

CURRICULUM SHEET      Prior to Fall 2025  
**Computer Engineering - Networks and Data Concentration**

Degree requirements - 126 credits

Fall - 14 credits				Credits	Spring - 15 credits				Credits
<b>FIRST YEAR</b>	ECE102	Digital Circuit Logic (F,S)		4	ECE251	Introduction to Microcontrollers and IoT (F,S; ECE102 with a C or higher)			4
	CS150B <sup>1</sup> Fulfills AUCC Category 3B	Culture and Coding: Python (F,S)		3	CS164 <sup>1</sup>	Computational Thinking with Java (F,S; CS150B with a B or higher or CS152 with a B or higher or CS163)			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
	CO150 <sup>2</sup> 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

Fall - 18 credits				Credits	Spring - 15 credits				Credits
<b>SECOND YEAR</b>	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	ECE232	Introduction to Project Practices (F,S; ECE202 or concurrent registration or ECE395B or concurrent registration)			1
	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	ECE303	Introduction to Communications Principles (S; MATH261 with a C or higher; MATH340 or concurrent registration)			3
	MATH261	Calculus for Physical Scientists III (F,S,SU; MATH161)		4	MATH340	Intro to Ordinary Differential Equations (F,S,SU; MATH261)			4
	PH141 Fulfills AUCC Category 3A	Physics for Scientists and Engineers I (F,S,SU; MATH159 or concurrent registration or MATH160 or concurrent registration)		5	Approved AUCC 3A Bio/Phy Science <sup>3</sup>	See Approved List (F,S,SU)			3

Fall - 17 credits				Credits	Spring - 15 credits				Credits
<b>THIRD YEAR</b>	ECE311	Linear Systems Analysis I (F; ECE202 with a C or higher; MATH340 with a C or higher; ECE451 or ECE528 or CS356 or concurrent registration)		3	ECE312	Linear Systems Analysis II (S; ECE311 with a C or higher)			3
	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 (F,S; CS152 with a B or higher OR CS162 or CS163 or CS164 with a C or higher; MATH159 or MATH160)		4	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
	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	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)			3

Fall - 16 credits				Credits	Spring - 16 credits				Credits
<b>FOURTH YEAR</b>	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
	ECE421	Telecommunications (F; ECE303 with a C or higher; ECE312 with a C or higher)		3	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)			3
	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	ECE456	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)			4
	Computer Engineering Electives <sup>3</sup> and Technical Electives <sup>3</sup>	See Approved List (F,S)		4	Computer Engineering Electives <sup>3</sup> and Technical Electives <sup>3</sup>	See Approved List (F,S)			6
	University Core	AUCC Category 1C, 3B, 3C, 3D (F,S,SU)		3					

<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 (CO150) must be completed within the first 60 (CSU and transfer) credits taken

<sup>3</sup> See list of approved courses on the ECE website: <https://www.engr.colostate.edu/ece/undergraduates/degree-programs/computer-engineering-with-networks-and-data/>

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.