

2013-2014 Course Sequence
Mechanical Engineering and Computing Technology

1st YEAR (30 credits)

| | | <u>Session</u> | <u>Prerequisite(s)</u> |
|---------|--|-----------------------|---|
| 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)

| | | <u>Session</u> | <u>Prerequisite(s)</u> |
|---------|---|-----------------------|--|
| ADM1100 | Introduction to Business Management | 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 | CHM1311 or equivalent |
| MCG2360 | Engineering Materials I | Fall | CHM1311 or equivalent |
| 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 |
| MCG2361 | Engineering Materials II | Winter | MCG2360 |

3rd YEAR (36 credits)

| | | <u>Session</u> | <u>Prerequisite(s)</u> |
|---------|--------------------------------------|----------------|--|
| CSI2110 | Data Structures and Algorithms | Fall | ITI1121, MAT1348 |
| ELG3336 | Electronics for Mechanical Engineers | 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, MCG2130 |
| ITI1100 | Digital systems I | Winter | |
| MCG3110 | Heat Transfer | Winter | MCG3340 |
| MCG3131 | Machine Design | Winter | CVG2140, MCG2101, (MCG2361 or MCG2142) |
| MCG3145 | Advanced Strength of Materials | Winter | CVG2140, MCG2108 |
| MCG3307 | Control Systems II | Winter | MAT3320, MCG3130, MCG3306, MCG3340, ELG3336. Corequisite: MCG3110. |
| MCG3341 | Fluid Mechanics II | Winter | MCG3340 |

4th YEAR (33 credits)

| | | <u>Session</u> | <u>Prerequisite(s)</u> |
|-------------------------------|--|----------------|--|
| 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 |
| MCG4328 | Manufacturing | Fall | MCG3110, MCG3340, (MCG2361 or MCG2142) |
| Complimentary Elective | | Fall | |
| Technical Elective | | Fall/Winter | |
| Technical Elective | | Fall/Winter | |
| CSI2120 | Programming Paradigms | Winter | CSI2110 |
| ECO1192 | Engineering Economics | Winter | |
| 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 (27 credits)

| | | <u>Session</u> | <u>Prerequisite(s)</u> |
|--|--|------------------|----------------------------------|
| MCG4322 | Computer-Aided Design | Fall | 24 MCG credits at the 3000 level |
| CEG3136 | Computer Architecture II | Fall | CEG2136 |
| Technical Elective | | Fall/Winter | |
| Technical Elective | | Fall/Winter | |
| CSI3131 | Operating Systems | Winter | CEG2136, CSI2110 |
| GNG4170 | Engineering Law | Winter | |
| HIS2129 | Technology, Society and Environment since 1800 | Winter (HIS2129) | |
| or | | | |
| PHI2394 | Scientific Thought and Social Value | Fall (PHI2394) | |
| Elective from CSI/SEG/CEG at the 2000 level or above | | Fall/Winter | |