Why GRADUATE STUDIES in MINING ENGINEERING?

Mining is the foundation of industrial civilization. It is the process of extracting minerals like gold, silver, copper, nickel and uranium (metallic) and salt, potash, coal, limestone aggregate and oil (non-metallic) formations that concentrate naturally in the earth. It may surprise you, but other than agricultural products, the raw ingredients for everything else in our modern lives comes from mining.

Mining Engineering is one part technical design and one part business management. Mining engineers are responsible for deciding how valuable a mineral deposit is and how best to mine it, for planning the day-to-day schedule and path of mining to maximize extraction and profit, and for ensuring the safety of people and equipment through applications in areas such as mine ventilation and rock mechanics.

Why QUEEN’S?

As a PhD student in Mining 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 mining engineering.

As technology evolves and the global economy changes, our students and researchers play a key role in defining the state of the art in mining. In close collaboration with industry partners, our faculty and students work to make mining operations safer, more efficient, more productive, less impactful on the natural environment, and more cost effective.

Our students come from all over the world. At Queen’s, graduate students from all disciplines learn and discover in a close-knit intellectual community.

RESEARCH Areas

- Mining Engineering
- Mine-Mechanical
- Mineral Processing
- Geomechanics, Seismicity, Geodynamics
- Blasting, Mine to Downstream Operations
- Ventilation
- Hydrometallurgy, Biohydrometallurgy, Environmental
- Pyrometallurgy, Microwaves in metal extraction
- Mineral Processing
- Geostatistics, Geometallurgy
- Data analytics
- Reliability, Maintenance and Risk Assessment
- Health and Safety
- Social Risk and Community Relations

You can also find out if the faculty member is accepting new graduate students to supervise by meeting your potential supervisor at departmental events for prospective students.

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

Visit the Mining Engineering website to read faculty profiles and learn more about faculty members’ research areas. When you find a faculty member with similar research interests to yours, contact him/her and tell them about your interest in graduate work and related experience.
ACHIEVE YOUR ACADEMIC GOALS

- Key priorities include forming your research committee, coursework and comprehensive exams.
- Meet regularly with your supervisor to set expectations and discuss roles, responsibilities, program requirements, resources, research/occupational goals, timelines, and any required accommodation plans.
- Look to Student Academic Success Services, Society of Graduate Students and Postdoctoral Affairs professional development for supports and workshops.
- Complete the laboratory safety course (CHEM 801).

MAXIMIZE RESEARCH IMPACT

- Think about audiences for your research.
- Complete CORE online module on research ethics if doing research with regarding sensitive topics.
- Apply to NSERC, OGS, and other funding.
- Apply for the Graduate Dean's Travel Grant for international activities.
- Complete the laboratory safety course (CHEM 801).

BUILD SKILLS AND EXPERIENCE

- Serve on faculty or university committees. Talk to the Society of Graduate and Professional Students (SGPS) for tips on getting involved.
- Consider positions in student services, the SGPS, or media outlets like The Queen's Journal, CFIQ, and the SGSPA Blog. Look in the AMS Clubs Directory.
- Use a Teaching Assistant or Research Assistant position to develop your skills and experience.
- Attend or present at a graduate conference such as the Canadian Institute of Mining (CIM) Annual Meeting.
- Expand your research audience through social media such as Twitter or a blog.
- Consider publishing elements of your research.
- None skills for non-academic employment by continuing involvement on committees and in community.
- Start keeping an up-to-date skills inventory that includes your skills, experiences and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SG902 or the PUTL Certificate for more professional development.

ENGAGE WITH YOUR COMMUNITY

- Consider volunteering with different community organizations.
- Connect to broader communities of engineers by joining an Engineering Society Design Team.
- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
- Do some targeted networking with people working in careers of interest, through Queen's Connects on LinkedIn, the Queen's Alumni Association professional associations, and at conferences. Get help from a Career Services workshop.

