CIVIL AND ENVIRONMENTAL ENGINEERING, M.S.

The Department of Civil and Environmental Engineering offers M.S. degrees with research (http://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-research-ms/) and professional (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-professional-ms/) named options. The research option is a two-year, research thesis-based program. The professional option is a one-year, face-to-face coursework program.

In addition, an online program in Civil & Environmental Engineering: Environmental Engineering M.Eng. (http://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-environmental-engineering-meng/) is offered.

The mission of the civil and environmental engineering program is to develop leaders in education, industry, and government who can use their acquired skills to improve society. The academic program provides a comprehensive framework of courses in the broad area of civil and environmental engineering with opportunities to develop specialized expertise. It also emphasizes the development of integrated teamwork abilities, communication, leadership, entrepreneurship, and creative research skills. Graduate study in the department offers an opportunity to undertake advanced study and research in various areas of specialization. Areas include:

- **Construction engineering and management**: construction labor productivity management, integrated lean project delivery systems, risk management, advanced computer applications to construction, and change management
- **Environmental engineering**: water supply, water quality, water treatment, wastewater treatment, solid and hazardous waste management, air pollution, biotechnology, and alternative energy
- **Geo and pavement engineering**: geotechnical and geological engineering, pavement materials and design, asphalt binders and mixtures, geosynthetics, in-situ testing and engineering geophysics, recycled materials in sustainable construction
- **Structural engineering**: behavior, analysis and design of reinforced/ prestressed concrete, steel, and wood structures; design for earthquake and wind loading; seismic rehabilitation
- **Transportation engineering**: highway and traffic engineering, intelligent transportation systems, connected and automated vehicles, transportation planning, freight, infrastructure management, transportation safety, user comprehension and behavior, advanced driving- and micro-simulation, big data
- **Water resources/environmental fluid mechanics**: analysis, measurement, modeling of currents, flows, and waves in natural and constructed systems; surface and groundwater hydrology; hydraulic engineering; coastal engineering; sedimentation and transport processes; infrastructure impacts of extreme weather events, hydroecology and stream restoration

Students apply to the Master of Science in Civil and Environmental Engineering through one of the named options:

- Research (http://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-research-ms/)  
- Professional (http://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-professional-ms/)

Admissions to the following options have been suspended. Interested students should apply to the Professional option.

- (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-research-ms/) Construction Engineering and Management (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-construction-engineering-management-ms/)  
- Environmental Science and Engineering (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-environmental-science-engineering-ms/)  
- Geological/Geotechnical Engineering (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-geotechnical-engineering-ms/)  
- Structural Engineering (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-structural-engineering-ms/)  
- Transportation Engineering (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-transportation-engineering-ms/)
- Water Resources Engineering (https://guide.wisc.edu/graduate/civil-environmental-engineering/civil-environmental-engineering-ms/civil-environmental-engineering-water-resources-engineering-ms/)

**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 restrictions related to funding.

**PROGRAM RESOURCES**

Financial support is available through fellowships, project/program assistantships (PA), research assistantships (RA), and teaching assistantships (TA). Faculty will contact successful M.S./Ph.D. applicants directly regarding funding opportunities. Admission is not a guarantee of funding.

Students in the Professional M.S. named option and M.Eng. (named option in Environmental Engineering) online programs are not eligible for department funded opportunities.

