

College of Engineering & Applied Science – B.S. Electrical Engineering

Location: Main Hall 208

Hours: Monday–Friday: 9am-4pm Appointments Only (except Wednesday afternoons)

Drop-in Advising every Wednesday from 1pm-4:30pm

Website: www.uccs.edu/advising

General Academic Information

Academic Policies

It is the responsibility of each student to know and follow all Academic policies established by the University and the College of Engineering & Applied Science (EAS) that are set forth in the Catalog (catalog.uccs.edu).

Course Prerequisites

Students are responsible for knowing and completing all course prerequisites. Course prerequisites are strictly enforced for all classes at UCCS.

Residency, Restrictions, and Limitations

Students must be admitted into the College of Engineering and Applied Science as well as complete at least the final 30 credit hours of coursework exclusively at UCCS. Only three hours of Independent Study may count toward the degree. Credit for work experience, Military Science, and ROTC – when granted – is generally not applicable to degree fulfillment.

Probation/Suspension

Students whose full-time semester’s or cumulative GPA falls below 2.0 will be placed on probation for the next semester in which they are enrolled in the College of Engineering & Applied Science and will be notified by email and mail. If, after that semester, the semester or cumulative GPA is still below 2.0, the student will be suspended from the college. PLEASE NOTE: *While on probation, registration for the subsequent semester will be blocked until final grades are posted for the current semester. This is to verify that the minimum semester GPA for each student has been fulfilled.*

UCCS Bachelor of Science, Electrical Engineering Major Degree Requirements

> A minimum of 128 hours must be completed with a cumulative CU grade point average of 2.0.

> The last 30 hours of the degree must be completed while registered in the College of Engineering and Applied Science at UCCS.

> Courses numbered below 1000 do not count towards degree completion.

> This guide is provided for student use only. It does not represent an official documentation of a student’s progress towards completion of their degree program. The EE program requires a minimum 2.0 GPA in all ECE course work taken in order to graduate. Students must also complete an Exit Interview with the ECE Department during their final semester to graduate.

Compass Curriculum

Compass Curriculum is the campus-wide general education program at UCCS. The Compass Curriculum has multiple components many of which will coincide with the degree requirements listed in this guide. Please visit the Compass Curriculum website at www.uccs.edu/compasscurriculum, review your degree audit, or check out the Compass Curriculum advising guide for specific course details. The required components are listed below and referenced in the guide.

REQUIRED COMPASS CURRICULUM COMPONENTS:

Component	Course
Gateway	GPS 1010
Explore¹ – Arts, Humanities and Cultures	See Degree Audit
Explore¹ – Society, Behavior and Health	See Degree Audit
Explore¹ – Physical and Natural World	PES 1110
Navigate²	See Degree Audit
Summit	ECE 4890/4899
Writing Intensive Course (WIC)³ <i>Two courses with at least one upper-division (3000+ level).</i>	See Degree Audit ECE 3610
Inclusiveness³	See Degree Audit
Sustainability³	See Degree Audit

¹ Explore must be outside major and area requirements.

² Navigate must be outside major requirements.

³ Can count towards other requirements within the Compass Curriculum or within a student’s degree program.



DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Department website: www.uccs.edu/ece

