Université Concordia University — GINA CODY SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Recommended Course Sequence
Mechanical Engineering (Co-op)
2026-2027 Academic Year

	SUMMER /1	FALL /2	WINTER /4
YEAR 1		**ENGR 213 Applied Ord. Differential Eq. (3.00)** The following course must be completed previously or concurrently: MATH 204 (Cegep Mathematics 105). The following course must be completed previously: MATH 205 (Cegep Mathematics 203).	**ENCS 282 Technical Writing & Comm. (3.00)** Students must have satisfied the requirements in Section 71.20.7 Writing Skills Requirement, by passing the Engineering Writing Test (EWT) or by passing ENCS 272 with a grade of C- or higher, prior to enrolling.
		ENGR 242 Statics (3.00) The following course must be completed previously or concurrently: ENGR 213. The following courses must be completed previously PHYS 204; MATH 204.	**ENGR 233 Applied Advanced Calculus (3.00)** The following course must be completed previously: MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203).
		MIAE 211 Mech. Engineering Drawing (3.50) Prerequisites: none.	**ENGR 243 Dynamics (3.00)** The following courses must be completed previously: ENGR 213, ENGR 242.
		MIAE 215 Programming for Mech & Indu Eng. (3.50) The following course must be completed previously: MATH 204 (Cegep mathematics 105).	**ENGR 244 Mechanics of Materials (3.75)** The following courses must be completed previously: ENGR 213; ENGR 242 or ENGR 245. The following courses must be completed previously or concurrently: ENGR 233.
		MIAE 221 Materials Science (3.00) The following course must be completed previously: CHEM 205 (Cegep Chemistry 101).	**MIAE 313 Machine Drawing and Design (3.50)** The following course must be completed previously: MECH 211 or MIAE 211.
YEAR 2	**ENGR 201 Professional Practice & Resp. (1.50)** Prerequisites: none.	**WORK TERM 1** **(You must complete 30 program credits, including ENCS 282 before your first work-term)**	**MECH 321 Properties & Failure of Material (3.50)** The following course must be completed previously: MECH 221 or MIAE 221.
	ENGR 202 Sust. Dev. Enviro. Stewardship (1.50) Prerequisites: none.		**MECH 343 Theory of Machines (3.50)** The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 243.
	ENGR 251 Thermodynamics I (3.00) The following course must be completed previously: MATH 203 (Cegep Mathematics 103).		**MECH 351 Thermodynamics II (3.50)** The following course must be completed previously: ENGR 251.
	ENGR 311 Transform Calc. & Partial Diff. Eq. (3.00) The following courses must be completed previously: ENGR 213, ENGR 233.		**MECH 368 Electronics for Mech. Engineers (3.50)** The following courses must be completed previously: PHYS 205; MIAE 215.
	MIAE 311 Manufacturing Processes (3.00) The following course must be completed previously: MECH 313 or MIAE 313.		**MIAE 380 Product Design & Development (3.00)** The following course must be completed previously: ENCS 282; MECH 211 or MIAE 211.
	MIAE 312 EDML Lab (1.00) The following course must be completed previously or concurrently: MIAE 311.		
YEAR 3	**ENGR 301 Engr. Manage. Principles Econ (3.00)** Prerequisites: none.	**MECH 344 Machine Element Design (3.00)** The following courses must be completed previously: ENGR 244; MECH 313 or MIAE 313. The following courses must be completed previously or concurrently: MECH 343.	**WORK TERM 2**
	ENGR 361 Fluid Mechanics I (3.00) The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 251 or AERO 253.	**MECH 352 Heat Transfer I (3.50)** The following courses must be completed previously: ENGR 311, ENGR 361.	
	ENGR 371 Probability & Stats in Eng. (3.00) The following courses must be completed previously: ENGR 213, ENGR 233.	**MECH 361 Fluid Mechanics II (3.50)** The following course must be completed previously: ENGR 361.	
	ENGR 391 Numerical Methods in Engr. (3.00) The following courses must be completed previously: ENGR 213, ENGR 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231.	**MECH 390 Mech Engr. Design Project (3.50)** The following courses must be completed previously: MECH 311 or MIAE 311; MECH 343; MIAE 380. The following course must be completed previously or concurrently: MECH 344.	
	MECH 371 Analysis & Design Ctrl Sys. (3.75) The following courses must be completed previously: PHYS 205; ENGR 243, ENGR 311.	**MIAE 383 Applied Machine Learning MIAE (3.50)** The following courses must be completed previously: ENGR 371; MIAE 215.	
YEAR 4	**WORK TERM 3**	**MECH 373 Instrumentation & Measurements (3.50)** The following courses must be completed previously: ENGR 311; AERO 371 or MECH 370 or MECH 371.	**ENGR 392 Impact of Technology on Society (3.00)** The following courses must be completed previously: ENCS 282; ENGR 201, ENGR 202.
		MECH 375 Mechanical Vibrations (3.50) The following course must be completed previously: AERO 371 or MECH 370 or MECH 371.	**General Studies (3.00)** (Undergraduate Calendar, Sec. 71.110)
		Technical Electives (Undergraduate Calendar, Sec. 71.40.1) Review your advisement report for the number of credits required. Speak with your Undergraduate Program Assistant if you have any further questions.	
		MECH 490 Capstone Mechanical Engineering Design Project (6.00) The following courses must be completed previously: ENGR 301; MECH 344, MECH 390; MIAE 312. Students must complete 75 credits in the program prior to enrolling.	

Course schedules are based on the recommended sequence; however, you may choose to follow a reduced load. Step-by-step instructions on re-sequencing are available on our website.

