Computer Engineering Curriculum - Fall 2018

Non-CEGEP Entry

1st Term (Fall)		14 credits	Prerequisites/Co-requisites
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]
CS	Complementary Studies Group B (HSSML) - 1*	3	-
2nd Term (Winter)		18 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	P - College level mathematics and physics or permission of instructor
ECSE 202	Introduction to Software Development	3	-
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	-
3rd Term (Fall)		15 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
ECSE 200	Electric Circuits 1	3	P - PHYS 142 / C - MATH 263
ECSE 205	Probability and Statistics for Engineers	3	-
FACC 250	Responsibilities of the Professional Engineer	0	P - FACC 100 or BREE 250
MATH 262	Intermediate Calculus	3	P - MATH 133, MATH 141
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
4th Term (Winter)		18 credits	Prerequisites/Co-requisites
COMP 250	Introduction to Computer Science	3	P - Familiarity with a high level programming language and CEGEP level Math [MATH 133, MATH 140, MATH 141]
ECSE 206	Introduction to Signals and Systems	3	P - ECSE 200
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 222	Digital Logic	3	P - ECSE 200
ECSE 223	Model-Based Programming	3	P - ECSE 200
CS	Complementary Studies Group B (HSSML) - 2*	3	-
5th Term (Fall)		17 credits	Prerequisites/Co-requisites
ECSE 211	Design Principles and Methods	3	P - ECSE 200, ECSE 202
ECSE 324	Computer Organization	4	P - ECSE 200, ECSE 222
ECSE 331	Electronics	4	P - ECSE 210
ECSE 353	Electromagnetic Fields and Waves	3	P - ECSE 210, MATH 262, MATH 263
FACC 300	Engineering Economy	3	-
6th Term (Winter)		18 credits	Prerequisites/Co-requisites
COMP 251	Algorithms and Data Structures	3	C - MATH 240
ECSE 310	Thermodynamics of Computing	3	P - ECSE 200, ECSE 205, ECSE 222
ECSE 321	Introduction to Software Engineering	3	P - ECSE 202
ECSE 325	Digital Systems	3	P - ECSE 324
ECSE 427	Operating Systems	3	P - ECSE 322 or ECSE 324 or COMP 273
MATH 240	Discrete Structures 1	3	C - MATH 133
7th Term (Fall)		17 credits	Prerequisites/Co-requisites
ECSE 308	Introduction to Communication Systems and Networks	4	P - ECSE 205, ECSE 206
ECSE 444	Microprocessors	4	P - ECSE 324
ECSE 456	ECSE Design Project 1	3	P - ECSE 211 and (ECSE 323 or ECSE 324) and CCOM 206 and (ECSE 330 or ECSE 331 or COMP 302)
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
8th Term (Winter)		16 credits	Prerequisites/Co-requisites
ECSE 425	Computer Architecture	3	P - (ECSE 322 and ECSE 323) or ECSE 324
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
FACC 400	Engineering Professional Practice	1	P - FACC 100, FACC 250**, and 60 program credits
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
XXXX xxx	Elective Course***	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 - Computer Engineering

Technical Complementaries

12-15 credits

4 courses must be taken, chosen as follows:

- 3 courses (minimum 9 credits) from List A
- The remaining 1 course (minimum 3 credits) from List A or List B

List A

9-14 credits from the following:

		Credits	Prerequisites/Co-requisites
COMP 424	Artificial Intelligence	3	P - COMP 206 / ECSE 321, MATH 323 or equivalent, and COMP 251
ECSE 335	Microelectronics	4	P - ECSE 331
ECSE 412	Discrete Time Signal Processing	3	P - ECSE 304 or ECSE 306
ECSE 416	Telecommunication Networks	4	P - COMP 250, ECSE 205, ECSE 308 / ECSE 316
ECSE 420	Parallel Computing	3	P - ECSE 427
ECSE 421	Embedded Systems	3	P - ECSE 322, ECSE 323
ECSE 422	Fault Tolerant Computing	3	P - ECSE 322 or (ECSE 324 and COMP 250)
ECSE 424	Human-Computer Interaction	3	P - ECSE 322 or (ECSE 324 and COMP250) or (COMP 251 and COMP 273)
ECSE 428	Software Engineering Practice	3	P - ECSE 321 or COMP 335
ECSE 429	Software Validation	3	P - ECSE 321 or COMP 303
ECSE 439	Software Language Engineering	3	P - ECSE 321 or COMP 303

List B

0-4 credits from the following:

COMP 557	Fundamentals of Computer Graphics	3	P - COMP 206, COMP 250, MATH 222/262, MATH 223
ECSE 307	Linear Systems and Control	4	P - ECSE 206, ECSE 210
ECSE 403	Control	4	P - ECSE 307
ECSE 408	Communication Systems	4	P - ECSE 205, ECSE 308
ECSE 415	Introduction to Computer Vision	3	P - ECSE 304 or ECSE 306 or ECSE 206
ECSE 435	Mixed-Signal Test Techniques	3	P - (ECSE 206 or ECSE 304) and (ECSE 334 or ECSE 335)
ECSE 436	Signal Processing Hardware	3	(ECSE 322 or ECSE 324), (ECSE 323 or ECSE 325) and (ECSE 304 or ECSE 306 or ECSE 206)
ECSE 446	Realistic Image Synthesis	3	P- ECSE 202, ECSE 205, and COMP 250
ECSE 450	Electromagnetic Compatibility	3	P - (ECSE 221 or ECSE 222) and (ECSE 334 or ECSE 331) and (ECSE 352 or ECSE 353 or ECSE 354)
ECSE 472	Fundamentals of Circuit Simulation and Modelling	3	-
COMP 551	Applied Machine Learning	4	P - MATH 323 or ECSE 205 or ECSE 305 or equivalent)

Last update: May 30, 2018

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