Electrical Engineering Curriculum - Fall 2010

Non-CEGEP Entry

1st Semester (Fall)		15 Credits	Pre-requisites/Co-requisites Required
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
2nd Semester (Winter)		18 Credits	Pre-requisites/Co-requisites Required
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	-
3rd Semester (Fall)		18 Credits	Pre-requisites/Co-requisites Required
CCOM 206	Communication in Engineering	3	-
CIVE 281	Analytical Mechanics	3	C - MATH 262, MATH 263
COMP 202	Introduction to Computing 1	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
4th Semester (Winter)		17 Credits	Pre-requisites/Co-requisites Required
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 211	Design Principles and Methods	3	P - ECSE 200, COMP 202 / C - ECSE 291
ECSE 221	Introduction to Computer Engineering	3	P - COMP 202
ECSE 291	Electrical Measurements Laboratory	2	C - ECSE 210
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
MATH 270	Applied Linear Algebra	3	P - MATH 263
5th Semester (Fall)		17 Credits	Pre-requisites/Co-requisites Required
ECSE 303	Signals and Systems 1	3	P - ECSE 210, MATH 271 / C - MATH 381
ECSE 322	Computer Engineering	3	P - ECSE 200 or MECH 383, ECSE 221
ECSE 323	Digital System Design	5	P - CCOM 206 or EDEC 206, ECSE 211, ECSE 221, ECSE 291
ECSE 330	Introduction to Electronics	3	P - ECSE 210
MATH 381	Complex Variables and Transforms	3	P - MATH 264
6th Semester (Winter)		18 Credits	Pre-requisites/Co-requisites Required
ECSE 304	Signals and Systems 2	3	P - ECSE 303
ECSE 305	Probability and Random Signals 1	3	P - ECSE 303 or ECSE 306
ECSE 334	Introduction to Microelectronics	3	P - ECSE 291, ECSE 303 or ECSE 306, ECSE 330
ECSE 351	Electromagnetic Fields	3	P - ECSE 200, MATH 264
PHYS 271	Introduction to Quantum Physics	3	P - CIVE 281
ECSE xxx	Technical Complementary	3	-
7th Semester (Fall)		17 Credits	Pre-requisites/Co-requisites Required
ECSE 352	Electromagnetic Waves	3	P - ECSE 351
ECSE 361	Power Engineering	3	P - ECSE 210, ECSE 351
ECSE 434	Microelectronics Laboratory	2	P - CCOM 206 or EDEC 206, ECSE 334
ECSE 456	ECSE Design Project 1	3	P - ECSE 211, ECSE 322, ECSE 323, ECSE 330 / CR - FACC 40
MIME 262	Properties of Materials in Electrical Engineering	3	-
ECSE xxx	Technical Complementary	3	-
8th Semester (Winter)		18 Credits	Pre-requisites/Co-requisites Required
ECSE 443	Introduction to Numerical Methods in Electrical Engineering	3	P - ESCE 221, ECSE 330, ECSE 351 or ECSE 353
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
MIME 310	Engineering Economy	3	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Laboratory Complementary	2	-
CS	Complementary Studies Group B (HSSML) - 2	3	-

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 in the *Programs, Courses and University Regulations Calendar* (www.mcgill.ca/study/2010-2011/faculties/engineering/undergraduate/ug_engineering_academic_programs) under "Complementary Studies."

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 - Electrical Engineering

Technical Complementaries

9 credits from the following::

		Credits
ECSE 404	Control Systems	3
ECSE 405	Antennas	3
ECSE 411	Communications Systems 1	3
ECSE 412	Discrete Time Signal Processing	3
ECSE 413	Communications Systems 2	3
ECSE 414	Introduction to Telecommunication Networks	3
ECSE 420	Parallel Computing	3
ECSE 421	Embedded Systems	3
ECSE 422	Fault Tolerant Computing	3
ECSE 423	Fundamentals of Photonics	3
ECSE 424	Human-Computer Interaction	3
ECSE 425	Computer Organization and Architecture	3
ECSE 426	Microprocessor Systems	3
ECSE 427	Operating Systems	3
ECSE 430	Photonic Devices and Systems	3
ECSE 431	Introduction to VLSI CAD	3
ECSE 432	Physical Basis: Transistor Devices	3
ECSE 435	Mixed-Signal Test Techniques	3
ECSE 436	Signal Processing Hardware	3
ECSE 450	Electromagnetic Compatibility	3
ECSE 451	EM Transmission and Radiation	3
ECSE 460	Appareillage électrique (Electrical Power Equipment)	3
ECSE 462	Electromechanical Energy Conversion	3
ECSE 464	Power System Analysis 1	3
ECSE 465	Power Electronic Systems	3
ECSE 467	Comportement des réseaux électriques	3
ECSE 468	Electricité industrielle (Industrial Power Systems)	3
ECSE 469	Protection des réseaux électriques	3

Laboratory Complementaries

2-3 credits from the following:

		Credits
ECSE 426	Microprocessor Systems	3
ECSE 431	Introduction to VLSI CAD	3
ECSE 435	Mixed-Signal Test Techniques	3
ECSE 436	Signal Processing Hardware	3
ECSE 450	Electromagnetic Compatibility	3
ECSE 485	IC Fabrication Laboratory	2
ECSE 486	Power Laboratory	2
ECSE 487	Computer Architecture Laboratory	2
ECSE 488	High Frequency Laboratory	2
ECSE 489	Telecommunication Network Laboratory	2
ECSE 490	Digital Signal Processing Laboratory	2
ECSE 491	Communication Systems Laboratory	2
ECSE 492	Optical Communications Laboratory	2
ECSE 493	Control and Robotics Laboratory	2

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