

BS in Earth & Space Science Education (694020) MAP Sheet

Physical and Mathematical Sciences, Geological Sciences

For students entering the degree program during the 2021-2022 curricular year.

This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to <http://education.byu.edu/ess/licensing.html> or contact Education Advisement Center, 350 MCKB, (801) 422-3426.



University Core and Graduation Requirements				Suggested Sequence of Courses			
University Core Requirements:							
Requirements	#Classes	Hours	Classes				
Religion Cornerstones							
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275				
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250				
Foundations of the Restoration	1	2.0	REL C 225				
The Eternal Family	1	2.0	REL C 200				
The Individual and Society							
American Heritage	1-2	3-6.0	from approved list				
Global and Cultural Awareness	1	3.0	SC ED 353*				
Skills							
First Year Writing	1	3.0	from approved list				
Advanced Written and Oral Communications	1	3.0	WRTG 316*				
Quantitative Reasoning	1	4.0	MATH 112*				
Languages of Learning (Math or Language)	1	4.0	MATH 112*				
Arts, Letters, and Sciences							
Civilization 1	1	3.0	from approved list				
Civilization 2	1	3.0	from approved list				
Arts	1	3.0	from approved list				
Letters	1	3.0	from approved list				
Biological Science	1	3-4.0	from approved list				
Physical Science	1	3.0	GEOL 210*				
Social Science	1	3.0	from approved list				
Core Enrichment: Electives							
Religion Electives	3-4	6.0	from approved list				
Open Electives	Variable	Variable	personal choice				
*THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (16-20 hours overlap)							
Graduation Requirements:							
Minimum residence hours required		30.0					
Minimum hours needed to graduate		120.0					

BS in Earth & Space Science Education (694020)

2021-2022 Program Requirements (84 - 86 Credit Hours)

This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to <https://www.schools.utah.gov/curr/licensing> or contact the Education Advisement Center, 350 MCKB, 801-422-3426.

For students accepted into the major after December 16, 2019, grades below C in any required coursework in a teaching major or teaching minor will not be accepted. Teacher candidates must maintain a cumulative GPA of 2.7 or higher once admitted into the program and to qualify for student teaching. For additional details on admission and retention requirements for teaching majors and teaching minors, see Educator Preparation Program Requirements in the Undergraduate Catalog.

REQUIREMENT 1 Complete 4 courses

GEOL 111 - Physical Geology	4.0
GEOL 112 - Historical Geology	4.0
*GEOL 210 - Field Studies	3.0
GEOL 411 - Geomorphology and Remote Sensing	3.0

REQUIREMENT 2 Complete 2.0 hours from the following course(s)

TAKE 4 TIMES.	
GEOL 491R - Geology Seminar	0.5
<i>You may take up to 2 credit hours.</i>	

REQUIREMENT 3 Complete 3 courses

GEOL 100 - Dinosaurs	3.0
GEOL 109 - Geology of the Planets	3.0
GEOL 230 - Geological Communications	3.0
GEOL 351 - Mineralogy	4.0
GEOL 352 - Petrology	3.0
GEOL 370 - Sedimentology and Stratigraphy	3.0
GEOL 375 - Structural Geology	3.0
GEOL 405 - Applied Mathematics in the Geological Sciences	3.0
GEOL 435 - Introduction to Groundwater	3.0
GEOL 440 - Solid Earth Geophysics	3.0
GEOL 445 - Geochemistry	3.0
GEOL 452 - Petrography to Petrogenesis	3.0
GEOL 460 - Economic and Resource Geology	3.0
GEOL 476 - Introduction to Seismic Interpretation	3.0
GEOL 480 - Paleontology	3.0

REQUIREMENT 4 Complete 1 option

OPTION 4.1 Complete 3 courses

CHEM 105 - General College Chemistry 1 with Lab (Integrated)	4.0
CHEM 106 - General College Chemistry 2	3.0
CHEM 107 - General College Chemistry Laboratory	1.0

OPTION 4.2 Complete 2 courses

CHEM 111 - Principles of Chemistry 1	4.0
CHEM 112 - Principles of Chemistry 2	3.0

