

# GEOLOGICAL ENGINEERING: TECHNICAL ELECTIVES

All courses on this list can be counted as Technical Elective unless they have already been taken as core. Some of these elective courses may not be available to all students due to prerequisite course requirements. Some courses are offered in alternating years. The student is responsible for confirming that he/she has the necessary prerequisites or permission of the instructor. For some courses that are part of other program cores and subject to internal enrollment restrictions, permission of the instructor may be required even if prerequisites are met. Other technical courses (courses with level 200+ that do not appear in the complimentary studies list for APSC) may be considered as eligible Technical Electives with the permission of the GEOE academic advisor and GEOE curriculum chair, and if the instructor of the course permits the student to register.

## Technical Electives List

Code	Title	Units
APSC 250	Biology Through an Engineering Lens	3.50
APSC 303	Professional Internship (Pending successful completion of Queen's Internship Program - QUIP)	3.50
APSC 381	Advanced Design and Skills for Innovation	3.50
APSC 480	Multi-disciplinary Industry	9.00
CHEE 324	Organic Process Development	3.50
CHEE 371	Mitigation of Industrial Pollution	3.50
CIVL 215	Materials For Civil Engineers	4.50
CIVL 231	Solid Mechanics II	4.50
CIVL 250	Hydraulics I	4.00
CIVL 350	Hydraulics 2	4.00
CIVL 341	Geotechnical Engineering 2	4.00
CIVL 371	Groundwater Engineering	4.00
CIVL 442	Geotechnical Design	4.00
CIVL 443	Geoenvironmental Design	4.00
CIVL 451	Lake, Reservoir and Coastal	4.00
CIVL 455	River Engineering	4.00
CIVL 471	Subsurface Contamination	4.00
CHEE 484	Bioremediation	3.50
CMPE 320	Fndmnts Software Development	4.00
ELEC 221	Electric Circuits	4.25
ELEC 278	Fundamentals Of Information Structures	4.00
ELEC 279	Introduction to Object Oriented Programming	4.00
ELEC 280	Fundamentals of Electromagnets	3.75
ELEC 381	Applications of Electromagnetics	3.75
ENCH 213	Intro To Chemical Analysis	4.75

ENPH 225	Mechanics	3.50
ENPH 239	Eng. Electricity & Magnetism	3.50
ENPH 334	Electronics For Applied Scient	5.00
GEOE 301	Field Studies in Geology	1.50
GEOE 337	Paleontology	3.75
GEOE 340	Problems In Geological Engineering	3.00
GEOE 341	Special Topics in Applied Geology	3.00
GEOE 368	Carbonate Sedimentology	4.50
GEOE 401	Field Studies in Geology II	1.50
GEOE 410	Geological Engineering Field School	4.00
GEOE 413	Rock Engineering Design	3.50
GEOE 414	Foundations of the Oil and Gas Industry	3.50
GEOE 419	Engineering Geophysics Field School	4.00
GEOE 439	Advanced Applied Geophysics	3.00
GEOE 452	Instrumental Techniques Applied to Geochemical Studies	3.00
GEOE 462	Advanced Petrogenesis and Metallogenesis	4.50
GEOE 463	Spatial Information Management in the Geosciences	3.50
GEOE 464	Visualization in Geosciences	3.00
GEOE 466	Isotopes & The Environment	4.00
GEOE 475	Exploration and Environmental Geochemistry	4.30
GEOE 478	Clastic Sedimentology	3.50
GEOE 481	Advanced Structural Analysis	3.50
GEOE 488	Geology Of North America	3.00
GPHY 304	Northern and Arctic Environments	3.00
MINE 321	Drilling & Blasting	4.50
MINE 330	Mineral Industry Economics	3.50
MINE 335	Mineral Processing	3.00
MINE 422	Mining And Sustainability	4.00
MINE 467	Geostatistics and Orebody Modelling	4.50
MNTC 408	Mine Health and Safety	3.00
MTHE 227	Vector Analysis	3.00
MTHE 228	Complex Analysis	3.50
MTHE 339	Evolutionary Game Theory	3.00
ENPH 242	Relativity And Quanta	3.50
MECH 228	Kinematics And Dynamics	3.50
MECH 230	Applied Thermodynamics I	3.50
MTHE 339	Evolutionary Game Theory	3.00
MECH 270	Materials Science and Engineering	3.50
MINE 331	Methods Of Mineral Separation	4.50



MINE 459 Risk and Reliability Analysis for Industrial 4.00  
Asset Management, Health & Safety