

# Mining Engineering Co-op Curriculum - FALL 2024

CEGEP Entry

<b>1st Term (Fall)</b>		<b>18 credits</b>	<b>Prerequisites/Co-requisites</b>
WCOM 206	Communication in Engineering	3	-
EPSC 221	General Geology	3	-
MATH 262	Intermediate Calculus	3	P - MATH 133 or equivalent, MATH 141 or equivalent
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
MECH 289	Design Graphics	3	-
MIME 200	Introduction to the Minerals Industry	3	-
<b>2nd Term (Winter)</b>		<b>17 credits</b>	<b>Prerequisites/Co-requisites</b>
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 100	Introduction to the Engineering Profession	1	-
FACC 300	Engineering Economy	3	-
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
MIME 209	Mathematical Applications	3	-
<b>3rd Term (Summer)</b>		<b>4 credits</b>	<b>Prerequisites/Co-requisites</b>
MIME 203	Mine Surveying	2	P - MECH 289
MIME 290	Industrial Work Period 1	2	P - MIME 200, MIME 203
<b>4th Term (Fall)</b>		<b>16 credits</b>	<b>Prerequisites/Co-requisites</b>
CIVE 207	Solid Mechanics	4	P - CIVE 205 or MECH 210
ECSE 209	Electrotechnology	3	P - PHYS 142 or equivalent
FACC 250	Responsibilities of the Professional Engineer	0	P - FACC 100 or BREE 250
MIME 260	Materials Science and Engineering	3	-
MIME 340	Applied Fluid Dynamics	3	-
CS	Complementary Studies Group B (HSSML)*	3	-
<b>5th Term (Winter)</b>		<b>15 credits</b>	<b>Prerequisites/Co-requisites</b>
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
<b>6th Term (Summer)</b>		<b>2 credits</b>	<b>Prerequisites/Co-requisites</b>
MIME 291	Industrial Work Period 2	2	P - MIME 290
<b>7th Term (Fall)</b>		<b>17 credits</b>	<b>Prerequisites/Co-requisites</b>
MPMC 321	Mécanique des roches et contrôle des terrains	3	P - MIME 323
MPMC 326	Recherche opérationnelle I	3	P - MATH 262
MPMC 329	Géologie minière	2	P - EPSC 221, MIME 200, MIME 209
MPMC 330	Géotechnique minière	3	P - MIME 323
MIME 425	Applied Stochastic Orebody Modelling	3	P - MPMC 326, MPMC 329
MIME xxx	Technical Complementary	3	-
<b>8th Term (Winter)</b>		<b>2 credits</b>	<b>Prerequisites/Co-requisites</b>
MIME 392	Industrial Work Period 3	2	P - MIME 291, 75 program credits
<b>9th Term (Summer)</b>		<b>15 credits</b>	<b>Prerequisites/Co-requisites</b>
MIME 419	Surface Mining	3	P - MIME 322, MIME 325, MIME 333
MIME 422	Mine Ventilation	3	P - MIME 340
MPMC 328	Environnement et gestion des rejets miniers	3	P - CIVE 205, MIME 323
MPMC 421	Exploitation en souterrain	3	P - MIME 322, MIME 325, MIME 333
MIME xxx	Technical Complementary	3	-
<b>10th Term (Fall)</b>		<b>16 credits</b>	<b>Prerequisites/Co-requisites</b>
FACC 400	Engineering Professional Practice	1	P - FACC 100, FACC 250**, 60 program credits
MIME 413	Strategic Mine Planning With Uncertainty	3	P - MIME 325, MIME 419, MPMC 326, 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	-
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 one course (3 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

### 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, 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 Engineering	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 Engineering 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](http://www.mcgill.ca/study)).