

MINING ENGINEERING (B.ENG.) (144 CREDITS)

Offered by: Mining & Materials Engineering (Faculty of Engineering)

Degree: Bachelor of Engineering

Program credit weight: 144 credits

Program Description

Enrolment in this program is subject to departmental approval, please consult with an Academic Advisor within the appropriate program further to discuss your suitability in this program.

The Department offers a Major in Mining Engineering Program leading to an accredited B.Eng. degree in Mining Engineering. The program focuses on the science and engineering of sustainable extraction of mineral resources. It contains two streams: English for non-CEGEP students and Bilingual (six courses in French) for CEGEP students, in collaboration with the mining engineering program at Polytechnique Montreal. The program includes projects that are reinforced by field trips to industrial operations.

B.Eng.; Major in Mining Engineering

Program credit weight: 144-145 credits

Program credit weight for CEGEP students: 115-116 credits

Entry into the Major in Mining Engineering

Students in Mining can be admitted only into the B.Eng.; Co-op in Mining Engineering. There is no direct entry to the Major in Mining Engineering (which does not include the work terms required for the Co-op program).

Students may enter the Major in Mining Engineering if they wish at any point in time during their study. To transfer into the Major program, students must obtain approval from the department adviser and submit a Request for Course Authorization form to the McGill Engineering Student Centre (Frank Dawson Adams, Room 22).

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Required Year 0 (Freshman) Courses (29 credits)

Generally, students admitted to Engineering from Quebec CEGEPs are granted transfer credit for these Year 0 (Freshman) courses and enter a 115- to 116-credit program.

Expand allContract all

Course	Title	Credits
CHEM 110	General Chemistry 1.	4
CHEM 120	General Chemistry 2.	4

MATH 133	Linear Algebra and Geometry.	3
MATH 140	Calculus 1.	3
MATH 141	Calculus 2.	4
PHYS 131	Mechanics and Waves.	4
PHYS 142	Electromagnetism and Optics.	4

AND 3 credits selected from the approved list of courses in Humanities and Social Sciences, Management Studies and Law, listed below under Complementary Studies (Group B).

Note: FACC 100 Introduction to the Engineering Profession. must be taken during the first year of study.

Required Non-Departmental Courses (37 credits)

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Course	Title	Credits
CIVE 205	Statics.	3
CIVE 207	Solid Mechanics.	4
COMP 208	Computer Programming for Physical Sciences and Engineering .	3
COMP 250	Introduction to Computer Science.	3
ECSE 209	Electrotechnology.	3
EPSC 221	General Geology.	3
EPSC 225	Properties of Minerals.	1
FACC 100	Introduction to the Engineering Profession.	1
FACC 250	Responsibilities of the Professional Engineer.	0
FACC 300	Engineering Economy.	3
FACC 400	Engineering Professional Practice.	1
MATH 262	Intermediate Calculus.	3
MATH 263	Ordinary Differential Equations for Engineers.	3
MATH 264	Advanced Calculus for Engineers.	3
MECH 289	Design Graphics.	3
WCOM 206	Communication in Engineering.	3

¹ Note: FACC 100 Introduction to the Engineering Profession. must be taken during the first year of study.

² Note: Students choose either COMP 208 or COMP 250.

Required Mining Engineering Courses (47 credits)

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Course	Title	Credits
MIME 200	Introduction to the Minerals Industry.	3
MIME 203	Mine Surveying.	2
MIME 209	Mathematical Applications.	3
MIME 260	Materials Science and Engineering.	3
MIME 322	Fragmentation and Comminution.	3
MIME 323	Rock and Soil Mass Characterization.	3

MIME 325	Mineral Industry Economics.	3
MIME 333	Materials Handling.	3
MIME 340	Applied Fluid Dynamics.	3
MIME 341	Introduction to Mineral Processing.	3
MIME 413	Strategic Mine Planning With Uncertainty.	3
MIME 419	Surface Mining.	3
MIME 422	Mine Ventilation.	3
MIME 425	Applied Stochastic Orebody Modelling.	3
MIME 426	Mine Design and Prefeasibility Study.	6

Complementary Courses (31-32 credits)

17 credits from one of Stream A or Stream B

Stream A - CEGEP Students

CEGEP students must take the following courses:

Expand allContract all

Course	Title	Credits
MPMC 321	Mécanique des roches et contrôle des terrains.	3
MPMC 326	Recherche opérationnelle I.	3
MPMC 328	Environnement et gestion des rejets miniers.	3
MPMC 329	Géologie minière.	2
MPMC 330	Géotechnique minière.	3
MPMC 421	Exploitation en souterrain.	3

¹ Mining courses taken at Polytechnique Montréal

Stream B - Non-CEGEP Students

Non-CEGEP students must take the following courses:

Expand allContract all

Course	Title	Credits
CIVE 208	Civil Engineering System Analysis.	3
MIME 329	Mining Geology.	2
MIME 330	Mining Geotechnics.	3
MIME 421	Rock Mechanics.	3
MIME 424	Underground Mining Methods.	3
MIME 428	Environmental Mining Engineering.	3

Technical Complementaries

List A

3-9 credits must be chosen from the following:

Expand allContract all

Course	Title	Credits
MIME 320	Extraction of Energy Resources.	3
MIME 442	Analysis, Modelling and Optimization in Mineral Processing.	3
MIME 484	Mining Project.	3

MIME 511	Advanced Subsurface Ventilation and Air Conditioning.	3
MIME 514	Sustainability Analysis of Mining Systems.	3
MIME 520	Stability of Rock Slopes.	3
MIME 527	Selected Topics in Mineral Resource Engineering.	3
MIME 529	Automation of Mining Systems.	3
MIME 544	Analysis: Mineral Processing Systems 1.	3
MIME 545	Analysis: Mineral Processing Systems 2.	3
MIME 588	Reliability Analysis of Mining Systems.	3

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; see the "Courses" section of this publication to know if a course is offered.

