

# Civil Engineering Curriculum - Fall 2015

## Non-CEGEP Entry

| 1st Term (Fall)   |   | 15 credits | Prerequisites/Co-requisites           |
|-------------------|---|------------|---------------------------------------|
| CHEM 110          | General Chemistry 1                           | 4          | -                                     |
| FACC 100          | Introduction to the Engineering Profession    | 1          | -                                     |
| MATH 133          | Linear Algebra and Geometry                   | 3          | -                                     |
| MATH 140          | Calculus 1                                    | 3          | -                                     |
| PHYS 131          | Mechanics and Waves                           | 4          | C - MATH 140                          |
| 2nd Term (Winter) |   | 18 credits | Prerequisites/Co-requisites           |
| CHEM 120          | General Chemistry 2                           | 4          | -                                     |
| MATH 141          | Calculus 2                                    | 4          | P - MATH 140                          |
| PHYS 142          | Electromagnetism and Optics                   | 4          | P - PHYS 131 / C - MATH 141           |
| CS                | Complementary Studies Group A (Impact)        | 3          | -                                     |
| CS                | Complementary Studies Group B (HSSML) - 1     | 3          | -                                     |
| 3rd Term (Fall)   |   | 18 credits | Prerequisites/Co-requisites           |
| CCOM 206          | Communication in Engineering                  | 3          | -                                     |
| CIVE 205          | Statics                                       | 3          | -                                     |
| CIVE 290          | Thermodynamics and Heat Transfer              | 3          | -                                     |
| EPSC 221          | General Geology                               | 3          | -                                     |
| MATH 262          | Intermediate Calculus                         | 3          | P - MATH 141, MATH 133                |
| MECH 289          | Design Graphics                               | 3          | -                                     |
| 4th Term (Winter) |   | 17 credits | Prerequisites/Co-requisites           |
| CIVE 202          | Construction Materials                        | 4          | P - CIVE 290                          |
| CIVE 206          | Dynamics                                      | 3          | P - CIVE 205 / C - MATH 262, MATH 263 |
| CIVE 207          | Solid Mechanics                               | 4          | P - CIVE 205                          |
| COMP 208          | Computers in Engineering                      | 3          | P - MATH 140, MATH 141                |
| MATH 263          | Ordinary Differential Equations for Engineers | 3          | C - MATH 262                          |
| Summer Term       |   | 2 credits  | Prerequisites/Co-requisites           |
| CIVE 210          | Surveying                                     | 2          | P - MECH 289                          |
| 5th Term (Fall)   |   | 18 credits | Prerequisites/Co-requisites           |
| CIVE 208          | Civil Engineering System Analysis             | 3          | P - COMP 208 / C - MATH 264           |
| CIVE 311          | Geotechnical Mechanics                        | 4          | P - CIVE 207                          |
| CIVE 317          | Structural Engineering 1                      | 3          | P - CIVE 202, CIVE 207, MECH 289      |
| FACC 300          | Engineering Economy                           | 3          | -                                     |
| MATH 264          | Advanced Calculus for Engineers               | 3          | P - MATH 262 / C - MATH 263           |
| MECH 261          | Measurement Laboratory                        | 2          | -                                     |
| 6th Term (Winter) |   | 17 credits | Prerequisites/Co-requisites           |
| CIVE 225          | Environmental Engineering                     | 4          | P - CIVE 290 / C - MATH 263           |
| CIVE 302          | Probabilistic Systems                         | 3          | P - MATH 262, COMP 208                |
| CIVE 318          | Structural Engineering 2                      | 3          | P - CIVE 317                          |
| CIVE 319          | Transportation Engineering                    | 3          | P - CIVE 208, COMP 208 / C - CIVE 302 |
| CIVE 327          | Fluid Mechanics and Hydraulics                | 4          | P - CIVE 206, MATH 264                |
| 7th Term (Fall)   |   | 17 credits | Prerequisites/Co-requisites           |
| CIVE 320          | Numerical Methods                             | 4          | P - COMP 208, MATH 264                |
| CIVE 323          | Hydrology and Water Resources                 | 3          | P - CIVE 302                          |
| CIVE 432          | Technical Paper                               | 1          | P - CCOM 206 or EDEC 206              |
| CIVE xxx          | Technical Complementary                       | 3          | -                                     |
| CIVE xxx          | Technical Complementary                       | 3          | -                                     |
| CS                | Complementary Studies Group B (HSSML) - 2     | 3          | -                                     |
| 8th Term (Winter) |   | 17 credits | Prerequisites/Co-requisites           |
| CIVE 324          | Construction Project Management               | 3          | P - FACC 300/MIME 310, CIVE 208       |
| CIVE 418          | Design Project                                | 4          | -                                     |
| FACC 400          | Engineering Professional Practice             | 1          | P - FACC 100, 60 program credits      |
| CIVE xxx          | Technical Complementary                       | 3          | -                                     |
| CIVE xxx          | Technical Complementary                       | 3          | -                                     |
| CIVE xxx          | Technical Complementary                       | 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). 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 the Academic Programs section).

