

# Mining Engineering Co-op Curriculum - Fall 2019

CEGEP Entry

| <b>1st Term (Fall)</b>   |                                                            | <b>18 credits</b> | <b>Prerequisites/Co-requisites</b>                 |
|--------------------------|------------------------------------------------------------|-------------------|----------------------------------------------------|
| CCOM 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                        |
| 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 and 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                           |
| 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                 | -                                                  |
| MIME xxx                 | Technical Complementary                                    | 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 and 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 - MIME 200, MIME 291                             |
| 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>                 |
| ECSE 461                 | Electric Machinery                                         | 3                 | -                                                  |
| FACC 400                 | Engineering Professional Practice                          | 1                 | P - FACC 100, FACC 250**, and 60 program credits   |
| 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       |
| 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

\*\*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.

|          |                                     | <b>Credits</b> | <b>Prerequisites/Co-requisites</b>    |
|----------|-------------------------------------|----------------|---------------------------------------|
| 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                                   | 3 | P - MIME 419, MPMC 328, MPMC 421                       |
| 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                                         |
| 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: September 19, 2019**

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