As a mechanical engineer, you can make a difference. You’ll use the latest technologies to help solve today’s problems in healthcare, energy, transportation, world hunger, space exploration, climate change, and more.
WHY CHOOSE MICHIGAN TECH?

Learn by Doing
You’ll be introduced to hands-on learning in state-of-the-art labs and computer centers—more than 50,000 square feet and 12 stories in the R.L. Smith ME-EM Building.

Big Department, Small Classes
You won’t get lost in the crowd here. Each and every course in our department is taught by faculty.
Average class size: 31
Average lab size: 12

Real-World Experience
Senior Design, Enterprise, internships and co-ops—our excellent programs will give you a thorough understanding of engineering practices in industry while you’re still a student.

Professional Success
Our graduates are recruited by regional, national, and global corporations, with a job placement rate of 98 percent within six months of graduation.

Outstanding Faculty
Our faculty are world-class mentors, researchers and teachers who maintain an open-door policy and encourage students to take advantage of it.

Solid Department Rankings

Undergraduate Program:
- 17th in total number of BSME degrees granted (in the top 17 for the past thirty consecutive years)

Graduate Program:
- 49th by US News & World Report, America’s Best Graduate Schools
- 22nd in research expenditures ($13.692 million) by the National Science Foundation
Our world-class Capstone Senior Design program allows student teams to solve real-world problems sponsored by our industrial partners. Projects are two semesters in length, and design-intensive. Each team has its own design studio in the department’s Cuskie Design and Creativity Center, and access to professional engineering facilities in the Rivard Product Realization Center.

Recent senior design projects include:

- Water pump design optimization, for Ford Motor Co.
- High-expansion foam generator system, for Tyco
- Engine compartment airflow improvement, for Caterpillar
- Dynamic test stand, for Whirlpool
- Elevating hands-free supportive walker for disabled children, for Mulholland, Inc.
- Limited edition lightweight RAM truck tailgate accessory, for Chrysler
- A troop portable heavy lift system, for the Air Force Office of Scientific Research
- Conversion of a multi-cylinder engine to a single cylinder, for John Deere
Enterprise Opportunities

Join an Enterprise team and get the extra edge on your education. Solve real-world engineering, design, and communication problems. Develop marketing, business, and leadership skills. Teams are made up of students from many different majors and operate like companies in the private sector.

Our department houses five Michigan Tech Enterprise teams, but you can choose from more than twenty-four across campus.

Mechanical engineering-sponsored teams include:

**BoardSport Technologies**
Design and construction of boards with original and pioneering features for various board sports

**Clean Snowmobile Team**
New technology to achieve significant reductions in noise and emissions

**Formula SAE Car**
Indy-style race car design and competition

**Aerospace**
Satellite and other aero-based projects

**Mini-Baja SAE**
Four-wheel drive off-road vehicle design and competition
Meaningful Work
One of the most rewarding aspects of being an engineer is improving people’s lives.

Our society is becoming increasingly complex. We must provide more food, water and energy for a rapidly growing population, and we must limit damage to the environment in the process. Engineering will play a key role in meeting these challenges. So can you.

Global Opportunities
More than ever before, Michigan Tech students are seeking opportunities to put their new engineering skills to work in impoverished communities throughout the world. A number of our students study abroad—in Europe, Asia, Australia, and Central and South America—through Engineers Without Borders and other international programs. In fact, Michigan Tech has one of the fastest-growing chapters of Engineers Without Borders in the US.

Close to Home
Here on campus, the Wood to Wheels (W2W) project brings together Michigan Tech scientists and engineers to research ethanol-powered transport from every perspective—forest resources, ethanol production, vehicle design, and social/economic impacts.

Agile Interconnected Microgrids (AIM) research is focused on scalable and flexible energy resource planning and execution for military and commercial sectors.
Cutting-edge research isn’t just for graduate students. As early as your sophomore year, you can gain valuable experience working with a faculty mentor.

