2005/2006 CURRICULUM - SOFTWARE ENGINEERING

EIGHT SEMESTER PROGRAM (Total Credits = 135-136)

First (Fall) Semester (TOTAL = 18 cr)		
CHEM 110	**General Chemistry 1**	(4 cr)
MATH 133	**Vectors, Matrices & Geometry**	(3 cr)
MATH 150	**Calculus A**	(4 cr)
PHYS 131	**Mechanics & Waves**	(4 cr)
XXXX xxx g1	General Complementary I	(3 cr)

Second (Winter) Semester (TOTAL = 18 cr)		
CHEM 120	**General Chemistry 2**	(4 cr)
COMP 202	**Introduction to Computing 1**	(3 cr)
MATH 152	**Calculus E**	(4 cr, P - MATH 150)
PHYS 142	**Electromagnetism & Optics**	(4 cr, P - PHYS 131)
XXXX xxx g2	General Complementary II	(3 cr)

Third (Fall) Semester (TOTAL = 17 cr)		
COMP 250	**Introduction to Computer Science**	(3 cr)
ECSE 200	**Fundamentals of Elect Eng**	(3 cr, C - MATH 261 or MATH 263 or MATH 325)
EDEC 206	**Communication in Engineering**	(3 cr)
MATH 263	**Ord.Differential Eqns. & Linear Alg.**	(3 cr, C - MATH 262 or MATH 260)
MATH 264	**Advanced Calculus**	(3 cr, P - MATH 260 or MATH 262 or MATH 151 or MATH 152 or equivalent)
MIME 221	**Engineering Professional Practice**	(2 cr)

Fourth (Winter) Semester (TOTAL = 17 cr)		
ECSE 210	**Circuit Analysis**	(3 cr, P - ECSE 200)
ECSE 221	**Intro. to Computer Engineering**	(3 cr, P - COMP 202)
ECSE 291	**Electrical Measurements Lab**	(2 cr, C - ECSE 210)
MATH 270	**Applied Linear Algebra**	(3 cr, P - MATH 263)
MATH 363	**Discrete Mathematics**	(3 cr, P - MATH 264 & MATH 270)
XXXX xxx g3	General Complementary III	(3 cr)

Fifth (Fall) Semester (TOTAL = 15 cr)		
COMP 251	**Data Struct. & Algorithms**	(3 cr, P - MATH 240/363 & COMP 250)
ECSE 303	**Signals & Systems 1**	(3 cr, P - ECSE 210, MATH 270 or 271/247; C - MATH 381/249)
ECSE 321	**Intro. to Software Engineering**	(3 cr, P - COMP 202 or COMP 208)
ECSE 322	**Computer Engineering**	(3 cr, P - ECSE 200 / MECH 383 & ECSE 221)
MATH 381	**Complex Variables & Transforms**	(3 cr, P - MATH 264)

Sixth (Winter) Semester (TOTAL = 18 cr)		
COMP 206	**Introduction to Software Systems**	(3 cr, P - COMP 202 or COMP 250)
COMP 302	**Prog. Languages & Paradigms**	(3 cr, P - COMP 250)
ECSE 305	**Probability & Random Signals 1**	(3 cr, P - ECSE 303)
ECSE 330	**Introduction to Electronics**	(3 cr, P - ECSE 210)
ECSE 427	**Operating Systems**	(3 cr, P - ECSE 322 or COMP 273)
XXXX xxx t1	Technical Complementary I	(3 cr)

Seventh (Fall) Semester (TOTAL = 15 cr)		
COMP 330	**Theoretical Aspects of Comp. Sci.**	(3 cr, P - COMP 251)
COMP 360	**Algorithm Design Techniques**	(3 cr, P - COMP 251, MATH 240/363)
COMP 420	**Files & Databases**	(3 cr, P - COMP 302)
ECSE 429	**Software Validation**	(3 cr, P - ECSE 321)
XXXX xxx t2	Technical Complementary II	(3 cr)

Eighth (Winter) Semester (TOTAL = 18 cr)		
COMP 361	**Systems Programming Project**	(3 cr, P - COMP 206)
ECSE 428	**Software Engineering Practice**	(3 cr, P - ECSE 321 or COMP 335)
ECSE 495	**Software Engineering Project**	(3 cr, P - ECSE 321 & 42 departmental credits)
MIME 310	**Engineering Economy**	(3 cr)
XXXX xxx t3	Technical Complementary III	(3 cr)
XXXX xxx t4	Technical Complementary IV	(3 cr)

All courses are core courses except for technical complementaries, laboratory complementaries and general complementaries. Core courses are shown in boldface above. All core courses must be passed with a grade "C" or better. Also, a grade of "C" is required for an ECSE xxx core course in order to proceed with its follow-on ECSE xxx course(s), and a grade of "C" is required for a MATH xxx course in order to proceed with its follow-on MATH xxx course(s). A grade of "D" is only acceptable for non-core courses.

