Why GRADUATE STUDIES in MECHANICAL & MATERIALS ENGINEERING?

As a Master's student in the field of Mechanical and Materials Engineering (MME), you can play a vital role in future developments in such areas as: ergonomics, biomechanics and tissue engineering, assistive technologies, emerging techniques in MRI and CT imaging, fuel cells, fluid flow, gas turbines, design optimization, robotics, ceramics and polymers, atomistic simulations on long and short timescales, corrosion and environmental degradation of materials, development of improved materials for nuclear reactor applications, laser additive manufacturing of metals, and many other areas. Mechanical & Materials Engineering continues to play a vital role in modern life.

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 Mechanical and Materials 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 of Mechanical and Materials Engineering.

The Mechanical and Materials graduate program has been recognized for the quality of its academic and research programs. It also focuses on multidisciplinary, collaborative research with faculty in other departments, other faculties and other universities.

Program STRUCTURE

MEng (3 semesters): course-based program with eight term-length courses chosen by the student. Some course permissions/approvals required.

KEY Competencies

- Engineering Analysis
- Engineering Measurements
- Component Performance/Design
- Integrated System Modelling

Visit the Mechanical Engineering website to read about program options.
2021-2022

MASTER OF ENGINEERING (MEng)

**GETTING STARTED**

- Achieve Your Academic Goals
  - Start with key priorities like doing your coursework.
  - Find your way through the academic process with the help of Expanding Horizons.

- Maximize Learning Impact
  - Explore research facilities, including the Machine Shop, Reactor Materials Testing Lab, and the Solar Calorimetry Lab.
  - Attend an "Engineering Internship and Other Program Options" information session to learn about the program options.

- Build Skills and Experience
  - Consider positions in student services, the SOPS, or media outlets like the Queen's Journal, CFRC, and the SGS Blog. Look at the SOPS websites.
  - Serve on departmental, faculty or university committees.
  - Check out 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 Human Mobility Research Centre, and the Centre for Advanced Materials & Manufacturing.

- 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? 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.
  - Check admission test deadlines if needed for further studies.

**INTERMEDIATE STAGE**

- Achieve Your Academic Goals
  - Consider transferring into a MASC.

- Maximize Learning Impact
  - Attend a graduate conference through the Canadian Society of Mechanical Engineering, Canadian Section of Combustion Institute, CFD Society of Canada.
  - Set up a meeting with the School of Graduate Studies for a Grad Chat to discuss your research interests.

- Build Skills and Experience
  - Start keeping an ePortfolio of your skills, experiences and competencies.
  - Use a Research Assistant or Teaching Assistant position to develop your research or teaching skills.
  - For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SG5902 or the PUTL Certificate for more professional development in teaching and learning.

- 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 Four Directions Indigenous Student Centre.
  - If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

- Launch Your Career
  - Explore different careers of interest by using Queen's Connects on LinkedIn to connect with Queen's alumni. For more information, check out Career Cruising.
  - If you are considering an MASC or PhD, explore programs of interest reach out to faculty, and apply to PhD programs and external scholarships.

**WRAPPING UP**

- Achieve Your Academic Goals
  - Finish your coursework and ensure you have enough credits to graduate.

- Maximize Learning Impact
  - Attend a major conference in your field, such as a conference by the American Society of Mechanical Engineering.
  - 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.
  - 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.

- Engage with Your Community
  - Do some targeted networking with people working in careers of interest, through Queen's Connects on LinkedIn, the Queen's Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.
  - Consider joining professional associations like the Professional Engineers of Ontario (PEO) or the Canadian Society for Mechanical Engineering.

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

### WHERE CAN I GO?

A Master's degree in Mechanical & Materials Engineering can take your career in many directions. Many of our MEng students choose to continue their academic career with an MASC or PhD. Our Master's students are equipped with a strong foundation for careers in numerous sectors, such as:

- Government
- Industry – Design Engineer
- Consulting

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

**WHAT WILL I LEARN?**

A graduate degree in Mechanical 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

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

*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.*
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 SGS 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 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 and 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.