Why GRADUATE STUDIES in ELECTRICAL & COMPUTER ENGINEERING?

As a MASc student in the important field of Electrical and Computer Engineering (ECE), you can play a vital role in future developments in such areas as microchip design, bioelectronics, 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. Check out whygradstudies.ca for more reasons to choose graduate studies in engineering.

Why QUEEN’S?

As a MASc 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.

In addition to the general MASc program, Queen’s ECE offers a Master of Applied Science with a Field of Study in Artificial Intelligence, as well as collaborative graduate programs in Biomedical Engineering, and Master’s in Applied Sustainability. It also has a number of cross-disciplinary opportunities in collaboration with the departments of Mathematics & Statistics, Physics & Engineering Physics, Computing, Mechanical Engineering and the School of Kinesiology and Health Studies.

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

MASc (2 years): 4 courses and seminars, plus a research thesis.

RESEARCH Areas

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

“We as a graduate student at Queen’s, you’re part of a small, tightly-knit community and you have the opportunity to connect with the faculty and students in your department in a way that is simply not possible at other universities.”

— Dustin Dunwell, MASc (Eng)
**Getting Started**

**Achieve Your Academic Goals**
- Start with key priorities like developing your relationship with your supervisor and completing your coursework.
- Consider how your course papers can contribute to your MASc thesis research.
- Start your research as soon as possible, aiming to get traction by the end of your first year.
- Attend the Departmental Speaker Series (ELEC 891).

**Maximize Research Impact**
- Start to think about the audiences for your research.
- Look into applying for NSERC, OGS and other scholarships. Winning them will boost your academic career.
- Participate in innovation activities, such as the Queen’s Innovation Connector.

**Build Skills and Experience**
- Serve on departmental, faculty or university committees. Talk to the Graduate Electrical & Computer Engineering (IECE) student society for tips on getting involved.
- Use Research Assistant and Teaching Assistant positions to develop your research or teaching skills.
- See professional development workshops from Expanding Horizons.

**Engage with Your Community**
- Explore how you can connect with your community through experiential opportunities on- and off-campus.
- Consider volunteering with different community organizations, such as the Engineering Society Design Team.

**Launch Your Career**
- Finding a career that fits starts with knowing yourself. Tune into IEEE messages and publications targeting student members and career building. Learn about the jobs and careers of other IEEE grads.
- Get help by taking a Career Services workshop or meeting with a career counsellor. Check out books like What Are You Going to Do With That? for advice on various career options.
- Start reading publications like University Affairs and the Chronicle of Higher Education. Browse non-academic labour market websites. Stay on the lookout for special events like School of Graduate Studies Career Week to explore your career pathways.

**Intermediate Stage**

**Achieve Your Academic Goals**
- Complete your coursework continue to do your research and progressively write up your Master’s research thesis.
- Find your way through the academic process with help from departmental and Expanding Horizons professional development workshops, the department Grad Chair and the SGS website.

**Maximize Research Impact**
- Submit your research for presentation at a research conference such as an IEEE sponsored conference.
- Consider participating in the IEEE’s 3 Minute Thesis (3MT) competition.
- Expand your research audience through social media such as Twitter or a blog.

**Build Skills and Experience**
- Start keeping an eportfolio of your skills, experiences and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SG5902 or the PUTL Certificate.
- Consider positions in student services, the SGPS, or media outlets like the Queen’s Journal, CFRG, and the SGs Blog. Look in the AMS Clubs, Directors for more ideas.

**Engage with Your Community**
- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
- Prepare for work or studies in a multi-cultural environment by taking the Intercultural Awareness Training Certificate hosted by QUIC and the Intercultural Awareness Training Certificate hosted by QUIC.
- Consider publication options for your research.
- Attend a major conference in your field, such as an IEEE conference.
- Set up a meeting with the School of Graduate Studies for a Grad Chat to discuss your research interests.
- Consider putting an article in The Conversation.

