

# Mechanical Engineering Curriculum - Fall 2013 (Stream A - Option 1)

CEGEP Entry

| <b>1st Semester (Fall)</b>   |                                                           | 13 credits | Prerequisites/Co-requisites                                                            |
|------------------------------|-----------------------------------------------------------|------------|----------------------------------------------------------------------------------------|
| COMP 208                     | Computers in Engineering                                  | 3          | P - MATH 140, MATH 141                                                                 |
| MATH 262                     | Intermediate Calculus                                     | 3          | P - MATH 141, MATH 133                                                                 |
| MECH 201                     | Introduction to Mechanical Engineering                    | 2          | -                                                                                      |
| MECH 210                     | Mechanics 1                                               | 2          | -                                                                                      |
| EC                           | Elective - 1                                              | 3          | -                                                                                      |
| <b>2nd Semester (Winter)</b> |                                                           | 17 credits | Prerequisites/Co-requisites                                                            |
| FACC 100                     | Introduction to the Engineering Profession                | 1          | -                                                                                      |
| MATH 263                     | Ordinary Differential Equations for Engineers             | 3          | C - MATH 262                                                                           |
| MATH 264                     | Advanced Calculus for Engineers                           | 3          | P - MATH 262 / C - MATH 263                                                            |
| MECH 220                     | Mechanics 2                                               | 4          | P - MECH 210, MATH 262 / C - MATH 263                                                  |
| MECH 262                     | Statistics and Measurement Laboratory                     | 3          | -                                                                                      |
| MECH 290                     | Design Graphics for Mechanical Engineering                |            |                                                                                        |
| <b>3rd Semester (Fall)</b>   |                                                           |            |                                                                                        |
| MECH 292                     | Conceptual Design                                         | 3          | P - MECH 289 or MECH 290 / P or C - CIVE 207                                           |
| MIME 260                     | Material Science and Engineering                          | 3          | -                                                                                      |
| EC                           | Elective - 2                                              | 3          | -                                                                                      |
| <b>4th Semester (Winter)</b> |                                                           | 15 credits | Prerequisites/Co-requisites                                                            |
| CCOM 206                     | Communication in Engineering                              | 3          | -                                                                                      |
| MECH 240                     | Thermodynamics 1                                          | 3          | -                                                                                      |
| MECH 309                     | Numerical Methods in Mechanical Engineering               | 3          | P - MATH 263, MATH 271, COMP 208                                                       |
| MECH 314                     | Dynamics of Mechanisms                                    | 3          | P - MECH 220                                                                           |
| MECH 331                     | Fluid Mechanics 1                                         | 3          | P - MECH 210 / C - MECH 220, MECH 240, MATH 271                                        |
| <b>5th Semester (Fall)</b>   |                                                           | 16 credits | Prerequisites/Co-requisites                                                            |
| MECH 315                     | Mechanics 3                                               | 4          | P - MECH 220, MATH 271 / C - CIVE 207                                                  |
| MECH 341                     | Thermodynamics 2                                          | 3          | P - MATH 264, MECH 240                                                                 |
| MECH 346                     | Heat Transfer                                             | 3          | P - MECH 240, MECH 331, MATH 271                                                       |
| MECH 360                     | Principles of Manufacturing                               | 3          | P - MECH 289 or MECH 290 / P or C - CIVE 207                                           |
| MECH 393                     | Machine Element Design                                    | 3          | P - MECH 289 or 290, CIVE 207 / P or C - MECH 260 or 360, MECH 292, MECH 314, MIME 260 |
| <b>6th Semester (Winter)</b> |                                                           | 15 credits | Prerequisites/Co-requisites                                                            |
| FACC 300                     | Engineering Economy                                       | 3          | -                                                                                      |
| MECH 321                     | Mechanics of Deformable Solids                            | 3          | P - CIVE 207                                                                           |
| MECH 383                     | Applied Electronics and Instrumentation                   | 3          | P - MECH 262, MATH 263                                                                 |
| MECH 430                     | Fluid Mechanics 2                                         | 3          | P - MECH 240, MECH 331                                                                 |
| MECH xxx                     | Technical Complementary                                   | 3          | -                                                                                      |
| <b>7th Semester (Fall)</b>   |                                                           | 14 credits | Prerequisites/Co-requisites                                                            |
| ECSE 461                     | Electric Machinery                                        | 3          | -                                                                                      |
| MECH 362                     | Mechanical Laboratory 1                                   | 2          | P - MECH 262                                                                           |
| MECH 412                     | System Dynamics and Control                               | 3          | P - MECH 309 or MATH 317, MECH 315 / C - MECH 331                                      |
| MECH 463D1                   | Mechanical Engineering Project                            | 3          | P - CCOM 206, MECH 260 / 360, MECH 292, MECH 314, MECH 393, MIME 260                   |
| CS                           | Complementary Studies Group A (Impact) or Group B (HSSML) | 3          | -                                                                                      |
| <b>8th Semester (Winter)</b> |                                                           | 13 credits | Prerequisites/Co-requisites                                                            |
| FACC 400                     | Engineering Professional Practice                         | 1          | P - FACC 100, 60 program credits                                                       |
| MECH 463D2                   | Mechanical Engineering Project                            | 3          | P - MECH 463D1                                                                         |
| MECH xxx                     | Technical Complementary                                   | 3          | -                                                                                      |
| MECH xxx                     | Technical Complementary                                   | 3          | -                                                                                      |
| CS                           | Complementary Studies Group A (Impact) or Group B (HSSML) | 3          | -                                                                                      |

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](http://www.mcgill.ca/study)) (see the Academic Programs section).

Elective courses (EC) may be chosen from any course at the 200-level or higher in the Desautels Faculty of Management, Faculty of Agricultural and Environmental Sciences, Faculty of Arts, Faculty of Engineering, Faculty of Religious Studies, Faculty of Science, and/or Schulich School of Music.

Students are responsible for satisfying pre-/co-requisites and verifying with their department that they are meeting the requirements of their program.

|          |                                             | <b>Credits</b> | <b>Prerequisites/Co-requisites</b>    |
|----------|---------------------------------------------|----------------|---------------------------------------|
| MECH 497 | Value Engineering                           | 3              | P - MECH 493 and 45 credits completed |
| MECH 498 | Interdisciplinary Design Project 1          | 3              | -                                     |
| MECH 499 | Interdisciplinary Design Project 2          | 3              | -                                     |
| MECH 513 | Control Systems                             | 3              | P - MECH 412 or MECH 419              |
| MECH 529 | Discrete Manufacturing Systems              | 3              | P - Permission of instructor          |
| MECH 530 | Mechanics of Composite Materials            | 3              | C - MECH 321                          |
| MECH 532 | Aircraft Performance, Stability and Control | 3              | P - MECH 412 / MECH 419, MECH 533     |
| MECH 535 | Turbomachinery and Propulsion               | 3              | P - MECH 331                          |
| MECH 536 | Aircraft Structures                         | 3              | P - MECH 321                          |
| MECH 541 | Kinematic Synthesis                         | 3              | P - MECH 309 or MATH 317              |
| MECH 543 | Design with Composite Materials             | 3              | P - MECH 530                          |
| MECH 544 | Processing of Composite Materials           | 3              | P - MECH 530                          |
| MECH 553 | Design and Manufacture of Microdevices      | 3              | -                                     |
| MECH 557 |                                             |                |                                       |