

# Software Engineering Curriculum - Fall 2013

Non-CEGEP Entry

<b>1st Semester (Fall)</b>		15 credits	Prerequisites/Co-requisites
CHEM 110	General Chemistry 1	4	-
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
<b>2nd Semester (Winter)</b>		18 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	-
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	-
CS	Complementary Studies Group B (HSSML) - 1	3	-
<b>3rd Semester (Fall)</b>		18 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
COMP 202	Foundations of Programming	3	P - MATH 140, MATH 141
ECSE 200	Electric Circuits 1	3	P - PHYS 142 or equivalent / C - MATH 263
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	-
<b>4th Semester (Winter)</b>		18 credits	Prerequisites/Co-requisites
COMP 250	Introduction to Computer Science	3	P - MATH 140, MATH 141
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 221	Introduction to Computer Engineering	3	P - COMP 202
ECSE 321	Introduction to Software Engineering	3	P - COMP 202 or COMP 208
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
MATH 270	Applied Linear Algebra	3	P - MATH 263
<b>5th Semester (Fall)</b>		17 credits	Prerequisites/Co-requisites
COMP 251	Data Structures and Algorithms	3	P - COMP 250
COMP 302	Programming Languages and Paradigms	3	P - COMP 250 or COMP 203
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 306	Fundamentals of Signals and Systems	3	P - ECSE 210, MATH 270
ECSE 322	Computer Engineering	3	P - ECSE 200 or MECH 383, ECSE 221
<b>6th Semester (Winter)</b>		17 credits	Prerequisites/Co-requisites
COMP 206	Introduction to Software Systems	3	P - COMP 202 or COMP 250
ECSE 305	Probability and Random Signals 1	3	P - ECSE 303 or ECSE 306
ECSE 323	Digital System Design	5	P - CCOM 206 or EDEC 206, ECSE 211, ECSE 221, ECSE 291
ECSE 427	Operating Systems	3	P - ECSE 322 or COMP 273
MATH 363	Discrete Mathematics	3	P - MATH 263, MATH 264
<b>7th Semester (Fall)</b>		16 credits	Prerequisites/Co-requisites
COMP 360	Algorithm Design Techniques	3	P - COMP 251, MATH 363
ECSE 414	Introduction to Telecommunication Networks	3	P - ECSE 322, ECSE 304/306
ECSE 420	Parallel Computing	3	P - ECSE 427
ECSE 429	Software Validation	3	P - ECSE 321 or COMP 303
ECSE 456	ECSE Design Project 1	3	P - CCOM 206, COMP 302, ECSE 211, ECSE 322, ECSE 306, ECSE 321
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
<b>8th Semester (Winter)</b>		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
FACC 300	Engineering Economy	3	-
ECSE xxx	Technical Complementary	3	-
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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](http://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:

COMP 330	Theory of Computation	3	P - COMP 251
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), 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
or ECSE 532	Computer Graphics	3	P - ECSE 322
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 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 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 570	Automatic Speech Recognition	3	P - ECSE 305 and ECSE 322

**Last update: April 4, 2013**

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