

CURRICULUM SHEET Prior to Fall 2025  
**Computer Engineering - Aerospace Systems Concentration**

Degree requirements - 126 credits

<b>Fall - 14 credits</b>		<b>Credits</b>	<b>Spring - 15 credits</b>		<b>Credits</b>	
<b>FIRST YEAR</b>	ECE102	Digital Circuit Logic (F,S)	4	ECE251	Introduction to Microcontrollers and IoT (F,S; <b>ECE102 with a C or higher</b> )	4
	CS150B <sup>1</sup> Fulfils AUCC Category 3B	Culture and Coding: Python (F,S)	3	CS164 <sup>1</sup>	Computational Thinking with Java (F,S; <b>CS150B with a B or higher or CS152 with a B or higher or CS163</b> )	4
	MATH160 Fulfils AUCC Category 1B	Calculus for Physical Scientists I (F,S,SU; <b>MATH124 with a B or higher; MATH126 with a B or higher or MATH127 with a B or higher</b> )	4	MATH161	Calculus for Physical Scientists II (F,S,SU; <b>MATH124 or MATH127; MATH159 or MATH160</b> )	4
	CO150 <sup>2</sup> Fulfils AUCC Category 1A	College Composition (F,S,SU; <b>CO130 or Placement</b> )	3	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)	3
<b>Fall - 18 credits</b>		<b>Credits</b>	<b>Spring - 15 credits</b>		<b>Credits</b>	
<b>SECOND YEAR</b>	ECE103	DC Circuit Analysis (F,S; <b>MATH159 with a C or higher or MATH160 with a C or higher</b> )	3	ECE202	Circuit Theory Applications (S,SU; <b>ECE103 with a C or higher; MATH161 with a C or higher</b> )	4
	CS165	CS2 - Data Structures (F,S; <b>CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher</b> )	4	ECE232	Introduction to Project Practices (F,S; <b>ECE202 or concurrent registration or ECE395B or concurrent registration</b> )	1
	CT301	C++ Fundamentals (F,S; <b>CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher</b> )	2	ECE303	Introduction to Communications Principles (S; <b>MATH261 with a C or higher; MATH340 or concurrent registration</b> )	3
	MATH261	Calculus for Physical Scientists III (F,S,SU; <b>MATH161</b> )	4	MATH340	Introduction to Ordinary Differential Equations (F,S,SU; <b>MATH261</b> )	4
	PH141 Fulfils AUCC Category 3A	Physics for Scientists and Engineers I (F,S,SU; <b>MATH159 or concurrent registration or MATH160 or concurrent registration</b> )	5	Approved AUCC 3A Bio/Phy Science <sup>3</sup>	See Approved List (F,S,SU)	3
<b>Fall - 17 credits</b>		<b>Credits</b>	<b>Spring - 15 credits</b>		<b>Credits</b>	
<b>THIRD YEAR</b>	ECE311	Linear Systems Analysis I (F; <b>ECE202 with a C or higher; MATH340 with a C or higher; ECE451 or ECE528 or CS356 or concurrent registration</b> )	3	ECE312	Linear Systems Analysis II (S; <b>ECE311 with a C or higher</b> )	3
	ECE450 <b>and</b> ECE451	Digital Systems Design Lab (F; <b>concurrent registration in ECE451</b> ) <b>and</b> Digital Systems Design (F; <b>ECE102 with a C or higher; ECE202 with a C or higher; concurrent registration in ECE450</b> )	4	ECE452	Computer Organization & Architecture (S; <b>ECE251 with a C or higher</b> )	3
	CS214	Software Development (F,S; <b>CS165 with a C or higher</b> )	3	CS356	System Security (F,S; <b>CS214 with a C or higher or CS253 with a C or higher or CS370 with a C or higher</b> )	3
	CS220	Discrete Structures (F,S; <b>CS152 with a B or higher OR CS162 or CS163 or CS164 with a C or higher; MATH159 or MATH160</b> )	4	MATH369 <b>or</b> DSCI369	Linear Algebra I (F,S,SU; <b>MATH 161</b> ) <b>or</b> Linear Algebra for Data Science (S; <b>MATH159 or MATH160 or MATH161</b> )	3-4
	CO301B <b>or</b> JTC300 Fulfils AUCC Category 2	Writing in the Disciplines-Sciences (F,S; <b>CO150 or HONR193</b> ) <b>or</b> Strategic Writing and Communication (F,S,SU; <b>CO150 or HONR193</b> )	3	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)	3
<b>Fall - 18 credits</b>		<b>Credits</b>	<b>Spring - 14 credits</b>		<b>Credits</b>	
<b>FOURTH YEAR</b>	ECE401 Fulfils AUCC Category 4	Senior Design Project I (F,S; <b>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</b> )	3	ECE402 Fulfils AUCC Category 4	Senior Design Project II (F,S; <b>ECE401</b> )	3
	ECE528 <sup>3</sup> <b>or</b> Technical Elective <sup>4</sup>	Embedded Systems and Machine Learning (F; <b>ECE251 with a C or higher</b> ) <b>or</b> See Approved List (F,S)	4	ECE456 <sup>3</sup> <b>or</b> Technical Elective <sup>4</sup>	Computer Networks (S; <b>ECE251 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</b> ) <b>or</b> See Approved List (F,S)	4
	Computer Engineering Electives <sup>4</sup> and Technical Electives <sup>4</sup>	See Approved List (F,S)	5	Computer Engineering Electives <sup>4</sup> and Technical Electives <sup>4</sup>	See Approved List (F,S)	7
	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)	6			

<sup>1</sup> Students may also choose one of the following: 1) Arts/Humanities AUCC + CS152 + CS162; or 2) Arts/Humanities AUCC + CS163

<sup>2</sup> College Composition must be completed within the first 60 (CSU and transfer) credits taken

<sup>3</sup> Students must take either ECE528 **OR** ECE456

<sup>4</sup> 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.**