Get to know MINING ENGINEERING

Aside from the plant material we harvest, all of the raw material used by human society comes from minerals extracted from the earth. This program prepares you for careers in both the minerals industry and related environmental and technological fields. As a Mining Engineering student, you will study a broad range of disciplines involved in locating, extracting, refining, and disposing of mineral and metal products and byproducts. The program teaches students how these processes can be carried out efficiently and competitively, with a focus on sustainability and the environment.

"Our program is designed to address the entire mine life-cycle, from exploration to mine closure and offer solutions that not only enhance the competitiveness of the mining industry but also ensures compatibility with evolving societal values."

Smith Engineering ADMISSIONS

Students apply to Smith 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.

A Common START

Smith Engineering 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. Smith Engineering also offers Section 900, a special extended program for students struggling with first year courses. Take things at a slower pace and recover in time for second year.

Degree OPTIONS

- Bachelor of Applied Science in Engineering
- Bachelor of Applied Science in Engineering with Professional Internship Option in Mining / Minerals Processing and Environmental / Mine-Mechanical

Course HIGHLIGHTS

Mining 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:

- Design and Planning
- Drilling and Blasting
- Mining and Sustainability
- Chemical Extraction of Metals
- Mineral Industry Economics
- Equipment Reliability and Maintenance
- Geostatistics
- Geomechanics
- Process Engineering
- Life-cycle Assessment for Green Technologies
- Data Analytics


That is a degree from Queen’s. mine.queensu.ca
Proficiency in mining sciences
Environmental management
Metallurgist
Mine engineer
Renewable resources
Relevant analysis and designing skills
Banking and venture capital
Consulting
Mine supervisor
Waste management
Project engineer
Health and Safety skills
Government (mine inspector, health and safety, environment)
Mining sales representative
Management
Business management (mine manager, director, vp, coo, ceo, president)
Time and resource management
Mining supplier
Written and oral communication skills
Mining financial analyst

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 shows suggestions – you don’t have to do it all! To make your own custom map, use the My Major Map tool.

How to use this map

GET THE COURSES YOU NEED

Smith 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.

GET RELEVANT EXPERIENCE

Join teams or clubs on campus such as the Queen’s University Experimental Sustainability Team (QUEST).
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 Engineers without Borders (EWB).
Consider joining an intramural sports or an athletics team. Check out the Athletics & Recreation site.

GET THINKING GLOBALLY

Speak to a QUIC advisor or get involved in programs, events and training opportunities.
Prepare for work or studies in a multi-cultural environment by taking QUIC’s Intercultural Awareness Training Certificate, and research possible immigration regulations.

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.

You will take the second EDPS course – APSC200.

Your other courses depend on your option.

Your other courses depend on your option!
Apply to graduate on SOLUS.

Investigate requirements for full-time jobs or other opportunities related to careers of interest.
Assess what experience you’re lacking and fill in gaps with volunteering, clubs, or internships - check out Career Services workshops for help.
Take the Mine Rescue course.

Courses include: Reliability, Maintenance & Risk Assessment, Mining & Sustainability, Occupational Health & Safety, Life-cycle Assessment for Green Technologies, as well as your 4th year project course(s).

If you are not already a member, join professional associations like PDAC, CIM, SME, and the International Society of Explosives Engineers (ISEE).
Join groups on LinkedIn reflecting specific careers or topics of interest in Mining Engineering.

International students interested in staying in Canada can speak with an International Student Advisor.

Consider applying to do a 12-16 month QUIP internship.
Consider a summer research position within the Mining Department.
Consider targeting networking with alumini working in careers of interest by joining the LinkedIn group Queen’s Connects Career Network. Continue to be involved with mining specific organizations through membership and by attending functions within these organizations. Consider attending the CIM Conference and/or the PDAC conference for networking opportunities.

Employability skills

Smith Engineering will give you valuable skills to boost your employability:
- Proficiency in mathematics and physical sciences
- Proficiency in mining sciences
- Relevant analysis and designing skills
- Health and Safety skills
- Relevant work experience in mining engineering
- Working knowledge of design software for mining engineering
- Sustainability Certified Skills
- Written and oral communication skills
- Time and resource management
- Ability to work independently and in a team on projects

Where could I go after graduation?

- Academia
- Banking and venture capital
- Business management (mine manager, director, vp, coo, ceo, president)
- Consulting
- Contracting
- Environmental management
- Equipment designer
- Graduate School
- Government (mine inspector, health and safety, environment)
- Law
- Management
- Mine engineer
- Mine planner and scheduler
- Mine supervisor
- Mineral exploration
- Mining financial analyst
- Mining sales representative
- Mining supplier
- Mining Software Developer
- Metallurgy
- Occupational health and safety
- Petroleum and gas industry
- Project engineer
- Project manager
- Renewable resources
- Technical specialist
- Waste management
- Quarrying

*some careers may require additional training. Careers listed here are only suggestions.
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.