Mechanical Engineering

Get to know MECHANICAL ENGINEERING

The domain of mechanical engineers is truly vast because they are needed everywhere machines are, and at every stage of design, manufacturing, construction, and research. In this program you will study basic engineering courses as well as practical courses in machine design, robotics, and manufacturing methods. Hands-on design is integral to this program. You may be involved in designing artificial joints, or even a Formula race car, depending on your specialization. If you choose the Materials option, you’ll study the exciting developments in materials and nanotechnology.

“Students are encouraged to participate in national design competitions in order to broaden their educational experience including the solar design team, the Formula racing car, the Mini Baja all terrain vehicle and the Aerodesign cargo aircraft, and others.”

Queen’s ADMISSIONS

Students apply to Queen’s Engineering (QE) through the OUAC (Ontario University Application Centre) website. Secondary School prerequisites include these five 4U courses, English 4U, Calculus and Vectors 4U, Advanced Functions 4U, Chemistry 4U, and Physics 4U. Applicants outside of Ontario may have additional requirements.

Degree OPTIONS

Bachelor of Applied Science in Engineering
Bachelor of Applied Science in Engineering with Professional Internship Option in General / Materials / Biomechanical Engineering

Course HIGHLIGHTS

Mechanical Engineering students have the opportunity to take a wide range of technical courses to help prepare them for the many possible career destinations available. Such courses include:

- Biomechanical Product Development
- Computer-Aided Design
- Bio-Materials
- Mechatronics Engineering
- Airplane Aerodynamics
- Musculoskeletal Biomechanics
- Nano-Structured Materials


That is a degree from Queen’s.

me.queensu.ca
Mechanical Engineering MAJOR MAP

BACHELOR OF APPLIED SCIENCE | BACHELOR OF APPLIED SCIENCE WITH PROFESSIONAL INTERNSHIP

GET THE COURSES YOU NEED

1ST YEAR
Queen's Engineering first year is common – courses include: Physics, Chemistry, Calculus, Algebra, Graphics, Computing, and Earth Systems Engineering.
Also APSC100, the entry level course in our Engineering Design and Practice Sequence (EDPS), focusing on problem solving, experimentation principles, and finishing off with a team-based engineering project.
Discipline selection will take place in February!

2ND YEAR
You will take the second EDPS course APSC 200. Students decide to enroll into one of the following options: ME1 General, ME2 Materials, or ME3 Biomechanical.

3RD YEAR
ME1 students will continue with advanced thermodynamics and fluid mechanics.
ME2 students will continue with additional materials processing and fracture mechanics courses.
ME3 students will dive into the world of biomechanical engineering.

4TH OR FINAL YEAR
Courses include either Capstone Team Project: Conceive & Design; Team Project: Implement and Operate; and a selection of technical electives based on your option.
On top of your technical electives, you will choose 3 or 4 complementary studies courses to complete your degree.

GET RELEVANT EXPERIENCE

Join teams or clubs on campus such as the Queen's Project or an International Development or the First Robotics Competition.
See the AMS Clubs Directory or the Queen's Get Involved page for more ideas.

GET CONNECTED WITH THE COMMUNITY
Volunteer on- or off-campus with different community organizations, such as Let's Talk Science (LTS) and Engineers without Borders (EWB).
Join professional associations like Professional Engineers Ontario (PEO), Canadian Society of Mechanical Engineers (CSME), Society of Manufacturing Engineers (SME) as a student member – it's often free.

GET THINKING GLOBALY
Speak to a QUIC advisor or get involved in their programs, events, and training initiatives.
Prepare for work or studies in a multi-cultural environment by taking the Intercultural Awareness Training Certificate hosted by QUIC and FDIC.

GET READY FOR LIFE AFTER GRADUATION
Grappling with program decisions? Go to the Orientation Evenings held by different Engineering departments and attend the various Career Fairs during the year.
Get some help deciding by visiting Career Services.

How to use this map
Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. The map just offers suggestions – you don’t have to do it all! To make your own custom map, use the My Major Map tool.

Employability skills
Your time at Queen's will give you valuable skills to boost your employability, including:
• Ability to apply science fundamentals to practical problems
• Proficiency in mathematics and quantitative analysis
• Innovation and implementation skills embodied in the CDIO paradigm: Conceive, Develop, Implement, and Operate
• Time and resource management
• Excellent technical writing and communication skills
• Engineering design skills
• Experience and capability in employing various information sources for solving engineering problems
• Ability to work independently and in a team on a project

Where could I go after graduation?
Your degree could take you in lots of interesting directions including:
• Biomechanics
• Modern technology
• Business administration and management
• Consulting
• Design optimization
• Industrial engineering
• Information technology
• Materials engineering
• Mechatronics
• Metallurgical engineering
• Nuclear engineering
• Occupational health and safety
• Product design
• Renewable resources and sustainability
• Robotics
• Sound engineering
• Structural analyst

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

*some careers may require additional training. Careers listed here are only suggestions.
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Get started thinking about the future now – where do you want to go after your degree? Having tentative goals (like careers or grad school) while working through your degree can help with short-term decisions about courses and experiences, but also help you keep motivated for success.

Get the help you need

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation. At Queen's, you are never alone. We have many offices dedicated to helping you learn, think and do.

Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming living and learning environment offers the programs and services you need to be successful, both academically and personally. Queen's wants you to succeed! Check out the Student Affairs website for available resources.

Why study in Kingston?

For over 175 years, our community has been more than a collection of bright minds – Queen's has attracted students with an ambitious spirit. Queen's has the highest retention rates, the highest graduation rates, and one of the highest employment rates among recent graduates. We are a research-intensive university focused on the undergraduate experience. The BBC has identified Kingston as one of the GREATEST UNIVERSITY TOWNS in the world – and it is often identified as the safest city in Canada. It is a university city at the core; just a quick drive to Toronto, Montreal, Ottawa and even New York. At a university with more clubs per capita than any other university in Canada, and in a city with more restaurants per capita than any other city in North America, you will have the experience of a lifetime at Queen's – and graduate with a degree that is globally recognized among the best.