Mining Engineering Co-op Curriculum - FALL 2024

Non-CEGEP Entry

1st Term (Fall)		**15 credits**	**Prerequisites/Co-requisites**
CHEM 110	General Chemistry 1	4	P - College level mathematics and physics or ermission 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
or COMP 250	Introduction to Computer Science	3	P - Familiarity with a high-level programming language and CEGEP level Math
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, and Instructor permission
MIME 425	Applied Stochastic Orebody Modelling	3	P - MPMC 326 (or CIVE 208), MPMC 329 (or MIME 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, 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 (or CIVE 208), MPMC 329 (or MIME 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) (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) 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

LIST - A

3-9 credits must be chosen from the following:

		Credits	Prerequisites/Co-requisites
MIME 320	Extraction of Energy Resources	3	P - Instructor permission
MIME 442	Analysis, Modelling and Optimization in Mineral Processing	3	P - MIME 341
MIME 484	Mining Project	3	P - 85 credits completed
MIME 511	Advanced Subsurface Ventilation and Air Conditioning	3	P - Permission of instructor
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 completed
MIME 529	Automation of Mining Systems	3	P - COMP 208, ECSE 209, MIME 322, MIME 333, or Instructor permission
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

LIST - B

0-6 credits can be chosen from the following or from other technical courses in Engineering, Management or Science with department approval.
Note: Not all courses are given annually; verification with the course instructor is advised.

		Credits	Prerequisites/Co-requisites
CFIN 410	Investment and Portfolio Management	3	P - MGCR 211, MGCR 341
CIVE 416	Geotechnical Engienering	3	P - CIVE 311 or Instructor permission
CIVE 421	Municipal Systems	3	P - CIVE 327
CIVE 573	Hydraulic Structures	3	P - CIVE 323, CIVE 327
CIVE 584	Mechanics of Groundwater Flow	3	P - CIVE 311 or instructor permission
COMP 417	Introduction to Robotics and Intelligent Systems	3	P - COMP 251, MATH 223, (ECSE 321 or COMP 206)
EPSC 303	Structural Geology	3	P - EPSC 231 or Instructor permission
EPSC 320	Elementary Earth Physics	3	P - MATH 133, MATH 222/262, or equivalent courses
EPSC 325	Environmental Geochemistry	3	P - CHEM 110 or some familiarity with the basic principles of the periodic table (high school/Cegep general chemistry is acceptable), or instructor permission
EPSC 549	Hydrogeology	3	P - Permission of instructor
FINE 482	International Finance 1	3	P - MGCR 341
MIME 494	Industrial Work Period 4	2	P - MIME 419, MPMC 328, MPMC 421
MIME 556	Sustainable Materials Processing	3	P - Instructor permission
MPMC 320	CAO et informatique pour les mines*	3	-
SEAD 515	Climate Change Adaptation and Engneering Infrastructure	3	P - Instructor permission
SEAD 520	Life Cycle-Based Environmental Footprinting	3	P - Instructor permission
SEAD 550	Decision-Making for Sustainability in Engineering and Design	3	P - Instructor permission

**Mining course taken at Polytechnique Montreal*

Last update:- **April 24, 2024**

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