2015-2016 Course Sequence

BASc in Biomedical Mechanical Engineering

1st YEAR (30 credits)

		Session	Prerequisite(s)
ENG1112	Technical Report Writing	Fall	
GNG1105	Engineering Mechanics	Fall	Physics 4U, advanced functions and Introductory Calculus 4U or equivalent
GNG1106	Fundamentals of Engineering Computation	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
ANP1106	Human Anatomy and Physiology II	Winter	OAC or 4U Biology
HSS2121	History of Healthcare	Winter	
MAT1322	Calculus II	Winter	MAT1320
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(s)
ECO1192	Engineering Economics	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)
MCG2108	Mechanics II	Fall	GNG1105. Corequisite: MAT2322
MCG2130	Thermodynamics I	Fall	
MCG2360	Engineering Materials I	Fall	
CVG2140	Mechanics of Materials	Winter	GNG1105
ELG2336	Electric Circuits and Machines for Mechanical Engineering	Winter	PHY1122. Corequisite: MAT2384
MAT2377	Probability and Statistics for Engineers	Winter	MAT1320 or MAT1330; corequisite: MAT1322 or MAT1325 or MAT1332
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 (33 credits)

		Session	Prerequisite(s)
ELG3336	Electronics for Mechanical Engineers	Fall	ELG2336
MAT3320	Mathematics for Engineers	Fall	(MAT2121 or MAT2322), (MAT2324 or MAT2384)
MCG3130	Dynamics of Machinery	Fall	MCG2108
MCG3305	Biomedical System Dynamics	Fall	MAT2384, MCG2108
MCG3340	Fluid Mechanics I	Fall	MCG2108, MCG2130
GNG4170	Engineering Law	Winter	
MCG3110	Heat Transfer	Winter	MCG3340
MCG3131	Machine Design	Winter	CVG2140, MCG2101, (MCG2361 or MCG2142)
MCG3141	Biomechanics	Winter	MCG2142, MCG3130
MCG3307	Control Systems	Winter	MAT3320, MCG3130, (MCG3305 or MCG3306), MCG3340, ELG3336. Corequisite: MCG3110
MCG3143	Bio-Fluid Mechanics	Winter	MCG2142, MCG3340

4th YEAR (33 credits)

		Session	Prerequisite(s)
MCG4151	Design of Artificial Joint Prostheses and Implants	Fall	MCG3141, MCG3130, MCG3131
MCG4322 (6 credits)	Computer-Aided Design	Fall	24 MCG credits at the 3000 level
MCG4328	Manufacturing	Fall	MCG3110, MCG3340, (MCG2361 or MCG2142)
PHI2396	Bioethics	Fall	
Technical Elective		Fall	
PHI2394	Scientific Thought and Social Value	Fall	
or			
GNG4120	Technology Entrepreneurship for Engineers and Computer Scientists	Fall	
or			
HIS2129	Technology, Society and Environment since 1800	Winter	
MCG4150	Bioinstrumentation	Winter	MCG3142 or MCG3307
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)