



Studying Geosciences at UTD

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Who should major in Geology?

Students who want to:

- learn how the world works
- address some of the most important issues in society today, including:
 - energy sources and sustainability
 - climate change
 - impacts of development on the environment
 - water management
 - natural hazards
 - strategic mineral resources
- enjoy the outdoors
- enjoy solving puzzles with some of the pieces missing

GeoCareers Growing

Employment opportunities steadily growing, more strongly in environmental applications.

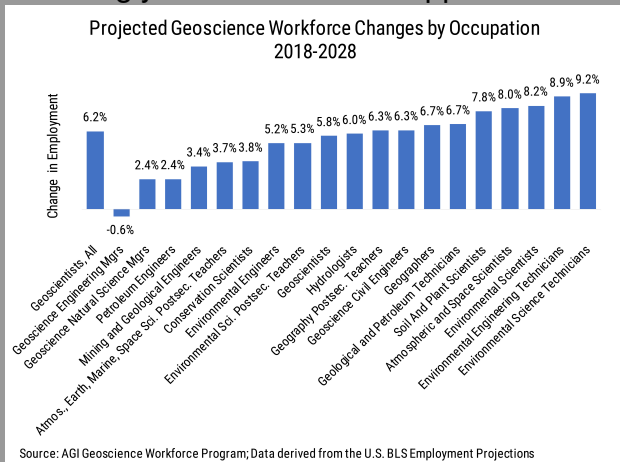


Figure: Projected growth in Earth Science/Geology-related fields through 2028. From AGI.

Be “Resilient”

Tremendous growth in climate resilience jobs, as indicated by ad trends at Indeed.com

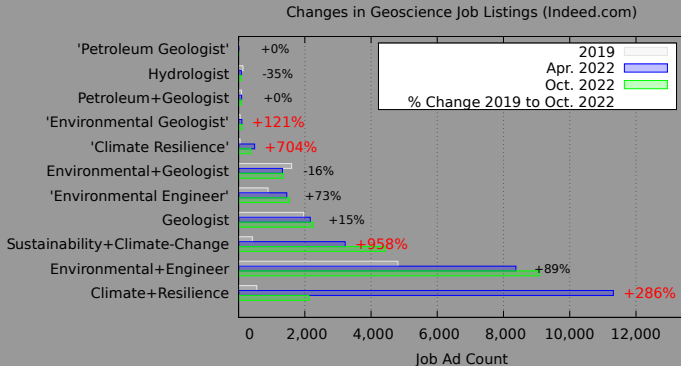


Figure: Growth in climate-resilience-related job ads at Indeed.com since 2019. Entries in single quotes are search results for the exact phrase.

Energy

- 30-40% of our graduates work in this field
- energy prices and oil company profits likely to remain high, not yet translating into hiring
- transitioning to reservoir and field management (e.g. re-fracing, CO₂ injection/sequestration). GIS and business skills helpful
- increasing interest in strategic metals for energy, e.g. lithium, cobalt
- also geothermal energy, good in combination with renewable energy sources

UDA ENERGY COMPANY
WATER OBSERVATION WELL
17-31
Nye County, Nevada
Sec. 31, T1N., R10E
Geothermal Lease N74099

Environmental Sciences

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Introduction

Career Outlook


Geosciences at
UTD

Degrees

Course
Sequence

- 30% of our graduates work in this field
- much growth in hydrology, water supply/quality work
- depends on regulatory environment, should be steady, much more growth outside of Texas
- DFW employment linked to commercial real-estate development
- Professional Geologist certification required for most of this work (i.e. a major market for geology majors)
- Climate resilience work is rapidly expanding, growth likely to continue

Other

- 
- A group of five students, three women and two men, are posing on a rocky, outdoor setting. They are dressed in outdoor or hiking attire, including hoodies, jackets, and backpacks. The background shows a rugged, rocky terrain with some sparse vegetation. The students are arranged in a loose group, with some sitting on the rocks and others standing or crouching.
- Teaching: about 20% of our graduates
 - Paleontology: small but steady opportunities (e.g. Dallas Natural History Museum curator is a recent graduate)
 - Government: generally in regulatory enforcement (e.g. EPA Region 6 in Dallas). James Reilly, UTD alumnus was an astronaut.

