Mechanical Engineering Curriculum - Fall 2021 (Stream A - Option 1)

CEGEP Entry

1st Term		13 credits	Prerequisites/Co-requisites
COMP 208	Computers in Engineering	3	P - differential and integral calculus [MATH 140 and MATH 141] / C - linear algebra [MATH 133]
MATH 262	Intermediate Calculus	3	P - MATH 133 or equivalent, MATH 141 or equivalent
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
MECH 201	Introduction to Mechanical Engineering	2	-
MECH 210	Mechanics 1	2	P - PHYS 101 or PHYS 131 or equivalent
2nd Term		**14 credits**	**Prerequisites/Co-requisites**
FACC 100	Introduction to the Engineering Profession	1	-
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	C - MATH 263
MECH 290	Design Graphics for Mechanical Engineering	3	-
3rd Term		**13 credits**	**Prerequisites/Co-requisites**
CIVE 207	Solid Mechanics	4	P - CIVE 205 or MECH 210
MATH 271	Linear Algebra and Partial Differential Equations	3	P - MATH 263, MATH 264
MIME 260	Material Science and Engineering	3	-
MECH 292	Design 1: Conceptual Design	3	P - MECH 289 or MECH 290 / P or C - CIVE 207
4th Term		**15 credits**	**Prerequisites/Co-requisites**
FACC 250	Responsibilities of the Professional Engineer	0	P - FACC 100 or BREE 250
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 / P or C - MECH 220, MECH 240, MATH 271
5th Term		**16 credits**	**Prerequisites/Co-requisites**
MECH 315	Mechanics 3	4	P - MECH 220, MATH 271 / P or 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	Design 2: Machine Element Design	3	P - MECH 289 or 290, CIVE 207 / P or C - MECH 260 or 360, MECH 292, MECH 314, MIME 260
6th Term		**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	-
7th Term		**14 credits**	**Prerequisites/Co-requisites**
ECSE 461	Electric Machinery	3	-
CS	Complementary Studies Group A (Impact)*	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 / P or C - MECH 331
MECH 463D1	Design 3: Mechanical Engineering Project	3	P - CCOM 206 or EDEC 206, MECH 260 / 360, MECH 292, MECH 314, MECH 393, MIME 260
8th Term		**13 credits**	**Prerequisites/Co-requisites**
FACC 400	Engineering Professional Practice	1	P - FACC 100, FACC 250**, and 60 program credits
CS	Complementary Studies Group B (HSSML)*	3	-
MECH	Design 3: Mechanical Engineering Project	3	P - MECH 463D1
MECH xxx	Technical Complementary	3	-
MECH xxx	Technical Complementary	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). Students must take one course (3 credits) from Group A and one course (3 credits) from Group B. The curriculum above includes suggested terms during which these courses can be taken. 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) (see your program listing in the "Browse Academic Units & Programs" section).

** FACC 250 is not yet indicated as a prerequisite in the eCalendar course information (www.mcgill.ca/study) but it will be before FACC 400 is taken.

Before Fall 2020, 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.

Technical Complementary Courses - Mechanical Engineering

6 credits at the 300-level or higher, chosen from Mechanical Engineering courses (subject code MECH). One of these two courses (3 credits) must be chosen from the following Design shortlist:

		Credits	Prerequisites/Co-requisites
MECH 497	Value Engineering	3	P - MECH 393 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	Mechatronic Design	3	P - ECSE 461, MECH 383, MECH 412 / MECH 419
MECH 559	Engineering Systems Optimization	3	-
MECH 560	Eco-design and Product Life Cycle Assessment	3	P - MECH 360
MECH 563	Biofluids and Cardiovascular Mechanics	3	P - CHEE 314 or MECH 331
or CHEE 563	Biofluids and Cardiovascular Mechanics	3	
MECH 565	Fluid Flow and Heat Transfer Equipment	3	P - MECH 240, MECH 309 or MATH 317, MECH 331, MECH 341, MECH 346 or permission of the instructor
MECH 573	Mechanics of Robotic Systems	3	P - MECH 309 or MATH 317, MECH 572
MECH 577	Optimum Design	3	P - MECH 309 or MATH 317

One course (3 credits), subject to Departmental approval, at the 300-level or higher from the Faculty of Engineering (including MECH courses) or from courses in the Faculty of Science, including MATH courses.

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For the official program listing, see the *Programs, Courses and University Regulations* publication (www.mcgill.ca/study).