

2005/2006 CURRICULUM - COMPUTER ENGINEERING

ENTRY FROM CEGEP (Total Credits = 111)

First (Fall) Semester (TOTAL = 15 cr)		Second (Winter) Semester (TOTAL = 17 cr)	
CIVE 281 Analytical Mechanics	(3 cr, C - MATH 260 or MATH 262, MATH 261 or MATH 263.)	COMP 250 Introduction to Computer Science	(3 cr)
COMP 202 Introduction to Computing 1	(3 cr)	ECSE 200 Fundamentals of Elect Eng	(3 cr, C - MATH 261 or MATH 263 or MATH 325)
MATH 262 Intermediate Calculus	(3 cr, P-MATH 141, MATH 133 or equivalent.)	ECSE 221 Intro. to Computer Engineering	(3 cr, C - COMP 202)
MATH 263 Ord.Differential Eqns. & Linear Alg.	(3 cr, C - MATH 262 or MATH 260)	EDEC 206 Communication in Engineering	(3 cr)
MIME 310 Engineering Economy	(3 cr)	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)
Third (Fall) Semester (TOTAL = 17 cr)		Fourth (Winter) Semester (TOTAL = 17 cr)	
COMP 302 Prog. Languages & Paradigms	(3 cr, P - COMP 250)	ECSE 303 Signals & Systems 1	(3 cr, P - ECSE 210, MATH 270 or 271/247; C - MATH 381/249)
ECSE 210 Circuit Analysis	(3 cr, P - ECSE 200)	ECSE 323 Digital Systems Design	(5 cr, P - EDEC 206, ECSE 221 & ECSE 291)
ECSE 291 Electrical Measurements Lab	(2 cr, C - ECSE 210)	ECSE 330 Introduction to Electronics	(3 cr, P - ECSE 210)
ECSE 321 Intro. to Software Engineering	(3 cr, P - COMP 202 or COMP 208)	MATH 363 Discrete Mathematics	(3 cr, P - MATH 264 & MATH 270)
ECSE 322 Computer Engineering	(3 cr, P - ECSE 200 / MECH 383 & ECSE 221)	MATH 381 Complex Variables & Transforms	(3 cr, P - MATH 264)
MATH 270 Applied Linear Algebra	(3 cr, P - MATH 263)		
Fifth (Fall) Semester (TOTAL = 17 cr)		Sixth (Winter) Semester (TOTAL = 14 cr)	
ECSE 304 Signals & Systems 2	(3 cr, P - ECSE 303)	ECSE 427 Operating Systems	(3 cr, P - ECSE 322 or COMP 273)
ECSE 305 Probability & Random Signals 1	(3 cr, P - ECSE 303)	ECSE 4xx I1 Lab Complementary I	(2 cr)
ECSE 334 Introduction to Microelectronics	(5 cr, P - EDEC 206, ECSE 291, ECSE 303 & ECSE 330)	XXXX xxx t1 Technical Complementary I	(3 cr)
ECSE 425 Computer Org. & Architecture	(3 cr, P - ECSE 322 & ECSE 323)	XXXX xxx t2 Technical Complementary II	(3 cr)
ECSE 426 Microprocessor Systems	(3 cr, P - ECSE 323 & EDEC 206)	XXXX xxx g1 General Complementary I	(3 cr)
Seventh (Fall) Semester (TOTAL = 14 cr)			
ECSE 353 Electromagnetic Fields & Waves	(3 cr, P - MATH 264 & ECSE 210)		
ECSE 494 Electrical Eng. Design Project OR	(3 cr, P - EDEC 206 & 42 departmental credits)		
ECSE 483** Multi-disciplinary Project 1 AND	(3 cr, P - EDEC 206 & 42 departmental credits)		
ECSE 484** Multi-disciplinary Project 2	(3 cr, P - ECSE 483)		
ECSE 4xx I2 Lab Complementary II	(2 cr)		
XXXX xxx t3 Technical Complementary III	(3 cr)		
XXXX xxx g2 General Complementary II	(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.

Laboratory complementaries are normally taken in conjunction with a technical complementary. The courses ECSE 426 - Microprocessor Systems, ECSE 431 - Intro. to VLSI CAD, ECSE 435 - Mixed Signal Test Techniques and ECSE 436 Signal Processing Hardware, can be taken as a technical complementary or a lab complementary.

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).

**Students whom opt to take the multi-disciplinary projects must take the two course sequence, ECSE 483 - Multi-disciplinary Project I and ECSE 484 - Multi-disciplinary Project II, in lieu of ECSE 494 - Electrical Engineering Design Project.

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 - COMPUTER ENGINEERING PROGRAM

Technical Complementaries (3 courses) 9 credits

Students following the Computer Engineering program should take 3 courses (9 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 Technical Complementary courses that are not on this list.

Computer Engineering Technical Complementaries:

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 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 420	Parallel Computing	(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 428	Software Engineering Practice	B (3 cr, P - ECSE 321 or COMP 335)	
ECSE 429	Software Validation	(3 cr, P - ECSE 321)	
ECSE 431	Introduction to VLSI CAD.	A (3 cr, P - ECSE 323 & ECSE 330)	
ECSE 436	Signal Processing Hardware	(3 cr, P - ECSE 322, ECSE 323 & ECSE 304)	
ECSE 450	Electromagnetic Compatability (EMC)	B (3cr, P- ECSE 221, ECSE 334, ECSE 352 or ECSE 353)	
ECSE 526	Artificial Intelligence	B (3 cr, P - ECSE 322)	
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)	
ECSE 548	Introduction to VLSI Systems	A (3 cr, P - ECSE 323 & ECSE 334)	
COMP 420	Files & Databases	A (3 cr, P - COMP 302)	
COMP 431	Algorithms for Engineers	(3 cr)	
COMP 575	Fundamentals of Distributed Algorithms	B (3 cr, P - ECSE 427)	

Laboratory Complementary Courses - Computer Engineering Program:

ECSE 431	Introduction to VLSI CAD.	A (3 cr, P - ECSE 323 & ECSE 330)
ECSE 435	Mixed Signal Test Techniques	B (3 cr, P - ECSE 304 & ECSE 334)
ECSE 436	Signal Processing Hardware	(3 cr, P - ECSE 322, ECSE 323 & ECSE 304)
ECSE 487	Computer Architecture Laboratory	A,B (2 cr, P - EDEC 206; C- ECSE 425 or ECSE 525)
ECSE 489	Telecommunication Network Laborator	B (2 cr, P - EDEC 206; C - ECSE 414)
ECSE 490	Digital Signal Processing Lab	A,B (2 cr, P - ECSE 291 & EDEC 206; C- ECSE 412 or ECSE 512)
ECSE 491	Communications Systems Lab	A,B (2 cr, P - EDEC 206, ECSE 291;C- ECSE 411 or ECSE 511)
ECSE 493	Control & Robotics Lab	B (2 cr, P - EDEC 206 & ECSE 291;C- ECSE 404 or ECSE 502)

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