CURRICULUM SHEET   Prior to Fall 2025
Computer Engineering - Embedded and IoT Systems Concentration
Degree requirements - 126 credits

FIRST YEAR

Fall - 14 credits		Credits	Spring - 15 credits		Credits
ECE102	Digital Circuit Logic *(F,S)*	4	ECE251	Introduction to Microcontrollers and IoT *(F,S; ECE102 with a C or higher)*	4
MATH160 Fulfills AUCC Category 1B	Calculus for Physical Scientists I *(F,S,SU; MATH124 with a B or higher; MATH126 with a B or higher or MATH127 with a B or higher)*	4	MATH161	Calculus for Physical Scientists II *(F,S,SU; MATH124 or MATH127; MATH159 or MATH160)*	4
CS150B[1] Fulfills AUCC Category 3B	Culture and Coding: Python *(F,S)*	3	CS164[1]	Computational Thinking with Java *(F,S; CS150A with a B or higher or CS150B with a B or higher or CS152 with a B or higher or CS163)*	4
CO150[2] Fulfills AUCC Category 1A	College Composition *(F,S,SU; CO130 or Placement)*	3	University Core	AUCC Category 1C, 3B, 3C, 3D *(F,S,SU)*	3

SECOND YEAR

Fall - 18 credits		Credits	Spring - 15 credits		Credits
ECE103	DC Circuit Analysis *(F,S; MATH159 with a C or higher or MATH160 with a C or higher)*	3	ECE202	Circuit Theory Applications *(S,SU; ECE103 with a C or higher; MATH161 with a C or higher)*	4
CS165	(CS2) Data Structures *(F,S; CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher)*	4	ECE303	Introduction to Communications Principles *(S; MATH261 with a C or higher; MATH340, may be taken concurrently)*	3
PH141 Fulfills AUCC Category 3A	Physics for Scientists and Engineers I *(F,S,SU; MATH159, may be taken concurrently or MATH160, may be taken concurrently)*	5	Approved AUCC 3A Bio/Phy Science[3]	See Approved List *(F,S,SS)*	3
MATH261	Calculus for Physical Scientists III *(F,S,SU; MATH161)*	4	MATH340	Introduction to Ordinary Differential Equations *(F,S,SU; MATH261)*	4
CT301	C++ Fundamentals *(F,S; CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher)*	2	ECE232	Introduction to Project Practices *(F,S; ECE202, may be enrolled concurrently or ECE395B, may be enrolled concurrently)*	1

THIRD YEAR

Fall - 17 credits		Credits	Spring - 15 credits		Credits
ECE311	Linear Systems Analysis I *(F; ECE202 with a C or higher ; MATH340 with a C or higher; ECE451 or ECE528 or CS356, may be taken concurrently)*	3	MATH369 or DSCI369	Linear Algebra I *(F,S,SU; MATH 161)* **or** Linear Algebra for Data Science *(S; MATH159 or MATH160 or MATH161)*	3-4
ECE450 **and** ECE451	Digital Systems Design Lab *(F; concurrent registration in ECE451)* **and** Digital Systems Design *(F; ECE102 with a C or higher; ECE202 with a C or higher; concurrent registration in ECE450)*	4	ECE452	Computer Organization & Architecture *(S; ECE251 with a C or higher)*	3
CS214	Software Development *(F,S; CS165 with a C or higher)*	3	CS356	System Security *(F,S; CS214 with a C or higher or CS253 with a C or higher or CS370 with a C or higher)*	3
CS220	Discrete Structures and their Applications *(F,S; CS152 with a B or higher OR CS162 or CS163 or CS164 with a C or higher; MATH159 or MATH160)*	4	University Core	AUCC Category 1C, 3B, 3C, 3D *(F,S,SU)*	6
CO301B or JTC300 Fulfills AUCC Category 2	Writing in the Disciplines-Sciences *(F,S; CO150 or HONR193)* **or** Strategic Writing and Communication *(F,S,SU; CO150 or HONR193)*	3			

FOURTH YEAR

Fall - 18 credits		Credits	Spring - 14 credits		Credits
ECE401 Fulfills AUCC Category 4	Senior Design Project 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)*	3	ECE402 Fulfills AUCC Category 4	Senior Design Project II *(F,S; ECE401)*	3
ECE528[3] or Technical Elective[4]	Embedded Systems and Machine Learning *(F; ECE251 with a C or higher)* **or** See Approved List *(F,S)* **Strongly Recommended: ECE528**	4	ECE456[3] or Technical Elective[4]	Computer Networks *(S; ECE251 with a C or higher; ECE303 with a C or higher; CS152 or CS162 or CS163 or CS164 with a C or higher; ECE311 with a C or higher)* **or** See Approved List *(F,S)*	4
CS320	Algorithms - Theory and Practice *(F,S; CS165 with a C or higher; CS220 with a C or higher; MATH160 with a C or higher; MATH369 or DSCI369 with a C or higher)*	3	University Core	AUCC Category 1C, 3B, 3C, 3D *(F,S,SU)*	3
Computer Engineering Electives[4] and Technical Electives[4]	See Approved List *(F,S)*	8	Computer Engineering Electives[4] and Technical Electives[4]	See Approved List *(F,S)*	4

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

[2] College Composition must be completed within the first 60 (CSU and transfer) credits taken

[3] Students must take either ECE528 **OR** ECE456

[4] See list of approved courses on the ECE website: https://www.engr.colostate.edu/ece/undergraduates/degree-programs/computer-engineering-undergrad/

ECE 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.