

# Mining Engineering Co-op Curriculum - FALL 2023

Non-CEGEP Entry

1st Term (Fall)		15 credits	Prerequisites/Co-requisites
CHEM 110	General Chemistry 1	4	P - College level mathematics and physics or permission of instructor
FACC 100	Introduction to the Engineering Profession	1	-
MATH 133	Linear Algebra and Geometry	3	P - A course in functions
MATH 140	Calculus 1	3	P - High school calculus
PHYS 131	Mechanics and Waves	4	C - Calculus course [MATH 140]
2nd Term (Winter)		15 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	P - College level mathematics and physics or permission of instructor
MATH 141	Calculus 2	4	P - MATH 140
PHYS 142	Electromagnetism and Optics	4	P - PHYS 131 / C - MATH 141
CS	Complementary Studies Group B (HSSML) - 1*	3	-
3rd Term (Fall)		18 credits	Prerequisites/Co-requisites
WCOM 206	Communication in Engineering	3	-
EPSC 221	General Geology	3	-
MATH 262	Intermediate Calculus	3	P - MATH 133, MATH 141
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
MECH 289	Design Graphics	3	-
MIME 200	Introduction to the Minerals Industry	3	-
4th Term (Winter)		16 credits	Prerequisites/Co-requisites
CIVE 205	Statics	3	-
COMP 208	Computer Programming for Physical Sciences and Engineering	3	P - MATH 141 / C - MATH 133
EPSC 225	Properties of Minerals	1	-
FACC 250	Responsibilities of the Professional Engineer	0	P - FACC 100 or BREE 250
FACC 300	Engineering Economy	3	-
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
MIME 209	Mathematical Applications	3	-
5th Term (Summer)		4 credits	Prerequisites/Co-requisites
MIME 203	Mine Surveying	2	P - MECH 289
MIME 290	Industrial Work Period 1	2	P - MIME 200 and MIME 203
6th Term (Fall)		18 credits	Prerequisites/Co-requisites
CIVE 207	Solid Mechanics	4	P - CIVE 205 or MECH 210
ECSE 209	Electrotechnology	3	P - PHYS 142 or equivalent
MIME 260	Materials Science and Engineering	3	-
MIME 329	Mining Geology	2	P - EPSC 221, MIME 200 and instructor permission
MIME 340	Applied Fluid Dynamics	3	-
CS	Complementary Studies Group B (HSSML) - 2*	3	-
7th Term (Winter)		15 credits	Prerequisites/Co-requisites
MIME 322	Rock Fragmentation	3	P - MIME 200
MIME 323	Rock and Soil Mass Characterization	3	P - EPSC 221, MIME 200
MIME 325	Mineral Industry Economics	3	P - FACC 300
MIME 333	Materials Handling	3	P - MIME 200
MIME 341	Introduction to Mineral Processing	3	P - MIME 200 or MIME 250
8th Term (Summer)		2 credits	Prerequisites/Co-requisites
MIME 291	Industrial Work Period 2	2	P - MIME 290
9th Term (Fall)		16 credits	Prerequisites/Co-requisites
CIVE 208	Civil Engineering System Analysis	3	P - COMP 208 / C - MATH 264
FACC 400	Engineering Professional Practice	1	P - FACC 100, FACC 250**, and 60 program credits
MIME 330	Mining Geotechnics	3	P - MIME 323
MIME 421	Rock Mechanics	3	P - MIME 323, instructor permission
MIME 425	Applied Stochastic Orebody Modelling	3	P - MPMC 326 and MPMC 329
MIME xxx	Technical Complementary	3	-
10th Term (Winter)		2 credits	Prerequisites/Co-requisites
MIME 392	Industrial Work Period 3	2	P - MIME 291, 75 program credits
11th Term (Summer)		15 credits	Prerequisites/Co-requisites
MIME 419	Surface Mining	3	P - MIME 322, MIME 325, MIME 333
MIME 422	Mine Ventilation	3	P - MIME 340
MIME 424	Underground Mining Methods	3	P - MIME 322, MIME 325, MIME 333
MIME 428	Environmental Mining Engineering	3	P - CIVE 205 and MIME 323
MIME xxx	Technical Complementary	3	-
12th Term (Fall)		18 credits	Prerequisites/Co-requisites
MIME 413	Strategic Mine Planning With Uncertainty	3	P - MIME 325, MIME 419, MPMC 326, and MPMC 329
MIME 426	Mine Design and Prefeasibility Study	6	P - MIME 333, MIME 325, MIME 421 or MPMC 321
MIME xxx	Technical Complementary	3	-
MIME xxx	Technical Complementary	3	-
CS	Complementary Studies Group A (Impact)*	3	-

