

# Geological Sciences

The Geological Science major focuses on the study of the Earth's structure, composition, and processes, including the study of rocks, minerals, earthquakes, volcanoes, and environmental hazards. Students in this major gain expertise in fieldwork, data analysis, and geotechnical methods to understand geological formations and their impact on the environment. Graduates are prepared to work in fields related to natural resource exploration, environmental protection, and hazard mitigation. Typical industry sectors include environmental consulting, energy and mining, government agencies, construction, and research institutions.

## Job Title Examples:

- Geologist
- Environmental Consultant
- Geological Technician
- Geophysicist
- Hydrogeologist
- Mining Technician
- Natural Resource Specialist
- Geotechnical Engineer
- Petroleum Technician
- Environmental Health and Safety Specialist

## Hard and Soft Skills Needed:

### Hard Skills:

1. Geological Mapping
2. Data Analysis and Modeling
3. Geophysical Surveying
4. GIS (Geographic Information Systems)
5. Rock and Mineral Identification

### Soft Skills:

1. Problem-Solving
2. Critical Thinking
3. Attention to Detail
4. Communication
5. Teamwork

### **Further Education/Training Required and/or Suggested:**

A BS in Geological Studies prepares students for entry-level roles, but additional training or certifications may be required for specific jobs and career advancement:

To Enter the Field:

1. State Licensure:
  - Some roles require licensure as a Professional Geologist (PG), which involves passing the Fundamentals of Geology (FG) exam and gaining work experience.
2. Field Skills:
  - Proficiency in tools like GIS or experience with geological software is often required.

To Advance:

1. Specialized Certifications:
  - Certified Petroleum Geologist (CPG) or Certified Hydrogeologist (CHG) for niche roles.
  - OSHA HAZWOPER Certification for environmental geology positions.
2. Graduate Studies:
  - An MS or PhD is often necessary for research, teaching, or advanced roles in geology.

Summary:

Licensure (PG) is often needed for advancement, and GIS or HAZWOPER certifications are valuable for specialization. Graduate studies are common for higher-level roles.

### **Professional or Student Associations:**

- American Institute of Professional Geologists (AIPG)
- Geological Society of America (GSA)
- Association for Women Geoscientists
- WKU Geology Club