Expand allContract all

Course	Title	Credits
CIVE 416	Geotechnical Engineering.	3
CIVE 421	Municipal Systems.	3
CIVE 573	Hydraulic Structures.	3
CIVE 584	Mechanics of Groundwater Flow.	3
COMP 417	Introduction Robotics and Intelligent Systems.	3
EPSC 303	Structural Geology.	3
EPSC 320	Elementary Earth Physics.	3
EPSC 325	Environmental Geochemistry.	3
EPSC 549	Hydrogeology.	3
FINE 482	International Finance 1.	3
MIME 290	Industrial Work Period 1.	2
MIME 556	Sustainable Materials Processing.	3
MPMC 320	CAO et informatique pour les mines.	3
SEAD 515	Climate Change Adaptation and Engineering Infrastructure.	3
SEAD 520	Life Cycle-Based Environmental Footprinting.	3
SEAD 550	Decision-Making for Sustainability in Engineering and Design.	3

¹ Mining courses taken at Polytechnique Montréal

Complementary Studies (6 credits)

Group A - Impact of Technology on Society

3 credits from the following:

Expand allContract all

Course	Title	Credits
ANTH 212	Anthropology of Development.	3
BTEC 502	Biotechnology Ethics and Society.	3

ECON 225	Economics of the Environment.	3
ECON 347	Economics of Climate Change.	3
ENVR 201	Society, Environment and Sustainability.	3
GEOG 200	Geographical Perspectives: World Environmental Problems.	3
GEOG 203	Environmental Systems.	3
GEOG 205	Global Change: Past, Present and Future.	3
GEOG 302	Environmental Management 1.	3
MGPO 440	Strategies for Sustainability.	3
PHIL 343	Biomedical Ethics.	3
RELG 270	Religious Ethics and the Environment.	3
SOCI 235	Technology and Society.	3
SOCI 312	Sociology of Work and Industry.	3
URBP 201	Planning the 21st Century City.	3

¹ Note: Management courses have limited enrolment and registration dates. See Important Dates at <http://www.mcgill.ca/importantdates>.

Group B - Humanities and Social Sciences, Management Studies, and Law

3 credits at the 200 level or higher from the following departments:

Anthropology (ANTH)

Economics (any 200- or 300-level course excluding ECON 227 Economic Statistics., and ECON 337 Introductory Econometrics 1.)

History (HIST)

Philosophy (excluding PHIL 210 Introduction to Deductive Logic 1. and PHIL 310 Intermediate Logic.)

Political Science (POLI)

Psychology (excluding PSYC 204 Introduction to Psychological Statistics. and PSYC 305 Statistics for Experimental Design., but including PSYC 100 Introduction to Psychology.)

Religious Studies (RELG) (excluding courses that principally impart language skills, such as Sanskrit, Tibetan, Tamil, New Testament Greek, and Biblical Hebrew)

School of Social Work (SWRK)

Sociology (excluding SOCI 350 Statistics in Social Research.)

OR one of the following:

Expand all Contract all

Course	Title	Credits
ARCH 528	History of Housing.	3
BUSA 465	Technological Entrepreneurship.	3
CLAS 203	Greek Mythology.	3
ENVR 203	Knowledge, Ethics and Environment.	3
ENVR 400	Environmental Thought.	3
FACC 220	Law for Architects and Engineers.	3
FACC 500	Technology Business Plan Design.	3

FACC 501	Technology Business Plan Project.	3
HISP 225	Hispanic Civilization 1.	3
HISP 226	Hispanic Civilization 2.	3
INDR 294	Introduction to Labour-Management Relations.	3
INTG 215	Entrepreneurship Essentials for Non-Management Students.	3
MATH 338	History and Philosophy of Mathematics.	3
MGCR 222	Introduction to Organizational Behaviour.	3
MGCR 352	Principles of Marketing.	3
ORGB 321	Leadership.	3
ORGB 423	Human Resources Management.	3

¹ If you are uncertain whether or not a course principally imparts language skills, please see an adviser in the McGill Engineering Student Centre (Frank Dawson Adams Building, Room 22) or email an adviser.

² Note: Management courses have limited enrolment and registration dates. See Important Dates at <http://www.mcgill.ca/importantdates>.

³ INTG 215 Entrepreneurship Essentials for Non-Management Students. is not open to students who have taken INTG 201 Integrated Management Essentials 1. and INTG 202 Integrated Management Essentials 2..

Note regarding language courses: Language courses are not accepted to satisfy the Complementary Studies Group B requirement, effective for students who entered the program as of Fall 2017.