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 CTI 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.

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.

“My [...] research project has involved collaboration with a surgeon in Sweden, researchers at the U of Queensland, Australia and NRC in Ottawa. This may sound extraordinary, but it is in fact closer to the norm for our Department.”

– Melanie Thompson, MASc

Program STRUCTURE

MASc (2-years): Research-based program with 4 term-length courses and a thesis. Seminar course also required (MECH 897). This course is a pass/fail only. Students present their research to their peers in year two (2).

Combined BASc and MASc program: BASc students can take 2 MASc courses in their 4th year, and the other 2 courses during their MASc.

RESEARCH Areas

• Biomechanical
• Energy and Fluid Systems
• Manufacturing and Dynamic Systems
• Materials Engineering

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

Visit the Mechanical and Materials Engineering website to read about research groups and faculty profiles. When you find a faculty member with similar research interests to yours, contact them and tell them about your interest in graduate work and related experience. This is also an opportunity for you to find out if the faculty member is accepting new graduate students to supervise. Meet with your potential supervisor at departmental events for prospective students.
GETTING STARTED

- Start with key priorities like developing your relationship with your supervisor and starting your coursework.
- Consider how your coursework can contribute to your thesis.
- Find your way through the academic process with help from School of Graduate Studies and Postdoctoral Affairs.

INTERMEDIATE STAGE

- Complete your coursework; begin to research and write your thesis.
- Attend the Departmental Graduate Seminar Series (MECH 897).

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.
- Explore research facilities, including the Machine Shop, Reactor Materials Testing Lab, and the Solar Calorimetry Lab.

BUILD SKILLS AND EXPERIENCE

- Consider positions in student services, the SGSP, or media outlets like the Queen's Journal, CFRC, and the SGSPA Blog. Look at the SGSP's website for more ideas.
- Serve on departmental, faculty, or university committees.
- Check out professional development workshops from SGSPA.

ENGAGE WITH YOUR COMMUNITY

- Explore how you can connect with your community through experiences of 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 educator and coach.
- 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 and Postdoctoral Affairs Career Week to explore your career pathways.
- Check admission test deadlines if needed for further studies.

WRAPPING UP

- Present your research to Mechanical Engineering graduate students and faculty as part of MECH 897, and complete and defend your Master’s research thesis.
- Consider publication options for your research.
- Attend a major conference in your field, such as a conference by the American Society of Mechanical Engineering.
- Set up a meeting with the School of Graduate Studies and Postdoctoral Affairs for a Grad Chat to discuss your research interests.

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

WHERE CAN I GO?

A Master’s degree in Mechanical & Materials 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 – Professors
- Consulting
- Government
- Industry – Design Engineer
- Research Science – Simulation Engineer

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

Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
• Honours Bachelor’s degree in Applied Science or Engineering.
• Grade requirements: minimum cumulative average of a B (73-76.9%).

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 following minimum scores are required: (1) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30). Applicants must have the minimum score in each test as well as the minimum overall score, or (2) IELTS: 7.0 (academic module overall band score and a 7.0 for each test band), or (3) PTE Academics: 65, or (4) CAEL CE -70 (minimum overall score).

KEY DATES & DEADLINES
• Application deadline: No hard deadline. It is encouraged that prospective international students apply before March 1st to allow time to receive Visas.
• Notification of acceptance: End of March to July for September admissions.

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

What about FUNDING?

MASc students receive minimum funding of $20,000 (domestic)/$25,000 (international) per year which includes mandatory teaching assistantships. Students are funded through a combination of research assistantships, teaching assistantships, and/or scholarships.

Apply for external funding from OGS 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.