

McMaster's ECE department consists of esteemed faculty members who are the top experts in their fields. Many faculty members hold prestigious research awards and offer summer or part-time research positions to outstanding undergraduate students.

FOCUSED ON A
**BRIGHTER
WORLD**



Electrical and Computer Engineering at McMaster



ENGINEERING
Electrical and
Computer Engineering

McMaster University | ITB-A111 | 1280 Main Street West | Hamilton, Ontario, Canada | L8S 4K1



| [Instagram/ece.mcmaster](https://www.instagram.com/ece.mcmaster) |



| eng.mcmaster.ca/ece |



| twitter.com/ecemcmaster |

BRIGHTER WORLD

ENGINEERING



What is ECE?

Electrical and Computer Engineering involves the conception, design, fabrication and application of systems that employ electricity for the public good. Electrical and Computer Engineers work to build a more connected, intelligent, and healthy world by making advances in the following areas:

- Power Systems / Clean Energy
- Medical and Biomedical Technologies
- Communications / Networks
- Robotics / Control
- Imaging, Radar and Surveillance
- Electric / Hybrid / Autonomous Vehicles
- Artificial Intelligence / Machine Learning
- Microelectronics
- Software and Hardware for Computing Systems
- High-Performance Computing

DID YOU KNOW?

Computer Engineers play a key role in everyday life. Have you ever wondered what is “under the hood” that makes driverless vehicles capable of performing trustworthy actions, or what is happening “behind the scenes” for a search engine to provide instant results to your online queries? Computer engineers are the ones who build the hardware and software components that make these systems work seamlessly. Our graduates join companies in a broad number of industries, including automotive, consumer electronics, medical devices and telecommunications. Whereas one graduate may join a biomedical firm and design the specialized hardware for diagnostic imaging equipment, another may start a company that builds machine learning software.

Why McMaster University?

GLOBAL REPUTATION:

McMaster is a medium-sized university with a large reputation. We are consistently ranked among the best in Canada:

- 2021 Academic Ranking of World Universities (4th in Canada)
- 2021 US News and World Report Best Global Universities (4th in Canada)
- 2022 Times Higher Education World University Rankings (4th in Canada)
- 2022 QS World University Rankings (6th in Canada)
- 2021 Maclean's University Rankings – Medical/Doctoral Category (4th in Canada)

TEACHING REPUTATION:

- McMaster's teaching is consistently ranked among the best in Ontario and Canada.
- McMaster was one of the first universities in Canada to establish a centre for the improvement of teaching effectiveness.
- McMaster was one of the first institutions to introduce problem-based learning.
- McMaster was the winner of the 2018 Global Teaching Excellence Award from the Higher Education Academy.

RETENTION RATES:

- Students in engineering at McMaster are provided with an extensive support system to help them succeed.
- McMaster currently has one of the highest retention rates in Ontario for engineering (~95% of entering students successfully complete Level 1, and ~90% of entering students successfully graduate from their program).

PROBLEM-BASED LEARNING:

- Students in engineering at McMaster work in teams on real-world problems, each one geared to the progression of their skills, culminating in a capstone course where they complete a design project with a group of peers.

COMMUNITY SUPPORT:

- Student clubs offer a multitude of opportunities to enhance your educational experience, from workshops that complement your studies to social activities.
- There is a Program Advisor for each program, as well as an Academic Advisor for the department, to assist students.

eng.mcmaster.ca/ece



SPOTLIGHT: MARC

McMaster Automotive Resource Center (MARC) is the hub for world-leading research programs from hybrid and electric powertrains to safety-critical software to lightweight material design, hosting more than 200 researchers.

Why ECE at McMaster University?

WE OFFER 3 UNDERGRADUATE PROGRAMS:

- **Computer Engineering** – a program that covers both the hardware (computer architecture, digital circuits, robotics) and software (data structures, algorithms, high-performance programming) of computing systems. Students enter this program through McMaster's Level 1 Engineering.
- **Electrical Engineering** – a program that covers everything from power generation and distribution, electrical and electronic circuits and systems, control systems, to telecommunications and signal processing. Students enter this program through Level 1 Engineering.
- **Electrical and Biomedical Engineering** – a program that combines Electrical and Computer Engineering with Biomedical Health Science & Engineering. Students enter this program through McMaster's Integrated Biomedical Engineering & Health Sciences "IBEHS" program. Please refer to the IBEHS website for details: www.eng.mcmaster.ca/ibiomed

WE OFFER OPTIONS:

- **Engineering and Co-Op** – Apply your technical knowledge in industry doing real engineering work for a minimum total of 12 months. Flexible options include work terms of 4, 8, 12 or 16 months.
- **Engineering and Management** – Integrate your technical education with a business education, which can lead to higher salaries and rapid progression to senior positions. This 5-year option can provide one year's credit towards an MBA degree.
- **Engineering and Society** – Broaden your engineering education with courses in culture, history, and societal interactions with technology. This 5-year option offers a truly multidisciplinary education.

WE OFFER TIME TO DECIDE ON YOUR SPECIALTY:

- All McMaster Engineering students begin their degree with a Level 1 general year.
- Towards the end of their first year, students are introduced to the various programs offered by the different departments within the Faculty of Engineering. Departments host Information Sessions to help students understand what each program offers.
- After learning more about the possibilities, students submit their program selection choices, and acceptances are based on the Level 1 grades. The minimum cut-off varies from year to year, based on the pool of students interested in the program.

JOIN OUR STUDENT GROUPS:

- Electrical and Computer Engineering Society (ECES)
- BioEngineering At McMaster Society (BEAMS)
- Institute of Electrical and Electronics Engineers (IEEE) Student Branch
- McMaster Engineering Society (MES)
- Mac Formula Electric team
- EcoCar team

DID YOU KNOW?

Electrical Engineers are central to our electrified and interconnected world. In fact, it is hard to imagine our world without them. They work in a wide range of fields including green energy generation and distribution, electric and hybrid vehicles, electronic systems, computer systems, wired and wireless telecommunications, fiber optic systems, satellites, radar systems, remote sensing, medical instrumentation, industrial control, machine learning, among many others. Over the past fifty years, their work has helped to raise millions of people out of poverty and to vastly improve everyone's standard of living. Our graduates will be key players in the future health of our planet and in further improving the quality of life of our global society.

