

GEOLOGICAL ENGINEERING (M.S.)

Master of Science. Major in Geological Engineering.

Geological Engineering is the professional discipline that relies on the use of geologic conditions and implications for:

1. the design and construction of civil and mining projects,
2. the evaluation and mitigation of natural and human-caused geologic hazards, and
3. the exploration and development of mineral and energy resources.

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil engineering or geology; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate students enrolled in this program take a combination of courses in such areas as geological engineering, civil engineering (soil mechanics), hydrogeology, and site characterization. The degree requires a minimum of 30 semester credits beyond the baccalaureate degree. Of those 30 credits, at least 18 must be from 500-level graduate courses. The degree program is available with a thesis option and a non-thesis option. The thesis option requires 6 credits of thesis work approved by faculty who serve on the student's graduate committee. The non-thesis option is available to students who have at least two years of professional experience; this program requires a 3-credit directed study research paper and a final oral examination.

The following courses are considered to be the minimum preparation necessary for admission to the Geological Engineering Master of Science degree program. Students who do not have an adequate background in these subject areas will be required to satisfactorily complete those in which they are deficient. The actual course content of the program will depend on the student's background and career objectives. Each program is tailored to the individual student.

Required Deficiency Courses:

- ENGR 210 Engineering Statics
- ENGR 220 Engineering Dynamics
- ENGR 335 Engineering Fluid Mechanics
- ENGR 350 Engineering Mechanics of Materials
- GEOL 345 Structural Geology
- Mathematics through Differential Equations

For additional information regarding the graduate program in Geological Engineering, contact the GeoE Program Director.

Please see the Geological Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. Demonstrates knowledge of degree subject matter; integrates and builds upon the foundation provided by a relevant undergraduate degree.
2. Conducts research and analyzes and interprets the results.
3. Communicates professional work.

4. Understands the responsibility to enhance the quality of life of the global community through the practice of engineering.