

Recommended Course Sequence
Aerospace Engineering Option C – Avionics & Aerospace Systems (January Entry)
2022-2023 Academic Year

	SUMMER /1	FALL /2	WINTER /4
YEAR 1			ELEC 273 Basic Circuit Analysis 3.50 Prerequisite: ENGR 213 previously or concurrently; PHYS 205.
			ENGR 213 Applied Ord. Differential Eq. 3.00 Prerequisite: MATH 204 previously or concurrently; MATH 205
			ENGR 233 Applied Advanced Calculus 3.00 Prerequisite: MATH 204; MATH 205
			ENGR 242 Statics 3.00 Prerequisite: ENGR 213 previously or concurrently; PHYS 204; MATH 204.
			ENGR 251 Thermodynamics I 3.00 Prerequisite: MATH 203
YEAR 2	ENCS 282 Tech. Writing & Comm. 3.00 Prerequisite: The Engineering Writing Test (EWT) or ENCS 272 must be completed prior to registering.	AERO 201 Intro to Flight & Aero Systems 4.00 Prerequisite: ENGR 213 previously or concurrently	AERO 290 Introduction to Aircraft Design 3.00 Prereq: AERO 201; ENCS 282 previously or concurrently.
	ELEC 242 Continuous-Time Signals & Sys. 3.00 Prerequisite: ELEC 273; ENGR 213.	COEN 212 Digital Systems Design I 3.50 Prerequisite: MATH 204	AERO 371 Modelling and Control Systems 3.50 Prerequisite: PHYS 205; ENGR 213, 243; ENGR 311 or ELEC 342 or ELEC 364 previously or concurrently.
	ENGR 243 Dynamics 3.00 Prerequisite: ENGR 213, 242	COEN 231 Intro. to Discrete Mathematics 3.00 Prerequisite: MATH 204	COEN 244 Programming Methodology II 3.00 Prerequisite: COEN 243 or MECH 215 or MIAE 215.
	ENGR 244 Mechanics of Materials 3.75 Prerequisite: ENGR 213; ENGR 242 or 245; ENGR 233 previously or concurrently	COEN 243 Programming Methodology I 3.50 Prerequisite: MATH 204	ENGR 201 Professional Practice & Resp. 1.50 Prerequisite: none
		ELEC 342 Discrete-Time Signals and Systems 3.50 Prerequisite: ELEC 242 or 264.	ENGR 202 Sust. Dev. Enviro. Stewardship 1.50 Prerequisite: none
YEAR 3		AERO 390 Aero Engineering Design Project 3.00 Prerequisite: AERO 290, 371; ENCS 282.	COEN 311 Comp. Organization and Software 3.50 Prerequisite: COEN 212, 243.
		AERO 417 Standards, Reg. and Certification 3.00 Prerequisite: ENGR 201.	ENGR 301 Engr. Manage. Principles Econ 3.00 Prerequisite: none
		COEN 352 Data Structures and Algorithms 3.00 Prerequisite: COEN 231, 244.	ENGR 371 Probability & Stats in Eng. 3.00 Prerequisite: ENGR 213, 233
		ENGR 361 Fluid Mechanics I 3.00 Prerequisite: ENGR 213, 233, 251	ENGR 391 Numerical Methods in Eng. 3.00 Prerequisite: ENGR 213, 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 231
		General Studies 3.00 (Undergrad Calendar, Sec. 71.110)	SOEN 341 Software Process and Practices 3.00 Prerequisite: COMP 352 or COEN 352 previously or concurrently; ENCS 282 previously or concurrently.
YEAR 4		AERO 482 Avionic Navigation Systems 3.00 Prerequisite: ENGR 371 or COMP 233; AERO 371 or ELEC 372 or MECH 370 or SOEN 385.	AERO 483 Integration of Avionics Systems 3.00 Prerequisite: AERO 482.
		ENGR 392 Impact of Technology on Society 3.00 Prerequisite: ENCS 282; ENGR 201, 202	ELEC 483 Real-Time Comp. Control Systems 3.50 Prereq: AERO 371 or ELEC 372; ELEC 342 or 364.
		Technical Electives (UGRAD Calendar, Sec. 71.55) ---	
		AERO 490 Capstone Aerospace Engineering Design Project 4.00 Prerequisite: 75 credits in the program; AERO 390; ENGR 301.	

