The graduate program offers training leading to the master of science and
the doctor of philosophy degrees in geological engineering. Geological
engineering is a rapidly growing field of study that integrates the two
disciplines of geology and engineering. Geological engineers help find
the best ways to use the earth’s resources for solving technical problems
while protecting the environment. The need for graduate education in
geological engineering has been brought about by modern developments
and activities in science and industry that have an impact on earth
materials including soil, rock, water, and air. The area of study combines
research and application methodologies of geology and of several
engineering disciplines to address engineering problems in which the
geologic nature of a site or geologic processes constitute major design
objectives or constraints.

Emphasis in the program is on development of the student’s ability to
originate and perform analytical, numerical, and/or laboratory analysis
techniques to address new and challenging earth-related problems
associated with modern land-use practices, earthen construction,
energy and mineral extraction, and environmental pollution control and
remediation. The program is expected to be of interest to students in
engineering (particularly mining, civil, environmental, and mechanical)
and physical sciences (particularly geology, geophysics, and geography).
Students select their research topics from such areas as geotechnical
and geo-environmental engineering, applied geophysics, hydrology and
hydrogeology, numerical modeling of rock masses, remote sensing, rock
mechanics, and soil and rock engineering.

Modern facilities include soil and rock mechanics laboratories; drilling
equipment and instrumentation for rock and soil mechanics field testing;
and soils, geosynthetics, and geo-environmental laboratories. Research
assistantships, teaching assistantships, and fellowships are available to
qualified applicants either upon admission or one to two semesters after
entering the program.