

Welcome to the

Earth & Space Science Education Major

in the College of Physical and Mathematical Sciences

College Advisement Center

Website: <https://science.byu.edu/advisement>
Phone: 801-422-2674
Office: N-181 ESC
Email: science.math.advisement@byu.edu

Geological Sciences Department

Website: www.geology.byu.edu
Phone: 801-422-3918
Office: S-389 ESC
Email: geology@byu.edu

Faculty Advisor – Adam Bennion

Phone: 801-422-3095
Office: N-319 ESC
Email: adam_bennion@byu.edu

Education Advisement Center

Website: education.byu.edu
Phone: 801-422-3426
Office: 350 MCKB
Email: eac.frontdesk@byu.edu



Educator: Apply to the program at educator.byu.edu. If you have any technical issues, contact the EPP Help Center at 801-422-1190, <https://epp.byu.edu/>. You should plan to have the application completely done by the time you finish the PHY S 276 class.

STEM Alliance--Connect with STEM employers, mentors, and clubs: www.stem.byu.edu

Club – Geology Club

Advisor: Ron Harris
Phone: 801-422-9264
Office: S-317 ESC
Email: rharris@byu.edu

*Please meet with Dr. Jani Radebaugh soon after entering the major for important information about the course sequencing of Geology electives. Contact information: 801-422-9127, janirad@byu.edu, S-383 ESC.

Learning outcomes can be found here: <https://learningoutcomes.byu.edu/Courses/program-courses/694020/Earth+%26+Space+Science+Education+BS+/1325>

Things to Know

Resources for Graduation Planning

- Flow Charts and Major Academic Plans (MAPs) can be found here: <https://science.byu.edu/advisement/explore-majors-and-minors>.
- Academic advisors in N-181 ESC will help you understand course sequencing and help you plan classes to efficiently fill requirements. They can also help you with study skills and initial career exploration as well as connecting you with correct resources.
- Plan and register from your plan on MyMAP. Your academic advisor can help you understand how to best utilize this resource.
- Evaluate your current program. Periodically major programs are updated. An academic advisor would be happy to review the differences between the programs with you to help you determine what would be best for you.
- Consider meeting with a faculty advisor in your department. Contact info is found on the first page of this packet.

Tutoring Resources and Research

- Volunteer peer tutors are available through Y Serve if you need help with a class. Also, if you excel in a subject, consider serving your fellow students by becoming a tutor. Find out more here: <https://tutoring.byu.edu/>.
- Many departments provide TA Tutorial Labs and research opportunities. Check your department for details:
 - Chemistry and Biochemistry: C-100 BNSN, 801-422-3667, <https://www.chem.byu.edu/>
 - Computer Science: 3361 TMCB, 801-422-3027, csoffice@cs.byu.edu
 - Geological Sciences: S-389 ESC, 801-422-3918, geology@byu.edu
 - Mathematics: 275 TMCB, 801-422-2061, office@mathematics.byu.edu
 - Mathematics Education: 167 TMCB, 801-422-1735, office@mathed.byu.edu
 - Physics and Astronomy: N-283 ESC, 801-422-4361, physics_office@byu.edu
 - Statistics: 2152 WVB, 801-422-4505, statsec@stat.byu.edu

Prepare Early for a Career

- Check out Careers & Experiential Learning in 1134 WSC and at <https://ucs.byu.edu/>.
- Consider doing an internship.
 - Attend the STEM and Career Fairs held in fall and winter semesters.
 - Talk to your department about internship opportunities.
 - Use LinkedIn and Handshake (see flyer in this packet) to connect with alumni and apply for jobs/internships. BYU Connect is another great resource for networking (connect.byu.edu).
 - Talk with the college Career Director who can help you search for internships as well as assist you with many other career related strategies (see first page of this packet).
- Consider taking StDev 317 (Career Strategies) your junior year.
- Consider taking either Chem 502, CS 502, Geol 502, Math 502, PHSCS 502, or STAT 502 (1-credit Job Search Class). Class is held for 1 hour each week.

