About Michigan Tech
Michigan Tech is located in Houghton, MI on the south shore of Lake Superior. This rural area is known for natural beauty, pleasant summers, abundant snowfall, and numerous all-season outdoor activities. In addition, the University maintains its own downhill and cross-country ski facilities and golf course. There are also numerous cultural activities and opportunities available on campus and in the community. Michigan Tech is rated as one of the safest college campuses in the United States, and the local community provides excellent resources conducive to quality family life.

About the Department of Civil and Environmental Engineering
The Civil and Environmental Engineering Department at Michigan Tech includes 26 faculty, who play an active role in graduate education and research, 30 professional staff, over 100 full-time graduate students, and more than 500 undergraduate students. Research funding exceeds $4.5 million per year and several undergraduate and graduate degree programs are nationally ranked by U.S. News & World Report.
How do we create a sustainable transportation infrastructure that supports a growing demand for a system that provides safe and efficient modes for moving goods and people, that positions us as a leader in a global economy, and reduces our dependency on diminishing natural resources?

Transportation Research Initiatives at Michigan Tech

The Michigan Tech Transportation Institute (MTTI) promotes transportation research and outreach activities, and provides connections between a variety of transportation centers and organizations in the Civil & Environmental Engineering Department at Michigan Tech. These centers and organizations offer unique expertise within the transportation industry. For more information, visit www.mtti.mtu.edu.

Michigan Tech’s University Transportation Center for Materials in Sustainable Transportation Infrastructure (MiSTI) is creating the future of transportation infrastructure. MiSTI supports innovative research, distinctive educational programs, and engages industry in a partnership to explore the sustainable use of materials in the construction, maintenance, and repair of transportation infrastructure. MiSTI promotes the most efficient use of naturally occurring resources, the sustainable use of industrial by-products such as fly ash or recycled materials, across many modes and systems. For more information, visit www.misti.mtu.edu.

Michigan’s Local Technical Assistance Program (LTAP) is a joint effort of the Federal Highway Administration’s Office of Professional Development and the MDOT Office of Research and National Best Practices. LTAP provides the transportation technology transfer, Technical Assistance Group (T2) to local government organizations (counties, cities, and villages) through Michigan. The LTAP mission is to bridge the gap between research and practice by conducting training sessions and demonstrations and by serving as a clearinghouse for information related to state-of-the-art technology in the construction and maintenance of roads and bridges. For more information, visit www.michiganltap.org.

The Transportation Materials Research Center (TMRC) at Michigan Tech provides technical expertise and state-of-the-art laboratories to support MMTI’s transportation materials research and investigation by maintaining highly qualified technical staff and certified facilities. Specific areas of research include the behavior and performance of materials including asphalt, concrete, unbound aggregate, and soils. For more information, visit www.tmrc.mtu.edu.

The Center for Structural Durability (CSD) explores research in the area of durable structural highway systems. Areas of expertise include:
• Ultra high performance concrete
• Rapid construction for prestressed concrete bridges
• Inspection and repair for transportation systems and bridges

Structural durability-related research helps DOT, Federal, and industry clients achieve their performance goals of safety, mobility, and productivity of the transportation system while exploring long-term solutions to improve the condition and durability of transportation structures. For more information, visit www.csd.mtu.edu.

The Tribal Technical Assistance Program (TTAP) is part of a nationwide effort sponsored by the Federal Highway Administration and the Bureau of Indian Affairs. TTAP explores technology transfer initiatives focusing on technology and information on tribal roads and bridges, tourism, and recreation, and related economic development to tribal transportation and planning personnel. TTAP provides technology transfer through training workshops, a quarterly newsletter, and the operation of free publication and videotape training libraries. For more information, visit www.ttap.mtu.edu.

