Computer Engineering Curriculum - Fall 2012

CEGEP Entry

1st Semester (Fall)		15 credits	Prerequisites/Co-requisites
CIVE 281	Analytical Mechanics	3	C - MATH 262, MATH 263
COMP 202	Foundations of Programming	3	P - MATH 140, MATH 141
MATH 262	Intermediate Calculus	3	P - MATH 141, MATH 133
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
CS	Complementary Studies Group B (HSSML)	3	-
2nd Semester (Winter)		16 credits	Prerequisites/Co-requisites
COMP 250	Introduction to Computer Science	3	P - MATH 140, MATH 141
ECSE 200	Electric Circuits 1	3	P - PHYS 142 or equivalent / C - MATH 263
ECSE 221	Introduction to Computer Engineering	3	P - COMP 202
FACC 100	Introduction to the Engineering Profession	1	-
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
MATH 270	Applied Linear Algebra	3	P - MATH 263
3rd Semester (Fall)		17 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 211	Design Principles and Methods	3	P - ECSE 200, COMP 202 / C - ECSE 291
ECSE 291	Electrical Measurements Laboratory	2	C - ECSE 210
ECSE 322	Computer Engineering	3	P - ECSE 200 or MECH 383, ECSE 221
CS	Complementary Studies Group A (Impact)	3	-
4th Semester (Winter)		17 credits	Prerequisites/Co-requisites
ECSE 306	Fundamentals of Signals and Systems	3	P - ECSE 210, MATH 270
ECSE 321	Introduction to Software Engineering	3	P - COMP 202 or COMP 208
ECSE 323	Digital System Design	5	P - CCOM 206 or EDEC 206, ECSE 211, ECSE 221, ECSE 291
ECSE 330	Introduction to Electronics	3	P - ECSE 210
MATH 363	Discrete Mathematics	3	P - MATH 263, MATH 264
5th Semester (Fall)		15 credits	Prerequisites/Co-requisites
COMP 251	Data Structures and Algorithms	3	P - COMP 203 or COMP 250
ECSE 305	Probability and Random Signals 1	3	P - ECSE 303 or ECSE 306
ECSE 353	Electromagnetic Fields and Waves	3	P - ECSE 210, MATH 264
ECSE 427	Operating Systems	3	P - ECSE 322 or COMP 273
Science	Basic Science Complementary	3	-
6th Semester (Winter)		18 credits	Prerequisites/Co-requisites
ECSE 334	Introduction to Microelectronics	3	P - ECSE 291, ECSE 303 or ECSE 306, ECSE 330
ECSE 425	Computer Organization and Architecture	3	P - ECSE 322, ECSE 323
ECSE 426	Microprocessor Systems	3	P - CCOM 206 or EDEC 206, ECSE 323
ECSE 456	ECSE Design Project 1	3	P - ECSE 211, ECSE 322, ECSE 323, ECSE 330 / C - FACC 400
FACC 300	Engineering Economy	3	-
ECSE xxx	Technical Complementary	3	-
7th Semester (Fall)		15 credits	Prerequisites/Co-requisites
ECSE 414	Introduction to Telecommunication Networks	3	P - ECSE 322, ECSE 304 or ECSE 306
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
ECSE xxx	Lab Complementary	2	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-

Technical, Lab and Basic Science Complementary course 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 Programs, Courses and University Regulations Calendar (www.mcgill.ca/study).

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

Note: 500-level courses are restricted to students with a minimum CGPA of 3.0 and B+ or better in prerequisite courses.

9 credits from the following:

		Credits	Prerequisites/Co-requisites
COMP 424	Artificial Intelligence	3	P - COMP 206/ECSE 321, COMP 251
ECSE 404	Control Systems	3	C - ECSE 304 or ECSE 306
ECSE 411	Communications Systems 1	3	P - ECSE 305, ECSE 304 / ECSE 306
ECSE 412	Discrete Time Signal Processing	3	P - ECSE 304 or ECSE 306
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
ECSE 428	Software Engineering Practice	3	P - ECSE 321 or COMP 335
ECSE 429	Software Validation	3	P - ECSE 321 or COMP 303
ECSE 431	Introduction to VLSI CAD	3	P - ECSE 323, ECSE 330
ECSE 436	Signal Processing Hardware	3	P - ECSE 322, ECSE 323, ECSE 304/306
ECSE 443	Introduction to Numerical Methods of Electrical Engineering	3	P - ECSE 221, ECSE 330, ECSE 351/ECSE 353
ECSE 450	Electromagnetic Compatibility	3	P - ECSE 221, ECSE 334, ECSE 352/ECSE 353
ECSE 530	Logic Synthesis	3	P - ECSE 323
ECSE 532	Computer Graphics	3	P - ECSE 322
ECSE 537	Advanced Digital Integrated Circuits	3	P - ECSE 323, ECSE 334
ECSE 548	Introduction to VLSI Systems	3	P - ECSE 323, ECSE 334

Laboratory Complementaries

2-3 credits from the following:

		Credits	Prerequisites/Co-requisites
ECSE 434	Microelectronics Laboratory	2	P - CCOM 206, ECSE 334
ECSE 436	Signal Processing Hardware	3	P - ECSE 322, ECSE 323, ECSE 304/ECSE 306
ECSE 487	Computer Architecture Laboratory	2	P - CCOM 206 / C - ECSE 425
ECSE 489	Telecommunication Network Laboratory	2	P - CCOM 206 / C - ECSE 414 or ECSE 528
ECSE 490	Digital Signal Processing Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 412 or ECSE 512
ECSE 491	Communication Systems Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 411 or ECSE 511
ECSE 493	Control and Robotics Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 404 or ECSE 501

Basic Science Complementary Courses - Computer Engineering

Students from CEGEP are required to complete one 3-credit course at the 200-level or higher, chosen from the following science departments, approved by the Undergraduate Programs Office in the Department of Electrical and Computer Engineering:

Atmospheric and Oceanic Sciences (ATOC)
Biology (BIOL)
Chemistry (CHEM)
Earth and Planetary Sciences (EPSC)
Earth System Science (ESYS)
Physics (PHYS)

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