Course sequence

Biomedical Mechanical Engineering and Computing Technology

1st YEAR (30 credits)

		Session	Prerequisite
CHM1311	Principles of Chemistry	Fall	4U chemistry or OAC Chemistry or equivalent.
ENG1112	Technical Report Writing	Fall	
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.
ITI1121	Introduction to computing II	Winter	ITI1120
MAT1322	Calculus II	Winter	MAT1320
MAT1341	Introduction to Linear Algebra	Winter	MAT1339 or Ontario 4U Calculus and Vectors (MCV4U), or an equivalent.
MCG1100	Introduction to Mechanical Engineering	Winter	Corequisite: GNG1105
PHY1122	Fundamentals of Physics II	Winter	OAC or 4U Physics; corequisite: MAT1320 (preferred) or MAT1330.

2nd YEAR (36 credits)

		Session	Prerequisite
ECO1192	Engineering Economics	**Fall**/Winter	
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)
MCG2108	Mechanics II	Fall	GNG1105; corequisite: MAT2322
MCG2130	Thermodynamics I	Fall	
MCG2141	Biological and Engineering Materials I	Fall	
CVG2140	Mechanics of Materials	Winter	GNG1105
ELG2336	Electric Circuits and Machines for Mechanical Engineering	Winter	PHY1122; corequisite: MAT2384
MAT1348	Discrete Mathematics for Computing	Winter	
MCG2101	Introduction to Design	Winter	MCG1100, MCG2108, (MCG2360 or MCG2141)
MCG2131	Thermodynamics II	Winter	MCG2130
MCG2142	Biological and Engineering Materials II	Winter	MCG2141

3rd YEAR (36 credits)

		Session	Prerequisite
CSI2110	Data Structures and Algorithms	Fall	ITI1121, MAT1348
ELG3336	Electronics for Mechanical	Fall	ELG2336
MAT3320	Mathematics for Engineers	Fall	(MAT2121 or MAT2322), (MAT2324 or MAT2384)
MCG3130	Dynamics of Machinery	Fall	MCG2108
MCG3306	Control Systems I	Fall	MAT2384, MCG2108
MCG3340	Fluid Mechanics I	Fall	MCG2108, MCG2
ITI1100	Digital systems I	Winter	
MCG3110	Heat Transfer	Winter	MCG3340
MCG3131	Machine Design	Winter	CVG2140, MCG2101, (MCG2361 or MCG2142)
MCG3141	Biomechanics	Winter	MCG2142, MCG3130
MCG3142	Biocontrol Systems	Winter	MAT3320, MCG2142, MCG3306, ELG3336
MCG3143	Bio-Fluid Mechanics	Winter	MCG2142, MCG3340 for MCG students or CHG2312 for CHG students

4th YEAR (36 credits)

		Session	Prerequisite
CEG2136	Computer architecture I	Fall	ITI1100
CSI2372	Advanced Programming Concepts with C++	Fall	ITI1121, ITI1100
MAT2377	Probability and Statistics for Engineers	Fall	MAT1320 or MAT1330; corequisite: MAT1322 or MAT1325 or MAT1332
MCG4151	Design of Artificial Joint Prostheses and Implants	Fall	MCG3141, MCG3130, MCG3131
MCG4328	Manufacturing	Fall	MCG3110, MCG3340, (MCG2361 or MCG2142)
PHI2396	Bioethics	Fall	
CSI2120	Programming Paradigms	Winter	CSI2110
HSS2121	History of Healthcare	Fall/**Winter**	
MCG4150	Bioinstrumentation	Winter	MCG3142
MCG4152	Design of Artificial Organs	Winter	MCG3143
MCG4308	Mechanical Vibration Analysis	Winter	MAT3320, MCG3130
MCG4340	Mechanical Engineering Laboratory	Winter	MCG3110, MCG3131, (MCG3145 or MCG3141), (MCG3307 or MCG3142), (MCG3341 or MCG3143)

5th YEAR (24 credits)

		Session	Prerequisite
MCG4322	Computer-Aided Design	Fall	24 MCG credits at the 3000 level
CEG3136	Computer architecture II	Fall	CEG2136
Technical elective		**Fall**/Winter	
HIS2129 or	Technology, Society and	Winter (HIS2129)	
PHI2394 or	Environment since 1800 / Scientific Thought and Social Value	Fall (PHI2394)	
GNG4120	Technology Entrepreneurship for Engineers and Computer Scientists	Fall (GNG4120)	
CSI3131	Operating systems	Winter	CEG2136, CSI2110
GNG4170	Engineering Law	Winter	
Elective chosen from SEG or CEG courses at the 2000 level or above		Fall/**Winter**	