

Computer Engineering - Aerospace Systems Concentration

Degree requirements - 126 credits

Fall - 15 credits			Credits	Spring - 14 credits			Credits
FIRST YEAR	ENGR 111	Fundamentals of Engineering (<i>F,S</i>)	3	ENGR114	Engineering for Grand Challenges (<i>F,S; ENGR 111 or CBE104A or CIVE101A or CIVE102 or MECH103 or MECH104A</i>)		3
	MATH160	Calculus for Physical Scientists I (<i>F,S,SU; MATH124 with a B or higher; MATH126 with a B or higher or MATH127 with a B or higher</i>)	4	MATH161	Calculus for Physical Scientists II (<i>F,S,SU; MATH124 or MATH127; MATH159 or MATH160</i>)		4
	CHEM111 and CHEM112 Fulfills AUCC Category 3A	General Chemistry I (<i>F,S,SU; MATH118 or MATH127 or MATH160 or MATH161 or MATH229 or MATH261</i>) and General Chemistry Lab I (<i>F,S,SU; CHEM111 or concurrent registration or CHEM120 or concurrent registration</i>)	5	CS164 ¹	CS1 - Computational Thinking with Java (<i>F,S; CS150B with a B or higher or CS152 with a B or higher or ENGR111 with a B or higher or ENGR123 with a B or higher or CS163</i>)		4
	University Core	AUCC Category 1C, 3B, 3C, 3D (<i>F,S,SU</i>) ***Recommend CS150B¹ - Culture and Coding: Python (AUCC 3B)	3	CO150 ² Fulfills AUCC Category 1A	College Composition (<i>F,S,SU; CO130 or Placement</i>)		3
Fall - 17 credits			Credits	Spring - 16 credits			Credits
SECOND YEAR	ECE205	Analog Circuits I (<i>F,S; MATH159 with a C or higher or MATH160 with a C or higher</i>)	3	ECE206	Analog Circuits II (<i>S,SU; ECE103 with a C or higher or ECE205 with a C or higher; MATH161 with a C or higher</i>)		3
	ECE252	Intro to Digital Circuits (<i>F,S</i>)	3	ECE253	Microcontrollers and C for Internet-of-Things (<i>F,S; ECE102 with a C or higher or ECE252 with a C or higher</i>)		3
	CS165	CS2 - Data Structures (<i>F,S; CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher</i>)	4	ECE232	Introduction to Project Practices (<i>F,S; ECE202 or concurrent registration or ECE206 or concurrent registration or ECE395B or concurrent registration</i>)		1
	MATH261	Calculus for Physical Scientists III (<i>F,S,SU; MATH161</i>)	4	MATH340	Intro to Ordinary Differential Equations (<i>F,S,SU; MATH261</i>)		4
	University Core	AUCC Category 1C, 3B, 3C, 3D (<i>F,S,SU</i>)	3	PH141 Fulfills AUCC Category 3A	Physics for Scientists and Engineers I (<i>F,S,SU; MATH159 or concurrent registration or MATH160 or concurrent registration</i>)		5
Fall - 17 credits			Credits	Spring - 14 credits			Credits
THIRD YEAR	ECE311	Linear Systems Analysis I (<i>F; ECE202 with a C or higher or ECE206 with a C or higher; MATH340 with a C or higher; ECE451 or ECE528 or CS356 or concurrent registration</i>)	3	ECE312	Linear Systems Analysis II (<i>S; ECE311 with a C or higher</i>)		3
	ECE450 and ECE451	Digital Systems Design Lab (<i>F; concurrent registration in ECE451</i>) and Digital Systems Design (<i>F; ECE102 with a C or higher or ECE252 with a C or higher; ECE202 with a C or higher or ECE206 with a C or higher; concurrent registration in ECE450</i>)	4	ECE452	Computer Organization & Architecture (<i>S; ECE251 with a C or higher or ECE253 with a C or higher</i>)		3
	ECE303	Introduction to Communications Principles (<i>S; MATH261 with a C or higher; MATH340 or concurrent registration</i>)	3	CT301	C++ Fundamentals (<i>F,S; CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher</i>)		2
	CS214	Software Development (<i>F,S; CS165 with a C or higher</i>)	3	MATH369 or DSCI369	Linear Algebra I (<i>F,S,SU; MATH 161</i>) or Linear Algebra for Data Science (<i>S; MATH159 or MATH160 or MATH161</i>)		3-4
	CS220	Discrete Structures (<i>F,S; CS152 with a B or higher OR CS162 or CS163 or CS164 with a C or higher; MATH159 or MATH160</i>)	4	CO301B or JTC300 Fulfills AUCC Category 2	Writing in the Disciplines-Sciences (<i>F,S; CO150 or HONR193</i>) or Strategic Writing and Communication (<i>F,S,SU; CO150 or HONR193</i>)		3
Fall - 17credits			Credits	Spring - 16 credits			Credits
FOURTH YEAR	ECE401 Fulfills AUCC Category 4	Senior Design Project I (<i>F,S; ECE232 with a C or higher; ECE311 with a C or higher; 4 courses from ECE452, ECE456, ECE451, ECE528, CS356, ECE312 with a C or higher, ECE331 with a C or higher, ECE332 with a C or higher</i>)	3	ECE402 Fulfills AUCC Category 4	Senior Design Project II (<i>F,S; ECE401</i>)		3
	ECE528 ³ or Technical Elective ⁴	Embedded Systems and Machine Learning (<i>F; ECE251 with a C or higher or ECE253 with a C or higher</i>) or See Approved List (<i>F,S</i>)	4	ECE4563 or Technical Elective ⁴	Computer Networks (<i>S; ECE251 with a C or higher or ECE253 with a C or higher; ECE/STAT303 with a C or higher; CS152 or CS162 or CS163 or CS164 with a C or higher; ECE311 with a C or higher</i>) or See Approved List (<i>F,S</i>)		4
	Computer Engineering Electives ⁴ and Technical Electives ⁴	See Approved List (<i>F,S</i>)	4	Computer Engineering Electives ⁴ and Technical Electives ⁴	See Approved List (<i>F,S</i>)		6
	University Core	AUCC Category 1C, 3B, 3C, 3D (<i>F,S,SU</i>)	6	University Core	AUCC Category 1C, 3B, 3C, 3D (<i>F,S,SU</i>)		3

¹ Students may also choose one of the following: 1) CS150B + CS164; or 2) Arts/Humanities AUCC + CS152 + CS162; or 3) Arts/Humanities AUCC + CS163² College Composition must be completed within the first 60 (CSU and transfer) credits taken³ Students must take either ECE528 **OR** ECE456 to fulfill the Group 1 Computer Engineering Electives⁴ See list of approved courses on the ECE website: <https://www.engr.colostate.edu/ece/undergraduates/degree-programs/computer-engineering-with-aerospace-systems/>

ECE prefix courses required for the major at the 100, 200, and 300 level must be passed with a minimum grade of C; grades below a C will require the student to retake the course. ECE courses designated as an elective are exempt from the C or higher minimum grade requirement.