CIVIL AND ENVIRONMENTAL ENGINEERING

Civil and environmental engineers work to create a cooperative balance between the needs of people and protecting the natural resources in our environment. They plan, design, and construct many of the civil works that make modern life possible, such as highways, water and wastewater systems, tunnels, dams, buildings, airports, railroads, and bridges.

Civil and environmental engineers work as planners, designers, builders, researchers, plant operators, government employees, lawyers, teachers, and administrators. At MSU, our excellent faculty, state-of-the-art facilities, active student groups, and comprehensive educational programs combine to offer superior preparation for a professional career.

Our extensive facilities include outstanding environmental engineering laboratories, the Civil Infrastructure Laboratory, and computing laboratories. The environmental laboratories contain sophisticated instrumentation for studying chemical and biological remediation and filtration techniques. The Civil Infrastructure Lab allows testing of large-scale structural and pavement components, as well as construction materials, and has a unique structural fire testing facility.

UNDERGRADUATE PROGRAM

We offer undergraduate students an educational environment rich in opportunities to obtain knowledge and skills that facilitate civil engineering practice, life-long learning, and professional development, all of which lead to career success. Each year, approximately 280 undergraduate students are enrolled and 90 bachelor’s degrees are awarded.

Students are provided opportunities to obtain the knowledge, skills, and professional perspectives needed for:

- Entry to civil engineering practice and the pursuit of advanced studies
- life-long learning
- professional practice consistent with the principles of sustainable development
- continuing professional development and leadership
- licensure

GRADUATE PROGRAMS

We offer graduate degrees in both civil and environmental engineering disciplines. Students may specialize in the areas of faculty expertise listed under “Research.” Each year, approximately 100 graduate students are enrolled and 24 students are awarded degrees.

Graduate students in all areas work with faculty as teaching assistants and/or as research assistants on funded research projects. Funded projects come from a variety of sources and are based on strong relationships with various state- and national-level agencies and industries.

We provide significant financial support to graduate students through paid teaching and research positions. In 2009, we provided $450,000 to fund teaching assistants; $1,000,000 from external grants to support research assistantship positions; and $100,000 to fund fellowships.
MAJOR RESEARCH SPONSORS

- American Institute of Steel Construction
- Michigan Department of Environmental Quality
- Michigan Department of Transportation
- National Cooperative Highway Research Program
- National Institute of Environmental Health Sciences
- National Institute of Standards and Technology
- National Institutes of Health
- National Science Foundation
- Portland Cement Association
- Prestressed Concrete Institute
- U.S. Department of Commerce
- U.S. Department of Homeland Security
- U.S. Environmental Protection Agency

RESEARCH

Our faculty conduct cutting-edge research in fire engineering; structural engineering; mechanics and materials; pavement engineering; geotechnical and geoenvironmental engineering; hydrology and water resource systems; environmental chemistry and physical-chemical processes; and environmental microbiology and biological processes. This research is strongly linked to our education programs through course offerings and the training of students.

External research funding for FY 2009 totaled $5.8 million.

Our facilities enable MSU researchers to address pressing needs within Michigan and across the nation related to:

- Environmental remediation
- Water quality
- Structural fire engineering
- Repair and rehabilitation of deteriorating roads and bridges
- Stronger and more durable construction materials and pavements
- Monitoring health of infrastructure

We operate or partner with five research centers:

1. the National Center for Pavement Preservation
2. the EPA/DHS Cooperative Center of Excellence for Research on Microbial Risk Assessment for Homeland Security
3. the NOAA Center of Excellence for the Great Lakes and Human Health
4. pavement research
5. bridges and structures
PROGRAM HIGHLIGHTS

- An ABET-accredited program that offers courses in construction engineering and materials, environmental engineering, geotechnical engineering, pavement engineering, structural engineering, transportation engineering, and water resources engineering
- A popular study abroad program in England
- Strong cooperative education opportunities
- A special environmental engineering concentration
- Regional and national successes at the ASCE-sponsored intercollegiate concrete canoe and steel bridge team competitions
- Student memberships and student chapter participation in civil and environmental engineering-related professional societies

FACULTY AND STAFF

CEE is composed of 24 faculty members and 15 academic specialists and support staff. Most of the department’s faculty are active in teaching undergraduate and graduate courses, as well as in research. Faculty specialties encompass construction materials, environmental engineering, hydrology and water resources engineering, geotechnical engineering, pavement engineering, structural engineering, and transportation engineering. Many faculty members are registered professional engineers.

FOR MORE INFORMATION

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