Degrees and Pay

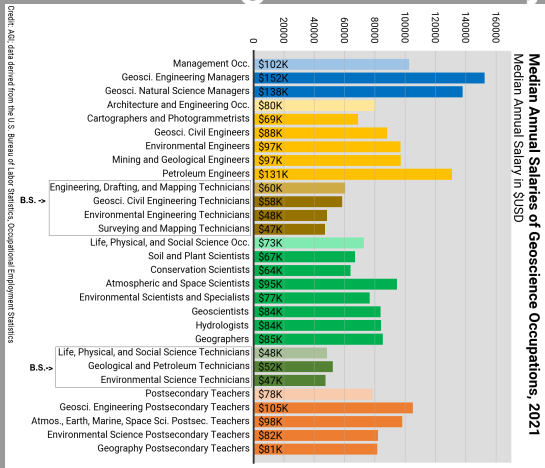


Figure: 2021 median salaries in Earth Sciences fields. Technicians (boxes) require B.S., others require at least M.S. Professional license best for managers (blue).

Undergraduate Opportunities

Examples of learning and internship/assistantship opportunities in the following:

- Undergraduate research projects (many UTD-funded, and travel to present results)
- GeoCorps: internships with government agencies, National Park Service, etc.
- NSF Ocean Drilling Program: always need technicians for research cruises
- NASA/JPL internships: help process planetary data

UTD GeoClub

- a very active social group for Geology majors at UTD
- see “UTD GeoClub” on Facebook
- GeoClub meeting, presentation on geology, free pizza every other week
- field trips several times per semester
- many activities funded through mineral sales
- UTD Geoscience Studio: undergrad-created short videos on geoscience topics (<https://utdgss2016.wixsite.com/utdgss>)

Degrees Offered

- B.S.** our primary degree, required for anyone wishing to be a *practitioner* of geology. Two options: Geology or Geophysics (latter has more math, fewer field-related classes)
- B.A.** intended for *interpreters* or *managers* of geology. Includes teachers, government regulators, etc. Useful for less quantitative students
- Minor** great for students with geology interest, 20 hours of course work required. Has included business majors (e.g. a building stone company owner), pre-meds, physics majors interested in geophysics, etc.

GEOS Course Sequence

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Many freshman-sophomore courses can be taken at community college level. Colored courses not available there, and are key pre-requisites for many upper level Geosciences courses.

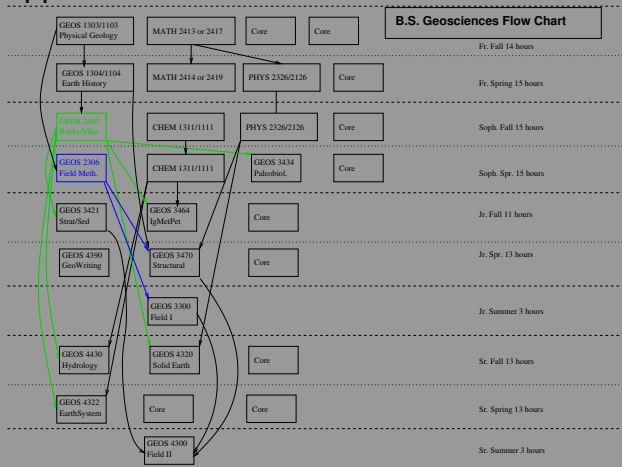
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UTD

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General Requirements

- First 2 years can be transferred from community college
 - all UTD B.S.: 1 year each of Calculus, Calculus-based Physics, and lab Chemistry
 - 40 “Core” hours are dictated by the State, including History, Rhetoric, etc.
- Most jobs require an M.S., UTD offers:
 - Coursework M.S.:** 2 years, good for applied environmental careers, especially with Professional Licensing
 - Thesis M.S.:** 2.5-3 years, good for research and energy careers
- Ph.D.: mostly research-oriented, lately more industry demand, generally supported by teaching and research assistantships

Career Applications



Geology graduates can apply their versatile skills in a huge variety of areas.