REQUIREMENT 5 Complete 8 courses

*MATH 112 - Calculus 1	4.0
PHSCS 105 - General Physics 1	3.0
PHSCS 106 - General Physics 2	3.0
PHSCS 107 - General Physics Lab 1	1.0
PHSCS 108 - General Physics Lab 2	1.0
PHSCS 127 - Descriptive Astronomy	3.0
PHSCS 137 - (Not currently offered)	
*WRTG 316 - Technical Communication	3.0

REQUIREMENT 6 Complete 2 options

PROFESSIONAL EDUCATION COMPONENT:

Licensure requirements: Contact the Education Advisement Center, 350 MCKB, 801-422-3426, to schedule the final interview to clear your application for the secondary teaching license. You should be registered for your last semester at BYU prior to the scheduled appointment.

OPTION 6.1 Complete 9 courses

CPSE 402 - Educating Students with Disabilities in Secondary Classroom	2.0
IP&T 371 - Integrating K-12 Educational Technology 1	1.0
IP&T 372 - Integrating K-12 Educational Technology 2	1.0
IP&T 373 - Teaching in K-12 Online and Blended Learning Contexts	1.0
PHY S 276 - Exploration of Teaching	4.0
PHY S 377 - Teaching Methods and Instruction	3.0
PHY S 378 - Practicum in Secondary Education	1.0
*SC ED 353 - Multicultural Education for Secondary Education	3.0
SC ED 375 - Adolescent Development and Classroom Management	3.0

Note: Fingerprinting and FBI clearance must be completed before enrollment in Phy S 377.

OPTION 6.2 Complete 12.0 hours from the following course(s)

PHY S 476 - Secondary Student Teaching	12.0v
PHY S 496 - Academic Internship: Secondary Education	12.0v

Student teachers/interns must complete three forms in their Educator accounts (PIBS, CDS, FED) and attach their TWS to the Educator account for their program. All four must be completed to be cleared for graduation.

THE DISCIPLINE

Geological sciences consist of a number of disciplines aimed at understanding the Earth's origin and development and the natural processes that have operated upon it and within it from the time of formation of the solar system. With the development of remote sensing technology and the exploration of the solar system by spacecraft, geological sciences have become increasingly important for understanding not only the Earth but the Moon, other planets and their moons, and small bodies that orbit the sun.

Understanding the dynamic processes of Earth and other planets is relevant to many societal needs, such as assessment and forecasting of natural hazards, environmental change, and discovery of energy and mineral resources. Some of the diverse disciplines that can be studied in this department include general geology, plate tectonics, volcanology, geochemistry, geophysics, paleontology, environmental geology, petroleum geology, hydrogeology, paleoclimatology, and planetary geology.

CAREER OPPORTUNITIES

Graduates have the opportunity to work both outdoors and in the laboratory, pursuing careers in energy, mineral, and water resources or in environmental evaluation with industry, government, or consulting firms. The substantial preparation in basic sciences and mathematics also leads to a broad spectrum of teaching opportunities. Some scholarship money is available for those who pursue a geological sciences degree as a pre-law track.

The most marketable terminal degree in geological sciences is the MS. Starting salaries for this degree are often very competitive with any other discipline.

MAP DISCLAIMER

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

BS in Earth & Space Science Education (694020)

2021-2022

DEPARTMENT INFORMATION

Department of Geological Sciences

Brigham Young University

S-389 ESC

Provo, UT 84602

Telephone: (801) 422-3918

ADVISEMENT CENTER INFORMATION

Physical and Mathematical Sciences College Advisement Center

Brigham Young University

N-181 ESC

Provo, UT 84602

Telephone: (801) 422-2674

FACULTY ADVISOR:

Duane Merrell

N-143 ESC

Brigham Young University, Provo, UT 84602

Telephone: (801) 422-2255

LICENSURE ADVISOR

Tara Goulding

120 MCKB

Brigham Young University, Provo, UT 84602

Telephone: (801) 422-7327