

DETAILED COURSE INFORMATION 2025-26

COURSE	TITLE	CREDIT	PRE-REQUISITE	CO-REQUISITE	SUM 1	SUM 2	FALL	WIN
ACCO 220	Financial and Managerial Accounting	3.00						X
AERO 201	Introduction to Flight and Aerospace Systems	4.00	ENGR 213				X	X
AERO 290	Introduction to Aircraft Design	3.00	AERO 201	ENCS 282				X
AERO 371	Modelling and Control Systems	3.50	PHYS 205; ENGR 213, ENGR 243	ENGR 311 or ELEC 342 or ELEC 364			X	X
AERO 390	Aerospace Engineering Design Project	3.00	AERO 290, AERO 371; ENCS 282				X	
AERO 417	Standards, Regulations and Certification	3.00	ENGR 201		X		X	
AERO 431	Principles of Aeroelasticity	3.50	ENGR 361; MECH 375				X	
AERO 446	Aerospace Vehicle Performance	3.00	MECH 361					X
AERO 455	Computational Fluid Dynamics for Aerospace Applications	3.75	ENGR 311, ENGR 391; MECH 361					X
AERO 462	Turbomachinery and Propulsion	3.00	MECH 351, MECH 361				X	
AERO 464	Aerodynamics	3.00	MECH 361				X	X
AERO 465	Gas Turbine Design	3.50	AERO 462					X
AERO 471	Aircraft Hydro-Mechanical and Fuel Systems	3.50	AERO 201. Or, permission of the Department.					X
AERO 472	Aircraft Pneumatic and Electrical Power Systems	3.50	AERO 201; ENGR 361		n/a	n/a	n/a	n/a
AERO 480	Flight Control Systems	3.50	AERO 371 or ELEC 372 or MECH 371 or SOEN 385				X	
AERO 481	Materials Engineering for Aerospace	3.50	MECH 221 or MIAE				X	
AERO 482	Avionic Navigation Systems	3.00	ENGR 371 or COMP 233; AERO 371 or ELEC 372 or MECH 370 or SOEN 385				X	
AERO 483	Integration of Avionics Systems	3.00	AERO 482; ELEC 481					X
AERO 485	Introduction to Space Systems	3.00	MECH 351, MECH 361					X
AERO 486	Aircraft Stress Analysis	3.00	ENGR 243, ENGR 244				X	
AERO 487	Design of Aircraft Structures	3.00	AERO 486					X
AERO 490	Capstone Aerospace Engineering Design Project	6.00	AERO 390; ENGR 301. Students must have completed 75 credits in the program.				X	
BSTA 478	Data Mining Techniques	3.00	Permission from JMSB					X
BTM 480	Project Management	3.00	Permission from JMSB					X
COEN 212	Digital Systems Design I	3.50	MATH 204 (Cegep Mathematics 105)		X	X	X	X
COEN 231	Introduction to Discrete Mathematics	3.00	MATH 204 (Cegep Mathematics 105)			X	X	X
COEN 243	Programming Methodology I	3.00	MATH 204 (Cegep Mathematics 105)			X	X	X
COEN 244	Programming Methodology II	3.00	COEN 243 or MECH 215 or MIAE 215		X		X	X
COEN 311	Computer Organization and Software	3.50	COEN 212, COEN 243		X		X	X
COEN 313	Digital Systems Design II	3.50	COEN 212, COEN 231		X		X	X
COEN 317	Microprocessor Systems	3.50	COEN 311 or COMP 228 or SOEN 228; COEN 313				X	X
COEN 320	Introduction to Real-Time Systems	3.00	COEN 346 or COMP 346				X	X
COEN 346	Operating Systems	3.50	COEN 311; COMP 352 or COEN 352				X	X
COEN 352	Data Structures and Algorithms	3.00	COEN 231, COEN 244		X		X	X
COEN 366	Communication Networks and Protocols	3.50	COEN 346				X	X
COEN 413	Hardware Functional Verification	3.50	COEN 313		n/a	n/a	n/a	n/a
COEN 421	Embedded Systems Design	4.00	COEN 317, COEN 320; SOEN 341					X
