**Mechanical Engineering**

**MAJOR MAP**

**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 Mag tool.

**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 motivated for success.

**Why study in Kingston?**

For 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 awarded 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. A university with more clubs per capita than any other university in Canada, and 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.

**For more information, contact quip@queensu.ca or visit the Program Website.**

**Mechanical Engineering**

**QUEEN’S UNDERGRADUATE INTERNSHIP PROGRAM**

**PROGRAM OVERVIEW**

- Graduates with "Professional Internship" on your degree.
- Learn about current advances, practices and technologies in business and industry.
- Test drive a career, earn a competitive salary, and get real world experience.

**ELIGIBILITY**

- 2nd or 3rd Year Students
- Minimum GPA of 1.9

**WHY QUIP?**

- Gain a year of career-related work experience.
- Build network connections.
- Receive support from Queen’s staff in job search and during internship.

**SAMPLE PAST INTERNSHIPS**

- Engineering & Business Challenge Team
- Software Engineering
- More Engineering Teams

**Get the help you need**

Queen’s wants you to succeed! Check out the Student Affairs website for available resources.

**Degree OPTIONS**

- Bachelor of Applied Science in Engineering
- Bachelor of Applied Science in Engineering with Professional Internship

**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
- Turbomachinery
- Mechatronics Engineering
- Aeronautical Design
- Musculoskeletal Biomechanics
- Nano-Structured Materials

**Acquire Skills. Gain Experience. Go Global.**

That is a degree from Queen’s.

me.queensu.ca
Mechanical Engineering

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

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
Courses include: Statics & Solid Mechanics, Differential Equations, Manufacturing Methods, Thermodynamics, Materials, Electric Circuits & Machines, Numerical Methods, Measurement for Mechatronics, Kinematics & Dynamics and Fluid Mechanics. 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
Courses include: Engineering Economics, Solid Mechanics, Dynamics & Vibration, Machine Design, Heat Transfer, Automatic Controls, and Engineering Data Analysis. Your other courses will depend on your option and elective choice!

4TH OR FINAL YEAR
Courses include either Team Project: Conceive & Design or Multi-disciplinary Industry Engineering Design Project. ME3 students will also take the Team Project: Implement & Operate course. Choose another 6 or 7 technical courses depending on your option, three complementary studies courses, and you are set to graduate!

GET THE COURSES YOU NEED
Visit careers.queensu.ca/majormap for the online version with links!

GET RELEVANT EXPERIENCE
Join teams or clubs on campus such as the Queen's Project on International Development or the First Robotics Competition.

GET CONNECTED WITH THE COMMUNITY
Volunteer on or off-campus with different community organizations, such as Let’s Talk Science (ITS) 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 GLOBALLY
Speak to a QUIC advisor or get involved in their programs, events and training opportunities.

GET READY FOR LIFE AFTER GRADUATION
Grapping 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.

Employability skills
Your time at Queen's will give you valuable skills to boost your employability, including:
• 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
• Ability to apply science fundamentals to practical problems of mechanical engineering
• 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:
• Aviation and aircraft management
• Biomechanics
• Biomedical technology
• Business administration and management
• Industrial engineering
• Information technology
• Materials engineering
• Metallurgical engineering
• Nuclear engineering
• Occupational health and safety
• Product design
• Renewable resources and sustainability
• Research analyst
• 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. Please note: some careers may require additional training or education.

* This map is intended to provide suggestions for activities and careers, but everyone's abilities, experiences, and constraints are different. Build your own Major Map using our online My Major Map tool.