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.

ELECTRICAL & COMPUTER ENGINEERING

Michigan Technological University
Department of Electrical & Computer Engineering
121 Electrical Energy Resources Center
1400 Townsend Drive
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CREATE THE FUTURE

Launch yourself into our high-tech world. With ECE you can energize the planet, advance communication, and create technology to help others in meaningful ways.

Michigan Tech
Electricity engineers and computer engineers use electrical and/or optical energy to manipulate, store and transmit information—and to deliver power to the entire world. Both fields evolve at lightning speed, so fasten your seat belts and get ready to shape the future through the exciting world of high tech.

Explore Many Possibilities

You can focus on a wide variety of challenges with ECE—everything from creating green energy solutions to discovering new galaxies. Opportunities for innovation abound. A few examples include:

- Robotic systems and lasers for medical surgeries
- Voice-activated control systems for computers, cars, and more
- Modern, high-speed rail transportation
- Nanotechnology in semiconductors, transistors, and microchips
- Smart grids for next-generation energy systems

Many excellent reasons to choose ECE at Michigan Tech. Here are just a few…

Friendly Learning Environment

We offer all the advantages of a large engineering program in a small-college atmosphere. Faculty and staff are easily accessible and enjoy mentoring students.

Excellent Faculty

Courses in our department are taught by faculty who are nationally recognized for their contributions to engineering education, research, and practice.

State-of-the-Art Facilities

Our multimillion-dollar labs provide a hands-on learning experience. You’ll enjoy cutting-edge equipment—from lasers, microprobes and robots to anechoic chambers and more—along with industry standard software and current generation computer systems.

Unique Lab Curriculum

We have strategically integrated our key courses with labs that will lead you to discover for yourself the basic principles that govern the field.

Industry Experience

Participate in Senior Design, Enterprise, internships, and co-ops—our excellent programs give you a chance to work directly with industry while you’re still a student.

Sustainable Future

Our students contribute to the advancement of green, renewable, and alternative energy, including solar and wind power, hybrid power, and more.

Global Opportunities

Our students have studied in Norway, Australia, Germany, Italy, Finland, Denmark, England, Russia, Scotland, Korea, and the developing world.
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**State-of-the-Art Facilities**
Our multimillion-dollar labs provide a hands-on learning experience. You’ll enjoy cutting-edge equipment, hands-on experimentation, and access to a wide variety of off-campus locations—along with industry-standard electronics and advanced computer systems.

**Unique Lab Curriculum**
We have strategically integrated our key courses with labs that will lead you to discover for yourself the basic principles that govern the field.

**Industry Experience**
As engineers in highly specialized fields, our faculty collaborate and interact with industry that gives you real-world experience.

**Sustainable Future**
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www.ece.mtu.edu
To keep pace with the explosive growth in computing technology, you should consider computer engineering. With our computer engineering program, you can gain valuable experience in both hardware and software aspects of computing.

Computer engineering projects range from designing microprocessors to creating network communication systems. You will work with cutting-edge technology and gain real-world experience through internships and co-op opportunities.

Our faculty are experts in fields ranging from computer architecture to network security, and they bring their research and industry experience into the classroom. This means you will participate in hands-on projects that give you practical experience in solving real-world problems.

To learn more about our computer engineering program, visit our website or contact our academic advisor, Judy Donahue, at jmdonahu@mtu.edu.
Senior Design

It takes innovation to bring creative ideas to life. Throughout your senior year, you'll have the opportunity to work on a project in collaboration with industry sponsors. From developing a product like a “beta” job to a “beta” service, everyone will contribute to the success of the project. Each team will connect with an industry sponsor through an open-ended design project. They will provide you with the kind of experience that can launch a successful career.

D80 Center

Many challenges confront our planet’s inhabitants, particularly the 80 percent not typically considered by those creating infrastructure, goods, and services. Numerous roles must play a role in elevating the quality of life for all while ensuring future generations can thrive. This starts with the courage to serve others, and the ability to envision new solutions.

Michigan Tech’s D80 Center provides education, service, and research opportunities for students interested in gaining valuable professional experience while making a difference in the lives of others. For more info on all the D80 programs check out the D80 Center online at www.d80.mtu.edu.

Enterprise

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 open to students from all majors, and operate like companies in the private sector. As a member of an enterprise team, you can choose the area in which you want to work, and you can choose the projects that play a role in your team.

