

Electrical Engineering Curriculum - Fall 2015

CEGEP Entry

1st Term (Fall)		15 credits	Prerequisites/Co-requisites
CIVE 281	Analytical Mechanics	3	C - MATH 262, MATH 263
COMP 202	Foundations of Programming	3	P - A CEGEP-level mathematics course
ECSE 200	Electric Circuits 1	3	P - PHYS 142 or CEGEP 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
2nd Term (Winter)		15 credits	Prerequisites/Co-requisites
ECSE 210	Electric Circuits 2	3	P - ECSE 200
ECSE 211	Design Principles & 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
FACC 100	Introduction to the Engineering Profession	1	-
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
3rd Term (Fall)		15 credits	Prerequisites/Co-requisites
CCOM 206	Communication in Engineering	3	-
ECSE 322	Computer Engineering	3	P - ECSE 200 or MECH 383, ECSE 221
ECSE 351	Electromagnetic Fields	3	P - ECSE 200, MATH 264
MATH 270	Applied Linear Algebra	3	P - MATH 263
MATH 381	Complex Variables and Transforms	3	P - MATH 264
4th Term (Winter)		15 credits	Prerequisites/Co-requisites
ECSE 303	Signals and Systems 1	3	P - ECSE 210, MATH 270 / C - MATH 381
ECSE 330	Introduction to Electronics	3	P - ECSE 210
ECSE 361	Power Engineering	3	P - ECSE 210, ECSE 351
FACC 300	Engineering Economy	3	-
PHYS 271	Introduction to Quantum Physics	3	P - CIVE 281
5th Term (Fall)		17 credits	Prerequisites/Co-requisites
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 323	Digital System Design	5	P - CCOM 206, ECSE 211, ECSE 221, ECSE 291
ECSE 334	Introduction to Microelectronics	3	P - ECSE 291, ECSE 303 or ECSE 306, ECSE 330
ECSE 352	Electromagnetic Waves	3	P - ECSE 351
6th Term (Winter)		17 credits	Prerequisites/Co-requisites
ECSE 434	Microelectronics Laboratory	2	P - CCOM 206, ECSE 334
ECSE 443	Introduction to Numerical Methods in Electrical Engineering	3	P - ECSE 221, ECSE 330, ECSE 351 or ECSE 353
ECSE 456	ECSE Design Project 1	3	P - ECSE 211, ECSE 322, ECSE 323, ECSE 330
MIME 262	Properties of Materials in Electrical Engineering	3	-
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Technical Complementary	3	-
7th Term (Fall)		15 credits	Prerequisites/Co-requisites
ECSE 457	ECSE Design Project 2	3	P - ECSE 456
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
ECSE xxx	Technical Complementary	3	-
ECSE xxx	Lab Complementary	2	-
CS	Complementary Studies Group A (Impact)	3	-
CS	Complementary Studies Group B (HSSML)	3	-

*Students with prior programming experience can replace COMP 202 with COMP 250 upon receiving permission from the department.

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

9 credits from the following:

		Credits	Prerequisites/Co-requisites
ECSE 404	Control Systems	3	C - ECSE 304 or ECSE 306
ECSE 405	Antennas	3	P - ECSE 303, ECSE 352
ECSE 411	Communications Systems 1	3	P - ECSE 305, ECSE 304 / ECSE 306
ECSE 412	Discrete Time Signal Processing	3	P - ECSE 304 or ECSE 306
ECSE 413	Communications Systems 2	3	P - ECSE 411
ECSE 414	Introduction to Telecommunication Networks	3	P - ECSE 322, ECSE 304 / ECSE 306
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 426	Microprocessor Systems	3	P - CCOM 206, 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 432	Physical Basis: Transistor Devices	3	P - ECSE 212 / MIME 262, ECSE 330, ECSE 351
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 462	Electromechanical Energy Conversion	3	P - ECSE 361
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

Laboratory Complementaries

2-3 credits from the following:

		Credits	Prerequisites/Co-requisites
ECSE 426	Microprocessor Systems	3	P - CCOM 206, ECSE 323
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 485	IC Fabrication Laboratory	2	P - CCOM 206, ECSE 334 / C - ECSE 432 / ECSE 533
ECSE 486	Power Laboratory	2	P - CCOM 206, ECSE 330, ECSE 361
ECSE 487	Computer Architecture Laboratory	2	P - CCOM 206 / C - ECSE 425
ECSE 488	High Frequency Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 451
ECSE 489	Telecommunication Network Laboratory	2	P - CCOM 206 / C - ECSE 414 or ECSE 528
ECSE 490	Digital Signal Processing Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 412 or ECSE 512
ECSE 491	Communication Systems Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 411 or ECSE 511
ECSE 492	Optical Communications Laboratory	2	P - CCOM 206 / C - ECSE 423 or ECSE 430 or ECSE 527 or ECSE 571
ECSE 493	Control and Robotics Laboratory	2	P - CCOM 206, ECSE 291 / C - ECSE 404 or ECSE 501

Last update: May 12, 2015

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