

Electrical & Computer Engineering

PhD Map

Applying to and Navigating Graduate Studies

Why Graduate Studies in Electrical & Computer Engineering?

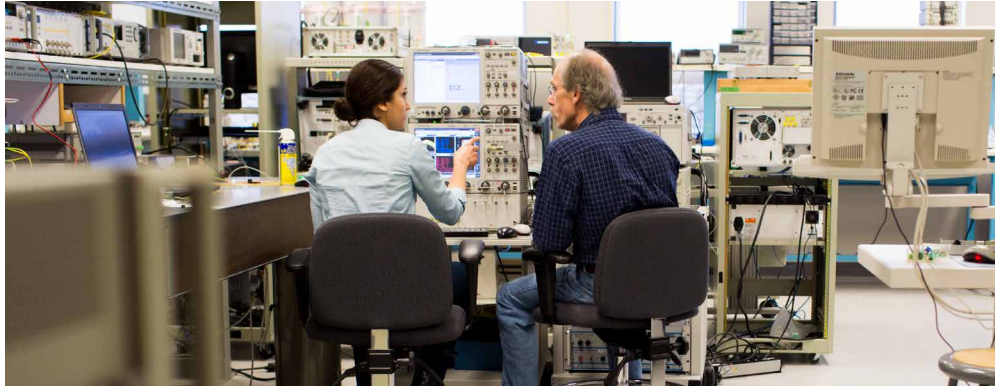
As a PhD student in the important field of Electrical and Computer Engineering (ECE), you can play a vital role in future developments in such fields as microchip design, bioelectronics, biomedical and human-machine systems, artificial intelligence, machine vision, IoT, autonomous vehicle & robots, speech and language processing, wireless and optical communications, nanoelectronics, photonics, power electronics and systems, green energy, cybersecurity, supercomputing, software engineering, and thousands of other areas.

Almost every aspect of modern life is impacted by electrical and computer engineering.

Graduate students and their work are an important part of an ongoing research process that provides the community with ways of understanding natural, cultural, imaginative, social, and technological phenomena.

Why Queen's?

As a PhD student in ECE at Queen's you are part of one of the most research intensive universities in Canada. Our research program is internationally renowned with a wide range of research activities in all of the major specialization areas of electrical and computer engineering.



"Thanks to Queen's ECE, where my MASc and PhD study paved the way for my rewarding career as a professor. Besides my thesis supervisor, I also collaborated with student and faculty researchers at Queen's and other universities. I presented my research at companies and government labs to cultivate connections, and I took stints as a visiting researcher at a university and a company in Europe." — Tiago Falk, MASc, PhD

Queen's ECE offers a number of cross-disciplinary opportunities in collaboration with the departments of Mathematics & Statistics, Physics, Computing, Mechanical & Materials Engineering, Mining, the School of Kinesiology, Health Sciences and Law, as well as the collaborative graduate programs in Biomedical Engineering and Applied Sustainability.

Our students come from all over the world. At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community.

Program Structure

PhD (4 years): 4 courses and seminars, thesis background and proposal exams, and thesis defense.

Research Areas

- Communications and Signal Processing
- Computer and Software Engineering
- Microelectronics, Electromagnetics and Photonics
- Power Electronics
- Biomedical and Intelligent Systems

We encourage you to identify an area of research interest and contact a potential supervisor before applying.

Visit the [Electrical and Computer Engineering website](https://www.queensu.ca/ece) to read about research groups and faculty profiles. When you find a faculty member with similar research interests to yours, contact him/her and tell them about your interest in graduate work, area of research interest and related experience.



Electrical & Computer Engineering PhD Map

DOCTOR OF PHILOSOPHY (PhD)



Knowledge & Workplace Skills

A graduate degree in Electrical and Computer Engineering can equip you with valuable and versatile skills, such as:

- Knowledge and technical skills** in multiple forms for diverse audiences
- Effective communication skills** in multiple forms for diverse audiences
- Information management:** prioritize, organize, and synthesize large amounts of information
- Time management:** Meet deadlines and manage responsibilities despite competing demands
- Project management:** develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions
- Creativity and innovation**
- Perseverance**
- Independence and experience** as a collaborative worker
- Awareness,** an understanding of sound ethical practices, social responsibility, responsible research, and cultural sensitivity
- Professionalism** in all aspects of work, research, and interactions
- Leadership:** initiative and vision leading people and discussion

Career Possibilities

A PhD in Electrical and Computer Engineering can take your career in many directions. In Canada, less than 40% of all PhDs will work in post-secondary education.

Graduates from the PhD program have found careers with:

- Startups in all sectors, such as wearable devices, intelligent apps
- Services such as financial, pension, actuarial, intellectual properties
- Tech companies, such as Qualcomm, Ciena, Microsoft, Google, IBM, Cisco Systems, General Dynamics, Nvidia, Intel, Amazon, and Samsung
- Universities as professors

Exploring career options and building experience can help you transition to the world after graduation.

How to use this map
Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. To make your own custom map, use the My Grad Map tool: [careers.queensu.ca/gradmaps](#).

Graduate Studies FAQs

How do I make the most of my time at Queen's?

Use the Grad Map to plan for success in five overlapping areas of your career and academic life. Everyone's journey is different - the ideas on the maps are just suggestions to help you explore possibilities. For more support with your professional development, take advantage of the SGSPA professional development framework and the new Individual Development Plan (IDP) process to set customized goals to help you get career ready when you graduate.

Where can I get help?

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation. Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming environment offers the programs and services you need to be successful, both academically and personally. Check out the [SGSPA website](#) for available resources.

What is the community like?

Queen's offers graduate students from every discipline a close-knit intellectual community where they can learn, discover, and build lasting connections. With more than 130 graduate programs across 50+ departments and research centres, students benefit from world-class scholars, prize-winning professional development, generous funding packages, and life in the historic waterfront city of Kingston. The campus sits at the heart of Kingston, just a 10-minute walk from downtown's shops, restaurants, and waterfront, and is deeply integrated with the local community. For more on Kingston's history and culture, see Queen's University's Discover Kingston page.

Application FAQs

What do I need to know to Apply?

ACADEMIC REQUIREMENTS

- Master of Applied Science or Master of Science.
- **Grades Required:** minimum cumulative average of 75% or B from Canadian or US Universities, or 80% for international students.

ADDITIONAL REQUIREMENTS

- Statement of Interest/Statement of Research.
- Curriculum Vitae.
- English Proficiency Requirements as listed on the ECE graduate website.
- If English is not a first language, nor was the language of instruction in undergraduate studies, prospective students must meet English language proficiency requirements in writing, speaking, reading, and listening as part of the application process, and before final acceptance is granted, as per School of Graduate Studies and Postdoctoral Affairs' regulations.

KEY DATES & DEADLINES

- **Application due:** Fall Semester Start: January 31 (international), March 1 (domestic).
- **Winter Semester Start:** August 15th.
- **Notification of acceptance:** usually before the end of April for international students, end of May for domestic students.

Before you start your application, please review the Graduate studies application process.

What about Funding?

Doctoral students are currently guaranteed minimum funding of \$29,950 per year for years 1-4. Students are usually funded through a combination of graduate research fellowships, teaching assistantships, and/or scholarships.

You are encouraged to apply for external funding from OGS, NSERC, and other sources. For more information on awards and scholarships, consult the School of Graduate Studies and Postdoctoral Affairs' website.



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