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

Physical and Mathematical Sciences, Geological Sciences

For students entering the degree program during the 2023-2024 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:				FRESHMAN YEAR			
Requirements	#Classes	Hours	Classes	JUNIOR YEAR			
Religion Cornerstones				5th Semester			
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275	First-year Writing	3.0	GEOL 411	3.0
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250	GEOL 111	4.0	GEOL 491R	0.5
Foundations of the Restoration	1	2.0	REL C 225	MATH 112	4.0	WRTG 316	3.0
The Eternal Family	1	2.0	REL C 200	PHSCS 105, 107	4.0	PHY S 276R	4.0
The Individual and Society				Religion Cornerstone course	2.0	IP&T 371	1.0
American Heritage	1-2	3-6.0	from approved list	Total Hours	17.0	IP&T 372	1.0
Global and Cultural Awareness	1	3.0	SC ED 353*	2nd Semester		Religion elective	2.0
Skills				American Heritage	3.0	Total Hours	14.5
First Year Writing	1	3.0	from approved list	CHEM 105 or CHEM 111	4.0	6th Semester	
Advanced Written and Oral Communications	1	3.0	WRTG 316*	GEOL 112	4.0	PHIL 423 or Letters	3.0
Quantitative Reasoning	1	4.0	MATH 112*	PHSCS 106, 108	4.0	GEOL 491R	0.5
Languages of Learning (Math or Language)	1	4.0	MATH 112*	Religion Cornerstone course	2.0	Geology elective 2	3.0
Arts, Letters, and Sciences				Total Hours	17.0	CPSE 402	2.0
Civilization 1	1	3.0	from approved list	SOPHOMORE YEAR		SC ED 353	3.0
Civilization 2	1	3.0	from approved list	3rd Semester		Biological Science	3.0
Arts	1	3.0	from approved list	CHEM 106, 107 or CHEM 112	3-4.0	Religion elective	2.0
Letters	1	3.0	from approved list	GEOL 210	3.0	Total Hours	16.5
Biological Science	1	3-4.0	from approved list	PHSCS 137	3.0	SENIOR YEAR	
Physical Science	1	3.0	GEOL 210*	Civilization 1	3.0	7th Semester	
Social Science	1	3.0	from approved list	Religion Cornerstone course	2.0	IP&T 373	1.0
Core Enrichment: Electives				Total Hours	14-15.0	GEOL 491R	0.5
Religion Electives	3-4	6.0	from approved list	4th Semester		Geology elective 3	3.0
Open Electives	Variable	Variable	personal choice	Geology elective 1	3.0	PHY S 377	3.0
*THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (16-20 hours overlap)				GEOL 491R	0.5	PHY S 378	1.0
Graduation Requirements:				PHSCS 127	3.0	SC ED 375	3.0
Minimum residence hours required		30.0		Civilization 2/Arts	3.0	General Elective	2.0
Minimum hours needed to graduate		120.0		Social Science	3.0	Religion elective	2.0
				Religion cornerstone course	2.0	Total Hours	15.5
				Total Hours	14.5	8th Semester	
						SC ED 476R or 496R	12.0
						Total Hours	12.0
				**Note: The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.			
				Note: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.			
				FOR UNIVERSITY CORE OR PROGRAM QUESTIONS, CONTACT THE ADVISEMENT CENTER.			

Program Requirements

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 3.0

Requirement 2 —Complete 2 hours

Take 4 times.

GEOL 491R - Geology Seminar - You may take up to 2.0 credit hours 0.5

Requirement 3 —Complete 3 of 15 Courses

GEOL 100 - Dinosaurs 3.0

GEOL 109 - Geology of Planets 3.0

GEOL 230 - Geological Communications 3.0

GEOL 351 - Mineralogy 4.0

GEOL 352 - Petrology 3.0

GEOL 370 - Sedimentology & Stratigraphy 3.0

GEOL 375 - Structural Geology 3.0

GEOL 405 - GeoMathematics 3.0

GEOL 435 - 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 & Resource Geology 3.0

GEOL 476 - Intro Seismic Interpretation 3.0

GEOL 480 - Paleontology 3.0

Requirement 4 —Complete 1 of 2 Options

Option 4.1

Complete 3 Courses

CHEM 105 - Gen College Chem 1+Lab Integr 4.0

CHEM 106 - General College Chemistry 2 3.0

CHEM 107 - Gen Coll Chem Lab 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 - Energy, Climate, Environment 3.0

WRTG 316 - Technical Communication 3.0

Requirement 6 —Complete 2 Requirements

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.

