2015-2016 Course Sequence

BASc in Electrical Engineering and BSc in Computing Technology

1st YEAR (30 credits)

		Session	Prerequisite(s)
CHM1311	Principles of Chemistry	Fall	4U or OAC chemistry or equivalent
GNG1105	Engineering Mechanics	Fall	Physics 4U, advanced functions and Introductory Calculus 4U or equivalent
ITI1120	Introduction to Computing I	Fall	
MAT1320	Calculus I	Fall	One of MAT1339, Ontario 4U Calculus and Vectors MCV4U) or an equivalent
MAT1341	Introduction to Linear Algebra	Fall	MAT1339 or Ontario 4U Calculus and Vectors (MCV4U), or an equivalent
ITI1121	Introduction to Computing II	Winter	ITI1120
ITI1100	Digital Systems I	Winter	
MAT1322	Calculus II	Winter	MAT1320
MAT1348	Discrete Mathematics for Computing	Winter	
PHY1124	Fundamentals of Physics for Engineers	Winter	OAC or 4U Physics, MAT1320

2nd YEAR (36 credits)

		Session	Prerequisite(s)
CEG2136	Computer architecture I	Fall	ITI1100
CSI2110	Data Structures and Algorithms	Fall	ITI1121, MAT1348
ELG2138	Circuit Theory I	Fall	ITI1100, MAT1341, MAT1322
ENG1112	Technical Report Writing	Fall	
MAT2322	Calculus III for Engineers	Fall	(MAT1322 or MAT1325 or MAT1332), (MAT1341 or CEGEP linear algebra)
MAT2384	Ordinary Differential Equations and Numerical Methods	Fall	MAT1341, (MAT1322 or MAT1325 or MAT1332)
CSI2101	Discrete Structures	Winter	MAT1348
CSI2120	Programming Paradigms	Winter	CSI2110
ELG2911	Professional Practice in Information Technology and Engineering	Winter	
ELG2136	Electronics I	Winter	ELG2138, MAT2384
ELG2137	Circuit Theory II	Winter	ELG2138, MAT2384
PHY2323	Electricity and Magnetism	Winter	(MAT2121 or MAT2122 or MAT2322), (PHY1124 or {PHY1121, PHY1122} or {PHY1321, PHY1322} or {PHY1331, PHY1322})

3rd YEAR (27 credits)

		Session	Prerequisite(s)
SEG2105	Introduction to Software Engineering	Fall	ITI1121
ELG3106	Electromagnetic Engineering	Fall	MAT2322, MAT2384, PHY2323
ELG3125	Signal and System Analysis	Fall	ELG2138
ELG3136	Electronics II	Fall	ELG2136
ELG3316	Electric Machines and Power Systems	Fall	ELG2138, ELG2136
ELG3126	Random Signals and Systems	Winter	ELG3125
ELG3155	Introduction to Control Systems	Winter	ELG3125
ELG3175	Introduction to Communication Systems	Winter	ELG3125. Corequisite: ELG3126
CEG3185	Introduction to Data Communications and Networking	Winter	MAT2377 or (MAT2371, MAT2375), or corequisite: ELG3126

4th YEAR * – (30 credits)

*Note: 4th year students are required to pick one of the 5 options: Communications [T], Systems [S], Electronics [E], Microwave & Photonic [M] or Power and Sustainable Energy [P].

		Session	Prerequisite(s)
CEG4158 [S]	Computer Control in Robotics	Fall	CEG2136, ELG3155
ELG4117 [E], [M]	Optoelectronics and Optical Components	Fall	ELG3106, ELG3136
ELG4125 [P]	Electric Power Transmission, Distribution & Utilization	Fall	ELG2137, ELG3316
ELG4139 [T], [E], [M], [P]	Electronics III	Fall	ELG3136, ELG3155
ELG4156 [T], [S]	Linear Systems	Fall	ELG3125, ELG3155
ELG4176 [T], [E]	Communication Systems	Fall	ELG3175, ELG3126
ELG4179 [T], [M], [P]	Wireless Communication Fundamentals	Fall	ELG3175
ELG4912 [All options]	Electrical Engineering Design Project: Part I	Fall	ELG3106, ELG3136, ELG3175, ELG3155
PHY2311 [M]	Waves and Optics	Fall	(PHY1122 or PHY1124 or PHY1322), (MAT1322 or MAT1325 or MAT1332)
PHY2333 [S]	Mechanics	Fall	MAT1341, (MAT1322 or MAT1325 or MAT1341, (MAT1322 or MAT1325 or MAT1332), (PHY1121 or PHY1321 or PHY1331 or PHY1124)
Technical elective ** [S], [E], [P]		Fall	
ELG4115 [E], [M]	Microwave Circuits	Winter	ELG3106, ELG3136
ELG4118 [T], [M]	Wave Propagation and Antennas	Winter	ELG3106
ELG4126 [P]	Sustainable Electrical Power Systems	Winter	ELG2137, ELG3316, ELG3136, ELG3155
ELG4137 [S], [E]	Principles and Applications of VLSI Design	Winter	ELG2136
ELG4157 [S], [P]	Modern Control Engineering	Winter	ELG3155
ELG4159 [S], [P]	Integrated Control Systems	Winter	ELG3125, ELG3155, ELG3316
ELG4177 [T], [S], [E]	Digital Signal Processing	Winter	ELG3125
ELG4178 [M]	Optical Communications and Networking	Winter	PHY3320 or ELG3106
ELG4913 [All options]	Electrical Engineering Design Project: Part II	Winter	ELG4912
EVS1101 [P]	Introduction to Environmental Science	Winter	Advanced Functions and Introductory Calculus 4U or Calculus and Vectors 4U or MAT1319 or MAT1339 and two of the 4U Science or Mathematics courses
PHY2361 [T], [E]	Modern Physics	Winter	MAT1341, (MAT1322 or MAT1325 or MAT1332), (PHY1124 or (PHY1121, PHY1122) or (PHY1321, PHY1322) or (PHY1331, PHY1322)
Technical Elective *** [T], [M]		Winter	

** Technical electives include the following courses: CEG4158, CEG4188, CEG4316, ELG4117, ELG4121, ELG4125, ELG4139, ELG4156, ELG4176, ELG4179.

*** Technical electives include the following courses: CEG4187, CEG4396, ELG4115, ELG4118, ELG4122, ELG4126, ELG4137, ELG4157, ELG4159, ELG4177, ELG4178.
Additionally, for the [S], [E], [M] options: CEG4186.

5th YEAR (30 credits)

		Session	Prerequisite(s)
CSI2372	Advanced Programming Concepts with C++	Fall	ITI1121, ITI1100
CSI3120	Programming Language Concepts	Fall	CSI2101, CSI2120
ECO1192	Engineering Economics	Fall	
1 CSI/CEG/SEG 3000 level		Fall	
Elective		Fall	
PHI2394	Scientific Thought and Social Value	Fall	
or			
HIS2129	Technology, Society and Environment since 1800	Winter	
CSI3131	Operating Systems	Winter	CEG2136, CSI2110
SEG2106	Software Construction	Winter	CSI2110, SEG2105
Elective		Winter	
Elective		Winter	