earth (3)	
	ENVT 482R	Geologic Environmental Internship (1)	
	ENVT 495R	Special Projects in Environmental Management (1)	
	GEO 1080	Introduction to Oceanography PP (3)	
	GEO 202R	Science Excursion (1)	

## Earth Science

	GEO 204R	Natural History Excursion BB (1)	
	GEO 2070	Desert Natural History (3)	
	GEO 3000	Environmental Geochemistry (3)	
	GEO 3100	Isotope Geochemistry (3)	
	GEO 3080	Earth Materials WE (3)	
and	GEO 3085	Earth Materials Laboratory (1)	
	GEO 3100	Isotope Geochemistry (3)	
	GEO 3105	Isotope Geochemistry Laboratory (1)	
	GEO 3200	Geologic Hazards (3)	
and	GEO 3205	Geologic Hazards Laboratory (1)	
	GEO 4500	Sedimentary Geology WE (4)	
	GEO 4790	Hydrogeology (3)	
	GEOG 2000	Sustainability and Environment SS (3)	
	GEOG 3650	Advanced Geographic Information Systems (4)	
	GEOG 3500	Geomorphology WE (4)	
or	GEO 3500	Geomorphology WE (4)	
	GEOG 3700	Wetland Studies (3)	
	GEOG 3705	Wetland Studies Laboratory (1)	
	GEOG 3800	Environmental History of the United States (3)	
	GEOG 4100	Geospatial Field Methods (3)	
	GEOG 482R	GIS Internship (1-3)	
	METO 1020	Introduction to Meteorology Laboratory (1)	
	METO 1060	Fundamentals of Weather Forecasting PP (3)	
	METO 3100	Climate and the Earth System (3)	
	PHYS 2015	College Physics I Lab (1)	
	PHYS 2025	College Physics II Lab (1)	
	PHYS 2210	Physics for Scientists and Engineers I PP (4)	
	PHYS 2220	Physics for Scientists and Engineers II PP (4)	
	CHEM 2310	Organic Chemistry I (4)	
	CHEM 2315	Organic Chemistry I Laboratory (1)	
	CHEM 2320	Organic Chemistry II (4)	
	CHEM 2325	Organic Chemistry II Laboratory (1)	
	MATH 1210	Calculus I QL (4)	
	MATH 1220	Calculus II (4)	
	MATH 2210	Calculus III (4)	
	BIOL 1610	College Biology I BB (4)	
	BIOL 1615	College Biology I Laboratory (1)	
	BIOL 1620	College Biology II (3)	
	BIOL 1625	College Biology II Laboratory (1)	
	BIOL 2500	Environmental Biology BB (3)	
	BIOL 3700	General Ecology (3) <sup>4</sup>	

	BIOL 3705	General Ecology Laboratory (1) <sup>4</sup>	
	BIOL 3800	Conservation Biology (3)	
	BIOL 4000	Freshwater Ecology (4) <sup>4</sup>	
	MIRC 3150	Microbial Ecology WE (4) <sup>4</sup>	
	Or other electives approved by the advisor and chair.		

### Notes:

1. MATH 1210 is required for PHYS 2110 option.
2. Both MATH 1050 and PHYS 1100 are needed for PHY 2210 option. Otherwise both MATH 1050 and MATH 1060 are required.
3. BIOL 1610 has a co-requisite of BIOL 1615 which can count as an elective.
4. This course has a prerequisite that is not in program and may require you to take additional courses.
5. Credits used to satisfy core and/or track requirements cannot double count as an elective.

### Graduation Requirements:

1. Completion of a minimum of 120 semester credits with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.0 (C) or above.
3. Grade of C- or better in all ENVT, GEO, and GEOG courses.
4. Residency hours--minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
5. Completion of GE and specified departmental requirements.
6. Successful completion of at least one Global/Intercultural course.
7. Successful completion of at least two Writing Enriched (WE) courses.

## Environmental Science and Management, B.S.

### Careers

1. Develop the necessary technical knowledge in environmental science and technology management, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in professional careers related to their degree programs or in associated graduate programs.
2. Demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports.
3. Develop skills to critically evaluate scientific literature and scientific problems, identify existing and new scientific questions, and address those questions using both logical, laboratory, geospatial, and other creative approaches.
4. Graduate with knowledge of the relevant agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated laws and regulations relevant to their field of study.
5. Graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction.

