MAJOR IN COMPUTER ENGINEERING, EMBEDDED AND IOT SYSTEMS CONCENTRATION

Major Completion Map

Distinctive Requirements for Degree Program:

TO PREPARE FOR FIRST SEMESTER: The curriculum for this major assumes students enter college prepared to take calculus.

In order to maintain professional standards required of practicing engineers, the Department of Electrical and Computer Engineering requires a cumulative grade point average of at least 2.000 in Electrical Engineering courses as a graduation requirement. It is the responsibility of any student who fails to maintain a 2.000 average to work with their advisor to correct grade point deficiencies. ECE courses required for the major at the 100, 200, and 300 level must be passed with a minimum grade of C (2.000); 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.

Freshman

Semester 1		**Critical**	**Recommended**	**AUCC**	**Credits**
CHEM 111	General Chemistry I (GT-SC2)		X	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)		X	3A	1
ENGR 111	Fundamentals of Engineering	X			3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		1B	4
First course from Group A, B, or C (See options in Program Requirements Tab)		X		3B	3
	Total Credits				**15**

Semester 2		**Critical**	**Recommended**	**AUCC**	**Credits**
CO 150	College Composition (GT-CO2)		X	1A	3
ENGR 114	Engineering for Grand Challenges	X			3
MATH 161	Calculus for Physical Scientists II (GT-MA1)	X		1B	4
Remaining course(s) from Group A, B, or C (See options in Program Requirements Tab)		X			4
	Total Credits				**14**

Sophomore

Semester 3		**Critical**	**Recommended**	**AUCC**	**Credits**
CS 165	CS2--Data Structures	X			4
ECE 205	Analog Circuits I	X			2
ECE 252	Introduction to Digital Circuits	X			3
MATH 261	Calculus for Physical Scientists III	X			4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	5
	Total Credits				**18**

Semester 4		**Critical**	**Recommended**	**AUCC**	**Credits**
ECE 206	Analog Circuits II				3
ECE 232	Introduction to Project Practices	X			1
ECE 253	Microcontrollers and C for Internet-of-Things				3
ECE 303/ STAT 303	Introduction to Communications Principles	X			3
MATH 340	Intro to Ordinary Differential Equations	X			4
	Total Credits				**14**

Junior

Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
CS 214	Software Development	X			3
CS 220	Discrete Structures and the Applications	X			4
ECE 311	Linear System Analysis I	X			3
ECE 450	Digital System Design Laboratory	X			1
ECE 451	Digital System Design	X			3

JTC 300 or CO 301B	Strategic Writing and Communication (GT-CO3) Writing in the Disciplines: Sciences (GT-CO3)		X	2	3
	Total Credits				**17**
Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
CT 301	C++ Fundamentals				2
ECE 452	Computer Organization and Architecture	X			3
ECON 202	Principles of Microeconomics (GT-SS1)		X	3C	3
Select a minimum of three credits from the following:			X		3
DSCI 369	Linear Algebra for Data Science				
MATH 369	Linear Algebra I				
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)			X	1C	3
	Total Credits				**14**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
CS 320	Algorithms--Theory and Practice		X		3
ECE 401	Senior Design Project I	X		4A,4B	3
Choose one of the following:		X			4
ECE 456	Computer Networks				
ECE 528/ CS 528	Embedded Systems and Machine Learning				
Computer Engineering Electives and Technical Electives (See Lists on Program Requirements Tab)		X			4
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
	Total Credits				**17**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
ECE 402	Senior Design Project II	X		4C	3
Computer Engineering Electives and Technical Electives (See Lists on Program Requirements Tab)		X			11
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		X		3B	3
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
	Total Credits				**17**
	Program Total Credits:				**126**