

# Civil Engineering Curriculum - Fall 2013

## Non-CEGEP Entry

<b>1st Semester (Fall)</b>		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
<b>2nd Semester (Winter)</b>		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	-
<b>3rd Semester (Fall)</b>		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	-
<b>4th Semester (Winter)</b>		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
<b>5th Semester (Summer)</b>		2 credits	Prerequisites/Co-requisites
CIVE 210	Surveying	2	P - MECH 289
<b>6th Semester (Fall)</b>		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	-
<b>7th Semester (Winter)</b>		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
<b>8th Semester (Fall)</b>		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	-
<b>9th Semester (Winter)</b>		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.

# Technical Complementary Courses - Civil Engineering

A minimum of six credits to be selected from List A and the remaining nine credits to be selected from List A and/or B or from other suitable undergraduate or 500-level courses.

## List A - Design Technical Complementaries

6-15 credits from the following:

		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

## List B - General Technical Complementaries

0-9 credits from the following:

		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	P - (CHEE 315 or CIVE 225 or MIME 356), (CHEE 310 or CIVE 430 or CHEM 233)
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
CIVE 572	Computational Hydraulics	3	P - CIVE 327
CIVE 573	Hydraulic Structures	3	P - CIVE 323, CIVE 327
CIVE 574	Fluid Mechanics of Water Pollution	3	P - CIVE 327
CIVE 577	River Engineering	3	P - CIVE 428
CIVE 584	Groundwater Engineering	3	P - CIVE 311

**Last update: May 31, 2013**

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