### Related Careers

- Environmental Scientists and Specialists, Including Health
- Environmental Science Teachers, Postsecondary

## Environmental Studies, B.S.

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## Requirements

The Bachelor of Science in Environmental Studies is an interdisciplinary program that focuses on the complex relationships between humans and the natural world. By combining a solid foundation of earth system science with social science and humanities courses, students will gain the skills and perspectives necessary to solving some of the pressing environmental issues of today. The program is flexible so that students can tailor the program to fit their interests and career goals. After a broad introduction to environmental issues students can focus on specific areas and topics of their interest, such as sustainability, planning, policy, communication, business, ecology, geology, environmental science, geography, and more.

### Total Program Credits: 120

General Education Requirements:		36 Credits
	<a href="#">ENGL 1010</a> Introduction to Academic Writing CC	3
or	<a href="#">ENGL 1005</a> Literacies and Composition Across Context CC (5)	
	<a href="#">ENGL 2010</a> Intermediate Academic Writing CC	3
Complete one of the following:		4
	<a href="#">MATH 1050</a> College Algebra QL	
	<a href="#">MATH 1055</a> College Algebra with Preliminaries QL	
Complete the following:		3
	<a href="#">HIST 2700</a> US History to 1877 AS (3)	
and	<a href="#">HIST 2710</a> US History since 1877 AS (3)	
	<a href="#">HIST 1700</a> American Civilization AS (3)	
	<a href="#">HIST 1740</a> US Economic History AS (3)	
	<a href="#">POLS 1000</a> American Heritage SS (3)	
	<a href="#">POLS 1100</a> American National Government AS (3)	
Complete the following:		
	<a href="#">PHIL 2050</a> Ethics and Values IH	3
	<a href="#">HLTH 1100</a> Personal Health and Wellness TE	2
or	<a href="#">EXSC 1097</a> Fitness for Life TE (2)	
Distribution Courses		
	<a href="#">BIOL 1010</a> General Biology BB	3
or	<a href="#">BIOL 1610</a> College Biology I BB (4)	
	<a href="#">ENVT 1110</a> Introduction to Environmental Management PP	3
	<a href="#">GEOG 1000</a> Introduction to Physical Geography PP	3
Humanities Distribution		3
	<a href="#">GEOG 140G</a> Introduction to Human Geography SS GI	3
Fine Arts Distribution		3
Discipline Core Requirements:		22 Credits
	<a href="#">GEOG 2000</a> Sustainability and Environment SS	3
	<a href="#">GEOG 3000</a> Climate Change: Science and Society	3
	<a href="#">ENST 3000</a> Introduction to Environmental Studies	3
	<a href="#">ENST 3100</a> Environmental Justice	3
	<a href="#">ENVT 3290</a> Environmental Reporting WE	3
	<a href="#">ENVT 3850</a> Environmental Policy WE	3
	<a href="#">COMM 3115</a> Communicating in Environments	3

<a href="#">GEO 480R</a>	Earth Science Seminar (must be taken twice)	1
Program Electives:		33 Credits
Complete six credits from the following		6
<a href="#">ENVT 2560</a>	Environmental Health (3)	
<a href="#">ENVT 3280</a>	Environmental Law (3)	
<a href="#">ENVT 3800</a>	Energy Use on Earth (3)	
<a href="#">ENVT 3770</a>	Natural Resources Management (3)	
<a href="#">ENST 3520</a>	Environmental Sociology (3)	
<a href="#">ENST 490R</a>	Topics in Environmental Studies (3)	
<a href="#">PHIL 3530</a>	Environmental Ethics (3)	
<a href="#">PHIL 4300</a>	Environmental Aesthetics (3)	
Select one of the following methods courses		3
<a href="#">ANTH 3850</a>	Ethnographic Methods WE (3)	
<a href="#">ENGL 3460</a>	Wilderness and Environmental Writing (3)	
<a href="#">GEOG 3600</a>	Introduction to Geographic Information Systems (4)	
<a href="#">STAT 2040</a>	Principles of Statistics QL (4)	
Complete 12 credits from the following physical and life science courses <sup>1</sup>		12
<a href="#">ENVT 3750</a>	Land Use Planning (3)	
<a href="#">GEOG 3700</a>	Wetland Studies (3)	
<a href="#">GEOG 3400</a>	Environmental Remote Sensing (3)	
<a href="#">GEOG 3300</a>	Biogeography (4)	
<a href="#">GEOG 3500</a>	Geomorphology (4)	
<a href="#">GEOG 3650</a>	Advanced Geographic Information Systems (4)	
<a href="#">GEOG 3705</a>	Wetland Studies Laboratory (1)	
<a href="#">BIOL 2500</a>	Environmental Biology BB (3)	
<a href="#">BIOL 3700</a>	General Ecology (3)	
<a href="#">ENVT 2730</a>	Introduction to Soils (4)	
<a href="#">ENVT 3790</a>	Applied Hydrology WE (4)	
<a href="#">ENVT 4790</a>	Hydrology II (4)	
<a href="#">GEO 1080</a>	Introduction to Oceanography PP (3)	
<a href="#">GEO 1010</a>	Introduction to Geology PP (3)	
<a href="#">GEO 1085</a>	Introduction to Oceanography Laboratory (1)	
<a href="#">GEO 3080</a>	Earth Materials WE (3)	
<a href="#">GEO 3200</a>	Geologic Hazards (3)	
<a href="#">GEO 202R</a>	Science Excursion (1)	
<a href="#">GEO 3500</a>	Geomorphology WE (4)	
<a href="#">GEOG 4100</a>	Geospatial Field Methods (3)	
<a href="#">METO 3100</a>	Climate and the Earth System (3)	
Complete 12 credits from the following social science and humanities classes <sup>1</sup>		12
<a href="#">ANTH 3200</a>	Food and Culture (3)	
<a href="#">ANTH 101G</a>	Social Cultural Anthropology SS GI (3)	

