

GRADUATE PROGRAM IN GEOLOGICAL ENGINEERING 2013-2014

Prior to registering for courses, students should consult with their supervisor. The minimum requirements for program completion are as follows:

M.A.Sc.:	Course Credits	(18)	Note: Consult with Research Supervisor
	Thesis Credits	(12)	Note: Register for EOSC 599
	Total Credits	(30)	
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M.Eng.:	Core Credits – See below	(3)	Note: Also applies to M.Sc. (non-thesis) students registered in Geo. Eng.
	Constrained Elective Credits	(9)	Note: Consult with Grad Supervisor
	Unconstrained Elective Credits	(18)	Note: Consult with Grad Supervisor
	Total Credits	(30)	
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Ph.D.:	Course Credits*	(0)	Note: Consult with Research Supervisor
	Thesis	(12)	Note: Register for EOSC 699
	Total Credits	(12)	

* There are no course requirements for the Ph.D. program. Appropriate coursework may be selected in consultation with the student's research supervisor and supervisory committee.

The following courses are required for the **M.Eng.** program:

CORE COURSES (REQUIRED)		CREDITS	TERM
EOSC 598 ¹	M.Eng. Graduating Paper	3	1/2

¹Students in the M.Sc. (non-thesis) program supervised in Geological Engineering should register for EOSC 548 instead.

CONSTRAINED ELECTIVES (MUST TAKE MINIMUM OF 9 CREDITS)		CREDITS	TERM
EOSC 529	Advanced Geotechnics	3	2
EOSC 532 ¹	Field Laboratory in Groundwater Hydrology	3	2
EOSC 533	Advanced Groundwater Hydrology	3	1
EOSC 534 ²	Geological Engineering: Soils and Weak Rocks	3	2
EOSC 535	Transport Processes in Porous Media	3	2
EOSC 536 ³	Advanced Rock Engineering	3	1
EOSC 540 ⁴	Advanced Groundwater Geochemistry	3	1
EOSC 541	Multi-component Reactive Transport Modelling in Groundwater	3	2
EOSC 547	Tunneling and Underground Engineering	3	2
EOSC 595 ⁵	Directed Studies	3	1/2

¹Co-taught with EOSC 428. Not eligible if already taken during undergraduate/graduate degrees.
²Co-taught with EOSC 434. Not eligible if already taken during undergraduate/graduate degrees.
³Co-taught with EOSC 433. Not eligible if already taken during undergraduate/graduate degrees.
⁴Co-taught with EOSC 430. Not eligible if already taken during undergraduate/graduate degrees.
⁵A maximum of 6 credits of Directed Studies may be counted towards the overall program requirements. However, only 3 credits may be counted towards fulfilling the constrained elective requirement.

UNCONSTRAINED ELECTIVES (OTHERS MAY BE APPROVED ON REQUEST)		CREDITS	TERM
EOSC 514	Introduction to Geological Fluid Mechanics	3	2
EOSC 526	Mechanics of Natural Deformation	3	2
EOSC 537	Topics in Groundwater Hydrology	3	1
EOSC 544	Global Geodynamics	3	1
EOSC 554	Theoretical Glaciology	3	1
EOSC 595	Directed Studies (max. 6 credits)	3	1/2
CIVL 504	Seismicity and Seismic Design Parameters	2	2
CIVL 523	Project Management for Engineers	3	2

CIVL 537	Computational Mechanics I	3	1
CIVL 570	Soil Mechanics	3	1
CIVL 572	Contaminated Site Investigation and Management	3	2
CIVL 574	Experimental Soil Mechanics	3	2
CIVL 579	Geosynthetics	2	1
CIVL 580	Geotechnical Earthquake Engineering	3	1
CIVL 581	Soil Dynamics	3	2
MINE 551	Applied Underground Rock Mechanics	3	2
MINE 556	Rock Slope Engineering	2	1

UNCONSTRAINED ELECTIVES - UNDERGRADUATE (MAXIMUM 6 CREDITS ALLOWED)		CREDITS	TERM
EOSC 329	Groundwater Hydrology	3	1
EOSC 330	Principles of Geomorphology	3	1
EOSC 350	Environmental, Geotechnical, and Exploration Geophysics	3	1
EOSC 429	Groundwater Contamination	3	1
EOSC 431	Groundwater Remediation	3	2
EOSC 433	Geotechnical Engineering Practice	3	1
EOSC 434	Geological Engineering Soils and Weak Rocks	3	2
CIVL 408	Geo-Environmental Engineering	3	2
CIVL 410	Foundation Engineering I	3	1
CIVL 411	Foundation Engineering II	3	2
GEOB 308	Quaternary and Applied Geomorphology	3	2
GEOB 370	Advanced Geographic Information Science	3	1
MINE 403	Rock Mechanics Design	3	1
MINE 480	Mine Waste Management	2	2

ADVICE TO ASSIST YOU WITH REGISTRATION:

- Please check the UBC Course Calendar for course availability as **some of the listed courses are not offered in every academic year.**
- Students are encouraged to take a selection of elective credits that best reflect their research and professional interests. Course approval must be made in consultation with the student's supervisor.
- Students must **obtain permission from the instructor** for courses they would like to take that are in other UBC departments.
- Students may take a **maximum of six (6) credits of 300/400 level Undergraduate Courses.**
- Students may register for a **maximum of six (6) credits towards directed studies coursework.**
- Students requiring remedial course work at the 200 level (e.g. EOSC 210 Geology for Engineers) should register to **Audit** the course(s); note that 200 level classes cannot be used for credit towards a graduate level degree.
- All students are individually responsible for ensuring that they meet all requirements for graduation.

For more information, please visit the website at <http://www.geoeng.ubc.ca/>.