**Launch Your Career**
- Explore different careers of interest by using Queens Connects on LinkedIn to connect with Queen’s alumni. Check out Career Cruising for more information.
- If you are considering a PhD, explore programs of interest, reach out to your advisor and complete your coursework. Attend the Departmental Speaker Series (ELEC 891).
- If you are preparing for work or studies in a multi-cultural environment, consider speaking with an academic advisor.
- Complete your coursework; continue to do your research and progressively write up your Master’s research thesis.

**Wrapping Up**

**Achieve Your Academic Goals**
- Present your research to ECE graduate students and faculty.
- Complete and defend your Master’s research thesis.

**Maximize Research Impact**
- Consider publication options for your research.
- Attend a major conference in your field, such as an IEEE conference.
- Set up a meeting with the School of Graduate Studies for a Grad Chat to discuss your research interests.
- Consider putting an article in The Conversation.

**Build Skills and Experience**
- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a Career Services workshop.
- Check out opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills.
- Investigate internships from MITACS and other sources.

**Engage with Your Community**
- Do some targeted networking with people working in careers of interest, through Queens Connects on LinkedIn, the Queen’s Alumni Association, professional associations, and at conferences.
- Consider joining professional associations. Talk to your supervisor for advice.

**Launch Your Career**
- Participate in hiring committees and attend job talks. Research careers of interest. Craft your CV or Resume and job application materials.
- Start focusing on areas of interest. Research organizations of interest and start putting together your resume for potential positions of interest. Get help from Career Services with job searching, resumes, and interviews.

**What Will I Learn?**
- A graduate degree in Electrical and Computer Engineering can equip you with valuable and versatile skills, such as:
  - Knowledge and technical skills
  - 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 in other professional and public activities
  - Leadership, initiative and vision leading people and discussion

**Where Can I Go?**
- A Master’s degree in Electrical and Computer Engineering can take your career in many directions. Many of our MSc students choose to continue their academic inquiry with a PhD. Our Master’s students are equipped with a strong foundation for careers in numerous sectors, such as:
  - Tech companies, such as Qualcomm, Ciena, Microsoft, Google, IBM, Cisco Systems, General Dynamics, Nvidia, Intel, Amazon, and Samsung
  - Startups in all sectors, such as wearable technology, device, intelligent apps
  - Services such as financial, pension, actuarial, intellectual properties
  - Taking time to explore career options, build experience, and network can help you make a smooth transition to the world of work after graduation.

Visit careers.queensu.ca/gradmaps for the online version with links!

© Career Services, Queen’s University, 2021-2022

*This map is intended to provide suggestions for activities and careers, but everyone's abilities, experiences, and constraints are different. Build your own Grad Map using our online My Grad Map tool.
Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
- Bachelor degree in Engineering or closely related field.
- Grade requirements: 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.

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?

Minimum funding guarantee for MASc students is $23,000 (domestic & international) per year throughout years 1-2. Students are usually funded through a combination of research assistantships, teaching assistantships, and/or scholarships.

Apply for external funding from OGS, NSERC and other sources. Queen’s will automatically issue a one time $5,000 top-up to Masters winners of federal government tri-council awards. For more information, see the School of Graduate Studies’ information on awards and scholarships.

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 SGS website for available resources.

What is the community like?

At Queen’s, graduate students from all disciplines learn and discover in a close-knit intellectual community. You will find friends, peers and support among the graduate students enrolled in Queen’s more than 130 graduate programs within 50+ departments & research centres. With the world’s best scholars, prize-winning professional development opportunities, excellent funding packages and life in the affordable, historic waterfront city of Kingston, Queen’s offers a wonderful environment for graduate studies. Queen’s is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown with its shopping, dining and waterfront. For more about Kingston’s history and culture, see Queen’s University’s Discover Kingston page.

Debra Fraser, Graduate Program Assistant
(613) 533-2179
fraser.d@queensu.ca
ece.queensu.ca