

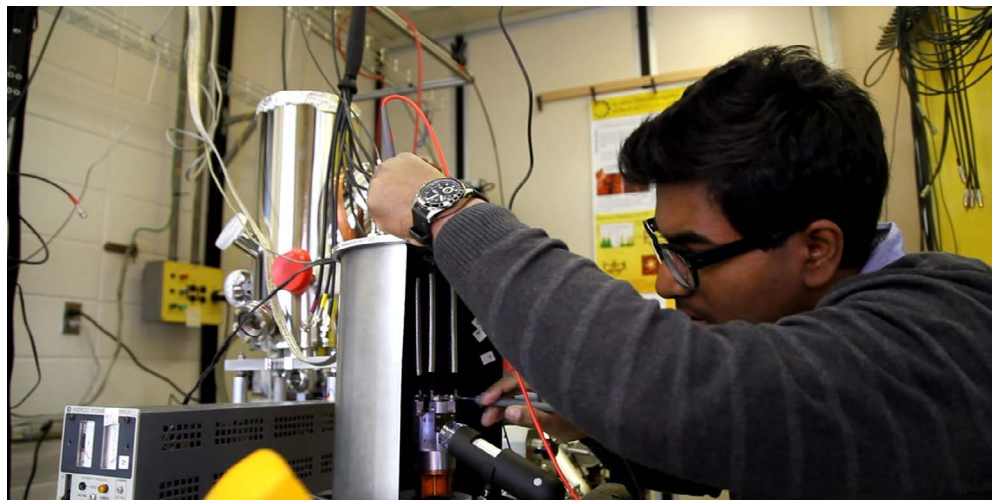
# Engineering Physics

MAJOR MAP FOR UNDERGRADUATES →

Get to know

## ENGINEERING PHYSICS

This program allows students to apply the knowledge of fundamental physical principles underlying modern technology and processes. You will study a strategic combination of math, physics and engineering courses from a chosen specialty area. Courses in quantum mechanics, laser optics and nanotechnology will help prepare you for an engineering career at the leading edge of technology. You will acquire advanced problem-solving and instrumentation skills, and will be able to apply your superior mathematical, analytical and abstract-thinking ability to modern engineering challenges.



*"With a focus on fundamental physics principles and a strong mathematical component, this program is designed to produce engineers with excellent problem solving and analytical skills, coupled with broad knowledge of engineering science and technology."*

### Degree **OPTIONS**

**Bachelor of Science in Engineering**

**Bachelor of Science in Engineering with Professional Internship**

*Specialization in Mechanical / Computing / Electrical / Materials Engineering*

### Queen's **ADMISSIONS**

Students apply to Queen's Engineering (QE) through the OUAC (Ontario University Application Centre) website. Secondary School prerequisites include six 4U and 4M courses, one of which must be English 4U. Calculus and Vectors 4U, Chemistry 4U, and Physics 4U are all required along with one of Advanced Functions 4U, Biology 4U, Data Management 4U, Computer Science 4U, Earth and Space Science 4U. A final grade of 70% must be obtained in English 4U. Applicants outside of Ontario may have additional requirements.

### A Common **START**

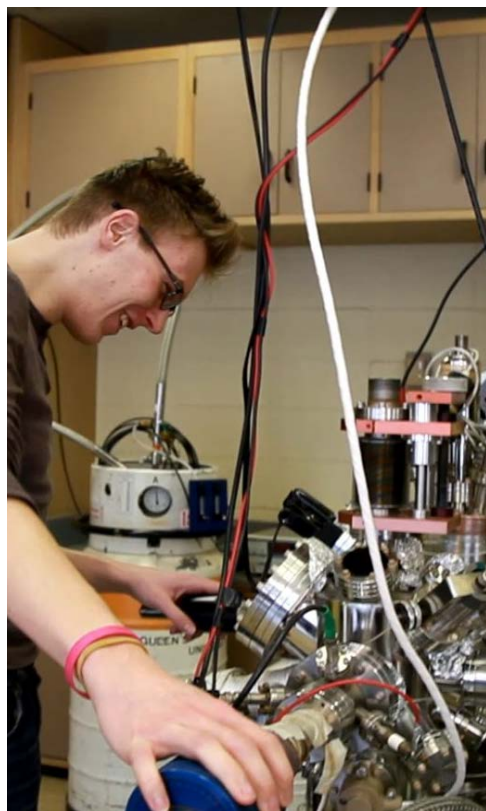
Queen's is unique in offering a common First Year along with an open discipline choice.