Requirement 6.1

Complete 9 Courses

CPSE 402 - Educ Stdnts w/Disabls in ScEd 2.0

IP&T 371 - Integrating K-12 Ed Tec 1 1.0

IP&T 372 - Integrating K-12 Ed Tec 2 1.0

IP&T 373 - Tching K-12 Online/Blended Lrn 1.0

PHY S 276 - Exploration of Teaching 4.0

PHY S 377 - Teaching Methods & Instruction 3.0

PHY S 378 - Practicum in Secondary Educ 1.0

SC ED 353 - Multi Cult Ed for Sc Ed 3.0

SC ED 375 - Ad Dev & Class Mgmt 3.0

Note: Fingerprinting and FBI clearance must be completed before enrollment in Phy S 276.

Requirement 6.2

Complete 12 hours

PHY S 476 - Secondary Student Teaching 0.0v

PHY S 496 - Acad Intern: Secondary Ed 0.0v

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.

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:

Adam Bennion N-319 ESC

Brigham Young University, Provo, UT 84602 Telephone: (801) 422-3095

LICENSURE ADVISOR

Tara Goulding 120 MCKB

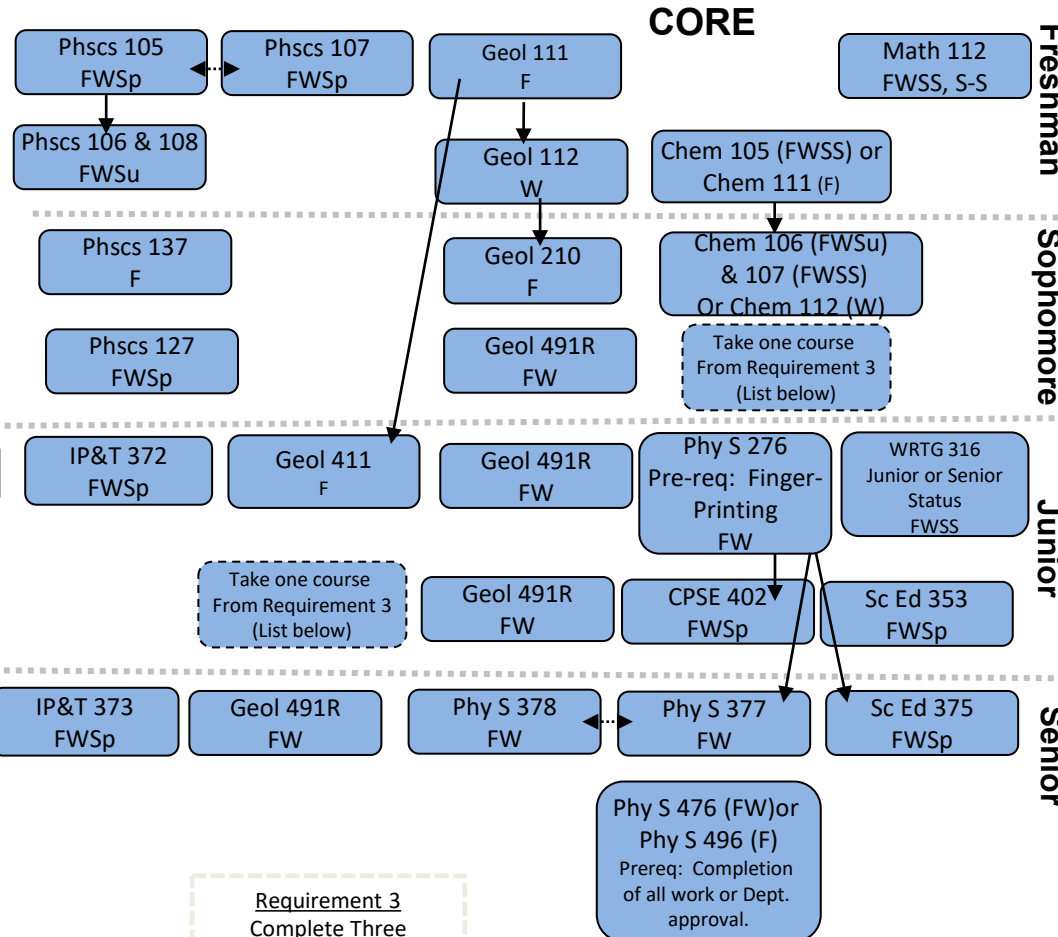
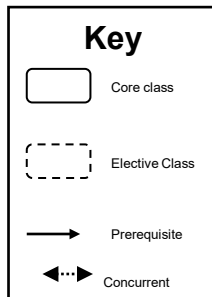
Brigham Young University, Provo, UT 84602 Telephone: (801) 422-7327