Degree Requirements	Courses						
Electrical Engineering Core Courses (53 hours) <i>You must be admitted into the College of Engineering in order to take any ECE coursework.</i> <i>Courses marked with an asterisk (*) must be passed with a C or better.</i>	Complete all of the following courses:						
	ECE 1001	Intro to Robotics				3	
	ECE 1021	Computer Based Modeling (<i>pre-req MATH 1350, ECE 1001</i>)				3	
	ECE 1411*	Logic Circuits I				2	
	ECE 2050	Intro to Physical Electronics (<i>co-req MATH 3400, PES 2130</i>)				3	
	ECE 2205	Circuits and Systems I (<i>pre-req ECE 2610, co-req MATH 3400</i>)				4	
	ECE 2411*	Logic Circuits II (<i>pre-req ECE 1411, co-req ECE 1021 or CS 2060</i>)				2	
	ECE 2610*	Intro to Signals and Systems (<i>pre-req MATH 1360, ECE 1021</i>)				4	
	ECE 3020	Semiconductor Devices (<i>pre-req ECE 2050, ECE 2205</i>)				3	
	ECE 3110	Electromagnetic Fields I (<i>pre-req ECE 2205</i>)				3	
	ECE 3205	Circuits and Systems II (<i>pre-req ECE 2205</i>)				4	
	ECE 3210	Electronics I (<i>pre-req ECE 2205</i>)				3	
	ECE 3220	Electronics II (<i>pre-req ECE 2205, ECE 3210</i>)				3	
	ECE 3230	Electronics Lab I (<i>co-req ECE 3210</i>)				1	
	ECE 3240	Electronics Lab II (<i>pre-req ECE 3230, co-req ECE 3220</i>)				1	
	ECE 3420	Microprocessor Systems Lab (<i>pre-req ECE 1411, co-req ECE 3430</i>)				1	
	ECE 3430	Intro to Microcomputer Systems (<i>pre-req ECE 1411, co-req ECE 3420</i>)				3	
	ECE 3610	Engineering Probability and Statistics (<i>pre-req MATH 2350</i>)				3	
	ECE 4480	Computer Architecture & Design (<i>pre-req ECE 3430 or instructor consent</i>)				3	
	ECE 4890	Senior Seminar (<i>Must be taken semester prior to ECE 4898</i>)				1	
	ECE 4898	Senior Design Project (<i>pre-req ECE 4890 & last semester of degree</i>)				3	
Electrical Engineering Electives (14 hours)	Complete 12 hours from the following courses.						
	ECE 3120	Electromagnetic Fields II (<i>pre-req ECE 3110, MATH 3400</i>)				3	
	ECE 4020	Semiconductor Devices II (<i>pre-req ECE 3020</i>)				3	
	ECE 4242	Advanced Digital Design Methodology (<i>pre-req ECE 2411</i>)				3	
	ECE 4340	VLSI Circuit Design I (<i>pre-req ECE 3020, ECE 3210</i>)				3	
	ECE 4510	Feedback Control System (<i>pre-req ECE 2205</i>)				3	
	ECE 4625	Communications Systems I (<i>pre-req ECE 3205</i>)				3	
	ECE 4650	Modern Digital Signal Processing (<i>pre-req ECE 3205, ECE 3610</i>)				3	
	ECE 4910	Power Systems II (<i>pre-req ECE 3910</i>)				3	
	Complete 2 hours from the following lab courses.						
	ECE 3440	Microcomputer Systems Lab (<i>pre-req ECE 2411, ECE 3430</i>)				1	
	ECE 4040	Intro VLSI Fabrication Lab (<i>pre-req ECE 4020, ECE 4080</i>)				1	
	ECE 4150	Microwave Measurement Lab (<i>pre-req ECE 3120</i>)				1	
	ECE 4200	Advanced Digital Design Lab (<i>pre-req ECE 4242</i>)				1	
	ECE 4530	Control Systems Lab (<i>co-req ECE 4510</i>)				1	
	ECE 4560	Digital Control Lab (<i>co-req ECE 4540</i>)				1	
	ECE 4670	Communications Lab (<i>pre-req ECE 3230, co-req ECE 4625</i>)				1	
	ECE 4680	Signal Processing Lab (<i>pre-req ECE 3230, co-req ECE 4650</i>)				1	
	Technical Electives (6 hours) <i>Other courses in BIOL, CHEM, CS, ECE, MAE, MATH and PES numbered 4000+ may be accepted with a petition completed prior to taking the course.</i>	Complete 6 hours from the following courses (<i>or ECE courses at the 3000-4000 level, except ECE 3001</i>).					
BIOL 3000		BIOL 3020	BIOL 3100	BIOL 3140	BIOL 3220	BIOL 3300	
BIOL 3610		BIOL 3700	BIOL 3830	BIOL 3910	CHEM 3001	CHEM 3002	
CHEM 3101		CHEM 3102	CHEM 3111	CHEM 3112	CHEM 3203	CHEM 3213	
CHEM 4521		CS 3010	CS 3060	CS 3160	CS 3300	MAE 3130	
MAE 3201		MAE 3401	MATH 3110	MATH 3130	MATH 3410	MATH 3500	
MATH 3510		PES 3060	PES 3130	PES 3210	PES 3410	PES 3650	
PES 3670							

