

GEOLOGICAL ENGINEERING, BS

Geological engineering (GLE) brings the fields of geology and engineering to solve challenges with our natural and built environments. It offers opportunities to work outdoors; help communities grow, evolve, and respond to climate change; and guide the sustainable use of Earth's natural resources by:

- Solving issues with rock and soils
- Mitigating the risk of floods, landslides, earthquakes, and other natural hazards
- Managing groundwater and surface water to provide safe drinking water
- Designing and building foundation systems, transportation facilities, dams, tunnels, and other critical infrastructure
- Harnessing and storing alternative energy sources like wind, solar, and geothermal
- Creating systems for recycling, reusing, and disposing of solid and hazardous waste
- Remediating contaminated soil and water

Geological engineers are in demand as society adapts to climate change and resource depletion. Professionals in this field help us sustainably overcome the grand challenges we face in meeting our energy, infrastructure, and resource needs.

At the University of Wisconsin–Madison, geological engineering students excel with hands-on opportunities in well-equipped labs (<https://engineering.wisc.edu/blog/gle-spotlight-sydney-klinzing-reflects-on-undergrad-research-and-student-life/>), computer facilities, and field research sites. We study minerals, rocks, soil, and the history of the Earth to understand the natural world and how we can live and work in concert with it.

You will learn from faculty and staff from the College of Engineering and the College of Letters and Science, as well as practicing engineers. You'll use the tools and technology that geological engineers use every day, and you'll apply your knowledge to create multidisciplinary solutions for real-world challenges in our capstone design course (<https://engineering.wisc.edu/blog/cee-capstone-course-wins-7th-ncees-award-for-renewable-energy-project/>).

As a student in our program, you can increase your career potential by earning a dual major in geological engineering and geology and geophysics (<https://guide.wisc.edu/undergraduate/letters-science/geoscience/geology-geophysics-bs/>) in a single 126-credit program, with no extra coursework. There are also a variety of certificate programs that you can pair with your degree, including two options for sustainable energy, to set yourself up for success.

We encourage students to take the Fundamentals of Engineering (FE) exam before or shortly after graduating (<https://engineering.wisc.edu/blog/taking-the-fe-exam-as-an-undergrad/>), which is the first step in professional engineering licensure and its benefits. A pass rate of 90% among our geological engineering students surpasses the national average of 70%, ensuring our graduates are well-prepared for their careers.

Geological engineering (<https://www.youtube.com/watch?v=OAadhKvleI>) alumni from our program find rewarding careers with planning and design consulting firms; the natural resource sector; construction companies; energy developers and providers; and city/county, state, and federal agencies. Typical entry-level position titles include geological engineer, geotechnical engineer (<https://engineering.wisc.edu/blog/geological-engineering-degree-sparks-rewarding-career-for-devin-welch/>), geologist, design engineer, and project engineer.