# Earth Science

	<a href="#">GEOG 2500</a>	Geography of Latin America and the Caribbean (3)	
	<a href="#">GEOG 3110</a>	Urban Geography WE (3)	
	<a href="#">GEOG 3200</a>	Geography of Utah (3)	
	<a href="#">GEOG 3350</a>	Geography of Africa (3)	
	<a href="#">GEOG 3800</a>	Environmental History of the United States (3)	
or	<a href="#">HIST 3800</a>	Environmental History of the United States (3)	
	<a href="#">HIST 322G</a>	History of the American West to 1850 GI WE (3)	
	<a href="#">HIST 323G</a>	History of the American West since 1850 GI WE (3)	
	<a href="#">HIST 4320</a>	History of Scientific Thought (3)	
	<a href="#">POLS 3030</a>	State and Local Government (3)	
	<a href="#">POLS 3410</a>	Globalization and Sustainable Development (3)	
	<a href="#">POLS 3310</a>	Introduction to Public Policy WE (3)	
	<a href="#">POLS 3320</a>	Nonprofits and The Public Sector (3)	
	<a href="#">POLS 3640</a>	United Nations Sustainable Development Goals (3)	
	<a href="#">PHIL 3400</a>	Philosophy of Science (3)	
	<a href="#">SOC 1010</a>	Introduction to Sociology SS (3)	
	<a href="#">SOC 3520</a>	Environmental Sociology (3)	
or	<a href="#">ENST 3520</a>	Environmental Sociology (3)	
	<a href="#">SOC 4100</a>	Contemporary Social Theory WE (3)	
	<a href="#">SOC 4400</a>	Social Change (3)	
	<a href="#">PJST 3200</a>	Global Poverty Facts Causes and Solutions (3)	
	<a href="#">PJST 3300</a>	Community Development (3)	
Electives: <sup>1</sup>			29 Credits
Choose any classes. It is recommended that you select classes listed in the categories above that have not been taken or select from the courses below. It is also recommended to select classes from the following prefixes: GEOG, GEO, ENVT, ENST, AIST, ANTH, SOC, BIOL, CHEM, PHYS, NSS, HIST, GIS, MATH, STAT, CS, REC, PHIL, ENTR, ARC, ART, HUM, ENGL, METO, PJST, POLS, MGMT.			29
	<a href="#">GEOG 482R</a>	GIS Internship (1-3)	
	<a href="#">GEOG 489R</a>	Student Research in Geography (1-4)	
	<a href="#">AIST 327G</a>	Indians of Utah GI (3)	
	<a href="#">CHEM 1210</a>	Principles of Chemistry I PP (4)	
and	<a href="#">CHEM 1215</a>	Principles of Chemistry I Laboratory (1)	
	<a href="#">CHEM 1220</a>	Principles of Chemistry II PP (4)	
and	<a href="#">CHEM 1225</a>	Principles of Chemistry II Laboratory (1)	
	<a href="#">STAT 2060</a>	Introduction to Statistical Computing (1)	