LAUNCH YOUR CAREER

- Finding a career fit starts with knowing yourself. Take a Career Services workshop or meet with a career counselor for help.
- 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 Fall School of Graduate Studies and Postdoctoral Affairs Career Week to explore your career pathways.
- Start building your teaching portfolio including student evaluations, and seeking mentorship.
- Explore different careers of interest by using Queen's Connects on LinkedIn to connect with Queen's alumni. For more information check out Career Cruising.
- Investigate requirements for professional positions or other opportunities related to careers of interest.
- Participate in hiring committees and attend job talks. Research academic careers of interest. Craft your CV and job application materials.
- Start focusing on non-academic areas of interest. Research organizations of interest and start putting together your industry resume and begin your job search plan.

YEAR IV

- Complete and defend your research thesis (MINE 999).
- Present your research at conferences and work with your supervisor to prepare for defense.
- Review submission and examination guidelines.
- Secure necessary oral defence accommodations.
- Discuss career pathways, reference letters, and publication options with your supervisor.

WHAT WILL I LEARN?

A graduate degree in Mining Engineering can equip you with:

- Knowledge and technical skills
- Effective communication skills in multiple forms for diverse audiences
- Information management: prioritize, organize and synthesize large amounts of information
- Time management: Meet deadlines and manage responsibilities despite competing demands
- Project management: develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions
- Creativity and innovation
- Perseverance
- Independence and experience as a collaborative worker
- Awareness, an understanding of sound ethical practices, social responsibility, responsible research and cultural sensitivity
- Professionalism in all aspects of work, research, and interactions
- Leadership: initiative and vision leading people and discussion

WHERE CAN I GO?

A PhD in Mining Engineering can take your career in many directions. In Canada, less than 40% of all PhDs will work in post-secondary education - the majority will work in industry, government, or non-government organizations.

- Graduates from the Mining Engineering PhD program have found careers within:
  - Academia and Research
  - Consulting
  - Mining Companies
  - Mining Equipment and Technology Providers
- Non-Governmental Organizations
- Financial Institutions

Taking time to explore career options, build experiences, and network can help you have a smooth transition to the world of work after graduation.
How do I make the most of my time at Queen's?

Use the Grad Map to plan for success in five overlapping areas of your career and academic life. Everyone's journey is different - the ideas on the maps are just suggestions to help you explore possibilities. For more support with your professional development, take advantage of the SGSPA professional development framework and the new Individual Development Plan (IDP) process to set customized goals to help you get career ready when you graduate.

Where can I get help?

Queen’s provides you with a broad range of support services from your first point of contact with the university through to graduation. Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming environment offers the programs and services you need to be successful, both academically and personally. Check out the SGSPA website for available resources.

What is the community like?

At Queen’s, graduate students from all disciplines learn and discover in a close-knit intellectual community. You will find friends, peers and support among the graduate students enrolled in Queen’s more than 130 graduate programs within 50+ departments & research centres. With the world’s best scholars, prize-winning professional development opportunities, excellent funding packages and life in the affordable, historic waterfront city of Kingston, Queen’s offers a wonderful environment for graduate studies. Queen’s is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown with its shopping, dining and waterfront. For more about Kingston’s history and culture, see Queen’s University’s Discover Kingston page.

Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
• A Master’s degree in Mining Engineering. Applicants with a Master’s degree in a cognate science may be admitted.

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: March 1st.
• Notification of acceptance: April 30th.

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

What about FUNDING?

The level of financial is at a guaranteed minimum level of $25,000 for PhD students. As part of the minimum funding package, you may also serve as a Teaching Assistant and gain additional pay for this service.

You are encouraged to apply for external funding from OGS, NSERC and other sources. Queen’s will automatically issue a one time $10,000 award to Doctoral students who have won federal government tri-council awards. For more information, see the School of Graduate Studies and Postdoctoral Affairs’ information on awards and scholarships.

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