

Civil Engineering Curriculum - Fall 2019

Non-CEGEP Entry

1st Term (Fall)		15 credits	Prerequisites/Co-requisites
CHEM 110	General Chemistry 1	4	P - College level mathematics and physics or permission of instructor
FACC 100	Introduction to the Engineering Profession	1	-
MATH 133	Linear Algebra and Geometry	3	P - A course in functions
MATH 140	Calculus 1	3	P - High school calculus
PHYS 131	Mechanics and Waves	4	C - Calculus course [MATH 140]
2nd Term (Winter)		18 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	P - College level mathematics and physics or permission of instructor
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 133, MATH 141
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 (or MECH 210 in special circumstances)
COMP 208	Computers in Engineering	3	P - differential and integral calculus [MATH 140 and MATH 141] / C - linear algebra [MATH 133]
FACC 250	Responsibilities of the Professional Engineer	0	P - FACC 100 or BREE 250
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 - COMP 208, MATH 262
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
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	Sustainable Project Management	3	P - CIVE 208, FACC 300
CIVE 418	Design Project	4	P - Completion of an approved set of required and complementary courses
FACC 400	Engineering Professional Practice	1	P - FACC 100, FACC 250**, and 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). Students must take one course (3 credits) from Group A and two courses (6 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) (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) 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 - 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
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 and instructor permission
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 permission of instructor
or CHEE 521	Nanomaterials and the Aquatic Environment	3	CHEM 233) or permission of instructor
CIVE 527	Renovation and Preservation: Infrastructure	3	P - CIVE 202, CIVE 318
CIVE 540	Urban Transportation Planning	3	P - CIVE 319 or instructor permission
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 or equivalent
CIVE 551	Environmental Transport Processes	3	P - CIVE 225 or instructor permission
CIVE 555	Environmental Data Analysis	3	P - CIVE 302 or instructor permission
CIVE 557	Microbiology for Environmental Engineering	3	P - CIVE 225 or instructor permission
CIVE 558	Biomolecular Techniques for Environmental Engineering	3	P - Permission of instructor
CIVE 560	Transportation Safety and Design	3	P - CIVE 319
CIVE 561	Urban Activity, Air Pollution, and Health	3	-
CIVE 572	Computational Hydraulics	3	P - CIVE 327 or equivalent
CIVE 573	Hydraulic Structures	3	P - CIVE 323, CIVE 327
CIVE 574	Fluid Mechanics of Water Pollution	3	P - CIVE 327 or equivalent
CIVE 577	River Engineering	3	P - CIVE 428 or instructor permission
CIVE 584	Mechanics of Groundwater Flow	3	P - CIVE 311 or instructor permission

Last update: April 30, 2019

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