CIVIL AND ENVIRONMENTAL ENGINEERING: GEOLOGICAL/GEOTECHNICAL ENGINEERING, M.S.

This is a named option within Civil and Environmental Engineering M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms) It is based on coursework only (no research-based thesis).

The Geological/Geotechnical Engineering (https://www.engr.wisc.edu/%20department/civil-environmental-engineering/academics/accelerated-%20master-science-programs/civil-environmental-engineering) M.S.-CEE named option from the University of Wisconsin-Madison is interdisciplinary, taught by faculty from the College of Engineering and the College of Letters & Science. Our program integrates expertise from geology and engineering, so you acquire deep understanding of the interrelation between nature and the built environment.

In just one year, learn to solve a variety of practical problems associated with rocks and soils using principles of sustainable engineering. Combine your knowledge of geology with your engineering expertise to build structures, manage groundwater and surface water resources, construct subsurface repositories for waste disposal, and design systems to help extract conventional and alternative energy and mineral resources.

Our program is dynamic. You work with engineering and geoscience professors, visiting professors, academic staff members, and a cadre of research graduate and undergraduate students. Choose your electives based on your specific career or research needs. Research topics include alternative energy, geoenvironmental engineering, rock mechanics, earthquake engineering, hydrogeology, near-surface geophysics, and many more.

In the UW–Madison Geological/Geotechnical Engineering master’s program, you develop strong skills in geoenvironmental engineering, groundwater technology, rock and soil mechanics, geophysics, and geology. Graduate ready to excel in your field, whether it be consulting, petroleum and gas industries, mining, infrastructure, federal and state laboratories, or research. The Earth can be your office!

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website. Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements of the Graduate School as well as the program(s).

Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply).

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>December 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>This program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>This program does not admit in the summer.</td>
</tr>
</tbody>
</table>

GRE (Graduate Record Examinations) Not required.

English Proficiency Test Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).

Other Test(s) (e.g., GMAT, MCAT) n/a

Letters of Recommendation Required 3

Applicants must first meet all of the requirements of the Graduate School. Please visit this website (https://grad.wisc.edu) for details.

Applicants must also meet department specific requirements as outlined below:

- Have a bachelor’s degree in civil and environmental engineering from an ABET-accredited engineering program or from a recognized international institution
- Submit a 1,000 word or fewer statement of purpose; include your technical areas of interest, coursework emphasis, research experience, professional goals, faculty members you are interested in working with, and any other items relevant to your qualifications for graduate school
- Submit three letters of recommendation
- Non-native English speakers must have a Test of English as a Foreign Language (TOEFL) with a score of 580 (written) or 92 (Internet version)

Please do not mail paper copies of application materials. Upload the required application materials to the electronic Graduate School application, including a PDF copy of the most current transcripts. Applicants who are recommended for admission by the CEE Admissions Committee will receive an e-mail with further instructions from the CEE Graduate Admissions Office, requesting official transcripts or other required application material.

Applicants should monitor the application status by visiting the “Graduate Application Status” window within your MyUW portal (information on this is received after submitting an application). You may need to activate a NetID to gain access to the MyUW portal.

Graduate Application Status will remain “pending” until recommendations are determined. All applicants will receive an e-mail from the CEE Graduate Admissions Team with more details once the admission committees have made decisions.

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.
PROGRAM RESOURCES

Students in this program are not eligible for department funded opportunities in the form of teaching assistantship (TA), research assistantship (RA), or project assistantship (PA).

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to Face</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements Detail</th>
<th>Minimum Credit Requirement</th>
<th>Minimum Residence Credit Requirement</th>
<th>Minimum Graduate Coursework Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Credit</td>
<td>30 credits</td>
<td>16 credits</td>
<td>At least 50% of credits applied toward the graduate degree credit requirement must be completed in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide.</td>
</tr>
<tr>
<td>Graduation GPA Requirement</td>
<td>3.00 GPA required.</td>
<td></td>
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</tr>
<tr>
<td>Other Grade Requirements</td>
<td>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 of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.</td>
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Assessments and Examinations

Contact the program for information on required assessments and examinations.

Language

Contact the program for information on any language Requirements requirements.

