

2015 / 2016 CURRICULUM - COMPUTER ENGINEERING

EIGHT SEMESTER PROGRAM Total credits: 133

First Semester (Fall 2015)		14 credits	Second Semester (Winter 2016)		18 credits
XXXX xxx	Humanities & Social Sciences 1*	(3 cr)	CHEM 120	General Chemistry 2	(4 cr)
FACC 100	Intro. to Engineering Profession	(1 cr)	COMP 202	Foundations of Programming	(3 cr)
MATH 133	Linear Algebra and Geometry	(3 cr)	MATH 141	Calculus 2	(4 cr, P - MATH 140)
MATH 140	Calculus 1	(3 cr)	PHYS 142	Electromagnetism & Optics	(4 cr, P - PHYS 131; C - MATH 141)
PHYS 131	Mechanics & Waves	(4 cr, C - MATH 140)	XXXX xxx	Impact of Technology on Society **	(3 cr)
Third Semester (Fall 2016)		15 credits	Fourth Semester (Winter 2017)		18 credits
CCOM 206	Communication in Engineering	(3 cr)	COMP 250	Introduction to Computer Science	(3 cr)
ECSE 200	Electric Circuits 1	(3 cr, P - PHYS 142 or CEGEP Equivalent; C - MATH 263)	ECSE 206	Fund. of Signals & Systems	(3 cr, P - ECSE 200)
ECSE 205	Probability & Statistics for Eng.	(3 cr)	ECSE 210	Electric Circuits 2	(3 cr, P - ECSE 200)
MATH 262	Intermediate Calculus	(3 cr, P - MATH 141 & MATH 133 or equiv)	ECSE 222	Digital Logic	(3 cr, P - COMP 202)
MATH 263	ODEs for Engineers	(3 cr, C - MATH 262)	ECSE 223	Model-based Programming	(3 cr, P - COMP 202)
			XXXX xxx	Humanities & Social Sciences 2*	(3 cr)
Fifth Semester (Fall 2017)		17 credits	Sixth Semester (Winter 2018)		18 credits
FACC 300	Engineering Economy	(3 cr)	ECSE 310	Thermodynamics of Computing	(3 cr, P - ECSE 200, ECSE 205 & ECSE 222)
ECSE 211	Design Principles and Methods	(3 cr, P - ECSE 200 & COMP 202)	ECSE 321	Intro. to Software Engineering	(3 cr, P - COMP 202 or COMP 208)
ECSE 324	Computer Organization	(4 cr, P - ECSE 200 & ECSE 222)	ECSE 325	Digital Systems	(3 cr, P - ECSE 324)
ECSE 331	Electronics	(4 cr, P - ECSE 210)	ECSE 427	Operating Systems	(3 cr, P - ECSE 324 or COMP 273)
ECSE 353	Electromagnetic Fields & Waves	(3 cr, P - MATH 262, MATH 263 & ECSE 210)	COMP 251	Algorithms and Data Structures	(3 cr, P - COMP 250; C - MATH 240)
			MATH 240	Discrete Mathematics	(3 cr, C - MATH 133)
Seventh Semester (Fall 2018)		17 credits	Eighth Semester (Winter 2019)		16 credits
ECSE 308	Intro. Comm. Sys. & Networks	(4 cr, P - ECSE 205 & ECSE 206)	ECSE 425	Computer Architecture	(3 cr, P - ECSE 324)
ECSE 444	Microprocessors	(4 cr, P - ECSE 324)	ECSE 457	ECSE Design Project 2	(3 cr, P - ECSE 456)
ECSE 456	ECSE Design Project 1	(3 cr, P - CCOM 206 & ECSE 211 & ECSE 325)	ECSE 4xx t3	Technical Complementary 3	(3 cr)
ECSE 4xx t1	Technical Complementary 1	(3 cr)	ECSE 4xx t4	Technical Complementary 4	(3 cr)
ECSE 4xx t2	Technical Complementary 2	(3 cr)	ECSE 4xx t5	Technical Complementary 5	(3 cr)
			FACC 400	Engineering Professional Practice	(1 cr, P - FACC100, 60 program credits)

TRANSITION TO NEW PROGRAM

Starting in September 2016, students will be admitted to a new Electrical Engineering program, which will replace what we presently offer. 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 will not be listed in the McGill eCalendar until the 2016-17 edition.

The "Total credits" above are correct if you transfer to the new program. For the old Computer Engineering program, the credits are 139.

If you have advanced credit for some of the Year 0 (Freshman) courses, the transition mentioned above may not be possible without an excessive delay to graduation, because the courses you need may not be available when you need them. The alternative is to continue to follow the old program. Academic advisers are available with course selection. For an appointment, please contact our Undergraduate Program Office at undergrad.ece@mcgill.ca or call 514-398-3943 for a phone appointment.

OTHER NOTES

Courses shown in boldface above must be passed with a grade "C" or better. A "D" is *only* acceptable in the courses *not* in boldface. Also, a grade of "C" is normally required in all prerequisites in order to proceed with the follow-on courses. (Exception: A student who fails a course with a grade of D may take an ECSE course that has it as a prerequisite, *provided that the failed course is re-taken at the same time*. Students thinking of doing this should meet with a departmental advisor.)

Courses shown in boldface above must be passed with a grade "C" or better. A "D" is *only* acceptable in the courses *not* in boldface. Also, a grade of "C" is required in all prerequisites in order to proceed with the follow-on courses.

Technical Complementary courses are selected from the list given on the next page.

* For instructions on selecting valid "Humanities and Social Sciences" courses, see www.mcgill.ca/ece, then: Programs and Courses > Undergraduate > Complementary Studies.

** For instructions on selecting valid "Impact of Technology on Society" courses, see www.mcgill.ca/ece, then: Programs and Courses > Undergraduate > Complementary Studies.

This sample curriculum is for students who wish to complete their degree requirements in 8 semesters. Students may, at any time, deviate from this structure. However, it is the student's responsibility to devise a study plan that has no course conflicts or prerequisite/corequisite violations. Also, some of the courses are new and will not be offered before certain semesters – consult the table below. Academic advisors are available for help with course selection.

COMPUTER ENGINEERING

A: Technical Complementaries (3 courses) 9 credits (minimum)

Three technical complementary courses must be chosen from this list:

COMP 424	Artificial Intelligence	(3 cr)
ECSE 335	Microelectronics	(4 cr)
ECSE 412	Discrete-Time Signal Processing	(3 cr)
ECSE 416	Telecom. Networks	(4 cr)
ECSE 420	Parallel Computing	(3 cr)
ECSE 421	Embedded Systems	(3 cr)
ECSE 422	Fault Tolerant Computing	(3 cr)
ECSE 424	Human-Computer Interaction	(3 cr)
ECSE 428	Software Engineering Practice	(3 cr)
ECSE 429	Software Validation	(3 cr)

B: Technical Complementaries (2 courses) 6 credits (minimum)

Two other technical complementary courses must be chosen from list A or from list B:

ECSE 307	Linear Systems & Control	(4 cr)
ECSE 403	Control Systems	(4 cr)
ECSE 408	Communication Systems	(4 cr)
ECSE 415	Introduction to Computer Vision	(3 cr)
ECSE 431	Introduction to VLSI CAD.	(3 cr)
ECSE 435	Mixed Signal Test Techniques	(3 cr)
ECSE 436	Signal Processing Hardware	(3 cr)
ECSE 450	Electromagnetic Compatability	(3 cr)
COMP 557	Fundamentals of Computer Graphics	(3 cr)