Why GRADUATE STUDIES in CHEMICAL ENGINEERING?

As a Master's student in the field of Chemical Engineering, you can play a vital role in future developments in such areas as biological conversion, pollution prevention and treatment, tissue engineering, process control and optimization, (bio)chemical sensing, nanocomposites, and many of other areas. Chemical Engineering has a wide range of applications that contribute to modern life and its technologies.

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 Master's student in Chemical Engineering 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.

“The enjoyment of the interaction between the students and faculty and our industrial partners. It was like a built-in work experience while you’re in school, [giving me] real world experience that I can add to my résumé.”

– Adegboyega Babasola, MSc

The Chemical Engineering Department has links to a number of multi-disciplinary centres at Queen’s, including: the Human Mobility Research Centre, Green Centre Canada, Innovation Park, the Queen’s Centre for Energy and Power Electronics Research (ePOWER), and the Queen’s Innovation Connector. The Department also houses the Polymers Research Group (PRG), with strengths in polymer reaction engineering, processing and rheology.

Program STRUCTURE

MASc (approximately 2 years): course work, seminar, and thesis.

RESEARCH Areas

- Bioengineering
- Clean Energy and Sustainable Environments
- Data Analytics, Optimization and Control
- Materials and Interfaces

We suggest that you review the specific research projects currently being investigated by faculty members to identify a potential supervisor. Please note, however, that contacting a faculty member does not guarantee acceptance and you will need to submit your full application in order to be considered.

Visit the Chemical Engineering Department website to read faculty profiles and learn more about faculty members' research areas.
2020-2021

Chemical Engineering
MASc Map *

MASTER OF APPLIED SCIENCE (MASc)

GETTING STARTED

ACHIEVE YOUR ACADEMIC GOALS

- Start with key priorities like developing your relationship with your supervisor, forming your committee, and doing your coursework.
- Consider how your course papers can contribute to your cognate essay or thesis.
- Find your way through the academic process with help from departmental and Expanding Horizons professional development workshops, the department Grad Chair and the GSG Habitat.

MAXIMIZE RESEARCH IMPACT

- Start to think about the audiences for your research.
- If you will be continuing graduate studies, apply for NSERC and OGS funding.

BUILD SKILLS AND EXPERIENCE

- Consider positions in student services, the SOPS, or media outlets like the Queen's Journal, CFRIC, and the SGS Blog. Look in the AMS Clubs Directory for more ideas.
- Serve on departmental or university committees. Talk to the Chemical Engineering Graduate Student Association (CEGSA) to get involved.
- Check out professional development workshops from Expanding Horizons and the Chemical Engineering Department.

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 Queen’s Chemical Engineering Graduate Student Association (CEGSA).
- Engage with the Chemical Engineering department on Twitter.

LAUNCH YOUR CAREER

- Finding a career that fits starts with knowing yourself. Get help by taking a Career Services workshop or meeting with a career counsellor. Check out books like So What Are You Going to Do With That? or Planning a Scientific Career in Industry from the Career Resource Area 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 Graduate Student Career Week to explore your career pathways.
- Check admission test deadlines if needed for further studies.

INTERMEDIATE STAGE

- Complete your coursework, begin to research and write your cognate essay or thesis.
- Attend the Departmental Speaker Series (CHEE 897).
- Complete the Academic Integrity Tutorial.

WRAPPING UP

- Present your research to Chemical Engineering graduate students and faculty.
- Complete and defend your Master’s research thesis.
- Consider publication options for your research.
- Attend a major conference in your field, such as the Canadian Chemical Engineering Conference or an Asian Pacific Confederation of Chemical Engineering Conference. Speak with your supervisor about options for conferences in your area of research.
- Consider putting an article in The Conversation.
- 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.
- Investigate internships from MITACS and other sources.
- Check out opportunities for extra training through CTL, Expanding Horizons, MITACS, or other sources to boost your skills.
- Do some targeted networking with people working in careers of interest, through Queen’s Conneccts Horizons, MITACS, or other sources to boost your skills.
- Consider joining professional associations like the Canadian Society for Chemical Engineers.

WHAT WILL I LEARN?

- A graduate degree in Chemical Engineering can equip you with:
  - Knowledge and technical skills
  - Effective communication skills in multiple forms for diverse audiences
  - 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 and 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 Chemical 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:
  - Academia
  - Consulting
  - Finance
  - Manufacturing
  - Pharmaceuticals
- Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

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

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* 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’s degree in Engineering or other relevant program.
- Grade requirements: minimum B+ (77%) average.

**ADDITIONAL REQUIREMENTS**
- If English is not a native language, prospective students must meet the English language proficiency requirements in writing, speaking, reading, and listening. The School of Graduate Studies requires the following minimum scores: TOEFL (paper-based): 550, (2) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30), for a total of 88/120 (applicants must have the minimum score in each test as well as the minimum overall score), or (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academics: 65.

**KEY DATES & DEADLINES**
- Application due: There is a constant intake with no set deadline. It is recommended that the application be completed at least 4 months ahead of the desired admission cycle, especially for international students.
- Notification of acceptance: Rolling acceptances for September, January, and May academic cycles.

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

What about FUNDING?

Chemical Engineering graduate students have a minimum funding of $25,000. As part of the minimum funding package, you may serve as a Teaching Assistant for at least one term per year.

Apply for external funding from OGS, SSHRC and other sources. Queen’s will automatically issue a $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.