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

Recommended Course Sequence
Aerospace Engineering Option A – Aerodynamics and Propulsion (September Entry)
2025-2026 Academic Year

	SUMMER /1	FALL /2	WINTER /4
YEAR 1		**AERO 201 Intro to Flight & Aero Systems (4.00)** The following course must be completed previously or concurrently: ENGR 213.	**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 201 Professional Practice & Resp. (1.50) Prerequisites: none.	**ENGR 233 Applied Advanced Calculus (3.00)** The following course must be completed previously: MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203).
		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).	**ENGR 243 Dynamics (3.00)** The following courses must be completed previously: ENGR 213, ENGR 242.
		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 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 215 Programming for Mech & Indu Eng. (3.50) The following course must be completed previously: MATH 204 (Cegep mathematics 105).	**ENGR 251 Thermodynamics I (3.00)** The following course must be completed previously: MATH 203 (Cegep Mathematics 103).
YEAR 2		**ENGR 202 Sust. Dev. Enviro. Stewardship (1.50)** Prerequisites: none.	**AERO 290 Introduction to Aircraft Design (3.00)** The following course must be completed previously: AERO 201. The following course must be completed previously or concurrently: ENCS 282.
		ENGR 311 Transform Calc. & Partial Diff. Eq. (3.00) The following courses must be completed previously: ENGR 213, ENGR 233.	**AERO 371 Modelling and Control Systems (3.50)** The following courses must be completed previously: PHYS 205; ENGR 213, ENGR 243. The following course must be completed previously or concurrently: ENGR 311 or ELEC 342 or ELEC 364.
		ENGR 371 Probability & Stats in Eng. (3.00) The following courses must be completed previously: ENGR 213, ENGR 233.	**ENGR 361 Fluid Mechanics I (3.00)** The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 251.
		MIAE 221 Materials Science (3.00) The following course must be completed previously: CHEM 205 (Cegep Chemistry 101).	**MECH 343 Theory of Machines (3.50)** The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 243.
		MIAE 211 Mech. Engineering Drawing (3.50) Prerequisites: none.	**MECH 351 Thermodynamics II (3.50)** The following course must be completed previously: ENGR 251.
YEAR 3		**AERO 390 Aerospace Engr. Design Project (3.00)** The following courses must be completed previously: AERO 290, AERO 371; ENCS 282.	**AERO 455 Comp. Fluid Dynamics for Aero. (3.75)** The following courses must be completed previously: ENGR 311, ENGR 391; MECH 361.
		AERO 481 Materials Engr. for Aerospace (3.50) The following course must be completed previously: MECH 221 or MIAE 221.	**AERO 464 Aerodynamics (3.00)** The following course must be completed previously: MECH 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.	**ENGR 301 Engr. Manage. Principles Econ (3.00)** Prerequisites: none.
		ENGR 392 Impact of Technology on Society (3.00) The following courses must be completed previously: ENCS 282; ENGR 201, ENGR 202.	**MECH 352 Heat Transfer I (3.50)** The following courses must be completed previously: ENGR 311, ENGR 361.
		MECH 361 Fluid Mechanics II (3.50) The following course must be completed previously: ENGR 361.	
		AERO 417 Standards, Reg. and Certification (3.00) The following course must be completed previously: ENGR 201.	**AERO 446 Aerospace Vehicle Performance (3.00)** The following course must be completed previously: MECH 361.
YEAR 4		**AERO 462 Turbomachinery and Propulsion (3.00)** The following courses must be completed previously: MECH 351, MECH 361.	**AERO 465 Gas Turbine Design (3.50)** The following course must be completed previously: AERO 462.
		MECH 461 Gas Dynamics (3.50) The following course must be completed previously: MECH 361.	**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.	
		AERO 490 Capstone Aerospace Engineering Design Project (6.00) The following courses must be completed in advance: AERO 390; ENGR 301. Students must have completed 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
Aerospace - Option A 2025-26

COURSE	TITLE	CREDIT	PRE-REQUISITE	CO-REQUISITE	SUM 1	SUM 2	FALL	WIN
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 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 490	Capstone Aerospace Engineering Design Project	6.00	AERO 390; ENGR 301. Students must have completed 75 credits in the program.				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	ENGR 213	PHYS 204; MATH 204	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		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 412	Human Factors Engineering	3.50	ENGR 371				X	
MECH 343	Theory of Machines	3.50	ENGR 213, ENGR 233, ENGR 243				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 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 426	Stress and Failure Analysis of Machinery	3.00	ENGR 233, ENGR 244; AERO 481 or MECH 321				X	
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 460	Finite Element Analysis	3.75	ENGR 244, ENGR 391					X
MECH 461	Gas Dynamics	3.50	MECH 361				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

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 February 2025.

*AERO 417 reserved for AERO students in summer