REQUIRED COURSES

Typical Curriculum in this program

- Students typically take 12 credits in the fall semester, 12 credits in the spring semester, and 6 credits in the summer semester.
- 15 credits from the approved list of Geological/Geotechnical Engineering Specialization courses. Student and advisor will select specific courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>G L E 401</td>
<td>Special Topics in Geological Engineering</td>
<td>1-3</td>
</tr>
<tr>
<td>G L E/GEOSCI/ M S &amp; E 474</td>
<td>Rock Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/G L E 530</td>
<td>Seepage and Slopes</td>
<td>3</td>
</tr>
<tr>
<td>G L E/GEOSCI 594</td>
<td>Introduction to Applied Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>G L E/GEOSCI 595</td>
<td>Field Methods in Applied and Engineering Geophys</td>
<td>1</td>
</tr>
<tr>
<td>CIV ENGR/G L E 635</td>
<td>Remediation Geotechnics</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/G L E 730</td>
<td>Engineering Properties of Soils</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/G L E 732</td>
<td>Unsaturated Soil Geoengineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/G L E 733</td>
<td>Physicochemical Basis of Soil Behavior</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/G L E 735</td>
<td>Soil Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

- 6 credits from a second discipline within the approved list of Civil and Environmental Engineering specialization courses, based on your career interests.
- 3 credits from a third discipline within the approved list of CEE specialization courses, based on your career interests.
- 5 credits of G L E 699 Independent Study and 1 credit of G L E 900 Seminar

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.
POLICIES

GRADUATE SCHOOL POLICIES
The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES
GRADUATE PROGRAM HANDBOOK
The Graduate Program Handbook (https://www.engr.wisc.edu/department/civil-environmental-engineering/academics/ms-phd-civil-and-environmental-engineering) is the repository for all of the program's policies and requirements.

PRIOR COURSEWORK
Graduate Work from Other Institutions
With program approval, students are allowed to count credits of graduate coursework from other institutions. Approved credits will be allowed to count toward the minimum graduate degree credit requirement and the minimum graduate coursework requirement, but will not count toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison Undergraduate
With program approval, no more than 7 credits of coursework numbered 300 or higher from a UW–Madison undergraduate degree are allowed to count only toward the minimum graduate degree credit requirement. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special
With program approval, students are allowed to count up to 15 credits of coursework numbered 300 or above taken as a UW–Madison special student toward the Minimum Graduate Residence Credit Requirement, and the Minimum Graduate Degree Credit Requirement; those courses numbered 700 or above may be applied toward the Minimum Graduate Coursework (50%) Requirement. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

PROBATION
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 / COMMITTEE
Every graduate student is required to 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.

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. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

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

CREDITS PER TERM ALLOWED
15 credits

TIME CONSTRAINTS
Master's degree students who have been absent for five 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.

OTHER
Students in the accelerated MS (named options) are not eligible for department funded opportunities.

CIVIL AND ENVIRONMENTAL ENGINEERING FACULTY
Professors Noyce (chair), Adams, Bahia, Cramer, Hanna, Harrington, Hurley, Likos, Loheide, McMahon, Noguera, Park, Parra-Montesinos, Ran, Russell, Schauer, Wu; Associate Professors Ahn, Block, Fratta, Pincheira, Remucal, Tinjum; Assistant Professors Blum, Gadikota, Ginder-Vogel, Hampton, Hicks, Prabhatkar, Pujara, Sone, Wang, Wright, Zhu. M.Eng Program Director Carlson. See also CEE faculty (http://directory.engr.wisc.edu/cee/faculty).

GEOLICAL ENGINEERING FACULTY
Professors Likos (director) (Civil and Environmental Engineering), Feigl (Geoscience), Goodwin (Geoscience), Holloway (Nelson Institute), Loheide (Civil and Environmental Engineering), Thurban (Geoscience), Tikoff (Geoscience), Wu (Civil and Environmental Engineering); Associate Professors Cardiff (Geoscience), Fratta (Civil and Environmental Engineering), Tinjum (Civil and Environmental Engineering); Assistant Professors Gadikota (Civil and Environmental Engineering), Ginder-Vogel (Civil and Environmental Engineering), Hampton (Civil and Environmental Engineering), Hicks (Civil and Environmental Engineering), Sone (Civil and Environmental Engineering), Zoet (Geoscience); Professor of Practice Pakes (Grainger). See also GLE faculty (https://www.engr.wisc.edu/geological-engineering/people).

ENVIRONMENTAL CHEMISTRY AND TECHNOLOGY
Professors Hurley (director) (Civil and Environmental Engineering), Bleam (Soil Science), Harrington (Civil and Environmental Engineering), Karthikeyan (Biological Systems Engineering), McMahon (Civil and Environmental Engineering/Bacteriology), Pedersen (Soil Science), Roden (Geoscience), Root (Chemical and Biological Engineering), Schauer (Civil and Environmental Engineering), Thompson (Biological Systems Engineering); Associate Professors Bertram (Chemistry), Remucal (Civil and Environmental Engineering); Assistant Professors Anantharaman (Bacteriology), Ginder-Vogel (Civil and Environmental Engineering), Gadikota (Civil...
and Environmental Engineering), Whitman (Soil Science). See also ECT Faculty (https://www.engr.wisc.edu/academics/graduate-academics/environmental-chemistry-technology).