	<a href="#">STAT 3040</a>	Probability and Statistics for Engineering and the Sciences (3)	
	<a href="#">ENGL 373R</a>	Literature of Cultures and Places (3)	
	<a href="#">ENTR 2500</a>	Creativity and Entrepreneurial Thinking SS (3)	
	<a href="#">ETHS 2500</a>	Introduction to Ethnic Studies (3)	
	<a href="#">AIST 3600</a>	American Indian Policy and Tribal Government (3)	
	<a href="#">AIST 3810</a>	Precolumbian America (3)	
	<a href="#">ANTH 3150</a>	Culture Ecology and Health (3)	
	<a href="#">ANTH 3450</a>	Shamanism and Indigenous Religion (3)	
	<a href="#">SOC 3700</a>	Social Inequality (3)	
	<a href="#">SOC 3460</a>	Political Sociology (3)	
	<a href="#">ETHS 2510</a>	Introduction to Ethnic Studies (3)	
	<a href="#">ENVT 3600</a>	Appropriate Technology and Sustainable Development for the Developing World (3)	
	<a href="#">GEO 1220</a>	Historical Geology (3)	
	<a href="#">GEO 3100</a>	Isotope Geochemistry (3)	
	<a href="#">GEO 3000</a>	Environmental Geochemistry (3)	
	<a href="#">GEO 3700</a>	Structure and Tectonics (4)	
	<a href="#">GEO 4500</a>	Sedimentary Geology WE (4)	
	<a href="#">MATH 1060</a>	Trigonometry QL (3)	
	<a href="#">MATH 1210</a>	Calculus I QL (4)	
	<a href="#">PHYS 2010</a>	College Physics I PP (4)	
or	<a href="#">PHYS 2210</a>	Physics for Scientists and Engineers I PP (4)	
	<a href="#">PHYS 2020</a>	College Physics II PP (4)	
or	<a href="#">PHYS 2220</a>	Physics for Scientists and Engineers II PP (4)	
	<a href="#">REC 1535</a>	Backpacking (1)	
	<a href="#">REC 2700</a>	Leave No Trace Trainer (1)	
	<a href="#">SOC 263G</a>	Race and Minority Relations GI (3)	
	<a href="#">SOC 3030</a>	Social Research Methods WE (3)	
	<a href="#">SOC 2370</a>	Sociology of Gender (3)	
	<a href="#">SOC 3690</a>	Internet and Society (3)	
	<a href="#">SOC 3850</a>	Rural Life--Global and Local (3)	
<b>Notes;</b>			
1. You need at least 40 hours of upper division credit to graduate. Work with your advisor to make sure you are meeting the 40 credits of upper division requirement.			

## Graduation Requirements:

1. Completion of a minimum of 120 semester credits with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.0 (C) or above.
3. Grade of C- or better in core curriculum courses.
4. Successful completion of at least one Global/Intercultural course.
5. Successful completion of at least two Writing Enriched (WE) courses.

**Environmental Studies, B.S.****Careers**

1. Analyze the scientific underpinnings, social context, and political ramifications of key environmental challenges to design sustainable solutions.
2. Evaluate the links between social and natural systems to identify appropriate areas of intervention.
3. Critically assess environmental and sustainability programs, organizations, and reporting mechanisms to create new and/or revised programs, organizations, and reports.
4. Analyze key environmental challenges facing societies and their unevenly distributed impacts.
5. Influence policy outcomes using existing laws, regulations, stakeholders, and interesting groups relating to environmental issues.
6. Create compelling written, verbal, and graphic presentations of environment and sustainability issues.

**Geography, B.S.**

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**Requirements**

Geography is the study of the earth's places, peoples, environments and their interrelationships from both the physical and social science perspectives. Geographers use many different scientific tools to study the relationships between earth's systems including geospatial technology and are employed in public agencies, local governments, federal offices, technology sectors, business planning, and careers related to spatial planning. The Bachelor of Science in Geography provides students with a program of study in the fundamentals of geography and prepares them to succeed as geographers as well as in many other careers related to geography. Students learn theories and methods of analysis related to land use and land cover change, urbanization, sustainability, human-environment interactions, and Geographic Information Systems (GIS) technology through the core courses of the program. Through elective courses, students can choose to further focus their studies on physical sciences, social sciences, and/or geospatial techniques to meet their career goals.

