Earth and Space Exploration (Geological Sciences), BS

Earth and space exploration majors learn about Earth's present, past and future. Geological sciences students explore the physics and chemistry of Earth; apply field and lab techniques to understand how mountains form, volcanoes erupt and earthquakes happen; and map and investigate interactions to gain a better understanding of our planet.

Program Description

Geological science is the study of the Earth and other planets with an emphasis on the processes that have shaped them since the origin of the solar system. Students explore topics such as the co-evolution of life, oceans, atmosphere and the Earth's climate system, and the record of that evolution encoded in rocks, soil, ice and isotopes.

The BS program in earth and space exploration with a concentration in geological sciences educates students in the fundamentals of the geological sciences, providing a solid background in chemistry, mathematics and physics as well as transdisciplinary training in engineering, astronomy and planetary science.

Students gain a strong understanding of field methods as well as modern computing, remote sensing and instrumentation in order to effectively study the natural environment and Earth's resources. Graduates of the program can apply their knowledge for the benefit of Arizona, the nation and society in general.

At a Glance

- **College/School:** College of Liberal Arts and Sciences
- **Location:** Tempe campus

- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
• **First Required Math Course**: MAT 265 - Calculus for Engineers I.
  or MAT 270 Calculus with Analytic Geometry I

• **Math Intensity**: Substantial

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**Required Courses (Major Map)**

2018 - 2019 Major Map  
Major Map (Archives)

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**Admission Requirements**

**General University Admission Requirements:**

All students are required to meet general university admission requirements.  
Freshman | Transfer | International | Readmission

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**Change of Major Requirements**

A current ASU student has no additional requirements for changing majors. Students should refer to https://students.asu.edu/changingmajors for information about how to change a major to this program.

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**Transfer Agreements**

ASU has partnered with colleges and universities in Arizona, California, Illinois and Washington to provide transfer curriculum pathways. Students should select their current institution to see if there is a partnership agreement between the institution and ASU for this degree program. Students who do not see their state or institution listed should check back as ASU is always working on creating new partnerships.

- Transfer from a Maricopa Community College in Arizona  
- Transfer from an Arizona Community College  
- Transfer from another state
Global Opportunities

Global Experience

With over 250 programs in more than 65 countries (ranging from one week to one year), study abroad is possible for all ASU students wishing to gain global skills and knowledge in preparation for a 21st century career. Students earn ASU credit for completed courses, while staying on track for graduation, and may apply financial aid and scholarships toward program costs. https://mystudyabroad.asu.edu/

Career Opportunities

Sample careers include:

- environmental geologist
- geological engineer
- geologist
- mining geologist
• petroleum geologist
• science policy intern
• science writer

Sample career settings include:

• environmental industry
• geotechnical industry
• mining and petroleum industries
• museums
• publishers

Some of the listed careers may require advanced degrees or additional certifications. This program also provides suitable preparation for graduate study.

Career examples include but are not limited to those shown in the following list. Advanced degrees or certifications may be required for academic or clinical positions.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering Professor 🌟</td>
<td>14.6%</td>
<td>$98,360</td>
</tr>
<tr>
<td>Engineering Manager 🌟</td>
<td>5.5%</td>
<td>$137,720</td>
</tr>
<tr>
<td>Environmental Engineer 🌟</td>
<td>8.3%</td>
<td>$86,800</td>
</tr>
<tr>
<td>Farm Manager</td>
<td>6.3%</td>
<td>$61,480</td>
</tr>
<tr>
<td>Fire Protection Engineer</td>
<td>8.6%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Forester</td>
<td>5.0%</td>
<td>$60,120</td>
</tr>
<tr>
<td>Forestry Professor</td>
<td>7.8%</td>
<td>$87,420</td>
</tr>
<tr>
<td>Geologist 🌟</td>
<td>14.0%</td>
<td>$89,850</td>
</tr>
<tr>
<td>Geology Professor 🌟</td>
<td>9.5%</td>
<td>$87,380</td>
</tr>
<tr>
<td>Health Sciences Manager 🌟🌟</td>
<td>9.9%</td>
<td>$118,970</td>
</tr>
<tr>
<td>Hydrogeologist 🌟🌟</td>
<td>9.9%</td>
<td>$118,970</td>
</tr>
<tr>
<td>Hydrologist 🌟🌟</td>
<td>9.9%</td>
<td>$79,990</td>
</tr>
<tr>
<td>Industrial Safety Engineer 🌟</td>
<td>8.6%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Park Ranger</td>
<td>6.3%</td>
<td>$61,480</td>
</tr>
<tr>
<td>Product Safety Engineer</td>
<td>8.6%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Soil Conservationist 🌟</td>
<td>6.3%</td>
<td>$61,480</td>
</tr>
<tr>
<td>Water/Wastewater Engineer 🌟</td>
<td>8.3%</td>
<td>$86,800</td>
</tr>
</tbody>
</table>
* Data obtained from the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA).

☀ Bright Outlook  🌿 Green Occupation

**Contact Information**

Schedule an advisor appointment  
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