CIVIL AND ENVIRONMENTAL ENGINEERING: ENVIRONMENTAL SCIENCE AND 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)

The Environmental Science and Engineering master’s degree from the Department of Civil and Environmental Engineering (https://www.engr.wisc.edu/department/civil-environmental-engineering/academics/accelerated-master-science-programs-civil-environmental-engineering) at the University of Wisconsin—Madison teaches you how to apply science to solve complex environmental problems. Our program is multidisciplinary, so you gain a deeper understanding of chemistry, biology, and systems thinking to better approach your work.

In just one year (fall, spring, and summer), learn to comprehensively address practical problems associated with drinking water and wastewater treatment, air quality, environmental chemistry, sustainable design, energy efficiency, and solid and hazardous waste remediation. Additionally, the Environmental Science and Engineering master’s degree explores the combination of law and practice, so you discover how to develop and enforce environmental policies and regulations that forge the way for a greener future.

At UW–Madison, our graduate research program is dynamic. Engineering and environmental chemistry professors, visiting professors, academic staff members, and a cadre of research graduate and undergraduate students provide context for your studies. We sustain a broad range of research topics, so you can explore environmental chemistry, wastewater treatment, drinking water treatment, freshwater quality, environmental microbiology, bioenergy production, sustainable engineering design, and many more.

With a master’s degree in Environmental Science and Engineering, you are at the forefront of rapidly developing and world-changing innovations.

ADMISSIONS

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)
- The Graduate Record Examination (GRE) is required for admission

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.

Further questions related to the CEE admissions process may be directed to ceeadmissions@engr.wisc.edu.

GRADUATE SCHOOL ADMISSIONS

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/admissions).

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>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<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>Minimum Credit Requirement</th>
<th>30 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
</tbody>
</table>

Minimum Graduate Coursework Requirement

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.

Overall Graduate GPA Requirement

3.00 GPA required.

Other Grade Requirements

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.

Assessments and Examinations

Contact the program for information on required assessments and examinations.

Language Requirements

Contact the program for information on any language requirements.

REQUIRED COURSES

This is a face to face, accelerated program:

- Complete the program in one academic year (fall, spring, summer)
- Courses begin in fall semester only
- Take 15 credits from the approved list of Environmental Engineering Specialization courses
- 6 credits from a second discipline within the approved list of Civil and Environmental Engineering (CEE) 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 independent study
- 1 credit in a graduate student seminar

Typical Curriculum in this Program

(fall semester-12 credits, spring semester-12 credits, summer semester-6 credits; courses are chosen with the assistance of a faculty advisor)

COURSE OPTIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV ENGR 426</td>
<td>Design of Wastewater Treatment Plants</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 427</td>
<td>Solid and Hazardous Wastes Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 500</td>
<td>Water Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 501</td>
<td>Water Analysis-Intermediate</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 421</td>
<td>Environmental Sustainability Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 700</td>
<td>Chemistry of Natural Waters</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/ ATM OCN 701</td>
<td>The Chemistry of Air Pollution</td>
<td>2</td>
</tr>
<tr>
<td>CIV ENGR 721</td>
<td>Biological Principles of Environmental Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 723</td>
<td>Energy Principles of Environmental Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 821</td>
<td>Environmental Engineering: Biological Treatment Processes</td>
<td>3-4</td>
</tr>
<tr>
<td>CIV ENGR 423</td>
<td>Air Pollution Effects, Measurement and Control</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 428</td>
<td>Water Treatment Plant Design</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 429</td>
<td>Environmental Systems Optimization</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 502</td>
<td>Environmental Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 522</td>
<td>Hazardous Waste Management</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR/ SOIL SCI 623</td>
<td>Microbiology of Waterborne Pathogens and Indicator Organisms</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 703</td>
<td>Environmental Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 704</td>
<td>Environmental Chemical Kinetics</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 722</td>
<td>Chemical Principles of Environmental Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIV ENGR 822</td>
<td>Environmental Engineering: Physical/Chemical Treatment Process</td>
<td>3-4</td>
</tr>
</tbody>
</table>
**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/app/uploads/2016/02/cee-graduate-student-handbook.pdf) 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.

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. 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.

**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.

**PEOPLE**

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

**Geological Engineering Faculty**: Professors Likos (director) (Civil and Environmental Engineering), Anderson (Geoscience), Bahir (Geoscience), Feigl (Geoscience), Goodwin (Geoscience), Holloway (Nelson Institute), Thurbur (Geoscience), Tikoff (Geoscience), Tobin (Geoscience), Wang (Geoscience), Wu (Civil and Environmental Engineering); Associate Professors Fratta (Civil and Environmental Engineering), Loheide (Civil and Environmental Engineering), Tinjum (Engineering Professional Development); Assistant Professors Cardiff (Geoscience), Ginder-Vogel (Civil and Environmental Engineering), Hicks (Civil and Environmental Engineering), Sone (Civil and Environmental Engineering), Zoet (Geoscience); Affiliate Professors Kung (Soil Science), Lowery (Soil Science), Plesha (Engineering Physics), Potter (Civil and Environmental Engineering). See also GLE faculty (https://www.engr.wisc.edu/geological-engineering/people).

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