

ELECTRICAL ENGINEERING

uwaterloo.ca/electrical-computer-engineering

98.3% of Electrical Engineering students found co-op jobs in 2019

OVER 7,000 co-op employers from around the globe

Create tomorrow's information, power, and energy tech

Electrical engineers develop much of today's technology, including satellite communication, television, computers, and energy distribution. In this program, you'll explore electronics, physics, and electromagnetism and use them to design a wide range of devices powered by electricity – developing them from concept to reality.

In first year courses, you'll develop a strong foundation in mathematics, science, and computing with a focus on engineering science and design. In upper years, you'll dive deeper into these concepts with courses in power electronics, microwave and photonic systems, electronic devices, digital communications, and control systems. Top it off with two years of work experience and a fourth year design project, and you'll be ready to create the next generation of smartphones, generators, and energy systems.

YOUR FIRST YEAR

FIRST TERM

- › Fundamentals of Programming
- › Classical Mechanics
- › Communication in the Engineering Profession
- › Engineering Profession and Practice
- › Linear Algebra
- › Calculus 1

SECOND TERM

- › Electricity and Magnetism
- › Discrete Mathematics and Logic 1
- › Digital Circuits and Systems
- › Linear Circuits
- › Engineering Economics and Impact on Society
- › Calculus 2

KICK-START YOUR IDEAS

GROBO

We provide the support you need to bring your ideas to life. This includes the Sedra Student Design Centre, Velocity, and vast entrepreneurial funding opportunities.

Chris and Bjorn, students in Electrical and Mechanical Engineering respectively, founded Grobo. It's a smart, indoor gardening system that creates optimal growing conditions year-round. Thanks to the Conrad School of Entrepreneurship and Business' Enterprise Co-op program, they were able to work on their business concept during a co-op term.



UNIVERSITY OF
WATERLOO



Waterloo offers the

WORLD'S LARGEST CO-OP PROGRAM

CO-OP AT WATERLOO = REAL WORLD EXPERIENCE

You'll have an unrivaled opportunity to gain paid work experience before you even graduate. We'll help you navigate job applications, résumés, and interviews; you'll have the added benefit of trying out different roles and/or industries to find the one that fits you while building your work experience and reinforcing your in-class learning out in the real world. It all adds up to a competitive advantage after graduation. Electrical Engineering has two co-op sequences you can choose from: Stream 4F and Stream 8.

STREAM 4F AND 8 STUDY AND CO-OP SEQUENCES

YEAR	TERM	STREAM 4F	STREAM 8
1	Fall	Study (1A)	Study (1A)
	Winter	Work	Study (1B)
	Spring	Study (1B)	Work
2	Fall	Work	Study (2A)
	Winter	Study (2A)	Work
	Spring	Work	Study (2B)
3	Fall	Study (2B)	Work
	Winter	Work	Study (3A)
	Spring	Study (3A)	Work
4	Fall	Study (3B)	Study (3B)
	Winter	Work	Work
	Spring	Study (4A)	Study (4A)
5	Fall	Work	Work
	Winter	Study (4B)	Study (4B)

Fall term: September to December
Winter term: January to April
Spring term: May to August



There's no shortage of ways to get involved – you'll have both an outstanding education, as well as a vibrant student experience.

BEYOND THE CLASSROOM

As a Waterloo Engineer, it's easy to get in on the action. You can join the Engineering Society, make a difference with Engineers Without Borders, or apply your studies with a student design team. If you have any questions about student life or want to shadow a current student for a day, our Engineering Ambassadors can help!

uwaterloo.ca/engineering-student-ambassadors

OUT IN THE WORLD

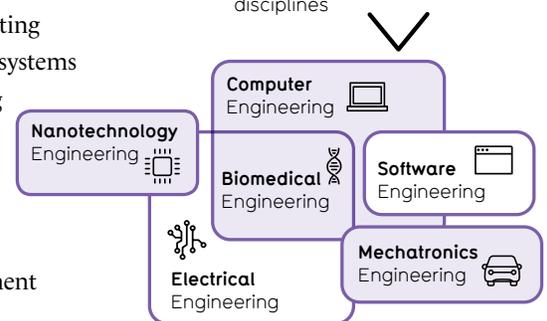
Electrical engineers power our world and the devices in it. It's a very wide field, touching on everything from tiny microprocessors to massive supercomputers. These engineers work on everything from consumer products like the smartphones in our pockets to the electrical systems on commercial aircrafts. They also developing medical tech like surgical robots that help surgeons perform safer, minimally invasive surgeries. Almost every industry has a place for electrical engineers!

EXPLORE YOUR INTERESTS

Our program lets you specialize based on your interests:

- > Computer architectures and embedded systems
- > Control and robotics
- > Electronic devices, circuits, and systems
- > Energy distribution, motors/generators, power electronics, and energy marketing
- > Microwave/RF/photonic devices and systems
- > Networks and distributed computing
- > Signal processing
- > Embedded software

Relationship between Electrical Engineering and other engineering disciplines



EMPLOYMENT OPPORTUNITIES

- > Telecommunication system development
- > Satellite communications
- > Microelectronics engineering (in computers and smartphones)
- > Household appliance design
- > Robotics engineering

FACULTY OF ENGINEERING
UNDERGRADUATE ADMISSIONS

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UWaterlooEngineering



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