

Computer Engineering

Degree requirements - 129 credits

FRESHMAN YEAR	Fall - 17-18 credits		Credits	Spring - 17 credits		Credits
	ECE102	Digital Circuit Logic (F,S)	4	ECE251	Introduction to Microcontrollers and IoT (F,S; ECE102 with a minimum grade of C)	4
	MATH160	Calculus for Physical Scientists I (F,S,SS; MATH124 with a minimum grade of B; MATH126 with a minimum grade of B)	4	MATH161	Calculus for Physical Scientists II (F,S,SS; MATH124; MATH159 or MATH160)	4
	Elective	Free Elective (F,S,SS)	2-3	PH141	Physics for Scientists and Engineers I (F,S,SS; MATH126; MATH159, may be taken concurrently or MATH160, may be taken concurrently)	5
	CS163 OR CS164	Java (CS1) No Prior Programming (F,S,SS; MATH124 with a minimum grade of C) or Java (CS1) Prior Programming (F,S; MATH124 with a minimum grade of C)	4	CS165	(CS2) Data Structures (F,S; CS163 with a minimum grade of C or CS164 with a minimum grade of C)	4
CO150 ¹	College Composition (F,S,SS; CO 130 or Placement)	3				

SOPHOMORE YEAR	Fall - 16 credits		Credits	Spring - 15 credits		Credits
	ECE103	DC Circuit Analysis (F,S; MATH159 with a minimum grade of C or MATH160 with a minimum grade of C)	3	ECE202	Circuit Theory Application (S,SS; ECE103 with a minimum grade of C; MATH161 with a minimum grade of C)	4
	PH142	Physics for Scientists and Engineers II (F,S; PH141; MATH161, may be taken concurrently)	5	ECE303	Introduction to Communications Principles (S; MATH261 with a minimum grade of C; MATH340, may be taken concurrently)	3
	CS220	Discrete Structures and their Applications (F,S; CS163 with a minimum grade of C or CS164 with a minimum grade of C; MATH124 with a minimum grade of B or MATH159 with a minimum grade of C or MATH160 with a minimum grade of C)	4	CS253	Software Development with C++ (F,S; CS165 with a minimum grade of C)	4
	MATH261	Calculus for Physical Scientists III (F,S,SS; MATH161)	4	MATH340	Introduction to Ordinary Differential Equations (F,S,SS; MATH261)	4

JUNIOR YEAR	Fall - 14 credits		Credits	Spring - 15-16 credits		Credits
	ECE311	Linear Systems Analysis I (F; ECE202 with a minimum grade of C; MATH340 with a minimum grade of C)	3	ECE312	Linear Systems Analysis II (S; ECE311 with a minimum grade of C)	3
	ECE331	Electronics Principles I (F; ECE202 with a minimum grade of C; MATH340 with a minimum grade of C; PH142 with a minimum grade of C; ECE311, may be taken concurrently; ECE341, may be taken concurrently)	4	ECE332 ³ OR CS320	Electronic Principles II (S; ECE331 with a minimum grade of C) or Algorithms - Theory & Practice (F,S; CS165 with a minimum grade of C; CS220 with a minimum grade of C; MATH160 with a minimum grade of C; MATH229 with a minimum grade of C or MATH369 with a minimum grade of C)	3-4
	ECE450	Digital Systems Design Lab (F; concurrent registration in ECE451)	1	ECE452	Computer Organization & Architecture (S; ECE251 with a minimum grade of C)	3
	ECE451	Digital Systems Design (F; ECE102 with a minimum grade of C; ECE202 with a minimum grade of C; concurrent registration in ECE450)	3	CO301B OR JTC300	Writing in the Disciplines-Sciences (F,S; CO150 or HONR193) OR Strategic Writing and Communication (F,S,SS; CO150 or HONR193)	3
	CS370	Operating Systems (F,S; CS165 with a minimum grade of C; ECE251 with a minimum grade of C)	3	University Core	AUCC Category 3B, 3D, 3E (F,S,SS)	3

SENIOR YEAR	Fall - 18 credits		Credits	Spring - 16 credits		Credits
	ECE401	Senior Design Project I (F,S; ECE312 with a minimum grade of C; ECE332 with a minimum grade of C; ECE342 with a minimum grade of C)	3	ECE402	Senior Design Project II (F,S; ECE401)	3
	ECON202	Microeconomics (F,S,SS; MATH117 or MATH118 or MATH160)	3	ECE456	Computer Networks (S; ECE251 with a minimum grade of C; ECE/STAT303 with a minimum grade of C; CS152 with a minimum grade of C)	4
	Technical Electives ²	See Approved List (F,S)	6	Technical Electives ²	See Approved List (F,S)	6
	University Core	AUCC Category 3B, 3D, 3E (F,S,SS)	6	University Core	AUCC Category 3B, 3D, 3E (F,S,SS)	3

¹ College Composition must be completed within the first 60 (CSU and transfer) credits taken² See list of approved courses on the ECE website: <https://www.engr.colostate.edu/ece/undergraduates/degree-programs/computer-engineering-undergrad/>³ ECE332 is recommended for students interested in specializing in VLSI

All ECE students must complete the Career Development Seminars - CDS: 1) Resume Writing; 2) Behavior Based Interviewing; and 3) Using LinkedIn (TM). Workshop schedule located in 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