COEN 498	Topics in Computer Engineering	3.00	Permission of the Department is required.			X		
ELEC 242	Continuous-Time Signals and Systems	3.00	ELEC 273; ENGR 213		X		X	X
ELEC 251	Fundamentals of Applied Electromagnetics	3.00	ELEC 273 or ENGR 273	ENGR 233			X	X
ELEC 273	Basic Circuit Analysis	3.50	PHYS 205	ENGR 213	X		X	X
ELEC 311	Electronics I	3.50	ELEC 273				X	X
ELEC 331	Fundamentals of Electrical Power Engineering	3.50	ELEC 251, ELEC 273				X	X
ELEC 342	Discrete-Time Signals and Systems	3.50	ELEC 242 or ELEC 264		X		X	X
ELEC 351	Electromagnetic Waves and Guiding Structures	3.50	ELEC 242, ELEC 251				X	X
ELEC 367	Introduction to Digital Communications	3.50	ELEC 342 or ELEC 364; ENGR 371				X	X
ELEC 433	Power Electronics	3.50	ELEC 311, ELEC 331				X	
ELEC 442	Advanced Signal Processing	3.50	ELEC 342 or ELEC 364; ENGR 371					X
ELEC 458	Techniques in Electromagnetic Compatibility	3.00	ELEC 351		n/a	n/a	n/a	n/a
ELEC 464	Wireless Communications	3.00	ELEC 367				X	
ELEC 481	Linear Systems	3.50	AERO 371 or ELEC 372 or MECH 371				X	
ELEC 482	System Optimization	3.50	ENGR 391 or EMAT 391		X			
ELEC 483	Real-Time Computer Control Systems	3.50	AERO 371 or ELEC 372; ELEC 342 or ELEC 364					X
ELEC 498	Topics in Electrical Engineering	3.00	Permission of the Department is required.		n/a	n/a	n/a	n/a
ENCS 282	Technical Writing and Communication	3.00	Passing the Engineering Writing Test (EWT) or ENCS 272 with a grade of C- or higher.		X	X	X	X
ENGR 201	Professional Practice and Responsibility	1.50				X	X	X
ENGR 202	Sustainable Development and Environmental Stewardship	1.50			X		X	X
ENGR 213	Applied Ordinary Differential Equations	3.00	MATH 205 (Cegep Mathematics 203)	MATH 204 (Cegep Mathematics 105)	X		X	X
ENGR 233	Applied Advanced Calculus	3.00	MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203)		X	X	X	X
ENGR 242	Statics	3.00	ENGR 213	PHYS 204; MATH 204	X		X	X

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COURSE	TITLE	CREDIT	PRE-REQUISITE	CO-REQUISITE	SUM 1	SUM 2	FALL	WIN
ENGR 243	Dynamics	3.00	ENGR 213, ENGR 242		X		X	X
ENGR 244	Mechanics of Materials	3.75	ENGR 213; ENGR 242 or ENGR 245	ENGR 233	X		X	X
ENGR 245	Mechanical Analysis	3.00	PHYS 204	ENGR 213	X			X
ENGR 251	Thermodynamics I	3.00	MATH 203		X	X	X	X
ENGR 301	Engineering Management Principles and Economics	3.00			X	X	X	X
ENGR 311	Transform Calculus and Partial Differential Equations	3.00	ENGR 213, ENGR 233		X	X	X	X
ENGR 361	Fluid Mechanics I	3.00	ENGR 213, ENGR 233, ENGR 251		X		X	X
ENGR 371	Probability and Statistics in Engineering	3.00	ENGR 213, ENGR 233		X	X	X	X
ENGR 391	Numerical Methods in Engineering	3.00	ENGR 213, ENGR 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231			X	X	X
ENGR 392	Impact of Technology on Society	3.00	ENCS 282; ENGR 201, ENGR 202		X	X	X	X
ENGR 411	Special Technical Report	1.00	ENCS 282. Permission of the Department is required.		X		X	X
ENGR 412	Honours Research Project	3.00	ENCS 282; 75cr in the BEng program, a CGPA of 3.00 or better. Permission of the Dept.		X		X	X
