

2016 / 2017 CURRICULUM - COMPUTER ENGINEERING

EIGHT SEMESTER PROGRAM		Total credits:	133			(presently 139 cr.)
First Semester (Fall 2016)		14 credits		Second Semester (Winter 2017)		18 credits
XXXX xxx	Humanities & Social Sciences 1*	(3 cr)		CHEM 120	General Chemistry 2	(4 cr)
MATH 140	Calculus 1	(3 cr)		MATH 141	Calculus 2	(4 cr, P - MATH 140)
PHYS 131	Mechanics & Waves	(4 cr, C - MATH 140)		PHYS 142	Electromagnetism & Optics	(4 cr, P - PHYS 131; C - MATH 141)
MATH 133	Linear Algebra and Geometry	(3 cr)		ECSE 202	Intro. to Software Development	(3 cr)
FACC 100	Intro. to Engineering Profession	(1 cr)		XXXX xxx	Impact of Technology on Society**	(3 cr)
Third Semester (Fall 2017)		15 credits		Fourth Semester (Winter 2018)		18 credits
ECSE 200	Electric Circuits 1	(3 cr, P - PHYS 142 or CEGEP Equivalent; C - MATH 263)		COMP 250	Introduction to Computer Science	(3 cr)
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 206	Intro. to Signals & Systems	(3 cr, P - ECSE 200)
MATH 263	ODEs for Engineers	(3 cr, C - MATH 262)		ECSE 222	Digital Logic	(3 cr, P - ECSE 202)
CCOM 206	Communication in Engineering	(3 cr)		ECSE 223	Model-based Programming	(3 cr, P - ECSE/COMP 202)
				XXXX xxx	Humanities & Social Sciences 2*	(3 cr)
Fifth Semester (Fall 2018)		17 credits		Sixth Semester (Winter 2019)		18 credits
FACC 300	Engineering Economy	(3 cr)		MATH 240	Discrete Structures 1	(3 cr, C - MATH 133)
ECSE 211	Design Principles and Methods	(3 cr, P - ECSE 200 & ECSE/COMP 202)		ECSE 310	Thermodynamics of Computing	(3 cr, P - ECSE 200, ECSE 205 & ECSE 222)
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 321	Intro. to Software Engineering	(3 cr, P - ECSE/COMP 202 or COMP 208)
ECSE 353	Electromagnetic Fields & Waves	(3 cr, P - MATH 262, MATH 263 & ECSE 210)		ECSE 427	Operating Systems	(3 cr, P - ECSE 324 or COMP 273)
				COMP 251	Algorithms and Data Structures	(3 cr, P - COMP 250, C - MATH 240)
Seventh Semester (Fall 2019)		17 credits		Eighth Semester (Winter 2020)		16 credits
ECSE 456	ECSE Design Project 1	(3 cr, P - CCOM 206 & ECSE 211 & ECSE 325)		ECSE 457	ECSE Design Project 2	(3 cr, P-ECSE 456)
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 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)

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. (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 retaken at the same time. Students thinking of doing this should meet with a Departmental advisor).

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. Academic advisors are available for help with course selection.

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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, P - COMP 206 or ECSE 321, COMP 251)
ECSE 335	Microelectronics	(4 cr, P - ECSE 331)
ECSE 412	Discrete-Time Signal Processing	(3 cr, P - ECSE 304 or ECSE 306)
ECSE 416	Telecom. Networks	(4 cr, P - COMP-250, ECSE 205 & ECSE 308 or ECSE 316)
ECSE 420	Parallel Computing	(3 cr, P - ECSE 427)
ECSE 421	Embedded Systems	(3 cr, P - ECSE 322 & ECSE 323)
ECSE 422	Fault Tolerant Computing	(3 cr, P - ECSE 322)
ECSE 424	Human-Computer Interaction	(3 cr, P - ECSE 322)
ECSE 428	Software Engineering Practice	(3 cr, P - ECSE 321 or COMP 335)
ECSE 429	Software Validation	(3 cr, P - ECSE 321 or COMP 303)

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