

Materials Engineering Curriculum - Fall 2010

Non-CEGEP Entry

1st Semester (Fall)		15 Credits	Pre-requisites/Co-requisites Required
CHEM 110	General Chemistry 1	4	-
FACC 100	Introduction to the Engineering Profession	1	-
MATH 133	Linear Algebra and Geometry	3	-
MATH 140	Calculus 1	3	-
PHYS 131	Mechanics and Waves	4	C - MATH 140
2nd Semester (Winter)		15 Credits	Pre-requisites/Co-requisites Required
CHEM 120	General Chemistry 2	4	-
MATH 141	Calculus 2	4	P - MATH 140
PHYS 142	Electromagnetism and Optics	4	P - PHYS 131 / C - MATH 141
CS	Complementary Studies Group B (HSSML) - 1	3	-
3rd Semester (Fall)		18 Credits	Pre-requisites/Co-requisites Required
CCOM 206	Communication in Engineering	3	-
MATH 262	Intermediate Calculus	3	P - MATH 141, MATH 133
MECH 289	Design Graphics	3	-
MIME 250	Introduction to Extractive Metallurgy	3	C - MIME 202
MIME 261	Structure of Materials	3	-
CS	Complementary Studies Group B (HSSML) - 1	3	-
4th Semester (Winter)		18 Credits	Pre-requisites/Co-requisites Required
CHEM 233	Topics in Physical Chemistry	3	-
CIVE 205	Statics	3	-
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
MIME 209	Mathematical Applications	3	-
MIME 212	Engineering Thermodynamics	3	-
MIME 341	Introduction to Mineral Processing	3	P - MIME 200 or MIME 250
5th Semester (Summer)		3 Credits	Pre-requisites/Co-requisites Required
MATH 264	Advanced Calculus for Engineers	3	P - MATH 262 / C - MATH 263
6th Semester (Fall)		17 Credits	Pre-requisites/Co-requisites Required
CIVE 207	Solid Mechanics	4	P - CIVE 205 or MECH 210
COMP 208	Computers in Engineering	3	P - MATH 140, MATH 141
ECSE 461	Electric Machinery	3	-
MIME 356	Heat, Mass and Fluid Flow	4	P - MIME 212, MATH 263
MIME 360	Phase Transformations: Solids	3	P - MIME 260 or MIME 261 / C - MIME 212
7th Semester (Winter)		2 Credits	Pre-requisites/Co-requisites Required
MIME 280	Industrial Training 1	2	P - 40 program credits
8th Semester (Summer)		18 Credits	Pre-requisites/Co-requisites Required
MIME 310	Engineering Economy	3	-
MIME 317	Analytical and Characterization Techniques	3	P - MIME 261
MIME 345	Applications of Polymers	3	P - MIME 261
MIME 350	Extractive Metallurgical Engineering	3	P - MIME 200 or MIME 250, MIME 212
MIME xxx	Technical Complementary	3	-
CS	Complementary Studies Group A (Impact)	3	-
9th Semester (Fall)		2 Credits	Pre-requisites/Co-requisites Required
MIME 380	Industrial Training 2	2	P - MIME 280
10th Semester (Winter)		19 Credits	Pre-requisites/Co-requisites Required
MIME 367	Electronic Properties of Materials	3	P - MIME 261, MATH 263, MATH 264
MIME 452	Process and Materials Design	4	-
MIME 455	Advanced Process Engineering	3	P - MIME 356
MIME 456	Steelmaking and Steel Processing	3	P - MIME 360 / C - MIME 455
MIME 465	Metallic and Ceramic Powders Processing	3	P - MIME 360
MIME xxx	Technical Complementary	3	-
10th Semester (Summer)		2 Credits	Pre-requisites/Co-requisites Required
MIME 480	Industrial Training 3	2	P - MIME 380
11th Semester (Fall)		19 Credits	Pre-requisites/Co-requisites Required
FACC 400	Engineering Professional Practice	1	P - FACC 100, 60 program credits
MIME 311	Modelling and Automatic Control	3	P - MIME 356
MIME 352	Hydrochemical Processing	3	P - CHEM 233, MIME 200 or MIME 250, MIME 212 / C - MIME 356
MIME 362	Mechanical Properties	3	P - MIME 360
MIME 442	Analysis, Modelling and Optimization in Mineral Processing	3	P - MIME 341
MIME xxx	Technical Complementary	3	-
MIME 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). These must be chosen from an approved list of courses/departments, found in the program list in the *Programs, Courses and University Regulations Calendar* (www.mcgill.ca/study/2010-2011/faculties/engineering/undergraduate/ug_engineering_academic_programs) under "Complementary Studies."

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 - Materials Engineering

9 - 12 credits from the following:

	Credits
CIVE 512 Advanced Civil Engineering Materials	3
MECH 530 Mechanics of Composite Materials	3
MIME 410 Research Project	3
MIME 457 Light Metals Extraction and Processing	3
MIME 470 Engineering Biomaterials	3
MIME 512 Corrosion and Degradation of Materials	3
MIME 542 Transmission Electron Microscopy	3
MIME 544 Analysis: Mineral Processing Systems 1	3
MIME 545 Analysis: Mineral Processing Systems 2	3
MIME 551 Electrochemical Processing	3
MIME 552 Environmental Controls in Metallurgical Plants	3
MIME 556 Sustainable Materials Processing	3
MIME 558 Engineering Nanomaterials	3
MIME 559 Aluminum Physical Metallurgy	3
MIME 560 Joining Processes	3
MIME 561 Advanced Materials Design	3
MIME 563 Hot Deformation of Metals	3
MIME 564 X-ray Diffraction Analysis of Materials	3
MIME 565 Aerospace Metallic-Materials and Manufacturing Processes	3
MIME 566 Texture, Structure & Properties of Polycrystalline Materials	3
MIME 568 Topics in Advanced Materials	3
MIME 569 Electron Beam Analysis of Materials	3
MIME 571 Surface Engineering	3
MIME 572 Computational Thermodynamics	3

0 - 3 credits from the following:

	Credits
BMDE 504 Biomaterials and Bioperformance	3
CHEM 455 Introductory Polymer Chemistry	3
CHEM 585 Colloid Chemistry	3
PHYS 558 Solid State Physics	3

July 19, 2010