ENGR 490	Engr 490 Multidisciplinary Capstone Design Project (4 Credits)	6.00	Students must be eligible to enroll for AERO 490, INDU 490 or MECH 490					
Gen. Ed.	General Education Elective	3.00	See section 71.7110 of the Undergraduate Calendar		X	X	X	X
INDU 211	Introduction to Production and Manufacturing Systems	3.00					X	
INDU 311	Simulation of Industrial Systems	3.50	ENGR 371				X	
INDU 320	Production Engineering	3.00	INDU 323				X	
INDU 321	Lean Manufacturing	3.00	INDU 320					X
INDU 323	Operations Research I	3.50	ENGR 213, ENGR 233; INDU 211		X			X
INDU 324	Operations Research II	3.50	INDU 323				X	
INDU 330	Engineering Management	3.00	ENCS 282	ENGR 301			X	
INDU 342	Logistics Network Models	3.00	INDU 324					X
INDU 371	Stochastic Models in Industrial Engineering	3.00	ENGR 371					X
INDU 372	Quality Control and Reliability	3.00	ENGR 371					X
INDU 410	Safety Engineering	3.00	MECH 311 or MIAE 311	MIAE 312			X	
INDU 411	Computer Integrated Manufacturing	3.50	MECH 311 or MIAE 311	MIAE 312				X
INDU 412	Human Factors Engineering	3.50	ENGR 371				X	
INDU 421	Facilities Design and Material Handling Systems	3.50	INDU 320	INDU 311			X	
INDU 423	Inventory Control	3.50	INDU 320				X	
INDU 424	Introduction to Enterprise Resource Planning	3.00	INDU 320					X
INDU 431	Quantitative Methods in Health-care Systems	3.00						X
INDU 441	Introduction to Six Sigma	3.00	INDU 372			X		X
INDU 466	Decision Models in Service Sector	3.00	ENGR 371; INDU 320					X
INDU 475	Advanced Concepts in Quality Improvement	3.00	INDU 372				X	
INDU 480	Cases in Industrial Engineering	3.00	INDU 311, INDU 324		n/a	n/a	n/a	n/a
INDU 490	Capstone Industrial Engineering Design Project	6.00	ENGR 301; MIAE 380. Students must complete 75cr in the program prior to enrolling.	INDU 421			X	
INDU 498	Topics in Industrial Engineering	3.00	Permission of the Department is required.					X
MANA 300	Entrepreneurship: Launching Your Business	3.00					X	X
MECH 321	Properties and Failure of Materials	3.50	MECH 221 or MIAE 221					X
MECH 343	Theory of Machines	3.50	ENGR 213, ENGR 233, ENGR 243				X	X
MECH 344	Machine Element Design	3.00	ENGR 244; MECH 313 or MIAE 313	MECH 343			X	X
MECH 351	Thermodynamics II	3.50	ENGR 251				X	X
MECH 352	Heat Transfer I	3.50	ENGR 311, ENGR 361				X	X
MECH 361	Fluid Mechanics II	3.50	ENGR 361				X	X
MECH 368	Electronics for Mechanical Engineers	3.50	PHYS 205; MIAE 215				X	X
MECH 370	Modelling and Analysis of Dynamic Systems	3.50	PHYS 205; ENGR 213; ENGR 243 or ENGR 245	ENGR 311		X	X	X
MECH 371	Analysis and Design of Control Systems	3.75	ENGR 311; MECH 370				X	X
MECH 373	Instrumentation and Measurements	3.50	ENGR 311; AERO 371 or MECH 370				X	
MECH 375	Mechanical Vibrations	3.50	AERO 371 or MECH 370			X	X	X
MECH 390	Mechanical Engineering Design Project	3.50	MECH 311 or MIAE 311; MECH 343; MIAE 380	MECH 344			X	X
MECH 412	Computer-Aided Mechanical Design	3.50	MIAE 311				X	
MECH 414	Computer Numerically Controlled Machining	3.50	MECH 311 or MIAE 311	MIAE 312				X