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

|          |   | Credits | Prerequisites/Co-requisites |
|----------|---|---------|-----------------------------|
| CIVE 416 | Geotechnical Engineering                  | 3       | P - CIVE 311                |
| CIVE 421 | Municipal Systems                         | 3       | P - CIVE 327                |
| CIVE 428 | Water Resources and Hydraulic Engineering | 3       | P - CIVE 327                |
| CIVE 430 | Water Treatment and Pollution Control     | 3       | P - CIVE 225, CIVE 327      |
| CIVE 440 | Traffic Engineering and Simulation        | 3       | P - CIVE 319                |
| CIVE 462 | Design of Steel Structures                | 3       | P - CIVE 318                |
| CIVE 463 | Design of Concrete Structures             | 3       | P - CIVE 318                |

|             |   | Credits | Prerequisites/Co-requisites              |
|-------------|---|---------|--|
| CIVE 433    | Urban Planning  | 3       | -  |
| CIVE 446    | Construction Engineering                              | 3       | P - CIVE 208, FACC 300/MIME 310          |
| CIVE 451    | Geoenvironmental Engineering                          | 3       | P - CIVE 225, CIVE 311                   |
| CIVE 460    | Matrix Structural Analysis                            | 3       | P - CIVE 206, CIVE 317                   |
| CIVE 470    | Undergraduate Research Project                        | 3       | P - 60 program credits                   |
| CIVE 512    | Advanced Civil Engineering Materials                  | 3       | P - CIVE 202                             |
| CIVE 514    | Structural Mechanics                                  | 3       | P - CIVE 207                             |
| CIVE 520    | Groundwater Hydrology                                 | 3       | P - CIVE 311, CIVE 323                   |
| CIVE 521    | Nanomaterials and the Aquatic Environment             | 3       |  |
| or CHEE 521 | Nanomaterials and the Aquatic Environment             | 3       |  |
| CIVE 527    | Renovation and Preservation: Infrastructure           | 3       | P - CIVE 202, CIVE 318                   |
| CIVE 540    | Urban Transportation Planning                         | 3       | P - CIVE 319                             |
| CIVE 542    | Transportation Network Analysis                       | 3       | P - CIVE 208                             |
| CIVE 546    | Selected Topics in Civil Engineering 1                | 3       | P - Permission of instructor             |
| CIVE 550    | Water Resources Management                            | 3       | P - CIVE 323                             |
| CIVE 551    | Environmental Transport Processes                     | 3       | P - CIVE 225                             |
| CIVE 555    | Environmental Data Analysis                           | 3       | P - CIVE 302                             |
| CIVE 557    | Microbiology for Environmental Engineering            | 3       | P - CIVE 225 or permission of instructor |
| CIVE 558    | Biomolecular Techniques for Environmental Engineering | 3       | P - Permission of instructor             |
| CIVE 560    | Transportation Safety and Design                      | 3       | P - CIVE 319                             |

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