

Computer Engineering Curriculum - Fall 2015

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	-
MATH 140	Calculus 1	3	-
PHYS 131	Mechanics and Waves	4	C - MATH 140
CS	Complementary Studies Group B (HSSML) - 1	3	-
2nd Term (Winter)		18 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	-
COMP 202	Foundations of Programming*	3	P - A CEGEP-level mathematics course [For non-CEGEP students: A 100-level mathematics course]
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 or equivalent / C - MATH 263
ECSE 205	Probability and Statistics for Engineers	3	-
MATH 262	Intermediate Calculus	3	P - MATH 141, MATH 133
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 - MATH 140, MATH 141
ECSE 206	Signals and Systems	3	P - ECSE 200
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 222	Digital Logic	3	P - COMP 202
ECSE 223	Model-Based Programming	3	P - COMP 202
CS	Complementary Studies Group B (HSSML) - 2	3	-
5th Term (Fall)		17 credits	Prerequisites/Co-requisites
COMP 251	Algorithms and Data Structures	3	P - COMP 250
ECSE 211	Design Principles and Methods	3	P - ECSE 200, COMP 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*
6th Term (Winter)		18 credits	Prerequisites/Co-requisites
ECSE 310	Thermodynamics of Computing	3	P - ECSE 200, ECSE 205, ECSE 222
ECSE 321	Introduction to Software Engineering	3	P - COMP 202 or COMP 208
ECSE 325	Digital Systems	3	P - ECSE 324
ECSE 427	Operating Systems	3	P - ECSE 324 or COMP 273*
FACC 300	Engineering Economy	3	-
MATH 363	Discrete Mathematics	3	P - MATH 263*
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 - CCOM 206, ECSE 211, ECSE 325*
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
8th Term (Winter)		16 credits	Prerequisites/Co-requisites
ECSE 425	Computer Organization and Architecture	3	P - ECSE 324*
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-

*Pending University approval.

Transition to New Program: Starting in September 2016, students will be admitted to a new Computer Engineering program, which will replace what is presently offered. The 8-semester curriculum above has been devised so that students admitted in September 2015 can transition smoothly into the new program. Many of the courses indicated for semester 3 onwards are also new and are not yet listed in the McGill eCalendar, but these will be included in the 2016-2017 edition.

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) (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 - Computer Engineering

Technical Complementaries

15-19 credits

5 courses must be taken, chosen as follows:

- 3 courses (minimum 9 credits) from List A
- The remaining 2 courses (minimum 6 credits) from List A or List B

List A

9-17 credits from the following:

		Credits	Prerequisites/Co-requisites
COMP 424	Artificial Intelligence	3	P - (COMP 206 or ECSE 321), MATH 323 or equiv. 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, and either ECSE 308 or 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
ECSE 424	Human-Computer Interaction	3	P - ECSE 322 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

List B

0-8 credits from the following:

COMP 557	Fundamentals of Computer Graphics	3	P - MATH 223, COMP 251, COMP 206
ECSE 307	Linear Systems and Control	4	P - ECSE 206 and ECSE 210
ECSE 403	Control	4	P - ECSE 307
ECSE 408	Communication Systems	4	P - ECSE 205 and ECSE 308
ECSE 415	Introduction to Computer Vision	3	P - ECSE 304 or ECSE 306
ECSE 431	Introduction to VLSI CAD	3	P - ECSE 323, ECSE 330
ECSE 435	Mixed-Signal Test Techniques	3	P - ECSE 304 and ECSE 334
ECSE 436	Signal Processing Hardware	3	P - ECSE 322, ECSE 323, ECSE 304/306
ECSE 450	Electromagnetic Compatibility	3	P - ECSE 221, ECSE 334, ECSE 352/ECSE 353

Last update: June 30, 2015

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