

Collaborative Graduate Program with a Specialization in

GeoEngineering

MASc & PhD

Why Graduate Studies in Geoengineering?

Unique in North America, the GeoEngineering program is a collaboration between faculty members at Queen's University and the Royal Military College (RMC). Drawn from three engineering departments at the two universities, the GeoEngineering Centre's members are dedicated to advancing knowledge in geotechnical, geohydrological, geochemical, geohazards, and cold regions. The program links three accredited graduate programs to provide shared learning experiences with interdisciplinary content: Civil Engineering (Queen's); Mining Engineering; Geological Sciences & Geological Engineering (Queen's); and Civil Engineering (RMC). Through the development of collaborative research projects, with involvement of government and industrial partners, the GeoEngineering Centre provides exciting opportunities for graduate student researchers in specialized or multi-disciplinary fields of interest.

Why Queen's?

We bring together students from a variety of backgrounds to take advantage of unique world class facilities and the largest GeoEngineering faculty in North America. Graduate students have opportunities to engage in innovative cross-disciplinary training and collaborations with research and industry leaders.

Program Structure

MASc: 2 years full time, coursework + thesis.

PhD: 3-4 years full time, coursework + thesis.



All students take the GeoEngineering Graduate Seminar, one GeoEngineering course from outside of their home department, and undertake at least 20% of selected coursework from their home department.

Research Areas

- **Geotechnical Engineering:** applying soil mechanics, rock mechanics, and engineering geology to solve soil and rock engineering problems.
- **Geomechanics:** applying soil and rock mechanics, materials science, and mathematics to the solution of geoenvironmental problems.
- **Geosynthetics:** researching and developing planar, polymeric materials used in contact with soil, rock, and other geotechnical materials
- **Geohazards:** research on the underlying mechanisms and risk-based frameworks to improve resilience and understanding of geohazards using experimental, numerical, and remote sensing approaches.
- **Cold Regions Engineering:** Research on behaviour of frozen and thawing soils

to improve resilience of permafrost and infrastructure to climate change.

- **Geoenvironmental Engineering:** applying geotechnical engineering, hydrogeology, and geochemistry to solve environmental problems related to soil and water pollution.
- **Hydrogeology:** research on the behaviour and remediation of contaminants in groundwater materials in civil engineering applications.
- **Geochemistry:** researching chemical composition and interaction of earth materials such as natural and contaminated waters, sediments, and rocks.



Faculty Research and Supervision

GEOTECHNICAL

- Richard Bathurst
- Ryley Beddoe
- Richard Brachman
- Jennifer Day
- Mark Diederichs
- Georgia Foropoulos
- Jean Hutchinson
- Ian Moore
- Kerry Rowe
- Greg Siemens
- Andy Take
- Nicholas Vlachopoulos
- Alireza Yaseri
- Geoffrey Eichhorn
- Jamie Van Gulck
- Abbas Taheri

GEOMECHANICS

- Fady Abdelaal
- Ryley Beddoe
- Richard Brachman
- Jennifer Day
- Mark Diederichs
- Georgia Fotopoulos
- Jean Hutchinson
- Ian Moore
- Kerry Rowe
- Greg Siemens
- Andy Take
- Nicholas Vlachopoulos
- Alireza Yaseri
- Geoffrey Eichhorn
- Mahmoud Alzoubi
- Abbas Taheri

GEOSYNTHETICS

- Fady Abdelaal
- Richard Bathurst
- Richard Brachman
- Ian Moore
- Kerry Rowe
- Andy Take
- Jamie Van Gulck

GEOHAZARDS

- Ryley Beddoe
- Jean Hutchinson
- Ryan Mulligan
- Greg Siemens

- Elisabeth Steele
- Andy Take
- Alireza Yaseri
- Geoffrey Eichhorn

GEOENVIRONMENTAL

- Fady Abdelaal
- Richard Bathurst
- Richard Brachman
- Mike Hulley
- Jean Hutchinson
- Heather Jamieson
- Bernard Kueper
- Kevin Mumford
- Kent Novakowski
- Kerry Rowe
- Greg Siemens
- Nicholas Vlachopoulos
- Jamie Van Gulck
- Geoffrey Eichhorn
- Bas Vriens

HYDROGEOLOGY

- Mike Hulley
- Bernard Kueper
- Kevin Mumford
- Kent Novakowski
- Stephanie Wright
- Élise Devoie
- Jamie Van Gulck
- Bas Vriens

GEOCHEMISTRY

- Heather Jamieson
- Bernard Kueper
- Jamie Van Gulck
- Bas Vriens

COLD REGIONS

- Ryley Beddoe
- Kerry Rowe
- Greg Siemens
- Stephanie Wright
- Élise Devoie
- Geoffrey Eichhorn
- Jamie Van Gulck
- Mahmoud Alzoubi

Application FAQs

What do I need to know to Apply?

Students must first be admitted to one of the four participating graduate programs: Civil Engineering (Queen's); Mining Engineering (Queen's); Geological Sciences & Geological Engineering (Queen's); and Civil Engineering (RMC). They must have a thesis supervisor connected with the GeoEngineering Centre. Students must satisfy the admissions, coursework, thesis, and other requirements of the specific program in which they are enrolled.

Students seeking enrolment in the GeoEngineering program must obtain and complete the GeoEngineering enrolment form and return it to the Executive Director of the GeoEngineering Centre at Queen's-RMC. Applications are accepted at any time and all eligible students are immediately accepted into the program. Students should then register through SOLUS in the GENG840 core course.

What about Funding?

Financial support is available to fund your studies. Please consult with your potential supervisor for more information.

Full-time students are encouraged to seek external financial support and to apply through Queen's for funding from NSERC and OGS.



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