When you do choose your program, you don't have to worry about caps or quotas. Provided you pass all of your First Year courses, you are guaranteed a place in your engineering program of choice. Queen's also offers J-Section, a special extended program for students struggling with First Year courses. Take things at a slower pace and recover in time for Second Year.

### Course **HIGHLIGHTS**

Engineering Physics 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:

- Laser Optics
- Nanoscience and Nanotechnology
- Nuclear Physics
- Medical Physics
- Solid State Devices
- General Relativity



**Acquire Skills. Gain Experience. Go Global.**  
That is a degree from Queen's.

[engphys.appsci.queensu.ca](http://engphys.appsci.queensu.ca)

# Engineering Physics MAJOR MAP

BACHELOR OF SCIENCE IN ENGINEERING | BACHELOR OF SCIENCE IN ENGINEERING WITH PROFESSIONAL INTERNSHIP

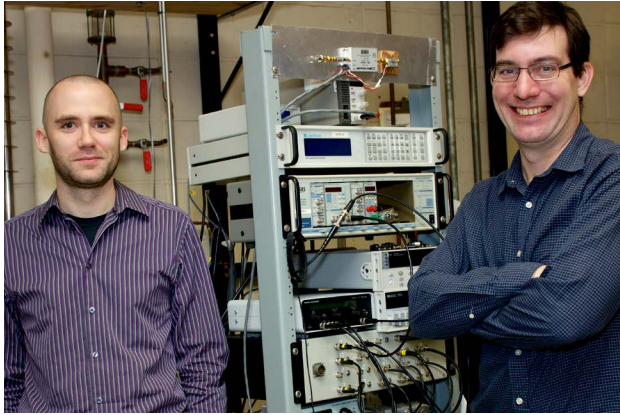


**Caution:** \*This map is meant as a guide to provide suggestions throughout your university career. The activities, resources, and careers mentioned are possibilities – you are not restricted to them and you don't have to follow this exact timeline. Every person (including you!) will find their own unique path through their degree at Queen's and beyond.

Visit [careers.queensu.ca/majormaps.html](http://careers.queensu.ca/majormaps.html) for the online version with links!

# Engineering Physics

## MAJOR MAP



### How to use this map

- Got questions about careers and classes?
- Feeling a little lost or overwhelmed by choices?
- Wondering what you are “supposed” to be doing?

Use this map to plan for success in five overlapping areas of career and academic life. Each map helps you explore possibilities, set goals and track your accomplishments. To make your own custom map, use the My Major Map tool.

Don't stress if you haven't done all of the suggested activities. The map is not a prescription – it's a tool for finding your own way at Queen's.



## Getting what you need to succeed in the workplace

### WHAT DO EMPLOYERS WANT?

In a recent survey from the Canadian Council of Chief Executives the top 6 skills sought by employers were:

- 1 People skills
- 2 Communication skills
- 3 Problem-solving skills
- 4 Analytical abilities
- 5 Leadership skills
- 6 Industry-specific knowledge

### HOW DO I GET THE SKILLS I NEED?

It is important to develop a balanced skill set – many of which you will develop during your studies. To stand out, take advantage of experiential learning through the multitude of clubs and activities in and around Queen's. Check out the Get Relevant Experience section of this map.

### WHAT CAN I LEARN STUDYING ENGINEERING PHYSICS AT QUEEN'S?

- **Proficiency in mathematics and numerical modeling with courses in math and physics**
- **Time and resource management – taught formally in class and then applied in your projects**
- **Work independently and in a team on a project – a group design project is undertaken every year and a thesis in the final year**
- **Able to solve complex problems using your broad scientific knowledge**
- **You gain practical skills as an engineer, and back them up with the deep knowledge of a scientist**
- **Ability to make careful measurements with sophisticated equipment in laboratory classes**
- **Proficiency with modern physics allowing you to work with tomorrow's technologies**

### WHAT MAKES ME SPECIAL?

No one will get exactly the same experience as you. Take the time to think about what skills you have developed to be able to best explain them with compelling examples in future applications to employers and further education. For help with this, check out the Career Services skills workshop.



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