We divide research and teaching into six key areas:

**Advanced Power Systems**
Critical technologies for clean, efficient, and sustainable power systems, including engines, fuel cells, and wind turbines

**Multi-scale Sensors and Systems**
Nanofabrication and characterization, micro-fabrication processes and bionanotechnology, as well as biomaterials, cellular materials, biological tissues, and artificial organs

**Mechanical Engineering Education**
Innovation through discovery-based learning and motivation research

**Multidisciplinary Engineering/Dynamic Systems**
Dynamics, vibration, acoustics, signal processing and controls, and emerging areas such as active nano-structures and smart materials

**Space Systems**
Innovative electric propulsion systems, Hall-effect thrusters, micro-thrusters, altitude control technology, lightweight spacecraft structures, and astrodynamics

**Agile Interconnected Microgrids**
Microgrid modeling, control, and optimization
Come See Us
There is no substitute for seeing firsthand what Michigan Tech has to offer. We invite you to visit our campus, and tour the mechanical engineering department. Call 888-688-1885 to set things up.

Advising
Two academic advisors in our department (who also happen to be engineers) meet with future students to map out academic choices and career development. Please feel free to get in touch. We look forward to hearing from you.

MECHANICAL ENGINEERING
Advising Center
R.L. Smith Building
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email: meadvising@mtu.edu
The Research-Oriented Underwater Glider for Hands-on Investigative Engineering (ROUGHIE) is developed by a team of students as a highly maneuverable, low-cost, autonomous underwater robot.

The Supermileage Systems Enterprise team designs a super-high-mileage vehicle (1500 mpg) to challenge other engineering schools at competition.

The Tomahawk, a hand-cranked cycle, was built by a senior design team for wounded veterans who ride with the Achilles Freedom Team.

An optically-accessible combustion chamber is used to design engine technologies that readily adapt to a wide variety of alternative fuels.

A senior design team designed this mold to improve the Jaipur foot used by patients in India. The team traveled to India to present their design to doctors and researchers.

Professor Lyon B. King leads a research program whose goal is to develop micro-scale propulsion systems for use on small satellites.

Women in the American Society of Mechanical Engineers (WASME) visit the Product Engineering Center and Tractor and Cab Assembly Operations at John Deere.

The Aerospace Enterprise took first place in the University Nanosatellite Program competition, earning a launch position on a SpaceX Falcon Heavy in late 2015.

Biomechanical engineers design smart implants for improving the quality of life.

Mobile microgrid ground robots can be used to quickly re-establish power after the event of a disaster.

Each year we host the national SAE Clean Snowmobile Challenge—schools compete with stock snowmobiles reengineered to reduce emissions and noise.

Instructional technology in the Fernstrum Adaptable Classroom allows students to stop taking notes and immerse themselves in the class.

Engineers Without Borders partners with developing communities worldwide. Here, a Michigan Tech student conducts a pump test in Bolivia.

Wide-ranging Options

As a mechanical engineer, you can design a component, a machine, a system, or a process. You’ll analyze your design using the principles of motion, energy, and force—insuring that it functions safely, efficiently, reliably, and can be manufactured at a competitive cost. You can...

- Work with computer software to design and develop new machinery, or use powerful supercomputers to study auto aerodynamics.
- Invent an ultrasonic device that deters whales, dolphins, and seals from swimming into fishing nets.
- Design a new rocket engine for the sub-zero cold of space, or a microprobe to dissect a single nerve cell under a microscope.
- Analyze the performance of a host of machinery—gas turbines, control devices, jet engines, and power plants—and develop more efficient ways to keep them running smoothly.
- Design a prosthetic arm or leg for people who have suffered an injury or other medical problems.
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Michigan Technological University is an equal opportunity educational institution/equal opportunity employer.

Since 1885, we have offered educational excellence in beautiful Upper Michigan. Our students create the future in arts, humanities, and social sciences; business and economics; computing; engineering; forestry and environmental science; natural and physical sciences; and technology.