The Technology Development Group (TDG) engages in research and development that supports the transportation management needs of state and local governments. Its primary product, the RoadSoft GIS Integrated Roadway Management System, provides county road commissions, cities, and villages with a state-of-the-art system for managing roadway assets. From pavements, signs, pavement markings, culverts, and traffic crashes, RoadSoft offers assistance in developing repair and construction strategies for streets and highways. Other development projects include the MERL Project Estimator, crash location software, GIS tools, and online data submission. For more information, visit www.roadsoft.org.

The Aggregate Research Center (ARC) advances the understanding of aggregates through resource exploration, extraction, materials processing, fabrication, regulatory compliance, and aggregate utilization. Multidisciplinary interests offer expertise to solve aggregate related problems and explore solutions for the transportation industry. For more information, visit www.arc.mtu.edu.

State-of-the-Art Research Facilities

Benedict Laboratory features 15,000 ft² of Cement and Concrete Reference Laboratory (CCLR) inspected concrete preparation and testing facilities. With high bay access and an overhead crane, the lab allows for large scale production and testing of conventional, high-strength, and ultra high-performance concrete. The facility is fully equipped for mechanical and durability testing, including a servo-hydraulic test system, a split-Hopkins pressure bar, freeze-thaw machine, and the required data acquisition systems.

Non-Conductive/Volatile Materials Characterization Facility includes a state-of-the-art sample preparation and petrophysics lab, featuring stereo and petrographic optical microscopes, high resolution digital imaging, x-ray microscopy, an environmental scanning electron microscope, and a full wet chemistry laboratory. This laboratory is staffed with a full-time ASTM C856 qualified petrographer.

Aggregate and Geotechnical Materials Research and Testing Facilities are AAASHTO AMRL accredited. The aggregate plant receives and processes material, including crushing, screening, and grading for classification in the aggregate preparation lab. The geotechnical research facilities contain advanced material characterization equipment including an advanced servo hydraulic resilient modulus testing apparatus.

The asphalt materials characterization facilities include the Asphalt Binder Rheology Testing Facility and the Hot Mix Asphalt Testing Facility. The Asphalt Binder Rheology Testing Facility is fully equipped to perform Superpave binder characterization. The Hot Mix Asphalt Testing Facility is capable of performing standard Superpave mix designs and, in addition to three gyratory compactors, has a slab compactor. Advanced material testing is performed with IPC UTM servo-pneumatic and servo-hydraulic testing systems and an Asphalt Pavement Analyzer. Both facilities are AAASHTO Materials Reference Laboratory (AMRL) accredited.

The Sustainable Futures Institute (SFI), the Center for Water and Society, the Remote Sensing Institute, and the Center for Science and Environmental Outreach also support research through knowledge transfer and technical expertise, especially in the area of sustainability, and provide an opportunity for students to obtain a Graduate Certificate in Engineering Sustainability. For more information, visit www.sfi.mtu.edu.

The HI-RISE group develops integrated approaches to understanding the implications of human decisions in design, construction, planning, and management of civil infrastructure systems. Currently, the research is developing models of expert decision making using interactive simulation platforms. For more information, visit http://www.construction.mtu.edu.8080/homepage/.

PhD Civil Engineering
MS Civil Engineering
MEng Civil Engineering

Why Michigan Tech?

• nationally ranked research and graduate education programs
• civil engineering courses including:
  • rail transportation
  • structural analysis and design
  • construction
  • pavement design
  • materials
  • geotechnical engineering
  • water resources
• more than $4.5 million in funded research projects annually in transportation research
• 10 percent of invention disclosures list graduate students as the inventor
• 1:4 faculty-to-graduate student ratio in civil engineering
• the only Peace Corps Master’s International civil engineering program in the country
• options to earn a Certificate in Engineering Sustainability

How to apply

1. Download an application form from the Graduate School webpage
2. Submit the completed application online, or mail or fax it to the Graduate School.
3. Track the status of your application online.

Visit the Graduate School webpage for complete details about admissions and program requirements.

www.gradschool.mtu.edu

The International Sustainable Development Engineering Initiative includes a graduate partnership with the U.S. Peace Corps. Students enhance their education through opportunities to participate in the Master’s International program.