Technical complementaries are selected from the list of 400-level courses offered by the Department of Electrical and Computer Engineering.

General complementary studies requirements consist of 3 credits from a special list which relate to the Impact of Technology on Society and 3 credits from a special list of Humanities and Social Sciences, and Administrative Studies and Law (see Section 8.3.4, Page 219 of the 2005-2006 McGill University Calendar).

General complementary studies requirements:
1) U0, freshman students, must complete 3 credits from a special list which relate to the Impact of Technology on Society and 6 credits from a special list of Humanities and Social Sciences, and Administrative Studies and Law (see Section 8.3.4, Page 219 of the 2005-2006 McGill University Calendar).
2) U1, (students from Quebec CEGEP), must complete 3 credits from a special list which relate to the Impact of Technology on Society and 3 credits from a special list of Humanities and Social Sciences, and Administrative Studies and Law (see Section 8.3.4, Page 219 of the 2005-2006 McGill University Calendar).

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TECHNICAL COMPLEMENTARY COURSES - SOFTWARE ENGINEERING PROGRAM

Technical Complementaries (4 courses) 12-14 credits

Students following the Software Engineering program should take 12-14 credits, of which 6 credits must be from list A, and 6-8 credits from list B. It is possible that not all the courses listed will be offered in any given year. Please refer to the up-to-date course assignments before selecting any course. Permission will not be granted to take Technical Complementary courses that are not on this list.

Software Engineering Technical Complementaries - GROUP A:

ECSE 304	Signals & Systems 2	A,B	(3 cr, P - ECSE 303)	
ECSE 529	Image Processing & Communication	A	(3 cr, P - ECSE 304)	
COMP 350	Numerical Computing	A	(3 cr, P - MATH 222 & 223 & one of COMP 202, 208, or 250; or equiv)	
COMP 409	Concurrent Programming	A	(3 cr, P - COMP 251, COMP 302 & COMP 310 or ECSE 427)	
COMP 424	Topics in Atrificial Intelligence 1	A	(3 cr, P - COMP 206, COMP 251, COMP 302)	**OR**
ECSE 526	Artificial Intelligence	B	(3 cr, P - ECSE 322)	
COMP 433	Personal Software Engineering		(3 cr, P - COMP 335)	
COMP 520	Compiler Design	A	(3 cr, P - COMP 273 & COMP 302)	
COMP 566	Discrete Optimization 1	A	(3 cr, P - COMP 360 & MATH 223)	
COMP 575	Fundamentals of Distributed Algorithms	B	(3 cr, P - ECSE 427)	

Software Engineering Technical Complementaries - GROUP B:

ECSE 323	Digital Systems Design	A,B	(5 cr, P - EDEC 206, ECSE 221 & ECSE 291)	
ECSE 404	Control Systems	A,B	(3 cr, C - ECSE 304)	
ECSE 411	Communications Systems 1	A	(3 cr, P - ECSE 304 & ECSE 305)	
ECSE 412	Discrete-Time Signal Processing	A,B	(3 cr, P - ECSE 304)	
ECSE 413	Communications Systems 2	B	(3 cr, P - ECSE 411)	
ECSE 414	Intro. to Telecom Networks	A	(3 cr, P - ECSE 304, ECSE 322)	**OR**
COMP 535	Computer Networks 1	A	(3 cr, P - ECSE 427)	
ECSE 421	Embedded Systems	B	(3 cr, P - ECSE 322, ECSE 323)	
ECSE 422	Fault Tolerant Computing		(3 cr, P - ECSE 322)	
ECSE 424	Human-Computer Interaction	B	(3 cr, P - ECSE 322)	
ECSE 425	Computer Org. & Architecture	A,B	(3 cr, P - ECSE 322 & ECSE 323)	
ECSE 426	Microprocessor Systems	A,B	(3 cr, P - ECSE 323 & EDEC 206)	**OR**
COMP 573	Microcomputers	A	(3 cr, P - COMP 273)	
ECSE 504	Computer Control		(3 cr, P - ECSE 305 & ECSE 404 or ECSE 502)	
ECSE 522	Asynchronous Circuits & Systems		(3 cr, P - ECSE 323)	
ECSE 530	Logic Synthesis	B	(3 cr, P - ECSE 323)	
ECSE 531	Real-Time Systems		(3 cr, P - ECSE 322 & ECSE 323)	
ECSE 532	Computer Graphics	A	(3 cr, P - ECSE 322)	**OR**
COMP 557	Computer Graphics	A	(3 cr, P - MATH 223 & COMP 251)	
COMP 410	Mobile Computing		(3 cr, P - COMP 310)	
COMP 412	Software for E-Commerce		(3 cr, P - ECSE 427 or COMP 310)	

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