**Total Program Credits: 120**

General Education Requirements:		36 Credits
	<a href="#">ENGL 1010</a> Introduction to Academic Writing CC	3
or	<a href="#">ENGL 1005</a> Literacies and Composition Across Context CC (5)	
	<a href="#">ENGL 2010</a> Intermediate Academic Writing CC	3
	<a href="#">MATH 1050</a> College Algebra QL	4
or	<a href="#">MATH 1055</a> College Algebra with Preliminaries QL (5)	
Complete the following:		3
	<a href="#">HIST 2700</a> US History to 1877 AS (3)	
and	<a href="#">HIST 2710</a> US History since 1877 AS (3)	
	<a href="#">HIST 1700</a> American Civilization AS (3)	
	<a href="#">HIST 1740</a> US Economic History AS (3)	
	<a href="#">POLS 1000</a> American Heritage SS (3)	
	<a href="#">POLS 1100</a> American National Government AS (3)	
Complete the following:		
	<a href="#">PHIL 2050</a> Ethics and Values IH	3

	<a href="#">HLTH 1100</a> Personal Health and Wellness TE	2
or	<a href="#">EXSC 1097</a> Fitness for Life TE (2)	
Distribution Courses		
	<a href="#">METO 1010</a> Introduction to Meteorology PP	3
or	<a href="#">METO 1060</a> Fundamentals of Weather Forecasting PP	
or	<a href="#">ENVT 1110</a> Introduction to Environmental Management PP	
or	<a href="#">GEOG 1800</a> Mapping the World with Deospatial Technology PP	
or	<a href="#">GEO 1010</a> Introduction to Geology PP	
or	<a href="#">GEO 1030</a> Natural Disasters and the Environment PP	
or	<a href="#">GEO 1040</a> The Dinosaurian World PP	
or	<a href="#">GEO 1050</a> Geology of National Parks PP	
	<a href="#">GEOG 1000</a> Introduction to Physical Geography PP	3
	<a href="#">GEOG 130G</a> Survey of World Geography GI SS	3
Biology Distribution		3
Humanities Distribution		3
Fine Arts Distribution		3
Discipline Core Requirements:		84 Credits
	<a href="#">GEOG 140G</a> Introduction to Human Geography SS GI	3
	<a href="#">GEOG 2000</a> Sustainability and Environment SS	3
	<a href="#">GEOG 3110</a> Urban Geography WE	3
	<a href="#">GEOG 3200</a> Geography of Utah	3
	<a href="#">GEOG 3500</a> Geomorphology WE	4
	<a href="#">GEOG 3600</a> Introduction to Geographic Information Systems	4
	<a href="#">GEOG 3650</a> Advanced Geographic Information Systems	4
	<a href="#">GEO 480R</a> Earth Science Seminar (taken twice)	1
	<a href="#">STAT 2040</a> Principles of Statistics QL	4
Select 12 credits from the following physical and life science courses <sup>1,2</sup>		12
	<a href="#">GEOG 1005</a> Introduction to Physical Geography Lab (1)	
	<a href="#">GEO 1015</a> Introduction to Geology Laboratory (1)	
	<a href="#">GEOG 1800</a> Mapping the World with Geospatial Technology PP	
	<a href="#">GEOG 3300</a> Biogeography (4)	
	<a href="#">GEOG 3400</a> Environmental Remote Sensing (3)	
	<a href="#">GEOG 3700</a> Wetland Studies (3)	
and	<a href="#">GEOG 3705</a> Wetland Studies Laboratory (1)	
	<a href="#">BIOL 3700</a> General Ecology (3)	
	<a href="#">ENVT 2730</a> Introduction to Soils (4)	
	<a href="#">ENVT 3790</a> Applied Hydrology WE (4)	
	<a href="#">ENVT 3800</a> Energy Use on Earth (3)	
	<a href="#">GEO 1010</a> Introduction to Geology PP (3)	

