Electrical Engineering Curriculum - Fall 2015

Non-CEGEP Entry

1st Term (Fall)		14 credits	Prerequisites/Co-requisites
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
CS	Complementary Studies Group B (HSSML) - 1	3	-
2nd Term (Winter)		18 credits	Prerequisites/Co-requisites
CHEM 120	General Chemistry 2	4	-
COMP 202	Foundations of Programming*	3	P - A CEGEP-level mathematics course [For non-CEGEP students: A 100-level mathematics course]
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	-
3rd Term (Fall)		18 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
CIVE 281	Analytical Mechanics	3	C - MATH 262, MATH 263
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	-
4th Term (Winter)		18 credits	Prerequisites/Co-requisites
COMP 250	Introduction to Computer Science	3	P - MATH 140, MATH 141
ECSE 205	Probability and Statistics for Engineers	3	-
ECSE 206	Signals and Systems	3	P - ECSE 200
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 222	Digital Logic	3	P - COMP 202
MIME 262	Properties of Materials in Electrical Engineering	3	-
5th Term (Fall)		18 credits	Prerequisites/Co-requisites
ECSE 211	Design Principles and Methods	3	P - ECSE 200, COMP 202*
ECSE 251	Electric and Magnetic Fields	3	P - ECSE 200, MATH 262
ECSE 307	Linear Systems and Control	4	P - ECSE 206, ECSE 210
ECSE 324	Computer Organization	4	P - ECSE 200, ECSE 222
ECSE 331	Electronics	4	P - ECSE 210
6th Term (Winter)		15 credits	Prerequisites/Co-requisites
ECSE 308	Introduction to Communication Systems and Networks	4	P - ECSE 205, ECSE 206
ECSE 354	Electromagnetic Wave Propagation	4	P - ECSE 251
ECSE 362	Fundamentals of Power Engineering	4	P - CIVE 281, ECSE 210, ECSE 251
ECSE 443	Introduction to Numerical Methods in Electrical Engineering	3	P - (COMP 250, ECSE 331, ECSE 251) or ECSE 353*
7th Term (Fall)		18 credits	Prerequisites/Co-requisites
ECSE 456	ECSE Design Project 1	3	P - CCOM 206, ECSE 211, ECSE 331*
ECSE xxx	Technical Complementary	4	-
ECSE xxx	Technical Complementary	4	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
8th Term (Winter)		15 credits	Prerequisites/Co-requisites
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
FACC 300	Engineering Economy	3	-

*Pending University approval.

Transition to New Program: Starting in September 2016, students will be admitted to a new Electrical Engineering program, which will replace what is presently offered. The 8-semester curriculum above has been devised so that students admitted in September 2015 can transition smoothly into the new program. Many of the courses indicated for semester 3 onwards are also new and are not yet listed in the McGill eCalendar, but these will be included in the 2016-2017 edition.

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) (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 - Electrical Engineering

Technical Complementaries

23-28 credits

7 courses must be taken, chosen as follows:

- 2 courses (minimum 8 credits) from List A
- The remaining 5 courses (minimum 15 credits) from List A or List B

List A

8-28 credits from the following:

		Credits	Prerequisites/Co-requisites
ECSE 335	Microelectronics	4	P - ECSE 331
ECSE 403	Control	4	P - ECSE 307
ECSE 408	Communication Systems	4	P - ECSE 205 and ECSE 308
ECSE 416	Telecommunication Networks	4	P - COMP 250, ECSE 205, and either ECSE 308 or ECSE 316
ECSE 433	Physical Basis of Transistor Devices	4	P - ECSE 251, ECSE 331, and MIME 262
ECSE 444	Microprocessors	4	P- ECSE 324
ECSE 470	Electromechanical Systems	4	P - ECSE 362

List B

0-15 credits from the following:

		Credits	Prerequisites/Co-requisites
ECSE 310	Thermodynamics of Computing	3	P - ECSE 200, ECSE 205, and ECSE 222
ECSE 325	Digital Systems	3	P - ECSE 324
ECSE 405	Antennas	3	P - ECSE 303, ECSE 352
ECSE 412	Discrete Time Signal Processing	3	P - ECSE 304 or ECSE 306
ECSE 413	Communications Systems 2	3	P - ECSE 411
ECSE 415	Introduction to Computer Vision	3	P - ECSE 304 or ECSE 306
ECSE 420	Parallel Computing	3	P - ECSE 427
ECSE 421	Embedded Systems	3	P - ECSE 322, ECSE 323
ECSE 422	Fault Tolerant Computing	3	P - ECSE 322
ECSE 423	Fundamentals of Photonics	3	P - ECSE 352
ECSE 424	Human-Computer Interaction	3	P - ECSE 322 or (COMP 251 and COMP 273)
ECSE 425	Computer Organization and Architecture	3	P - ECSE 322, ECSE 323
ECSE 427	Operating Systems	3	P - ECSE 322 or COMP 273
ECSE 430	Photonic Devices and Systems	3	P - ECSE 352, PHYS 271
ECSE 431	Introduction to VLSI CAD	3	P - ECSE 323, ECSE 330
ECSE 435	Mixed-Signal Test Techniques	3	P - ECSE 304, ECSE 334
ECSE 436	Signal Processing Hardware	3	P - ECSE 322, ECSE 323, ECSE 304/306
ECSE 450	Electromagnetic Compatibility	3	P - ECSE 221, ECSE 334, ECSE 352/ECSE 353
ECSE 451	EM Transmission and Radiation	3	P - ECSE 352
ECSE 460	Appareillage électrique (Electrical Power Equipment)	3	P - ECSE 464
ECSE 463	Electric Power Generation	3	P - ECSE 361 or ECSE 461
ECSE 464	Power Systems Analysis	3	P - ECSE 361
ECSE 465	Power Electronic Systems	3	P - ECSE 334, ECSE 361
ECSE 466	Réseaux de distribution	3	P - ECSE 361
ECSE 467	Comportement des réseaux électriques	3	P - ECSE 462 or ECSE 464
ECSE 468	Electricité industrielle (Industrial Power Systems)	3	P - ECSE 361
ECSE 469	Protection des réseaux électriques	3	P - ECSE 464
PHYS 434	Optics	3	P - PHYS 342 or PHYS 352, or permission of the instructor
PHYS 446	Majors Quantum Physics	3	P - PHYS 230 and PHYS 232, or PHYS 251

Last update: June 30, 2015

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