

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

Academic Advising Hours:

Location: Main Hall 208

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

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

Call: (719) 255-3260

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, Computer 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 CPEN program requires a minimum 2.0 GPA in all ECE and CS 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>	ECE 3610 See Degree Audit
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					
Computer Engineering Core Courses (62 hours) <i>You must be admitted into the College of Engineering in order to take any CS or ECE coursework.</i> <i>Courses marked with an asterisk (*) must be passed with a C or better.</i>	Complete all of the following courses:					
	CS 1150*	Principles of Computer Science			3	
	CS 1450*	Data Structures & Algorithms (<i>pre-req CS 1150</i>)			3	
	CS 2060	Programming with C (<i>pre-req CS 1150</i>)			3	
	CS 2080	Programming with UNIX (<i>pre-req CS 1450</i>)			2	
	CS 3060	Object Oriented Programming with C++ (<i>pre-req CS 2080 and CS 2060 or ECE 1021</i>)			3	
	CS 3300	Software Engineering (<i>pre-req CS 2080 and CS 3020 or CS 3060</i>)			3	
	CS 4500	Operating Systems (<i>pre-req CS 2060, CS 2080, CS 2160 or ECE 3430, CS 4200 or ECE 4480</i>)			3	
	CS 4720	Design & Analysis of Algorithms (<i>pre-req CS 1450, MATH 2150</i>)			3	
	ECE 1001	Intro to Robotics			3	
	ECE 1411*	Logic Circuits I			2	
	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>MATH 1360, ECE 1021 or CS 2060</i>)			4	
	ECE 3210	Electronics I (<i>pre-req ECE 2205</i>)			3	
	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 3440	Microcomputer Systems Lab (<i>pre-req ECE 2411, ECE 3430</i>)			1	
	ECE 3610	Engineering Probability and Statistics (<i>pre-req MATH 2350</i>)			3	
	ECE 4242	Advanced Digital Design Methods (<i>pre-req ECE 2411</i>)			3	
ECE 4330	Embedded System Design (<i>pre-req ECE 3430, CS 1450</i>)			3		
ECE 4480	Computer Architecture & Design (<i>pre-req ECE 3430</i>)			3		
ECE 4891	Senior Seminar (<i>Must be taken prior to ECE 4899</i>)			1		
ECE 4899	Design Project (<i>pre-req ECE 4891 & last semester of degree</i>)			3		
Technical Electives (10 hours)	Complete 10 hours from the following courses. <i>Other courses in CS, ECE, MAE, MATH and PES numbered 3000+ (except MATH 3010 and 3020) may be accepted with a petition completed prior to taking the course.</i>					
	CS 3010	CS 3020	CS 3160	CS 3350	CS 4100	CS 4220
	CS 4420	CS 4600	CS 4700	CS 4800	CS 4820	ECE 2050
	ECE 3003	ECE 3020	ECE 3110	ECE 3120	ECE 3205	ECE 3220
	ECE 3230	ECE 3240	ECE 4200	ECE 4211	ECE 4220	ECE 4320
	MATH 3130					
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 or 1410</i>)			3	
	PORT 3000	Writing Portfolio Assessment (<i>ENGL 2090</i>)			0	
Mathematics (18 hours)	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 2150	Discrete Mathematics (<i>pre-req MATH 1350</i>)			3	

<i>NOTE: Math courses require a grade of C or better to progress through the Math sequence.</i>	MATH 2350	Calculus III (<i>pre-req MATH 1360</i>)				4
	MATH 3400	Intro to Differential Equations (<i>pre-req MATH 2350</i>)				3
Basic Science (14 hours)	Complete PES 1110 and PES 1120 and 6 more hours from the list below. (<i>Or any other PES 3000+ level course.</i>)					
	PES 1110	PES 1120	BIOL 1300	BIOL 1310	BIOL 1350	BIOL 1360
	CHEM 1401	CHEM 1402	CHEM 1411	CHEM 1412	GEOL 1010	GEOL 1020
	PES 1160	PES 2130	PES 2160			
Compass Curriculum/ Humanities/ Social Science Requirements (15 hours) <i>Specific Limitations:</i> > <i>Select one course from the Explore Arts, Humanities & Cultures list, and one from the Explore Society, Behavior & Health list.</i> > <i>At least 6 hours of Humanities and Social Science electives must be 2000+ level.</i>	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 & practice courses), and PHIL.					
Open Elective (3 hours)	Complete 3 hours from any discipline. <i>May not include MATH 1040, 1050 or 1120.</i>					



Four-Year Degree Plan – Computer Engineering

The following four-year plan lists all the specific course requirements for the Bachelor of Science in Computer 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		CS 1450 – Data Structures & Algorithms	3
	CS 1150 – Principles of Computer Science	3		CS 2060 – C Programming	3
	MATH 1350 – Calculus I	4		MATH 1360 – Calculus II	4
	ENGL 1310 – Rhetoric & Writing I	3		PES 1110 – General Physics I	4
	GPS 1010 – Gateway Program Seminar	3		ENGL 2090 – Technical Writing	3
TOTAL		16	TOTAL		17

Suggested Second Year

FALL			SPRING**		
√	Course	Hours	√	Course	Hours
	ECE 1411 – Logic Circuits I	2		ECE 2205 – Circuits & Systems I	4
	ECE 2610 – Intro to Signals & Systems	4		ECE 2411 – Logic Circuits II	2
	CS 2080 – UNIX	2		CS 3060 – C++	3
	MATH 2350 – Calculus III	4		MATH 3400 – Intro to Differential Equations	3
	PES 1120 – General Physics II	4		Compass Explore (Social Science) Elective	3
TOTAL		16	TOTAL		15

Suggested Third Year

FALL**			SPRING**		
√	Course	Hours	√	Course	Hours
	ECE 3210 – Electronics I	3		CS 3300 – Software Engineering	3
	ECE 3420 – Microprocessor Systems Lab	1		ECE 3440 – Microprocessor Systems Lab	1
	ECE 3430 – Intro to Microcomputer Systems	3		ECE 3610 – Engineering Probability & Statistics	3
	ECE 4242 – Advanced Digital Design Methodology	3		ECE 4480 – Computer Architecture & Design	3
	MATH 2150 – Discrete Math	3		Basic Science Elective (w/Lab)	4
	Compass Explore (Humanities) Elective	3		2000+ Compass Inclusiveness & WIC Hum./Soc. Sci. Elec.	3
TOTAL		16	TOTAL		17

Suggested Fourth Year

FALL**			SPRING**		
√	Course	Hours	√	Course	Hours
	CS 4500 – Operating Systems I	3		ECE 4899 – Senior Design Project	3
	CS 4720 – Design & Analysis of Algorithms	3		Technical Elective	3
	ECE 4330 – Embedded Systems Design	3		Technical Elective	3
	ECE 4891 – Senior Seminar	1		Technical Elective Lab	1
	Technical Elective	3		2000+ Compass Sustainability/Hum./Social Science Elec.	3
	Basic Science Elective	2		Open Elective	3
	PORT 3000	0			
TOTAL		15	TOTAL		16