Have you ever wondered how computers work? With a computer engineering degree, you’ll join an in-demand field that is continually innovating to produce faster and more efficient computers. You’ll learn to develop hardware systems and write software that provide novel solutions to real-world problems. Graduates find work in industries from aerospace to agriculture — essentially anywhere computers are integrated into products worldwide.

If you enjoy math and physics, have a keen attention to detail, think logically, and enjoy a challenge, then a computer engineering might be perfect for you. In UWL’s Computer Engineering program, students take classes in software development, digital and analog circuit design, hardware/software integration, and complete a year-long senior project with other computer engineering students.

What is computer engineering?
Computer engineers invent new computer systems. Many tasks performed by a computer can be done through either hardware or software. Computer engineers focus particularly on the boundary between hardware and software. They study the trade-offs involved to decide which tasks should be done using hardware versus software, and design the interface between the two. They look for opportunities for improvements in computer performance and energy efficiency. They also integrate computers with sensors and actuators to make computers part of our everyday life.

Computer engineering jobs
Computer engineers find careers in computer hardware development, software development, or both. They are employed in a wide variety of industries, not just at companies that research and develop computers. The U.S. Bureau of Labor Statistics projects that the job outlook for computer engineers is expected to grow by 5% from 2016-26 and by 10% within Wisconsin alone during the same 10-year span. Computer engineering salaries are at the upper end of starting salaries for four-year graduates in any discipline. Computer hardware engineers have a high earning potential with a median annual wage of about $120,000.

Computer engineers interested in hardware development can find jobs in: robotics and automation, digital circuit design and verification, digital signal processing, embedded hardware and computer architecture. Computer engineers interested in software development can find careers developing software for: device drivers, compilers for high-level programming languages, embedded system firmware, operating system kernels and virtual machines.

Industries that employ computer engineers
- Companies that research and develop computers
- Automotive
- Aerospace
- Medical equipment
- Agriculture equipment
- Defense
- Renewable energy
- Home and office appliance
- Manufacturing automation

Further education
- Computer engineering graduates can continue their education in a master’s or doctoral program. Students who obtain post-graduate degrees can expect to find jobs in advanced software or hardware development, research or academia.
What distinguishes UWL's Computer Engineering program?

- **Small class sizes**
  The average enrollment in computer science classes is less than 30 students. The average enrollment in computer engineering classes has been 10-12 as the department ramps up the program.

- **Courses are taught by faculty — not teaching assistants**
  The Computer Science Department has twelve faculty — all with doctoral credentials and all dedicated to the success of the new computer engineering program. Three of the faculty members have degrees specifically in computer engineering, and they are routinely involved in research in computer engineering.

- **World-class computing resources and equipment**
  The department maintains a wide variety of high-performance servers for courses and for research projects. Industrial-strength lab equipment is available with plans to expand.

- **Talented and motivated students**
  While the computer engineering program is relatively new, the quality of incoming students is on-par with the already excellent pool of computer science students. Existing students routinely participate in undergraduate research, obtain highly-competitive grant funding, and work as interns at companies well-known in the industry.

- **Required work in virtual machines appeals to employers**
  The program includes a course sequence culminating in a senior level virtual machines offering. A virtual machine uses one computer to pose as another. Virtual machines are important because they are the backbone of the cloud. They help in making secure systems and they make computers compatible with other systems and software. For efficient virtual machines, both hardware and software need to be finely-tuned, making this a perfect topic for computer engineers. While a few other universities have virtual machines as an elective topic, UWL is the only known undergraduate program to require topics in virtual machines, making graduates highly-desirable to employers.

- **50-year-history, strong reputation**
  The Computer Science Department has an over 50-year history of delivering innovative curriculum and the computer engineering program continues that tradition.

- **Program based on ACM curriculum guidelines for computer engineering**
  The program leverages existing expertise and courses within the Computer Science Department and Physics Department. Several new courses specific to engineers round out the curriculum. Graduates will be experts in writing low-level systems software and experts in digital circuit design, subfields of computer science and electrical engineering, respectively. The program offers unique courses not found anywhere else, leveraging the strengths of faculty.

- **Student organizations**
  Computer Science Club - The department sponsors a student chapter of the Association for Computing Machinery (ACM) that hosts professional speakers, organizes field trips, hosts LAN parties and promotes social functions for computer science students.
  CODERS - This student group is dedicated to community outreach, diversity, and facilitating an inclusive community within the CS department. They welcome students who wish to share their passion for computing with peers and the greater community through social, professional development and community events with organizations.
  Makeshift Computer Science & Engineering Club – Welcoming all majors, Makeshift is a club about making stuff. They hack together wires, solder and code to make and repair gadgets and games.