# Earth Science

or	<a href="#">GEO 1030</a>	Natural Disasters and the Environment PP	
or	<a href="#">GEO 1040</a>	The Dinosaurian World PP	
or	<a href="#">GEO 1050</a>	Geology of National Parks PP	
	<a href="#">GEO 3200</a>	Geologic Hazards (3)	
	<a href="#">GEO 3080</a>	Earth Materials WE (3)	
and	<a href="#">GEO 3085</a>	Earth Materials Laboratory (1)	
	<a href="#">GEO 4790</a>	Hydrogeology	
	<a href="#">GEOG 4100</a>	Geospatial Field Methods (3)	
	<a href="#">METO 3100</a>	Climate and the Earth System (3)	
Select 12 credits from the following social science classes <sup>1</sup>			12
	<a href="#">GEOG 2100</a>	Geography of the United States SS (3)	
	<a href="#">GEOG 2500</a>	Geography of Latin America and the Caribbean (3)	
	<a href="#">GEOG 3010</a>	Economic Geography (3)	
	<a href="#">GEOG 3250</a>	Cultural Geography (3)	
	<a href="#">GEOG 3430</a>	Political Geography (3)	
	<a href="#">GEOG 3350</a>	Geography of Africa (3)	
	<a href="#">GEOG 3800</a>	Environmental History of the United States (3)	
	<a href="#">SOC 3520</a>	Environmental Sociology (3)	
or	<a href="#">ENST 3520</a>	Environmental Sociology (3)	
	<a href="#">SOC 4020</a>	Survey Research Design (3)	
or	<a href="#">ANTH 3850</a>	Ethnographic Methods WE (3)	
	<a href="#">ENST 3000</a>	Introduction to Environmental Studies (3)	
	<a href="#">ENVT 3770</a>	Natural Resources Management (3)	
	<a href="#">ENVT 3750</a>	Land Use Planning (3)	
	<a href="#">ENVT 3850</a>	Environmental Policy WE (3)	
Elective Requirements:			31 Credits
Choose any classes from the following list or any classes from the following prefixes: GEOG, GEO, ENVT, ENST, AIST, ANTH, SOC, BIOL, CHEM, PHYS, NSS, HIST, GIS, MATH, STAT, CS.			
	<a href="#">GEOG 482R</a>	GIS Internship (1-3)	
	<a href="#">GEOG 489R</a>	Student Research in Geography (1-4)	
	<a href="#">AIST 327G</a>	Indians of Utah GI (3)	
	<a href="#">HIST 384G</a>	American Indian History since 1890 GI (3)	
	<a href="#">ANTH 3150</a>	Culture Ecology and Health (3)	
	<a href="#">ANTH 3300</a>	Culture Development and International Aid (3)	
	<a href="#">ANTH 3660</a>	Globalized Society (3)	
	<a href="#">BIOL 2500</a>	Environmental Biology BB (3)	
	<a href="#">CHEM 1210</a>	Principles of Chemistry I PP (4)	
	<a href="#">CHEM 1215</a>	Principles of Chemistry I Laboratory (1)	
	<a href="#">CHEM 1220</a>	Principles of Chemistry II PP (4)	

	<a href="#">CHEM 1225</a>	Principles of Chemistry II Laboratory (1)	
	<a href="#">STAT 2060</a>	Introduction to Statistical Computing (1)	
	<a href="#">STAT 3040</a>	Probability and Statistics for Engineering and the Sciences (3)	
	<a href="#">ENGL 373R</a>	Literature of Cultures and Places (3)	
	<a href="#">ENVT 1110</a>	Introduction to Environmental Management PP (3)	
	<a href="#">ENVT 2560</a>	Environmental Health (3)	
	<a href="#">ENVT 3600</a>	Appropriate Technology and Sustainable Development for the Developing World (3)	
	<a href="#">GEO 1220</a>	Historical Geology (3)	
	<a href="#">GEO 3100</a>	Isotope Geochemistry (3)	
	<a href="#">GEO 3000</a>	Environmental Geochemistry (3)	
	<a href="#">GEO 3700</a>	Structure and Tectonics (4)	
	<a href="#">GEO 4500</a>	Sedimentary Geology WE (4)	
	<a href="#">MATH 1060</a>	Trigonometry QL (3)	
	<a href="#">MATH 1210</a>	Calculus I QL (5)	
	<a href="#">PHIL 3530</a>	Environmental Ethics (3)	
	<a href="#">PHYS 2010</a>	College Physics I PP (4)	
or	<a href="#">PHYS 2210</a>	Physics for Scientists and Engineers I PP (4)	
	<a href="#">PHYS 2020</a>	College Physics II PP (4)	
or	<a href="#">PHYS 2220</a>	Physics for Scientists and Engineers II PP (4)	
	<a href="#">SOC 3030</a>	Social Research Methods WE (3)	
	<a href="#">SOC 2370</a>	Sociology of Gender (3)	
	<a href="#">SOC 3690</a>	Internet and Society (3)	
	<a href="#">SOC 3850</a>	Rural Life--Global and Local (3)	
	<a href="#">STAT 2050</a>	Introduction to Statistical Methods (4)	

## Graduation Requirements:

1. Completion of a minimum of 120 semester credits, including 40 hours of upper-division credit.
2. Overall grade point average of 2.0 (C) or above.
3. Grade of C- or better in every ENVT, GEO, GEOG, METO, and core curriculum course.
4. Residency hours--minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
5. Successful completion of at least one Global/Intercultural course.
6. Successful completion of at least two Writing Enriched (WE) courses.

