



# COMPUTER ENGINEERING

Computers rule. From the supercomputers that forecast the weather to the smartphones that connect us to the world, computers basically run companies, communities and even our lives. Major in computer engineering and you'll become one of the engineering masterminds who design computer software, electronics, integrated circuits and hardware.

OHIO  
NORTHERN  
UNIVERSITY



## CONTROL THE MACHINES THAT CONTROL THE WORLD

In the T.J. Smull College of Engineering, you'll gain a solid foundation in the computer engineering field. You'll take courses in operating systems, embedded systems and computer architecture. If you're passionate about a particular subject - like computer networks, digital image processing or robotics - you can choose from a variety of upper-level elective courses in these areas.

Our academic program is rigorous. Expect to work hard and be challenged. However, we offer a supportive and collaborative environment. Your professors, and fellow students in the college will become your friends and family. You will have the opportunity to connect with ONU alumni and they will help you succeed and open doors for you.

Your computer engineering education will blend challenging coursework with hands-on, real-world learning experiences. You'll work on team projects and solve engineering challenges for actual clients as early as your first year. You'll apply the knowledge you learn in class, but, more importantly, you will have the opportunity to hone skills in leadership, teamwork, creativity and entrepreneurship. These skills will help you find a job and land that promotion.

Upon graduation, you'll be ready for whatever the future holds, whether it's working in computer security, designing software and hardware, or starting your own company!



## OPPORTUNITY ABOUNDS

### MIGHTY MOUSE A-MAZES

A mouse, a maze, a race to the center. At the Micromouse Competition - sponsored by the Institute of Electrical and Electronics Engineers (IEEE) - students design, construct and program an autonomous robotic mouse to compete with other mice in finding the center of a maze within the least amount of time. Held once a year, the competition pits ONU's team against teams from other engineering schools across the region. In case you're wondering, the Polar Bears usually capture one of the top competition awards.

### GET INVOLVED

Join a professional organization and you'll learn about opportunities in your field and meet new people. ONU's chapter of the Association for Computing Machinery (ACM), for example, provides access to social and networking events and fast-paced competitions like the ACM Programming Contest, in which student teams scramble to solve problems and submit solutions as programs in C, C++ or Java.



# WHERE COULD YOU END UP?

- Network engineer
- Computer architect
- Hardware designer
- Security engineer
- Programmer for embedded systems
- Software engineer
- ASIC designer

Companies that have recently hired our computer engineering students include Crown Equipment, GROB Systems, RoviSys, Battelle, Raytheon, IBM and Rockwell Automation.

## OUTCOMES AND COURSES

### SOLID OUTCOMES

- Our computer engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).
- Computer engineering had a 100 percent placement rate in recent years.
- We boast a 100 percent placement rate for students in co-op employment opportunities, which begin in the second semester of the junior year and continue for one year. Our computer engineering students co-op at well-known companies like RoviSys, Battelle, IBM, Timken, Rockwell Automation, Wright-Patterson Air Force Base, and Cooper Tire & Rubber Company.

### COURSES

You'll need 128 credit hours to earn your Bachelor of Science in Computer Engineering (BSCPE). We encourage you to use your elective hours to pursue a minor of your choice or a concentration in advanced energy or robotics that will align with your interests and passions.

Here are some courses you'll take as a computer engineering major:

- Programming
- Calculus
- Computer Security
- Digital Logic
- Digital Signal Processing
- Electronics
- Embedded Hardware-Software Codesign
- Data Structures and Algorithms
- Networks and Data Communications
- Operating Systems
- Computer Architecture
- Embedded Real-Time Applications
- Maker Engineering



**EDGAR GOMEZ**  
BSCPE '17 Computer Engineering

*"The best aspect of my ONU academic experience was the low student-to-faculty ratio. This allowed for closer personal connections with my professors, whom I felt were like friends rather than advisors."*

## THINK SUCCESS

Edgar Gomez enrolled at ONU because he liked its beautiful campus, low student-to-faculty ratio, and the fact that it was "not too far, not too close" to his hometown. With an interest in programming, he dove into his studies in computer engineering and became involved in the Delta Sigma Phi fraternity and the College of Engineering's Dean's Team. Through these activities, he grew as a person and a professional, he said. "Both taught me how to interact with people I did not know on a personal level, engage with the community, and push out of my comfort zone." Upon graduation, Edgar's solid academic foundation enabled him to excel in graduate school in the U.S. Air Force Institute of Technology and in his career. Today, he's a lead system engineer at KBR, Inc., specializing in performing vulnerability assessments in military, commercial and consumer vehicles. "I enjoy the fast-paced atmosphere and the ability to apply what I learned in my studies on a daily basis," he says.

## OHIO NORTHERN UNIVERSITY

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