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.

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

Visit the Electrical and Computer Engineering website 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

2022-2023

GETTING STARTED

- 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 Department Speaker Series (ELEC 891).

INTERMEDIATE STAGE

- 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 the Graduate and School of Graduate Studies and Postdoctoral Affairs professional development workshops, the department Grad Chair and the SGSPA website.

WRAPPING UP

- Present your research to ECE graduate students and faculty.
- Complete and defend your Master's research thesis.

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 and Computer Engineering (GEECE) 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 School of Graduate Studies and Postdoctoral Affairs professional development.

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 Teams.
- 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 FDISC.
- If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

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 ECE graduates.
- Get help by taking a Career Services workshop or meeting with a career counsellor.
- Start reading publications like University Affairs and the Chronicle of Higher Education. Browse non-academic labour market websites.

- Explore different careers of interest by using Queen's Connects on LinkedIn to connect with Queen's alumni. Check out Career Counselling for more information.
- If you are considering a PhD, explore programs of interest reach out to faculty, and apply to PhD programs and external scholarships. Check admission test deadlines if needed for further studies.

- Participate in hiring committees and attend job talks. Research careers 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 interactions
- 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 MASc 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 devices, intelligent apps
- Services such as financial, pension, actuarial, intellectual properties
- Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.
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 and Postdoctoral Affairs information on awards and scholarships.

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