Blue Marble Security (BMS)
• Secures the future through thoughtful use of technology
• Integrates sensors and communications
• Integrates sensing, optical, and software technologies

Integrated Microsystems (IME)
• Integrates sensors and microcontrollers

Wireless Communication (WCE)
• Creates wireless, optical, and biomedical solutions

Automotive Computing (ACE)
• Develops innovative computers for tomorrow’s automobiles

Undergraduate Research

Cutting-edge research isn’t just for grad students. You, too, can gain valuable experience working on a faculty-supervised project associated with a research team in one of the Pierre Auger Obervatories (Observatory in southeastern Colorado).
To keep pace with the exploding growth of computer networks, you'll need to understand the components and protocols that make up computer networks. You may find yourself working with other engineers on projects that involve designing and implementing network systems. You could work on developing new network protocols, improving existing ones, or enhancing network security. In this field, you'll have the opportunity to work on both hardware and software aspects of network systems.

In addition to computer networks, you may also specialize in computer engineering. You may work on developing new computer systems, or you may work on improving existing ones. You could work on designing and implementing computer systems that are used in a variety of applications, such as medical equipment, automotive systems, or military equipment. You may also work on developing computer software that is used to control these systems.

Electrical engineers work on the design and development of electrical systems. They work on the design and implementation of electrical systems that are used in a variety of applications, such as power generation, distribution, and control. They may work on designing and implementing power systems that are used in homes, businesses, and industries. They may also work on designing and implementing communication systems that are used in a variety of applications, such as telephone systems, television systems, and computer networks.

In addition to electrical engineers, you may also work with other engineers on projects that involve developing new electrical systems. You could work on designing and implementing new electrical systems that are used in a variety of applications, such as medical equipment, automotive systems, or military equipment. You may also work on developing computer software that is used to control these systems.

To learn more about computer engineering and electrical engineering, you can visit the websites of the Electrical and Computer Engineering departments at Michigan Tech. These websites provide information about the programs, courses, and projects that are available in these fields. You can also contact the faculty and staff at Michigan Tech to learn more about the programs and projects that are available in these fields. You can also contact the faculty and staff at Michigan Tech to learn more about the programs and projects that are available in these fields.
To learn more about computer engineering, visit www.ece.mtu.edu.

**Electrical Engineering**

Electrical engineers design the way we communicate, solve problems, produce energy and operate machines. Here at Michigan Tech, you’ll gain the skills you need to design and implement solutions when computer engineers can’t. Many of our electrical engineers go on to work in the technology and defense sectors. You could design components that facilitate communication by radio waves, lasers, fiber optics—an exciting area of EE that’s in high demand.

**Computer Engineering**

Making a World Of Difference
Many of our graduates go on to work in exciting areas such as autonomous vehicles, robotics, computer vision, and energy technology. They also design the systems that generate and distribute reliable electrical power to us all.

**Photonics**

Here at Michigan Tech, you’ll learn how to harness the power of light to transform products and services. You could design components for outer space. You could put your skills to work designing image sensors. You might produce holograms. You could be designing computer systems. You might learn techniques vital to manipulating information. You may find yourself working as an expert in the very first time.

**Professional Success**

Our graduates have a placement rate of 98 percent within six months of graduation. Companies seeking our graduates include Motorola, Texas Instruments, Hitachi GST, Honeywell, Consumers Energy, Kimberly-Clark, GE Aviation, Rockwell-Collins, Caterpillar, Systems, Georgia Pacific, Bechtel, and many others. Some students find employment in US government agencies, while others choose military service through ROTC programs. Many of our students get first jobs that are more fulfilling than a “last class”. Industry. The experience is more real-world engineering, design, and leadership skills. Teams are open to students from all majors, and leadership positions are open to both the hardware and the software. By the time you graduate, you, too, can gain valuable experience working with a faculty mentor. One recent project involved the creation of a system design. You may also find yourself working with other engineers who can work comfortably in the private sector. We host four enterprise teams, but you can choose from 28 across campus. We also host the Pavlis Institute for Entrepreneurship. Undergraduate research is an integral part of the curriculum. Recent projects include:

- Revenue from turbines, fuel cells, and hydroelectric plants, and solar energy systems.
- Developing digital audio and video processing, with an introduction to the digital electronics, computing, and control.
- They also design the systems that generate and distribute reliable electrical power to us all.
- Electrical engineers lead the way in communication, signal processing, electronics, and control. Electrical engineers work as leaders and design teams that create reliable electrical power to us all.
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