DETAILED COURSE INFORMATION
Mechanical Engineering 2026-27

COURSE	TITLE	CREDIT	PRE-REQUISITE	CO-REQUISITE	SUM 1	SUM 2	FALL	WIN
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 480	Flight Control Systems	3.50	AERO 371 or ELEC 372 or MECH 371 or SOEN 385				X	
AERO 482	Avionic Navigation Systems	3.00	ENGR 371 or COMP 233; AERO 371 or ELEC 372 or MECH 371 or SOEN 385				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
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	PHYS 204; MATH 204	ENGR 213	X		X	X
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 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 or AERO 253		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
Gen. Ed.	General Education Elective	3.00	See section 71.7110 of the Undergraduate Calendar		X	X	X	X
INDU 372	Quality Control and Reliability	3.00	ENGR 371					X
INDU 410	Safety Engineering	3.00	MECH 311 or MIAE 311				X	
INDU 411	Computer Integrated Manufacturing	3.50	MECH 311 or MIAE 311	MIAE 312	n/a	n/a	n/a	n/a
INDU 412	Human Factors Engineering	3.50	ENGR 371				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 371	Analysis and Design of Control Systems	3.75	PHYS 205; ENGR 243, ENGR 311			X	X	X
MECH 373	Instrumentation and Measurements	3.50	ENGR 311; AERO 371 or MECH 370 or MECH 371				X	
MECH 375	Mechanical Vibrations	3.50	AERO 371 or MECH 370 or MECH 371			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		n/a	n/a	n/a	n/a
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
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					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, Industrial and Aerospace 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			X**		X	
MIAE 313	Machine Drawing and Design	3.50	MECH 211 or MIAE 211			X	X	X
MIAE 380	Product Design and Development	3.00	ENCS 282; MECH 211 or MIAE 211				X	X
MIAE 383	Machine Learning for MIAE	3.50	ENGR 371; MIAE 215 or COEN 243				X	X

*AERO 417 reserved for AERO students in summer

**MIAE 312 reserved for Co-op students in summer

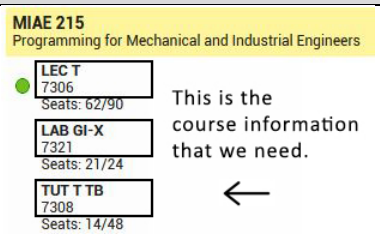
Note: In the case of discrepancies between this and the current Undergraduate Calendar, please contact your Undergraduate Program Assistant for clarification.

This information was compiled April 2026.

Registration Essentials

How do I register for classes?
Student registration is accessible within the Student Centre or the My CU Account page of the Student Hub. Detailed information and how-to guides can be found here Course registration - Concordia University.

If you need assistance for any particular reason, please email your Undergraduate Program Assistant and include your Student ID as well as detailed course information (i.e. term, lecture, lab and tutorial), as follows:

Information we need:	Where to find the information	Example:
Summer/Fall/Winter YEAR Lec ABCD 123-CC (2964) Tut ABCD 123-CCF (2969) Lab ABCD 123- CI-X (2966)	 Sample taken from the Visual Schedule Builder	**Fall 2026** LEC MIAE 215 T (7306*) Tut MIAE 215 TB (7308*) Lab MIAE 215 GI-X (7321*) *Code is optional

Registration Regulation: The 'C -' Rule
All **200-level courses** within the program [including admission/ECP/MEP requirements] which are prerequisites for other courses must be completed with a C- or higher. A 200-level course in which a student has obtained a D+ or lower must be repeated before attempting a course for which it is a prerequisite (Undergraduate Calendar, Section 71.10.4). **This does not apply to 300 or 400 level courses.**

Registration Regulation: The '200-level before 400-level' Rule
Students must complete (with a posted final grade) all 200-level courses required for their program before registering for any 400-level courses (Undergraduate Calendar, Section 71.10.4).

Why can't I enroll for ENCS 282?
Before enrolling in ENCS 282, students must meet the Writing Skills Requirement (Undergraduate Calendar, Section 71.20.7) by either passing the Engineering Writing Test (EWT) or ENCS 272 with a grade of C or higher. **This is faculty policy, no exceptions.** More details about the EWT, including registration and contact info, can be found here: Engineering Writing Test.

Where can I find the list of General Studies courses?
You can find the list of available courses here: Section 71.110 Complementary Studies for Engineering and Computer Science Students. Please note the Exclusion List, as these courses may not be taken to fulfill this requirement.

Do you need to re-sequence?
Please use our website's re-sequencing guide, planning tools, and sequence template to draft your course plan through to graduation. On page 2 of your recommended sequence, you'll find a table outlining all prerequisites, co-requisites, and course offerings by term—this will help with your planning. You can send a draft to your Program Assistant for review.

Registration: 3rd Time Repeat
A student may repeat a failed course only once. A student who fails a required course twice must request permission to take the course a third time. To submit a request, please go to: GCS Student requests & forms

How do I register for Capstone?
Online registration for Capstone opens June 1, after the annual assessment of GPA is performed by the Registrar's Office. For those taking prerequisite courses in either summer term, you can only register once the grades are available.

How do I know if I am on track for graduation?
The best way to assess what is required for your program is to look at your Academic Requirements Report. The report outlines the courses and credits required for your program(s), including majors, minors, and electives. It helps you monitor completed and outstanding requirements, track total credits, and note any deficiencies or transfer credits. *This is a reference tool only—consult your program advisor for official guidance.*

All of the information above, and more, can be found on our Quick Tips and FAQ (MIAE)

For more information, or clarification, please do not hesitate to contact your Undergraduate Program Assistant or Student Academic Services