

Software Engineering Curriculum - Fall 2015

CEGEP Entry

1st Term (Fall)		15 credits	Prerequisites/Co-requisites
COMP 202	Foundations of Programming*	3	P - A CEGEP-level mathematics course
MATH 262	Intermediate Calculus	3	P - MATH 141, MATH 133
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
Science	Natural Science Complementary 1	3	-
CS	Complementary Studies Group B (HSSML)	3	-
2nd Term (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 CEGEP 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 Term (Fall)		17 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
COMP 206	Introduction to Software Systems	3	P - COMP 202 or COMP 250
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 321	Introduction to Software Engineering	3	P - COMP 202 or COMP 208
4th Term (Winter)		17 credits	Prerequisites/Co-requisites
ECSE 306	Fundamentals of Signals and Systems	3	P - ECSE 210, MATH 270 or MATH 271
ECSE 322	Computer Engineering	3	P - ECSE 200 or MECH 383, ECSE 221
ECSE 323	Digital System Design	5	P - CCOM 206, ECSE 211, ECSE 221, ECSE 291
MATH 363	Discrete Mathematics	3	P - MATH 263, MATH 264
CS	Complementary Studies Group A (Impact)	3	-
5th Term (Fall)		18 credits	Prerequisites/Co-requisites
COMP 251	Algorithms and Data Structures	3	P - COMP 250
COMP 302	Programming Languages and Paradigms	3	P - COMP 250
ECSE 305	Probability and Random Signals 1	3	P - ECSE 303 or ECSE 306
ECSE 414	Introduction to Telecommunication Networks	3	P - ECSE 322, ECSE 304/306
ECSE 429	Software Validation	3	P - ECSE 321 or COMP 303
FACC 300	Engineering Economy	3	-
6th Term (Winter)		15 credits	Prerequisites/Co-requisites
COMP 421	Database Systems	3	P - COMP 206, COMP 251, COMP 302
ECSE 427	Operating Systems	3	P - ECSE 322 or COMP 273
ECSE 428	Software Engineering Practice	3	P - ECSE 321 or COMP 335
ECSE 456	ECSE Design Project 1	3	P - CCOM 206, COMP 302, ECSE 211, ECSE 322, ECSE 306, ECSE 321
ECSE xxx	Technical Complementary	3	-
7th Term (Fall)		16 credits	Prerequisites/Co-requisites
COMP 360	Algorithm Design	3	P - COMP 251, MATH 363
ECSE 420	Parallel Computing	3	P - ECSE 427
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	-
Science	Natural Science Complementary 2	3	-

*Students with prior programming experience can replace COMP 202 with an additional technical complementary upon receiving permission from the department. Technical and Natural Science 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 - Software 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.

6-7 credits (2 courses) from the following:

		Credits	Prerequisites/Co-requisites
COMP 330	Theory of Computation	3	P - COMP 251, MATH 240
COMP 350	Numerical Computing	3	P - MATH 222, MATH 223, COMP 202 / COMP 208 / COMP 250
COMP 409	Concurrent Programming	3	P - COMP 251, COMP 302, COMP 310 / ECSE 427
COMP 424	Artificial Intelligence	3	P - (COMP 206 or ECSE 321), MATH 323 or equiv. and COMP 251
COMP 520	Compiler Design	4	P - COMP 273, COMP 302
COMP 557	Fundamentals of Computer Graphics	3	P - MATH 223, COMP 206, COMP 251
COMP 566	Discrete Optimization 1	3	P - COMP 360, MATH 223
COMP 575	Fundamentals of Distributed Algorithms	3	P - COMP 310
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 413	Communications Systems 2	3	P - ECSE 411
ECSE 415	Introduction to Computer Vision	3	P - ECSE 304 or ECSE 306
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 425	Computer Organization and Architecture	3	P - ECSE 322, ECSE 323
ECSE 426	Microprocessor Systems	3	P - CCOM 206, ECSE 323
ECSE 504	Sampled Data Control	3	P - ECSE 304 or ECSE 306 / C - ECSE 404 or ECSE 501
ECSE 507	Optimization and Optimal Control	3	P - MATH 264/248, MATH 270/271 or MATH 247
ECSE 523	Speech Communications	3	P - ECSE 412 or ECSE 512
ECSE 529	Computer and Biological Vision	3	P - ECSE 304 or ECSE 306
ECSE 530	Logic Synthesis	3	P - ECSE 323
ECSE 539	Software Language Engineering	3	P - COMP 303 or ECSE 321 or permission of instructor
ECSE 570	Automatic Speech Recognition	3	P - ECSE 305 and ECSE 322

Natural Science Complementary Courses - Software Engineering

Students from CEGEP are required to complete two 3-credit courses 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)

Last update: May 12, 2015

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