

Software 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)		18 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
CS	Complementary Studies Group B (HSSML) - 2	3	-
4th Term (Winter)		18 credits	Prerequisites/Co-requisites
COMP 206	Introduction to Software Systems	3	P - ECSE 202 or COMP 250*
COMP 250	Introduction to Computer Science	3	P - MATH 140, MATH 141
ECSE 222	Digital Logic	3	P - COMP 202
ECSE 223	Model-Based Programming	3	P - COMP 202
ECSE 321	Introduction to Software Engineering	3	P - COMP 202 or COMP 208
MATH 363	Discrete Mathematics	3	P - MATH 263*
5th Term (Fall)		16 credits	Prerequisites/Co-requisites
COMP 251	Algorithms and Data Structures	3	P - COMP 250 or COMP 203
ECSE 211	Design Principles and Methods	3	P - ECSE 200, COMP 202*
ECSE 324	Computer Organization	4	P - ECSE 200, ECSE 222
ECSE 326	Software Requirements Engineering	3	P - COMP 202, ECSE 223*
ECSE 429	Software Validation	3	P - ECSE 321 or COMP 303
6th Term (Winter)		17 credits	Prerequisites/Co-requisites
COMP 302	Programming Languages and Paradigms	3	P - COMP 250
COMP 529	Software Architecture	4	P - TBD*
ECSE 310	Thermodynamics of Computing	3	P - ECSE 200, ECSE 205, ECSE 222
ECSE 316	Signals and Networks	3	P - COMP 251, ECSE 200, MATH 263
ECSE 427	Operating Systems	3	P - ECSE 324 or COMP 273*
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
7th Term (Fall)		18 credits	Prerequisites/Co-requisites
COMP 360	Algorithm Design	3	P - COMP 251, MATH 363
ECSE 420	Parallel Computing	3	P - ECSE 427
ECSE 456	ECSE Design Project 1	3	P - CCOM 206, ECSE 211, ECSE 326*
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
FACC 300	Engineering Economy	3	-
8th Term (Winter)		18 credits	Prerequisites/Co-requisites
COMP 421	Database Systems	3	P - COMP 206, COMP 251, COMP 302
ECSE 428	Software Engineering Practice	3	P - ECSE 321 or COMP 335
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
Science	Natural Science Complementary	3	-

*Pending University approval

Transition to New Program: Starting in September 2016, students will be admitted to a new Software 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 - Software Engineering

Technical Complementaries

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

12-16 credits (4 courses) from the following:

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 417	Introduction Robotics and Intelligent Systems	3	P - COMP 251, MATH 223 and (ECSE 321 or COMP 206)
COMP 424	Artificial Intelligence	3	P - (COMP 206 or ECSE 321), MATH 323 or equiv. and COMP 251
COMP 512	Distributed Systems	4	P- COMP 310, COMP 251 or equivalent
COMP 520	Compiler Design	4	P - COMP 273, COMP 302
COMP 521	Modern Computer Games	4	P - COMP 251, MATH 223 and (COMP 303 or COMP 361)
COMP 525	Formal Verification	3	P - COMP 251 and COMP 330
COMP 533	Model-Driven Software Development	3	P - ECSE 321 or COMP 303 or COMP 361
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 325	Digital Systems	3	P - ECSE 324
ECSE 415	Introduction to Computer Vision	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 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 444	Microprocessors	4	P- ECSE 324
ECSE 539	Software Language Engineering	3	P - COMP 303 or ECSE 321 or permission of instructor

Last update: June 30, 2015

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