**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.

**MAJOR REQUIREMENTS**

**CURRICULAR REQUIREMENTS**

<table>
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<tr>
<th>Requirements</th>
<th>Detail</th>
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<tr>
<td>Minimum</td>
<td>30 credits</td>
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<tr>
<td>Credit Requirement</td>
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<tr>
<td>Minimum Residence</td>
<td>16 credits</td>
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<td>Credit Requirement</td>
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<td>Minimum Graduate</td>
<td>At least 50% of credits applied toward the graduate degree credit</td>
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<td>Coursework Requirement</td>
<td>must be completed in graduate-level coursework; courses with the</td>
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<td>Graduate Level Coursework attribute are identified and searchable in</td>
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<td>Overall</td>
<td>3.00 GPA required.</td>
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<td>Graduate GPA</td>
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- CIVIL AND ENVIRONMENTAL ENGINEERING: CONSTRUCTION ENGINEERING AND MANAGEMENT, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-construction-engineering-management-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: ENVIRONMENTAL SCIENCE AND ENGINEERING, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-environmental-science-engineering-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: GEological/Geotechnical Engineering, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-geological-geotechnical-engineering-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: PROfessional, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-professional-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: RESEARCH, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-research-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: STRUCTURAL ENGINEERING, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-structural-engineering-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: TRANSPORTATION ENGINEERING, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-transportation-engineering-ms/)
- CIVIL AND ENVIRONMENTAL ENGINEERING: WATER RESOURCES ENGINEERING, M.S. (http://guide.wisc.edu/graduate/civil-environmental-engineering-water-resources-engineering-ms/)
- Research (http://guide.wisc.edu/graduate/civil-environmental-engineering-research-ms/)
- Environmental Science and Engineering (https://guide.wisc.edu/graduate/environmental-engineering-environmental-science-engineering-ms/)
- Geological/Geotechnical Engineering (https://guide.wisc.edu/graduate/environmental-engineering-geological-geotechnical-engineering-ms/)
- Professional (http://guide.wisc.edu/graduate/environmental-engineering-professional-ms/)
- Structural Engineering (https://guide.wisc.edu/graduate/environmental-engineering-structural-engineering-ms/)
- Transportation Engineering (https://guide.wisc.edu/graduate/environmental-engineering-transportation-engineering-ms/)
- Water Resources Engineering (https://guide.wisc.edu/graduate/environmental-engineering-water-resources-engineering-ms/)

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.

LEARNING OUTCOMES

1. Demonstrate a strong understanding of mathematical, scientific, and engineering principles in the field.
2. Demonstrate an ability to formulate, analyze, and solve advanced engineering problems.
3. Apply the latest scientific and technological advancements, advanced techniques, and modern engineering tools to these problems.
4. Recognize and apply principles of ethical and professional conduct.

PEOPLE

Civil and Environmental Engineering Faculty: Professors Likos (chair), Ahn, Bahia, Cramer, Hanna, Harrington, Hurley, Loheide, McMahon, Nogueira, Noyce, Park, Parra-Montesinos, Ran, Russell, Schauer, Wu; Associate Professors Block, Fratta, Ginder-Vogel, Pincheira, Remucal, Tinjum; Assistant Professors Blum, Hampton, Hicks, Prabhakar, Pujara, Qin, Sone, Wang, Wei, Wright, Zhu; M.Eng Programme Director Carlson. See also CEE faculty (http://directory. engr.wisc.edu/cee/faculty/).
**Geological Engineering Faculty:** Professors Tinjum (director) (Civil and Environmental Engineering), Feigl (Geoscience), Goodwin (Geoscience), Holloway (Nelson Institute), Likos (Civil and Environmental Engineering), Loheide (Civil and Environmental Engineering), Thurber (Geoscience), Tikoff (Geoscience), Wu (Civil and Environmental Engineering); Associate Professors Cardiff (Geoscience), Fratta (Civil and Environmental Engineering), Ginder-Vogel (Civil and Environmental Engineering); Assistant Professors 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), Bertram (Chemistry), 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 Ginder-Vogel (Civil and Environmental Engineering), Remucal (Civil and Environmental Engineering); Assistant Professors Anantharaman (Bacteriology), Majumder (Bacteriology), Qin (Civil and Environmental Engineering), Wei (Civil and Environmental Engineering), Whitman (Soil Science). See also ECT Faculty (https://www.engr.wisc.edu/academics/graduate-academics/environmental-chemistry-technology/).