Technical Complementary courses are selected from an approved list given on the next page.

\*The Complementary Studies (CS) courses are Impact of Technology courses (Group A) and Humanities & Social Sciences, Management Studies and Law courses (Group B). Students must take one course (3 credits) from Group A and two courses (6 credits) from Group B. The curriculum above includes suggested terms during which these courses can be taken. These must be chosen from an approved list of courses/departments, found in the program list under "Complementary Studies" in the Faculty of Engineering Undergraduate section of the *Programs, Courses and University Regulations* publication ([www.mcgill.ca/study](http://www.mcgill.ca/study)) (see your program listing in the "Browse Academic Units & Programs" section).

\*\*FACC 250 is not yet indicated as a prerequisite in the eCalendar course information ([www.mcgill.ca/study](http://www.mcgill.ca/study)) but it will be before FACC 400 is taken.

Students are responsible for satisfying pre-/co-requisites and verifying with their department that they are meeting the requirements of their program.

# Technical Complementary Courses - Mining Engineering

8-9 credits (3-4 courses) selected from those listed below or any other approved technical course(s) in Engineering, Management or Science.

Note: Not all courses are given annually; verification with course instructor is advised.

		Credits	Prerequisites/Co-requisites
CFIN 410	Investment and Portfolio Management	3	P - MGCR 211, MGCR 341
CIVE 416	Geotechnical Engineering	3	P - CIVE 311 or instructor permission
CIVE 421	Municipal Systems	3	P - CIVE 327
CIVE 514	Structural Mechanics	3	P - CIVE 207 and instructor permission
CIVE 584	Groundwater Engineering	3	P - CIVE 311 or instructor permission
EPSC 320	Elementary Earth Physics	3	P - MATH 133, MATH 222/262, or equivalent courses
EPSC 549	Hydrogeology	3	P - Permission of instructor
FINE 482	International Finance 1	3	P - MGCR 341
MIME 320	Extraction of Energy Resources	3	-
MIME 442	Analysis, Modelling and Optimization in Mineral Processing	3	P - MIME 341
MIME 484	Mining Project	3	P - 85 credits completed
MIME 494	Industrial Work Period 4	2	P - MIME 419, MPMC 328, MPMC 421
MIME 511	Advanced Mine Ventilation and Air Conditioning	3	-
MIME 514	Sustainability Analysis of Mining Systems	3	P - FACC 300 and MIME 341, or permission of instructor
MIME 520	Stability of Rock Slopes	3	P - Permission of instructor
MIME 527	Selected Topics in Mineral Resource Engineering	3	P - 85 credits
MIME 544	Analysis: Mineral Processing Systems 1	3	P - MIME 341
MIME 545	Analysis: Mineral Processing Systems 2	3	P - MIME 341
MIME 588	Reliability Analysis of Mining Systems	3	P - Permission of instructor
MPMC 320	CAO et informatique pour les mines	3	-

**Last update: February 28, 2023**

For the official program listing, see the *Programs, Courses and University Regulations* publication ([www.mcgill.ca/study](http://www.mcgill.ca/study)).