Composition Courses (6 hours)	Complete all of the following courses:			
	ENGL 1310	Rhetoric & Writing I		3
	ENGL 2090	Technical Writing & Presentation (<i>pre-req ENGL 1310</i>)		3
	PORT 3000	Writing Portfolio Assessment (<i>pre-req ENGL 2090</i>)		0
Mathematics (18 hours) <i>NOTE: Math courses require a grade of C or better to progress through the Math sequence.</i>	Complete all of the following courses:			
	MATH 1350	Calculus I (<i>pre-req MATH 1050</i>)		4
	MATH 1360	Calculus II (<i>pre-req MATH 1350</i>)		4
	MATH 2350	Calculus III (<i>pre-req MATH 1360</i>)		4
	MATH 3400	Intro to Differential Equations (<i>pre-req MATH 2350</i>)		3
	MATH Elective	Math 3110 or higher (<i>except MATH 3810</i>)		3
Basic Science (16 hours)	Complete PES 1110, PES 1120, PES 2130 (<i>Or any other PES course with a prerequisite of PES 1110. Please talk with an advisor to make sure the courses are approved in the program prior to completion.</i>)			
	PES 1110	PES 1120	PES 2130	GEOL 1010 GEOL1020
Compass Curriculum/ Humanities/ Social Science Requirements (15 hours) <i>Specific Limitations:</i> > Select one course from the Explore Arts, Humanities & Cultures list, and one from the Explore Society, Behavior & Health list. > At least 6 hours of Humanities and Social Science electives must be 2000+ level.	COMPASS CURRICULUM – In addition to the courses outlined above, a Gateway Seminar (GPS 1010) must be completed by all students to complete the Compass Curriculum. To see a list of all Compass Curriculum courses, please visit: www.uccs.edu/compasscurriculum .			
	GPS 1010			
	SOCIAL SCIENCE – Complete 6 hours of Social Science electives from the following departments: ANTH, COMM, ECON, GES, GRNT, PSC, PSY, SOC and WEST.			
	HUMANITIES – Complete 6 hours of Humanities electives from the following departments: AH, ENGL (except composition courses), HIST, HUM, Languages (culture courses only), MUS (except performance and practice courses), and PHIL.			



Four-Year Degree Plan – Electrical Engineering

The following four-year plan lists all the specific course requirements for the Bachelor of Science in Electrical Engineering degree at UCCS. Please note that this is a *suggested* degree program; your program may vary. **Students are responsible for completing all course prerequisites.** **Beginning Spring of the Second Year, ECE courses are offered only in the semester listed.**

Suggested First Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 1001 – Intro to Robotics	3		ECE 1021 – Computer-based Modeling & Methods	3
	ECE 1411 – Logic Circuits I	2		MATH 1360 – Calculus II	4
	MATH 1350 – Calculus I	4		ENGL 1310 – Rhetoric & Writing I	3
	PES 1110 – General Physics I	4		PES 1120 – General Physics II	4
	GPS 1010 – Gateway Program Seminar	3			
TOTAL		16	TOTAL		14

Suggested Second Year

FALL			SPRING**		
√	Course	Hours	√	Course	Hours
	ECE 2610 – Intro to Signals & Systems	4		ECE 2050 – Intro to Physical Electronics	3
	MATH 2350 – Calculus III	4		ECE 2205 – Circuits & Systems I	4
	Basic Science Elective (w/lab)	5		MATH 3400 – Intro to Differential Equations	3
	Compass Explore (Social Science) Elective	3		PES 2130 – General Physics III	3
				ENGL 2090 – Technical Writing	3
				ECE 2411 – Logic Circuits II	2
TOTAL		16	TOTAL		18

Suggested Third Year

FALL**			SPRING**		
√	Course	Hours	√	Course	Hours
	ECE 3020 – Semiconductor Devices I	3		ECE 3110 – Electromagnetic Fields I	3
	ECE 3205 – Circuits & Systems II	4		ECE 3220 – Electronics II	3
	ECE 3210 – Electronics I	3		ECE 3240 – Electronics II Lab	1
	ECE 3230 – Electronics I Lab	1		ECE 3610 – Engineering Probability & Statistics	3
	ECE 3420 – Microprocessor Systems Lab	1		ECE 4480 - Computer Architecture & Design	3
	ECE 3430 – Intro to Microcomputer Systems	3		Electrical Engineering Lab Elective	1
	Electrical Engineering Elective	3		2000+ Compass Inclusiveness & WIC Hum./Soc. Sci. Elec.	3
TOTAL		18	TOTAL		17

Suggested Fourth Year

FALL**			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 4890 – Senior Seminar	1		ECE 4898 – Senior Design Project	3
	MATH Elective (3110+)	3		Electrical Engineering Elective	10
	Technical Elective Course	6		Compass Explore (Humanities) Elective	3
	PORT 3000 – Writing Portfolio Assessment	0			
	2000 + Compass Sustainability/Hum./Social Science Elec.	3			
TOTAL		16	TOTAL		16