BYU Earth & Space Science Education BS

Requirements / Prerequisites 2023-2024 Academic Year

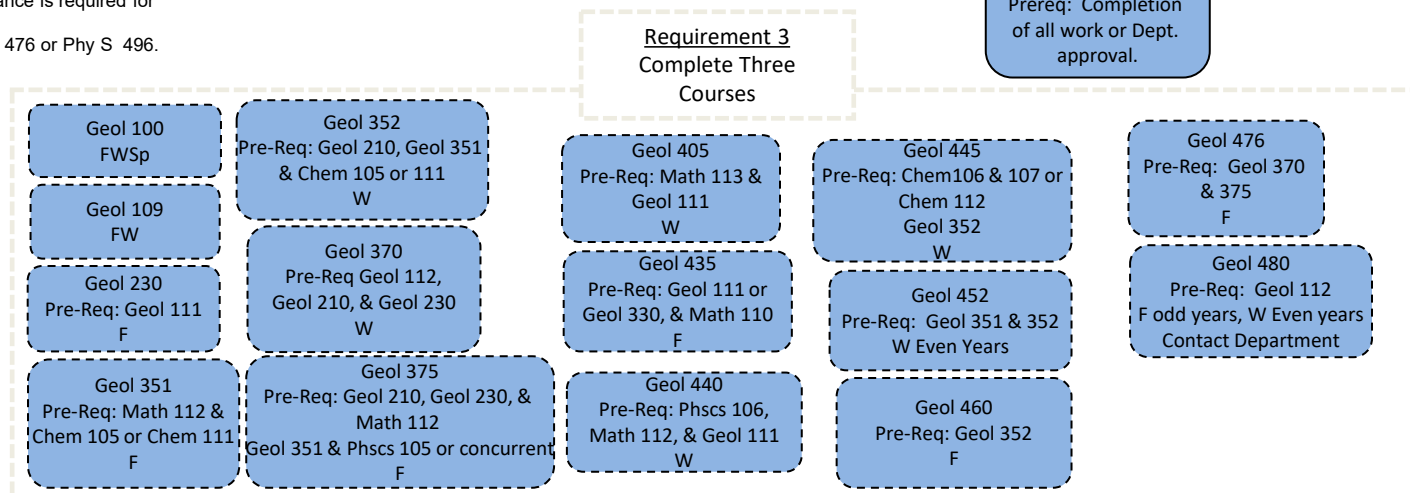
Major (84-86 Hours)