## Footnote

<sup>1</sup>You need at least 40 hours of upper division credit to graduate. Work with your advisor to make sure you are meeting the 40 credits of upper division requirement.

<sup>2</sup>Courses used for GE distribution credits cannot double count as core or elective classes.

**Geography, B.S.****Careers**

1. **Technical Knowledge:** Prior to graduation, our students will develop the necessary technical knowledge in Earth system science, geology, environmental science and management, geoscience education and geography, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in professional careers related to their degree programs or in associated graduate programs.
2. **Skill in oral and written communication:** Our students will demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports. This includes orally presenting the results of research to technical and non-technical audiences and write technical and non-technical reports based upon original research and reviews of other literature and reports.
3. **Skill in problem solving and reasoning:** Our students will develop skills to critically evaluate scientific questions and address those questions using both logical, laboratory, geospatial, and other creative approaches.
4. **Knowledge of agencies, laws, and regulations:** Our students will graduate with knowledge of the relevant agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated laws and regulations relevant to their field of study. Their knowledge will be sufficiently deep that they understand where and how to seek additional information to further educate themselves and conduct their work with accordance to all agencies, laws, and regulations.
5. **Knowledge of Professional Options and Responsibilities:** Our students will graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction. Additionally, they will know of the primary responsibilities and the expectations of them within their chosen professional track such that they are successful in the eyes of their employer(s).

**Related Careers**

- Managers, All Other
- Geographers
- Geography Teachers, Postsecondary

**Geology, B.S.**

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**Requirements**

Geology is the study of the Earth, including its water and atmosphere, and its relationship to humans and other living things. Geology applies chemistry, physics, mathematics and biology to answer questions about the Earth. Geologists conduct studies in the field, in the laboratory using advanced analytical equipment, and in the office using specialized computer software. Geology is particularly focused on the Earth's history, resources, hazards and resources including groundwater. Sub-disciplines of geology include economic geology, geochemistry, geologic hazards, geomorphology, hydrogeology, petrology, and tectonics. A B.S. in geology is preparation for a variety of career paths, including hazard assessment with government or private companies, ground and surface water monitoring and development, oil and gas, mining, and many other careers that draw on a background in the natural earth, including law, public policy, and public health; the program is also excellent preparation for graduate school.

**Total Program Credits: 120**

General Education Requirements:			37 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGL 1005	Literacies and Composition Across Context CC (5)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1210	Calculus I QL	4
Complete one of the following:			3
	HIST 2700	US History to 1877 AS (3)	
and	HIST 2710	US History since 1877 AS (3)	
	HIST 1700	American Civilization AS (3)	
	HIST 1740	US Economic History AS (3)	
	POLS 1000	American Heritage SS (3)	
	POLS 1100	American National Government AS (3)	
Complete the following:			
	PHIL 205G	Ethics and Values IH	3
	HLTH 1100	Personal Health and Wellness TE (2)	
or	EXSC 1097	Fitness for Life TE	2
Distribution Courses			
	BIOL 1010	General Biology BB	3
	GEO 1010	Introduction to Geology PP	3
or	GEO 1030	Natural Disasters and the Environment PP	
or	GEO 1040	The Dinosaurian World PP	
or	GEO 1050	Geology of National Parks PP	
	CHEM 1210	Principles of Chemistry I PP	4
	Humanities Distribution		3
	Fine Arts Distribution		3
	Social/Behavioral Science		3
Discipline Core Requirements:			83 Credits
	CHEM 1215	Principles of Chemistry I Laboratory	1
	CHEM 1220	Principles of Chemistry II PP	4
	CHEM 1225	Principles of Chemistry II Laboratory	1
	GEOG 3600	Introduction to Geographic Information Systems	4
	GEO 1015	Introduction to Geology Laboratory	1
	GEO 1220	Historical Geology	3
	GEO 1225	Historical Geology Laboratory	1
	GEO 2500	Introduction to Field Geology	3
	GEO 3080	Earth Materials WE	3
and	GEO 3085	Earth Materials Laboratory	1
	GEO 3200	Geologic Hazards	4
and	GEO 3205	Geologic Hazards Laboratory (either hazards or geomorphology can be taken as core requirement)	
or	GEO 3500	Geomorphology WE	
or	GEOG 3500	Geomorphology WE	
	GEO 3700	Structure and Tectonics	4
	GEO 4500	Sedimentary Geology WE	4

