2006 / 2007 CURRICULUM - COMPUTER ENGINEERING

EIGHT SEMESTER PROGRAM (Total Credits = 137)

First (Fall) Semester (TOTAL = 18 cr)

MATH 133	**Vectors, Matrices & Geometry**	(3 cr)
MATH 150	**Calculus A**	(4 cr)
PHYS 131	**Mechanics & Waves**	(4 cr)
CHEM 110	**General Chemistry 1**	(4 cr)
Xxxx xxx g1	General Complementary I	(3 cr)

Second (Winter) Semester (TOTAL = 18 cr)

MATH 152	**Calculus E**	(4 cr, P - MATH 150)
COMP 202	**Introduction to Computing 1**	(3 cr)
EDEC 206	**Communication in Engineering**	(3 cr)
PHYS 142	**Electromagnetism & Optics**	(4 cr, P - PHYS 131)
CHEM 120	**General Chemistry 2**	(4 cr)

Third (Fall) Semester (TOTAL = 17 cr)

CIVE 281	**Analytical Mechanics**	(3 cr, C - MATH 262 & MATH 263.)
ECSE 200	**Fundamentals of Elect Eng**	(3 cr, C - MATH 263, P - PHYS 142 or CEGEP Equivalent)
ECSE 221	**Intro. to Computer Engineering**	(3 cr, P - COMP 202)
MATH 263	**Ord. Differential Eqns. & Linear Alg.**	(3 cr, C - MATH 262)
MATH 264	**Advanced Calculus**	(3 cr, P - MATH 262 or MATH 151 or MATH 152 or equiv)
MIME 221	**Engineering Professional Practice**	(2 cr)

Fourth (Winter) Semester (TOTAL = 17 cr)

COMP 250	**Introduction to Computer Science**	(3 cr)
ECSE 210	**Circuit Analysis**	(3 cr, P - ECSE 200)
ECSE 211	**Design Methodology and Principles**	(3 cr, C - ECSE 291, P - ECSE 200 & COMP 202)
ECSE 291	**Electrical Measurements Lab**	(2 cr, C - ECSE 210)
ECSE 322	**Computer Engineering**	(3 cr, P - ECSE 221, ECSE 200 or MECH 383)
MATH 270	**Applied Linear Algebra**	(3 cr, P - MATH 263)

Fifth (Fall) Semester (TOTAL = 17 cr)

COMP 431	**Algorithms for Engineers**	(3 cr, P - ECSE 322 & MATH 363)
ECSE 306	**Fundamentals of Signals and System**	(3 cr, P - ECSE 210, MATH 270, C - MATH 381)
ECSE 323	**Digital Systems Design**	(5 cr, P - EDEC 206, ECSE 221 & ECSE 291)
ECSE 330	**Introduction to Electronics**	(3 cr, P - ECSE 210)
MATH 381	**Complex Variables & Transforms**	(3 cr, P - MATH 264)

Sixth (Winter) Semester (TOTAL = 18 cr)

ECSE 305	**Probability & Random Signals 1**	(3 cr, P - ECSE 303 or ECSE 306)
ECSE 321	**Intro. to Software Engineering**	(3 cr, P - COMP 202 or COMP 208)
ECSE 425	**Computer Org. & Architecture**	(3 cr, P - ECSE 322 & ECSE 323)
ECSE 427	**Operating Systems**	(3 cr, P - ECSE 322 or COMP 273)
MATH 363	**Discrete Mathematics**	(3 cr, P - MATH 264 & MATH 270)
XXXX xxx g2	General Complementary II	(3 cr)

Seventh (Fall) Semester (TOTAL = 16 cr)

COMP 535	**Computer Networks 1**	(3 cr, P - ECSE 427)
or ECSE 414	**Intro. to Telecom Networks**	(3 cr, P - ECSE 304 or ECSE 306, ECSE 322)
ECSE 334	**Introduction to Microelectronics**	(3 cr, P - EDEC 206, ECSE 291, ECSE 330, ECSE 303 or ECSE 306)
ECSE 353	**Electromagnetic Fields & Waves**	(3 cr, P - MATH 264 & ECSE 210)
ECSE 426	**Microprocessor Systems**	(3 cr, P - ECSE 323 & EDEC 206)
ECSE 474	**Design Project I**	(1 cr, P - EDEC 206 and 42 departmental credits)
XXXX xxx t1	Technical Complementary I	(3 cr)

Eighth (Winter) Semester (TOTAL = 16 cr)

MIME 310	**Engineering Economy**	(3 cr)
ECSE 475	**Design Project II**	(2 cr, P - ECSE 474)
ECSE 4xx l	Lab Complementary	(2 cr)
XXXX xxx t2	Technical Complementary II	(3 cr)
XXXX xxx t3	Technical Complementary III	(3 cr)
XXXX xxx g3	General Complementary III	(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 (ie - technical, laboratory, and general complementaries).