- Admission into the major or minor requires the following: **1)** 2.7 minimum high school/college GPA (be in the average of 3.0 for cohort), **2)** fingerprint background check, **3)** a cohort average ACT score of 21.25 (17 minimum) in English, average cohort score of 21.25 (17 minimum) in math, and an average cohort writing score of 6.60 (5 minimum) **or** a SAT average cohort verbal score of 543.33, average cohort math score of 532.5, and an average cohort essay score of 5.30. Anyone who has not taken the writing portion will need to take the Praxis Core Writing test and receive a 165.
- Grades below C in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Maintain minimum 2.7 (3.0 for cohort) GPA to qualify for student teaching.
- Complete the following: Geol 111, Geol 112, Geol 210, Geol 411.
- Complete the following (2 credit hours): Geol 491R
- Complete 3 courses from the following: Geol 100, Geol 109, Geol 230, Geol 351, Geol 352, Geol 370, Geol 375, Geol 405, Geol 435, Geol 440, Geol 445, Geol 452, Geol 460, Geol 476, Geol 480.
- Complete either Chem 105, Chem 106, and Chem 107, or Chem 111 and 112.
- Complete the following: WRTG 316, Math 112, Phscs 105, Phscs 106, Phscs 107, Phscs 108, Phscs 127, Phscs 137
- Complete the Professional Education Component: CPSE 402, IP&T 371, IP&T 372, IP&T 373, Phy S 276, Phy S 377, Phy S 378, Sc Ed 353, Sc Ed 375. Note: FBI clearance is required for Phy S 276.
- Complete 12 hours from the following: Phy S 476 or Phy S 496.



Minor (23 hours)

- Grades below C in professional education courses or content courses will not be accepted. Teacher candidates must have a 2.7 cumulative GPA.
- Complete Geol 111, Geol 112, Phy S 377
- Complete 8 hours from the following: Geol 100, Geol 109, Geol 210, Geol 351, Geol 352, Geol 370, Geol 375, Geol 405, Geol 411, Geol 435, Geol 440, Geol 445, Geol 452, Geol 460, Geol 480, Geol 546
3. Complete Geol 477R



handshake

BYU's own job board. Employers who want to hire BYU graduates or offer internships to current students post job openings to this website and students apply. Just like LinkedIn, employers can view student profiles and students can network as they apply for jobs and internships

Login to handshake.byu.edu >>> BYU Net ID

**you do not need to create an account, just sign in with you BYU information*



HOW TO MAKE THE MOST OUT OF HANDSHAKE:

1. COMPLETE YOUR PROFILE

- Upload your resume and it will auto-fill in your profile
- Completed profiles tailor your Handshake experience
- Information from your transcript is already uploaded
- Fill in the Summary/Bio section
- Fill in your past jobs and experiences, including all the bullet points you use on your resume
- Add a professional headshot and background photo

Remember: every word in your profile will be searchable by students and employers

4. EXPLORE FELLOW STUDENTS

- “Students” tab
- Search for fellow BYU students to view their profiles and job positions (Facebook stalking... “networking”)

5. ATTEND EVENTS

- The “Events” tab will be your key to attending info sessions, interviews, and Career Fairs
- The “Calendar” tab under “Events” will show you what events are coming soon
- Make sure to save events you are interested in or RSVP so you do not forget to attend
- Spread the word to your friends on social media

6. DOWNLOAD HANDSHAKE APP

- Search: “Handshake” not “Handshake Career Services”
- Input your BYU e-mail address: netID@byu.edu (it will forward emails to the e-mail you have on file with BYU)
- Handshake will send you a link via e-mail to enable your account in the app
- Navigate the app to perform all the functions of the website that have been previously mentioned

7. VISIT THE CAREER STUDIO

- Freshen up your resume, cover letter, or LinkedIn
- Receive networking help
- Practice interviewing with a mock interview
- Meet with a full-time Career Counselor in your field

8. GET A JOB, RING THE BELL

- Once you're hired, stop by the Career Studio to ring our Victory Bell and get a picture for the Victory Board



employers are
5X MORE LIKELY
to view a profile that has
at least one job/skill/organization

2. APPLY FOR JOBS

- Search for job titles, employers, or skills
- Apply for interesting jobs that meet your skill set

3. RESEARCH COMPANIES

- Under the “Jobs” Tab there is an “Employers” Tab
- Search for keywords or locations to find companies that are the right fit for you
- Plan to attend their info sessions on BYU Campus, connect with them at Career Fairs, or set up informational interviews to learn more

Remember: when looking at companies or jobs, Handshake will tell you what other BYU students have worked there. Use this resource to network and discover more information!