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.

Check out whygradstudies.ca for more reasons to choose graduate studies in engineering.

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.

Queen’s Mining Engineers work in metals and industrial minerals, with consulting companies, geotechnical groups, environmental groups, heavy and light equipment manufacturing companies, computer software and hardware development organizations, banks, government institutions and university organizations. We are at the forefront in developing computer applications for engineering design in mineral extraction and work in close contact with the mineral industry.

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

Areas of SPECIALIZATION

- Management of Social Risk & Community Relations
- Mineral Planning & Design of Mechanical Systems
- Mineral Processing
- Geotechnical, Environmental, Sustainability, & Mineral Economics
- Geostatistics & Geometallurgy
- Occupational Health and Safety & Rock Mechanics
- Reliability, Maintenance, & Risk Assessment

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

Visit the Mining Engineering website to read about 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. 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.

“I would recommend this program to anyone in the industry with a problem to solve.”
—George McIsaac, PhD

School of Graduate Studies
Create an impact
www.queensu.ca/sgs
Mining Engineering PhD MAP

**DOCTOR OF PHILOSOPHY (PhD)**

**YEAR I**

**ACHIEVE YOUR ACADEMIC GOALS**
- Key priorities include forming your research committee, coursework and comprehensive exams.
- Meet early 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 and Expanding Horizons for supports and workshops.
- Complete the laboratory safety course (CHEM 801) or (MINE 852).

**MAXIMIZE RESEARCH IMPACT**
- Think about audiences for your research.
- Complete ROMEO online module on research ethics if doing research with living people or sensitive topics.
- Apply to NSERC, OGS, and other funding.
- Apply for the Graduate Dean's Travel Grant for Doctoral Field Research.

**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, CFRC, and the SGSS Blog. Look in the AMS Clubs Directory.
- Use a Teaching Assistant or Research Assistant position to develop your skills and experience.

**ENGAGE WITH YOUR COMMUNITY**
- Consider volunteering with different community organizations.
- Connect to broader communities of engineers by joining a Engineering Society Design Team.

**LAUNCH YOUR CAREER**
- Finding career fits starts with knowing yourself. Take a Career Services career planning workshop or meet with a career counsellor for help. Check out books like So What Are You Going to do With That? for advice on various career options.
- 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 Graduate Student Career Week to explore your career pathways.

**YEAR II**

**ACHIEVE YOUR ACADEMIC GOALS**
- Write and defend your thesis proposal.
- Embark on your substantive research.
- Present your research in a seminar to Mining Engineering graduate students and faculty (MINE 897).
- Complete your PhD comprehensive exam within 4-18 months after registering.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Seek experiential/professional development opportunities.

**MAXIMIZE RESEARCH IMPACT**
- Attend or present as 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. Learn from the Expanding Horizons Publishing workshop.

**BUILD SKILLS AND EXPERIENCE**
- Hone skills for non-academic employment by continuing involvement on committees and in community.
- Start keeping an epitaph of your skills, experiences and competencies.
- For help with teaching, gain support from the Centre for Teaching and Learning. Enroll in SGSS01 or the PURL certificate for more professional development in teaching and learning.

**ENGAGE WITH YOUR COMMUNITY**
- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups like Material Matters.

**YEAR III**

**ACHIEVE YOUR ACADEMIC GOALS**
- Continue to meet regularly with your supervisor, review research progress and write your dissertation. Check out the SGIS Dissertation Boot Camp or Dissertation on the Lake.
- Use conference presentations to create, discuss, and explore ways to disseminate research findings. Learn from the Expanding Horizons Publishing workshop.
- Begin discussion of potential thesis defence examiners.

**MAXIMIZE RESEARCH IMPACT**
- Continue to present at conferences.
- Consider participating in the 3 Minute Thesis (3MT) competition.
- Contact the Queen’s Media Centre for guidance on speaking format and about your role on yourself on the Faculty of Engineering and Applied Science research website.

**BUILD SKILLS AND EXPERIENCE**
- Find opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills. Investigate internships from Mitacs and other sources.
- Take part in the various international, multidisciplinary opportunities, and collaborate with other departments, such as Geological, Mechanical, Chemical and Civil Engineering.

**ENGAGE WITH YOUR COMMUNITY**
- 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.

**YEAR IV & TRANSITIONING**

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

**MAXIMIZE RESEARCH IMPACT**
- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a Career Services workshop.
- Prepare for work or studies in a multi-cultural environment by taking QLIC’s Intercultural Competency Certificate.

**BUILD SKILLS AND EXPERIENCE**
- Write and defend your thesis proposal.
- Explore different careers of interest by reading So What Are You Going to do With That? for advice on career counselling.
- Participate in hiring committees and attend job talks.
- Start focusing on non-academic areas of interest.
- Prepare for work or studies in a multi-cultural environment.
- Build connections with faculty outside of your department. Pursue interviews for faculty positions and apply for post-doc fellowships and positions.
- Apply to jobs or make plans for other adventures.
- Get help from Career Services with job searching, resumes, or interviews.

**ENGAGE WITH YOUR COMMUNITY**
- Consider joining professional associations like the Mining Association of Canada (MAC), the Canadian Institute of Mining (CIM), and the International Society of Mining Engineers (ISME).
- Join groups on LinkedIn reflecting specific careers or topics of interest.

**WHAT WILL I LEARN?**
- A graduate degree in Mining Engineering can equip you with valuable and versatile skills, such as:
  - Knowledge and technical skills
  - Effective communication skills in various forms for diverse audiences
  - Information management: prioritize 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 and understanding of sound ethical practices, social responsibility, responsible research and cultural sensitivity
  - Professionalism in all aspects of work, research, and interaction
  - 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 experience, and network can help you have a smooth transition to the world of work after graduation.

Visit careers.queensu.ca/gradmaps for the online version with links!
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 School of Graduate Studies requires the following minimum scores: TOEFL (paper-based): 550, (2) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30), for a total of 88/120 (applicants must have the minimum score in each test as well as the minimum overall score), or (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academics: 65.

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 $18,000 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 $10,000 award to incoming PhD students who have won federal government tri-council awards. For more information, see the School of Graduate Studies’ information on awards and scholarships.

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.

Queen's University
DEPARTMENT OF MINING

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