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](http://education.byu.edu/ess/licensing.html) or contact Education Student Services, 120 MCKB, (801) 422-3426.

### UNIVERSITY CORE AND GRADUATION REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>#Classes</th>
<th>Hours</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Doctrinal Foundation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book of Mormon</td>
<td>2</td>
<td>4.0</td>
<td>Rel A 121/H and 122/H</td>
</tr>
<tr>
<td>New Testament</td>
<td>1</td>
<td>2.0</td>
<td>Rel A 211/H or 212/H</td>
</tr>
<tr>
<td>Doctrine and Covenants</td>
<td>1</td>
<td>2.0</td>
<td>Rel C 324/H or 325/H</td>
</tr>
<tr>
<td><strong>The Individual and Society</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizenship</td>
<td>1–2</td>
<td>3–6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Global &amp; Cultural Awareness</td>
<td>1</td>
<td>3.0</td>
<td>Sc Ed 353*</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective Communication</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>First-Year Writing</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Adv Written &amp; Oral Communication</td>
<td>1</td>
<td>3.0</td>
<td>Engl 316-</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>0–1</td>
<td>0–4.0</td>
<td>Math 112*</td>
</tr>
<tr>
<td>Languages of Learning (Math or Language)</td>
<td>1</td>
<td>4.0</td>
<td>Math 112*</td>
</tr>
<tr>
<td><strong>Arts, Letters, and Sciences</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civilization 1 and 2</td>
<td>2</td>
<td>6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Arts</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Letters</td>
<td>1</td>
<td>3.0</td>
<td>Phil 423*</td>
</tr>
<tr>
<td>Scientific Principles &amp; Reasoning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Science</td>
<td>1–2</td>
<td>3–5.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Physical Science</td>
<td>1</td>
<td>3.0</td>
<td>Geol 210*</td>
</tr>
<tr>
<td>Social Science</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td><strong>Core Enrichment: Electives</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Religion Electives</td>
<td>3–4</td>
<td>6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Open Electives</td>
<td>Variable</td>
<td>Variable</td>
<td>personal choice</td>
</tr>
</tbody>
</table>

**GRADUATION REQUIREMENTS:**

- Minimum residence hours required: 30.0
- Minimum hours needed to graduate: 120.0

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### PROGRAM REQUIREMENTS (83–86 total hours)

<table>
<thead>
<tr>
<th>Complete the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 316* Technical Communication</td>
</tr>
<tr>
<td>Math 112* Calculus 1</td>
</tr>
<tr>
<td>Phil 423* History and Philosophy of Science</td>
</tr>
<tr>
<td>Phscs 105 Introductory Applied Physics</td>
</tr>
<tr>
<td>Phscs 106 Introductory Applied Physics</td>
</tr>
<tr>
<td>Phscs 107 Introductory Applied Physics Lab</td>
</tr>
<tr>
<td>Phscs 108 Introductory Applied Physics Lab</td>
</tr>
<tr>
<td>Phscs 127 Descriptive Astronomy</td>
</tr>
<tr>
<td>Phscs 137 Intro to the Atmosphere &amp; Weather</td>
</tr>
</tbody>
</table>

### Complete the Professional Education Component:

- Complete the teacher licensure requirements:
  - Contact Education Student Services, 120 MCKB, 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.

#### A. Complete the following:

- CPSE 402 Educating Students with Disabilities | 2.0 |
- IP&T 286 Instructional Technology in Teaching | 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 350 Adolescent Development | 2.0 |
- Sc Ed 353* Multicultural Education | 2.0 |
- Sc Ed 379 Classroom Management | 1.0 |

**Note:** FBI fingerprint and background clearance must be completed before enrollment in Phy S 276.

#### B. Complete 12 hours from one of the following:

- Sc Ed 476R Student-Teaching Internship | 12.0 |
- Sc Ed 496R Academic Internship | 12.0 |

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**THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (16–20 hours overlap)**

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**FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT**

**THE ADVISEMENT CENTER**

Physical and Mathematical Sciences College Advisement Center  
N-181 ESC  
Brigham Young University, 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
Suggested Sequence of Courses:

**FRESHMAN YEAR**

1st Semester
- 1st Year Writing 3.0
- or A Htg 100 (3.0)
- Geol 111 (FW) 4.0
- Math 112 (FWSpSu) 4.0
- Phscs 105, 107 (FWSp) 4.0
- Rel A 121 (FWSpSu) 2.0
**Total Hours 17.0**

2nd Semester
- A Htg 100 3.0
- or 1st Year Writing (3.0)
- Chem 105 (FWSpSu) 4.0
- or Chem 111 (3.0)
- Geol 112 (W) 4.0
- Phscs 106, 108 (FWSp) 4.0
- Rel A 122 (FWSpSu) 2.0
**Total Hours 16–17.0**

**SOPHOMORE YEAR**

3rd Semester
- Chem 106, 107 (FWSpSu) 4.0
- or Chem 111 (3.0)
- Geol 210 (F) 3.0
  (Begins meeting before start of Fall semester)
- Phscs 127 (FWSpSu) 3.0
- Civilization 1 3.0
- Rel A 211/212 2.0
**Total Hours 14–15.0**

4th Semester
- Geology elective 3.0
- Geol 491R (FW) 0.5
- Phscs 127 (FWSpSu) 3.0
- or Chem 111 (3.0)
- Geol 112 (W) 4.0
- Phscs 106, 108 (FWSp) 4.0
- Rel A 122 (FWSpSu) 2.0
**Total Hours 14.5**

**JUNIOR YEAR**

5th Semester
- Geology elective 3.0
- Geol 491R (FW) 0.5
- Engl 316 (FWSpSu) 3.0
- Phy S 276R (FWSp) 4.0
- Total Hours 15.5

6th Semester
- Phscs 137 (FW) 3.0
- Geol 491R (FW) 0.5
- Geology elective 3.0
- CPSE 402 2.0
- Total Hours 17.0

**SENIOR YEAR**

7th Semester
- IP&T 286 (FWSpSu) 1.0
- Geol 491R (FW) 0.5
- Geology elective 3.0
- Phy S 377 3.0
- Phy S 378 1.0
- Global & Cultural Awareness 3.0
- Total Hours 14.5

8th Semester
- Sc Ed 476R or 496R (FW) 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.

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.

For more information on careers in your major, please refer to From Major to Career, a publication which is located in all college advisement centers.