MECH 415	Advanced Programming for Mechanical and Industrial Engineers	3.00	MECH 215 or MIAE 215				X	
MECH 421	Mechanical Shaping of Metals and Plastics	3.50	MECH 221 or MIAE 221					X
MECH 422	Mechanical Behaviour of Polymer Composite Materials	3.00	ENGR 233, ENGR 244; MECH 221 or MIAE 221				X	
MECH 423	CASTING, Welding, Heat Treating and Non-Destructive Testing	3.50	MECH 221 or MIAE 221		n/a	n/a	n/a	n/a
MECH 424	MEMS – Design and Fabrication	3.50	MECH 311 or MIAE 311; MECH 343	MIAE 312	n/a	n/a	n/a	n/a
MECH 425	Manufacturing of Composites	3.50	MECH 311 or MIAE 311	MIAE 312			X	
MECH 426	Stress and Failure Analysis of Machinery	3.00	ENGR 233, ENGR 244; AERO 481 or MECH 321				X	
MECH 428	Failure Analysis of Machine Systems	3.00	MECH 344		n/a	n/a	n/a	n/a

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MECH 444	Guided Vehicle Systems	3.00	MECH 375		n/a	n/a	n/a	n/a
MECH 447	Fundamentals of Vehicle System Design	3.00	MECH 343	MECH 375	n/a	n/a	n/a	n/a
MECH 451	Renewable Energy: Fundamentals and Applications	3.00	MECH 351, MECH 352, MECH 361					X
MECH 452	Heat Transfer II	3.50	MECH 351, MECH 352, MECH 361		n/a	n/a	n/a	n/a
MECH 453	Heating, Ventilation and Air Conditioning Systems	3.00	MECH 352					X
MECH 454	Vehicular Internal Combustion Engines	3.00	MECH 351, MECH 361					X
MECH 460	Finite Element Analysis	3.75	ENGR 244, ENGR 391					X
MECH 461	Gas Dynamics	3.50	MECH 361				X	
MECH 463	Fluid Power Control	3.50	ENGR 361; MECH 371		n/a	n/a	n/a	n/a
MECH 468	Wind Turbine Engineering	3.00	MECH 343, MECH 361	MECH 344, MECH 371				X
MECH 471	Microcontrollers for Mechatronics	3.50	ENGR 311; MECH 368					X
MECH 472	Mechatronics and Automation	3.50	MECH 215 or MIAE 215	MECH 371				X
MECH 473	Control System Design	3.50	ELEC 372 or MECH 371				X	
MECH 474	Mechatronics	3.75	ELEC 372 or MECH 371					X
MECH 476	Generative Design and Manufacturing in Engineering	3.00	MECH 313 or MIAE 313	AERO 390 or MECH 390	n/a	n/a	n/a	n/a
MECH 490	Capstone Mechanical Engineering Design Project	6.00	ENGR 301; MECH 344, MECH 390; MIAE 312. Students must complete 75cr in the program prior to enrolling.				X	
MECH 498	Topics in Mechanical Engineering	3.00	Permission of the Department is required.		n/a	n/a	n/a	n/a
MIAE 211	Mechanical Engineering Drawing	3.50			X		X	X
MIAE 215	Programming for Mechanical and Industrial Engineers	3.50	MATH 204 (Cegep mathematics 105)			X	X	X
MIAE 221	Materials Science	3.00	CHEM 205 (Cegep Chemistry 101)				X	X
MIAE 311	Manufacturing Processes	3.00	MECH 313 or MIAE 313		X		X	
MIAE 312	Engineering Design and Manufacturing Processes Lab	1.00		MIAE 311	X		X	
MIAE 313	Machine Drawing and Design	3.50	MECH 211 or MIAE 211				X	X
MIAE 380	Product Design and Development	3.00	ENCS 282; MECH 211 or MIAE 211				X	X
SOEN 341	Software Process	4.00	COMP 352 or COEN 352; ENCS 282				X	X
SOEN 342	Software Requirements and Specifications	4.00	SOEN 341				X	X
SOEN 343	Software Architecture and Design	4.00	SOEN 341; SOEN 342				X	X