

**Recommended Course Sequence**  
**Aerospace Engineering Option C – Avionics & Aerospace Systems (September Entry)**  
**2024-2025 Academic Year**

	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>ELEC 242 Continuous-Time Signals and Sys. (3.00)</b> The following courses must be completed previously: ELEC 273; ENGR 213.	
		<b>COEN 243 Programming Methodology I (3.50)</b> The following course must be completed previously: MATH 204 (Cegep Mathematics 105).	<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>ELEC 273 Basic Circuit Analysis (3.50)</b> The following course must be completed previously: PHYS 205. The following course must be completed previously or concurrently: ENGR 213.	<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>4YEAR 2</b>		<b>COEN 212 Digital Systems Design I (3.50)</b> The following course must be completed previously: MATH 204 (Cegep Mathematics 105).	<b>AERO 290 Introduction to Aircraft Design (3.00)</b> The following course must be completed previously: AERO 201. The following course must be completed previously or concurrently: ENCS 282.	
		<b>COEN 231 Introduction to Discrete Math. (3.00)</b> The following course must be completed previously: MATH 204 (Cegep Mathematics 105).	<b>AERO 371 Modelling and Control Systems (3.50)</b> 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.	
		<b>ELEC 342 Discrete-Time Signals and Systems (3.50)</b> The following course must be completed previously: ELEC 242 or ELEC 264.	<b>COEN 244 Programming Methodology II (3.00)</b> The following course must be completed previously: COEN 243 or MECH 215 or MIAE 215.	
		<b>ENGR 201 Professional Practice &amp; Resp. (1.50)</b> Prerequisites: none.	<b>ENGR 251 Thermodynamics I (3.00)</b> The following course must be completed previously: MATH 203 (Cegep Mathematics 103).	
		<b>ENGR 202 Sust. Dev. Enviro. Stewardship (1.50)</b> Prerequisites: none.	<b>ENGR 371 Probability &amp; Stats in Eng. (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233.	
<b>YEAR 3</b>		<b>AERO 390 Aerospace Engr. Design Project (3.00)</b> The following courses must be completed previously: AERO 290, AERO 371; ENCS 282.	<b>COEN 311 Comp. Organization and Software (3.50)</b> The following courses must be completed previously: COEN 212, COEN 243.	
		<b>AERO 417 Standards, Reg. and Certification (3.00)</b> The following course must be completed previously: ENGR 201.	<b>ELEC 483 Real-Time Comp. Control Systems (3.50)</b> The following courses must be completed previously: AERO 371 or ELEC 372; ELEC 342 or ELEC 364.	
		<b>COEN 352 Data Structures and Algorithms (3.00)</b> The following courses must be completed previously: COEN 231, COEN 244.	<b>ENGR 301 Engr. Manage. Principles Econ (3.00)</b> Prerequisites: none.	
		<b>ELEC 481 Linear Systems (3.50)</b> The following course must be completed previously: AERO 371 or ELEC 372 or MECH 371.	<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>ENGR 361 Fluid Mechanics I (3.00)</b> The following courses must be completed previously: ENGR 213, ENGR 233, ENGR 251.	<b>SOEN 341 Software Process and Practices (4.00)</b> The following courses must be completed previously or concurrently: COMP 352 or COEN 352; ENCS 282.	
<b>YEAR 4</b>		<b>AERO 482 Avionic Navigation Systems (3.00)</b> The following courses must be completed previously: ENGR 371 or COMP 233; AERO 371 or ELEC 372 or MECH 370 or SOEN 385.	<b>AERO 483 Integration of Avionics Systems (3.00)</b> The following courses must be completed previously: AERO 482; ELEC 481.	
		<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>General Studies (3.00)</b> (Undergraduate Calendar, Sec. 71.110)	
	<b>Technical Electives (UGRAD Calendar, Sec. 71.55)</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 C 2024-25

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	
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 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 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 490	Capstone Aerospace Engineering Design Project	6.00	AERO 390; ENGR 301. Students must have completed 75 credits in the program.				X	
COEN 212	Digital Systems Design I	3.50	MATH 204 (Cegep Mathematics 105)		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					X
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
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 361	Fluid Mechanics I	3.00	ENGR 213, ENGR 233, ENGR 251		X		X	EC
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			EC	EC	EC
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
Gen. Ed.	General Education Elective	3.00	See section 71.7110 of the Undergraduate Calendar		X	X	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

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 March 2024.

\*AERO 417 reserved for AERO students