

 <b>GINA CODY</b> SCHOOL OF ENGINEERING AND COMPUTER SCIENCE			<b>Recommended Course Sequence</b> <b>Aerospace Engineering Option A – Aerodynamics and Propulsion (Co-op)</b> <b>2025-2026 Academic Year</b>		
	SUMMER /1		FALL /2		WINTER /4
<b>YEAR 1</b>			<b>AERO 201 Intro to Flight &amp; Aero Systems (4.00)</b> The following course must be completed previously or concurrently: ENGR 213.		<b>ENCS 282 Technical Writing &amp; Comm. (3.00)</b> 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.
			<b>ENGR 201 Professional Practice &amp; Resp. (1.50)</b> Prerequisites: none.		<b>ENGR 233 Applied Advanced Calculus (3.00)</b> The following course must be completed previously: MATH 204 (Cegep Mathematics 105); MATH 205 (Cegep Mathematics 203).
			<b>ENGR 213 Applied Ord. Differential Eq. (3.00)</b> 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).		<b>ENGR 243 Dynamics (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 242.
			<b>ENGR 242 Statics (3.00)</b> The following course must be completed previously or concurrently: ENGR 213. The following courses must be completed previously PHYS 204; MATH 204.		<b>ENGR 244 Mechanics of Materials (3.75)</b> 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.
			<b>MIAE 215 Programming for Mech &amp; Indu Eng. (3.50)</b> The following course must be completed previously: MATH 204 (Cegep mathematics 105).		<b>ENGR 251 Thermodynamics I (3.00)</b> The following course must be completed previously: MATH 203 (Cegep Mathematics 103).
<b>YEAR 2</b>	<b>ENGR 202 Sust. Dev. Enviro. Stewardship (1.50)</b> Prerequisites: none.		<b>WORK TERM 1</b>  <b>(You must complete 30 program credits, including ENCS 282 before your first work-term)</b>		
	<b>ENGR 311 Transform Calc. &amp; Partial Diff. Eq. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233.				
	<b>ENGR 361 Fluid Mechanics I (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 251.				
	<b>ENGR 371 Probability &amp; Stats in Eng. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233.				
	<b>MIAE 211 Mech. Engineering Drawing (3.50)</b> Prerequisites: none.				
<b>YEAR 3</b>	<b>ENGR 301 Engr. Manage. Principles Econ (3.00)</b> Prerequisites: none.		<b>AERO 390 Aerospace Engr. Design Project (3.00)</b> The following courses must be completed previously: AERO 290, AERO 371; ENCS 282.		<b>WORK TERM 2</b>
	<b>ENGR 391 Numerical Methods in Engr. (3.00)</b> 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.		<b>AERO 417 Standards, Reg. and Certification (3.00)</b> The following course must be completed previously: ENGR 201.		
	<b>ENGR 392 Impact of Technology on Society (3.00)</b> The following courses must be completed previously: ENCS 282; ENGR 201, ENGR 202.		<b>AERO 481 Materials Engr. for Aerospace (3.50)</b> The following course must be completed previously: MECH 221 or MIAE 221.		
	<b>General Studies (3.00)</b> (Undergraduate Calendar, Sec. 71.110)		<b>MECH 361 Fluid Mechanics II (3.50)</b> The following course must be completed previously: ENGR 361.		
			<b>MECH 351 Thermodynamics II (3.50)</b> The following course must be completed previously: ENGR 251.		
<b>YEAR 4</b>	<b>WORK TERM 3</b>		<b>AERO 462 Turbomachinery and Propulsion (3.00)</b> The following courses must be completed previously: MECH 351, MECH 361.		<b>AERO 446 Aerospace Vehicle Performance (3.00)</b> The following course must be completed previously: MECH 361.
			<b>AERO 464 Aerodynamics (3.00)</b> The following course must be completed previously: MECH 361.		<b>AERO 465 Gas Turbine Design (3.50)</b> The following course must be completed previously: AERO 462.
			<b>MECH 461 Gas Dynamics (3.50)</b> The following course must be completed previously: MECH 361.		<b>AERO 455 Comp. Fluid Dynamics for Aero. (3.75)</b> The following courses must be completed previously: ENGR 311, ENGR 391; MECH 361.
			<b>Technical Electives (Undergraduate Calendar, Sec. 71.40.1)</b> Review your advisement report for the number of credits required. Speak with your Undergraduate Program Assistant if you have any further questions.		
			<b>AERO 490 Capstone Aerospace Engineering Design Project (6.00)</b> The following courses must be completed in advance: AERO 390; ENGR 301. Students must have completed 75 credits in the program prior to enrolling.		

**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
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