# Earth Science

	<a href="#">GEO 4790</a>	Hydrogeology (Recommended)	4
or	<a href="#">ENVT 3790</a>	Applied Hydrology WE	
	<a href="#">GEO 4600</a>	Field Experience	6
	<a href="#">MATH 1220</a>	Calculus II	5
	<a href="#">STAT 2040</a>	Principles of Statistics QL	4
	<a href="#">GEO 480R</a>	Earth Science Seminar (Must be taken twice)	1
	<a href="#">PHYS 2210</a>	Physics for Scientists and Engineers I PP	4
	<a href="#">PHYS 2220</a>	Physics for Scientists and Engineers II PP	4
Complete 22 credits from the following list (at least 12 credits must be Upper Division)			22
	<a href="#">BIOL 3800</a>	Conservation Biology (3)	
	<a href="#">ENVT 2730</a>	Introduction to Soils (4)	
	<a href="#">ENVT 3280</a>	Environmental Law (3)	
	<a href="#">ENVT 3790</a>	Applied Hydrology WE (3)	
	<a href="#">GEO 202R</a>	Science Excursion (1)	
	<a href="#">GEO 204R</a>	Natural History Excursion BB (3)	
	<a href="#">GEO 3000</a>	Environmental Geochemistry (3)	
	<a href="#">GEO 3100</a>	Isotope Geochemistry (3)	
	<a href="#">GEO 3105</a>	Isotope Geochemistry Laboratory (1)	
	<a href="#">GEO 3200</a>	Geologic Hazards (4)	
and	<a href="#">GEO 3205</a>	Geologic Hazards Laboratory (1) (if not taken as core requirement)	
	<a href="#">GEO 3500</a>	Geomorphology WE (4) (if not taken as core requirement)	
or	<a href="#">GEOG 3500</a>	Geomorphology WE (3)	
	<a href="#">GEO 4080</a>	Petrology (3)	
and	<a href="#">GEO 4085</a>	Petrology Laboratory(1)	
	<a href="#">GEO 4510</a>	Paleontology (4)	
	<a href="#">GEO 4790</a>	Hydrogeology (3)	
	<a href="#">GEO 482R</a>	Geologic Environmental Internship (1)	
	<a href="#">GEO 489R</a>	Student Research (1-4)	
	<a href="#">GEOG 3400</a>	Environmental Remote Sensing (3)	
	<a href="#">GEOG 3650</a>	Advanced Geographic Information Systems (4)	
	<a href="#">GEOG 3700</a>	Wetland Studies (3)	
	<a href="#">GEOG 3705</a>	Wetland Studies Laboratory (3)	
	<a href="#">GEOG 4100</a>	Geospatial Field Methods (3)	
	<a href="#">METO 1010</a>	Introduction to Meteorology PP (3)	
	<a href="#">METO 1060</a>	Fundamentals of Weather Forecasting PP (3)	
	<a href="#">METO 3100</a>	Climate and the Earth System (3)	
	<a href="#">PHYS 2215</a>	Physics for Scientists and Engineers I Lab (1)	
	<a href="#">PHYS 2225</a>	Physics for Scientists and Engineers II Lab (1)	
Or other department approved electives			

1. Completion of a minimum of 120 semester credits, with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.0 (C) or above.
3. Grade of C- or better in every ENVT, GEO, GEOG, and METO course.
4. Residency hours--minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
5. Completion of GE and specified departmental requirements.
6. Successful completion of at least one Global/Intercultural course.
7. Successful completion of at least two Writing Enriched (WE) courses.

## Geology, B.S. Careers

1. Develop the necessary technical knowledge in geology, as well as underlying foundational and interdisciplinary sciences including physics, chemistry, biology, and mathematics to succeed in professional careers related to their degree programs or in associated graduate programs.
2. Demonstrate effective oral and written communication skills that will enable them to succeed at presenting and publishing scientific data and reports.
3. Develop skills to critically evaluate scientific literature and scientific problems, identify existing and new scientific questions, and address those questions using both logical, laboratory, geospatial, and other creative approaches.
4. Graduate with knowledge of the relevant agencies (e.g., EPA, BLM, USGS, UGS, etc.) and the associated laws and regulations relevant to their field of study.
5. Graduate with sufficient knowledge of the breadth of career opportunities available to them that they can obtain career satisfaction.

## Related Careers

- Natural Sciences Managers
- Geoscientists, Except Hydrologists and Geographers
- Hydrologists
- Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary

### Graduation Requirements: