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 which 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 which have an impact on earth materials including soil, rock, and water. 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, 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 rock engineering.

Modern facilities include rock physics and rock mechanics laboratories; drilling rig 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.

Prospective students should see the program website for funding information.

To make progress toward a graduate degree, students must meet the Graduate School Minimum Degree Requirements and Satisfactory Progress (http://guide.wisc.edu/graduate/#policiesandrequirementstext) in addition to the requirements of the program.

Contact the program for information on any additional required courses.

Doctoral students in Geological Engineering are not required to complete a minor.

The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades.
Grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

PROBATION POLICY
The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

ADVISOR
Every graduate student is required to have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies. An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor.

To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

A committee often accomplishes advising for the students in the early stages of their studies.

ASSESSMENT AND EXAMINATIONS
Doctoral students are required to take a comprehensive preliminary/oral examination after they have cleared their record of all Incomplete and Progress grades (other than research and thesis). Deposit of the doctoral dissertation in the Graduate School is required.

TIME CONSTRAINTS
Doctoral degree students who have been absent for ten or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be require to take another preliminary examination and to be admitted to candidacy a second time.

LANGUAGE REQUIREMENTS
Contact the program for information on any language requirements.

ADMISSIONS
Admission to the program requires approval of the admissions committee. Applicants are normally expected to have a bachelor’s degree in engineering or the physical sciences.

LEARNING OUTCOMES
KNOWLEDGE AND SKILLS
- demonstrate an ability to synthesize knowledge from a subset of the biological, physical, and social sciences to help frame problems critical to the future of their discipline.
- conduct original research.
- foster ethical and professional conduct.

Faculty: Professors Noyce (chair), Adams, Bahia, Cramer, Feigl, Hanna, Harrington, Holloway, Hurley, Karthikeyan, Lee, Likos, Long, Noguera, McMahon, Park, Parra-Montesinos, Pedersen, Potter, Ran, Russell, Schauer, Wu; Associate Professors Ahn, Fratta, Loheide II, Pincheira Tinjum; Assistant Professors Block, Ginder-Vogel, Hedegaard, Hicks, Remucal, Sone, Wright. See also CEE faculty (http://directory. engr.wisc.edu/cee/faculty).

Geological Engineering Faculty: Professors Likos (chair) (Civil and Environmental Engineering), Anderson (Geoscience), Bahr (Geoscience), Goodwin (Geoscience), Thurber (Geology and Geoscience), Tikoff (Geoscience), Tobin (Geosciences), Wang (Geoscience), Wu (Civil and Environmental Engineering), Feigl (Geoscience); Associate Professors Fratta (Civil and Environmental Engineering), Loheide (Civil and Environmental Engineering); Assistant Professors Cardiff (Geoscience), Tinjum (Engineering Professional Development) Ginder-vogel (Civil and Environmental Engineering), Sone (Civil and Environmental Engineering); Affiliate Professors Kung (Soil Science), Lowery (Soil Science), Plesha (Engineering Physics), Potter (Civil and Environmental Engineering). See also GLE faculty (http://gle.wisc.edu/faculty-and-staff).