ELECTRICAL ENGINEERING

Create tomorrow's information, power, and energy tech. Electrical engineers develop much of today's technology, including cellular networks, 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.

uwaterloo.ca/ece/electrical-engineering

95.3% of Electrical Engineering students found co-op jobs in 2021

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

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

We provide the support you need to bring your ideas to life. This includes the Sedra Student Design Centre, the world's largest free incubator space (Velocity), our fourth-year Capstone Design project, the Enterprise Co-op program, and funding opportunities to help get your business off the ground.

UNIVERSITY OF WATERLOO

CO-OP

Waterloo offers the
WORLD'S LARGEST CO-OP PROGRAM

CO-OP AT WATERLOO = REAL WORLD EXPERIENCE

You'll have an unrivalled 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 students are part of the Stream 4F sequence.

STREAM 4F STUDY AND CO-OP SEQUENCE

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

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

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!

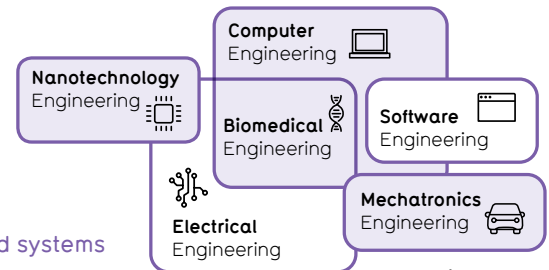uwaterloo.ca/engineering-student-ambassadors

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 develop 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, and power electronics
› Microwave/RF/photonic devices and systems
› Networks and distributed computing
› Signal processing
› Embedded software

Nanotechnology Engineering
Computer Engineering
Biomedical Engineering
Software Engineering
Electrical Engineering
Mechatronics Engineering

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

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FACULTY OF ENGINEERING
enginfo@uwaterloo.ca | uwaterloo.ca/engineering

200 UNIVERSITY AVE. W., WATERLOO, ON, CANADA N2L 3G1

uwaterloo.ca/future-students