DETAILED COURSE INFORMATION
Aerospace - Option C 2022-23

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, 243	ENGR 311 or ELEC 342 or ELEC 364				X
AERO 390	Aerospace Engineering Design Project	3.00	AERO 290, 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					
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					X
AERO 490	Capstone Aerospace Engineering Design Project	4.00	75 credits in the program; AERO 390; ENGR 301				X	
COEN 212	Digital Systems Design I	3.50	MATH 204		X		X	X
COEN 231	Introduction to Discrete Mathematics	3.00	MATH 204		X		X	X
COEN 243	Programming Methodology I	3.00	MATH 204			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, 243		X		X	X
COEN 313	Digital Systems Design II	3.50	COEN 212, 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, 244				X	X
COEN 366	Communication Networks and Protocols	3.50	COEN 346				X	X
COEN 413	Hardware Functional Verification	3.00	COEN 313					X
COEN 421	Embedded Systems Design	4.00	COEN 317, 320; SOEN 341					X
COEN 498	Topics in Computer Engineering	3.00			n/a	n/a	n/a	n/a
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	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	X
ELEC 331	Fundamentals of Electrical Power Engineering	3.50	ELEC 251, 273				X	X
ELEC 342	Discrete-Time Signals and Systems	3.50	ELEC 242 or 264		X		X	X
ELEC 351	Electromagnetic Waves and Guiding Structures	3.00	ELEC 251, 242; ENGR 233				X	X
ELEC 367	Introduction to Digital Communications	3.50	ELEC 342 or 364; ENGR 371				X	X
ELEC 433	Power Electronics	3.50	ELEC 311, 331				X	
ELEC 442	Digital Signal Processing	3.50	ELEC 342 or 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 364					X
ELEC 498	Topics in Electrical Engineering	3.00			n/a	n/a	n/a	n/a
ENCS 282	Technical Writing and Communication	3.00	Engineering Writing Test (EWT), or ENCS 272 (min. C-)		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	X
ENGR 213	Applied Ordinary Differential Equations	3.00	MATH 205	MATH 204	X		X	X
ENGR 233	Applied Advanced Calculus	3.00	MATH 204, 205		X	X	X	X
ENGR 242	Statics	3.00	MATH 204; PHYS 204	ENGR 213	X		X	X
ENGR 243	Dynamics	3.00	ENGR 213, 242		X		X	X
ENGR 244	Mechanics of Materials	3.75	ENGR 213 ; ENGR 242 or 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 361	Fluid Mechanics I	3.00	ENGR 213, 233, 251		X		X	X
ENGR 371	Probability and Statistics in Engineering	3.00	ENGR 213, 233		X	X	X	X
ENGR 391	Numerical Methods in Engineering	3.00	ENGR 213, 233; COMP 248 or COEN 243 or MECH 215 or MIAE 215 or BCEE 2			X	X	X
ENGR 392	Impact of Technology on Society	3.00	ENCS 282; ENGR 201, 202		X	X	X	X
ENGR 411	Special Technical Report	1.00	ENCS 282; permission of the Department		X	X	X	X
Gen. Ed.	General Education Elective	3.00	List of courses available in the Undergraduate Calendar, Sec. 71.110		X	X	X	X
SOEN 341	Software Process	3.00		COMP 352 or COEN 352, ENCS 282			X	X
SOEN 342	Software Requirements and Specifications	3.00	SOEN 341				X	X
SOEN 343	Software Architecture and Design I	3.00	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 16/03/2022