Laboratory complementaries are normally taken in conjuction with a technical complementary. Technical complementaries are selected from the list of 400-level courses offered by the Department of Electrical and Computer Engineering (see next page).

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 7.3.4, Page 213 of the 2006-2007 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 7.3.4, Page 213 of the 2006-2007 McGill University Calendar).

This sample curriculum is only for students who wish to complete their degree requirements in 8 semesters. Students may, at any time, deviate from this structure. However, it will be the student's responsibility to devise a study plan that has no course conflicts or prerequisite/corequisite violations. Academic advisors are available for course selection.

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Technical Complementaries (3 courses) 9 credits

Students following the Computer Engineering program must take 3 courses (9 credits) from the following lists. One course must be chosen from List A, and 2 courses must be chosen 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.

Computer Engineering Technical Complementaries - LIST A (1 Course):

Course	Course Title	Pre-Requisite and Co-Requisite Structure
ECSE 424	Human-Computer Interaction	(3 cr, P - ECSE 322)
ECSE 428	Software Engineering Practice	(3 cr, P - ECSE 321 or COMP 335)
ECSE 431	Introduction to VLSI CAD.	(3 cr, P - ECSE 323 & ECSE 330)

Computer Engineering Technical Complementaries - LIST B (2 Courses):

Course	Course Title	Pre-Requisite and Co-Requisite Structure
ECSE 404	Control Systems	(3 cr, C - ECSE 304 or ECSE 306)
ECSE 411	Communications Systems 1	(3 cr, P - ECSE 305 & ECSE 304 or ECSE 306)
ECSE 412	Discrete-Time Signal Processing	(3 cr, P - ECSE 304 or ECSE 306)
ECSE 420	Parallel Computing	(3 cr, P - ECSE 427)
ECSE 421	Embedded Systems	(3 cr, P - ECSE 322, ECSE 323)
ECSE 422	Fault Tolerant Computing	(3 cr, P - ECSE 322)
ECSE 429	Software Validation	(3 cr, P - ECSE 321)
ECSE 436	Signal Processing Hardware	(3 cr, P - ECSE 322, ECSE 323, ECSE 304 or ECSE 306)
ECSE 443	Numerical Methods in Electrical Eng.	(3 cr, P - COMP 202, ECSE 330, ECSE 351 or ECSE 353)
ECSE 450	Electromagnetic Compatability	(3 cr, P- ECSE 221, ECSE 334, ECSE 352 or ECSE 353)
ECSE 526	Artificial Intelligence	(3 cr, P - ECSE 322)
ECSE 530	Logic Synthesis	(3 cr, P - ECSE 323)
ECSE 532	Computer Graphics	(3 cr, P - ECSE 322)
ECSE 548	Introduction to VLSI Systems	(3 cr, P - ECSE 323 & ECSE 334)

Laboratory Elective (One course) 2 credits

Students following the regular Computer Engineering program must take one course (2 credits) from the following list. 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 Laboratory Complementary courses that are not on this list.

Laboratory Complementary Courses - Computer Engineering Program:

Course	Course Title	Pre-Requisite and Co-Requisite Structure
ECSE 434	Microelectronics Laboratory	(2 cr, P - ECSE 334, ECSE 304 or ECSE 306)
ECSE 487	Computer Architecture Laboratory	(2 cr, P - EDEC 206; C- ECSE 425 or ECSE 525)
ECSE 489	Telecommunication Network Laboratory	(2 cr, P - EDEC 206; C - ECSE 414)
ECSE 490	Digital Signal Processing Lab	(2 cr, P - ECSE 291 & EDEC 206; C- ECSE 412 or ECSE 512)
ECSE 491	Communications Systems Lab	(2 cr, P - EDEC 206, ECSE 291;C- ECSE 411 or ECSE 511)
ECSE 493	Control & Robotics Lab	(2 cr, P - EDEC 206 & ECSE 291;C- ECSE 404 or ECSE 501)

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