

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

### Contact Information:

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### Student Success Center Advising Hours:

Monday: 9am-5pm Walk-in Advising  
Tuesday–Friday: 9am-4pm Appointments Only  
*To schedule an appointment, call 719-255-3260.* The Student Success Center is located in Main Hall 208.

### 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](http://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.

#### Restrictions and Limitations

Students must be admitted into the degree major in the College of Engineering and Applied Science at least 30 credit hours prior to graduation. Only three hours of Independent Study may count toward the degree. Work Experience/Military Science/ROTC credit will not apply toward fulfillment of the requirements for a degree from the College of Engineering.

#### 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.*

#### 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](http://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
<b>Gateway</b>	GPS 1010
<b>Explore<sup>1</sup></b> – Arts, Humanities and Cultures	See List
<b>Explore<sup>1</sup></b> – Society, Behavior and Health	See List
<b>Explore<sup>1</sup></b> – Physical and Natural World	PES 1110
<b>Navigate<sup>2</sup></b>	See List
<b>Summit</b>	ECE 4890/4899
<b>Writing Intensive Course (WIC)<sup>3</sup></b> <i>Two courses with at least one upper-division (3000+ level).</i>	See List
<b>Inclusiveness<sup>3</sup></b>	See List
<b>Sustainability<sup>3</sup></b>	See List

<sup>1</sup> Explore must be outside major and area requirements.

<sup>2</sup> Navigate must be outside major requirements.

<sup>3</sup> Can count towards other requirements within the Compass Curriculum or within a student's degree program.

Degree Requirements	Courses		
<b>Electrical Engineering Core Courses</b> (50 hours)  <i>Courses marked with an asterisk (*) must be passed with a C or better.</i>	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</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 3240, 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 4890	Senior Seminar ( <i>Must be taken semester prior to ECE 4899</i> )	1
ECE 4899	Design Project ( <i>pre-req ECE 4890 &amp; last semester of degree</i> )	3	
<b>Electrical Engineering Electives</b> (14 hours)	<b>Complete 12 hours from the following courses.</b>		
	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 4480	Computer Architecture & Design ( <i>pre-req ECE 3430 or instructor consent</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
	<b>Complete 2 hours from the following lab courses.</b>		
	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	

<b>Technical Electives</b> (9 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 9 hours from the following courses (or ECE courses at the 3000-4000 level).					
	BIOL 3020	BIOL 3100	BIOL 3140	BIOL 3210	BIOL 3220	BIOL 3330
	BIOL 3600	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 3020	CS 3060	CS 3160	CS 3300
	MAE 3130	MAE 3135	MAE 3201	MAE 3310	MAE 3401	MAE 3560
	MATH 3110	MATH 3130	MATH 3410	MATH 3500	MATH 3510	PES 3060
	PES 3130	PES 3210	PES 3410	PES 3650		
<b>Composition Courses</b> (6 hours)	Complete ENGL 1310, 2090, and the Writing Portfolio.					
	ENGL 1310	Rhetoric & Writing I				3
	ENGL 2090	Technical Writing & Presentation (pre-req ENGL 1310)				3
	PORT 3000	Writing Portfolio Assessment (pre-req ENGL 2090)				0
<b>Mathematics</b> (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 (pre-req MATH 1050)				4
	MATH 1360	Calculus II (pre-req MATH 1350)				4
	MATH 2350	Calculus III (pre-req MATH 1360)				4
	MATH 3400	Intro to Differential Equations (pre-req MATH 2350)				3
	MATH Elective	Math 3110 or higher (except MATH 3810)				3
<b>Basic Science</b> (16 hours)	Complete PES 1110, PES 1120, PES 2130 and 5 more hours from the list below. (Or any other PES course with a prerequisite of PES 1110.)					
	PES 1110	PES 1120	PES 2130	BIOL 1300	BIOL 1310	BIOL 1350
	BIOL 1360	CHEM 1301	CHEM 1311	GEOL 1010	GEOL 1020	
<b>Humanities/Social Science Requirements</b> (12 hours)  <i>Specific Limitations:  &gt; Select one course from the Explore Arts, Humanities &amp; Cultures list, and one from the Explore Society, Behavior &amp; Health list.  &gt; At least 6 hours of Humanities and Social Science electives must be 2000+ level.  &gt; Only one course 3000+ level may be taken as Pass/Fail.</i>	<b>SOCIAL SCIENCE</b> – Complete 6 hours of Social Science electives from the following departments: ANTH, COMM, ECON, GES, GRNT, PSC, PSY, SOC and WEST.					
	<b>HUMANITIES</b> – Complete 6 hours of Humanities electives from the following departments: AH, ENGL (non-composition courses only), HIST, HUM, Languages (culture courses only), MUS (except choir and lessons), and PHIL.					
<b>Compass Curriculum</b> (3 hours not included above)	Complete all Compass Curriculum requirements not already completed as part of the above program. The Gateway Seminar ( <b>GPS 1010</b> ) must be completed by all students. Explore courses must be completed outside of the major and Area Requirements. All other Compass Curriculum requirements can be completed within the degree requirements above. To see a list of all Compass Curriculum courses, please visit: <a href="http://www.uccs.edu/compasscurriculum">www.uccs.edu/compasscurriculum</a> .					

### 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; at least 45 of these hours must be at the upper-division level (courses numbered 3000+).
- > 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.



## 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. The order in which these courses are taken may vary with course availability. **Students are responsible for completing all course prerequisites.** Please note that this is a *suggested* degree program; your program may vary.

### Suggested First Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	MATH 1350	4		ENGL 1310	3
	PES 1110	4		MATH 1360	4
	GPS 1010	3		PES 1120	4
	ECE 1001	3		ECE 1021	3
	ECE 1411	2		ECE 2411	2
	<b>TOTAL</b>	16		<b>TOTAL</b>	16

### Suggested Second Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	MATH 2350	4		MATH 3400	3
	Basic Science Elective (w/ lab)	5		PES 2130	3
	ECE 2610	4		ECE 2050	3
	Explore – Arts, Humanities & Cultures Course	3		ECE 2205	4
				ENGL 2090	3
	<b>TOTAL</b>	16		<b>TOTAL</b>	16

### Suggested Third Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 3020	3		ECE 3110	3
	ECE 3205	4		ECE 3220	3
	ECE 3210	3		ECE 3240	1
	ECE 3230	1		ECE 3610	3
	ECE 3420	1		Electrical Engineering Elective	4
	ECE 3430	3		Explore – Society, Behavior & Health Course	3
	<b>TOTAL</b>	15		<b>TOTAL</b>	17

### Suggested Fourth Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	MATH elective numbered 3110 or higher	3		ECE 4899	3
	Technical Elective Courses	9		Electrical Engineering Electives	10
	ECE 4890	1		Humanities/Social Science Elective (2000+ level)	3
	Humanities/Social Science Elective (2000+level)	3			
	<b>TOTAL</b>	16		<b>TOTAL</b>	16