Earth and Space Exploration (Geological Sciences), BS

Explore earth by applying field and laboratory techniques to understand how rocks form, mountains are built, volcanoes erupt and earthquakes happen. You learn to solve scientific problems aimed at understanding the fundamental processes responsible for the evolution of our planet.

Program Description

Geological science is the study of 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 geological sciences, providing a solid background in chemistry, mathematics and physics as well as mineralogy, structural geology, field geology and a variety of geologic subdisciplines.

Students gain a strong understanding of field methods as well as modern computing, remote sensing and instrumentation 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.

In addition to the guidelines in the Concurrent Program Options section below, students interested in pursuing concurrent or second baccalaureate degrees in The College of Liberal Arts and Sciences are advised to visit the college's website for more information and requirements.

At a Glance
• College/School: The College of Liberal Arts and Sciences
• Location: Tempe

• Additional Program Fee: Yes
• Second Language Requirement: No
• First Required Math Course: MAT 265 - Calculus for Engineers I or higher
• Math Intensity: Substantial

Required Courses (Major Map)

2023 - 2024 Major Map
Major Map (Archives)

Concurrent Program Options

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

Accelerated Program Options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's plus master's degree with:

Astrophysics and Astronomy, MS
Exploration Systems Design (Instrumentation), MS
Exploration Systems Design (Sensor Networks), MS
Exploration Systems Design (Systems Engineering), MS
Exploration Systems Design, MS

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.

Admission Requirements

General University Admission Requirements:
All students are required to meet general university admission requirements.
First-year | Transfer | International | Readmission

Tuition Information
When it comes to paying for college, everyone’s situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

**Change of Major Requirements**

A current ASU student has no additional requirements for changing majors.

Students should visit the Change of Major form for information about how to change a major to this program.

**Transfer Options**

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use MyPath2ASU® to outline a list of recommended courses to take prior to transfer.

ASU has transfer partnerships in Arizona and across the country to create a simplified transfer experience for students. These pathway programs include exclusive benefits, tools and resources, and they help students save time and money in their college journey.

**Global Opportunities**

**Global Experience**

With over 300 programs available, Global Education allows students in the geological sciences concentration to gain hands-on experience in a variety of programs all over the world.

Graduates who possess the heightened cultural competency and leadership and critical thinking skills they acquired through study abroad may stand out in a competitive field.

**Career Opportunities**

Graduates in geological sciences are prepared for employment in a variety of geoscience-related fields and for continued studies toward higher educational degrees. The geological science degree program provides broad training in the geosciences and supporting sciences, opening up diverse opportunities for employment in industry, government, education and other organizations. Geological science graduates understand how to approach diverse societal issues, such as water resources, mineral resources, geologic hazards, engineering geology and government regulations.

Sample careers include:

- environmental geologist
• geological engineer
• geologist
• government geologist
• mineral exploration geologist
• petroleum geologist
• science policy intern
• science writer
• water resources scientist

Sample career settings include:

• environmental industry
• federal, state, and local government agencies
• geotechnical industry
• museums
• petroleum industry
• publishers
• small exploration companies and large mining companies

Career example titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience, geographical location, and required advanced degrees or certifications may affect pay scales.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Analyst</strong></td>
<td>4.1%</td>
<td>$64,460</td>
</tr>
<tr>
<td><strong>Forester</strong></td>
<td>2.4%</td>
<td>$64,220</td>
</tr>
<tr>
<td><strong>Geologist</strong></td>
<td>5.1%</td>
<td>$87,480</td>
</tr>
<tr>
<td><strong>Geology Professor</strong></td>
<td>3.6%</td>
<td>$97,770</td>
</tr>
<tr>
<td><strong>Hydrogeologist</strong></td>
<td>4.8%</td>
<td>$144,440</td>
</tr>
<tr>
<td><strong>Hydrologist</strong></td>
<td>1.5%</td>
<td>$85,990</td>
</tr>
<tr>
<td><strong>Park Ranger</strong></td>
<td>4.1%</td>
<td>$64,460</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

**Contact Information**

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