

## 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](http://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](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. **See your degree audit for specific course prerequisites.**

#### 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](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 Degree Audit
<b>Explore<sup>1</sup></b> – Society, Behavior and Health	See Degree Audit
<b>Explore<sup>1</sup></b> – Physical and Natural World	PES 1110
<b>Navigate<sup>2</sup></b>	See Degree Audit
<b>Summit</b>	ECE 4890/4898
<b>Writing Intensive Course (WIC)<sup>3</sup></b> <i>Two courses with at least one upper-division (3000+ level).</i>	See Degree Audit ECE 3610
<b>Inclusiveness<sup>3</sup></b>	See Degree Audit
<b>Sustainability<sup>3</sup></b>	See Degree Audit

<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.



# DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Department website: [www.uccs.edu/ece](http://www.uccs.edu/ece)

Degree Requirements	Courses						
<b>Electrical Engineering Core Courses</b> (50 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				3	
	ECE 1411*	Logic Circuits I				2	
	ECE 2050	Intro to Physical Electronics				3	
	ECE 2205	Circuits and Systems I				4	
	ECE 2411*	Logic Circuits II				2	
	ECE 2610*	Intro to Signals and Systems				4	
	ECE 3020	Semiconductor Devices				3	
	ECE 3110	Electromagnetic Fields I				3	
	ECE 3205	Circuits and Systems II				4	
	ECE 3210	Electronics I				3	
	ECE 3220	Electronics II				3	
	ECE 3230	Electronics Lab I				1	
	ECE 3240	Electronics Lab II				1	
	ECE 3420	Microprocessor Systems Lab				1	
	ECE 3430	Intro to Microcomputer Systems				3	
	ECE 3610	Engineering Probability and Statistics				3	
	ECE 4890	Senior Seminar <i>(Must be taken semester prior to ECE 4898)</i>				1	
	ECE 4898	Senior Design Project				3	
<b>Electrical Engineering Electives</b> (14 hours)	<b>Complete 12 hours from the following courses.</b>						
	ECE 3120	Electromagnetic Fields II				3	
	ECE 4020	Semiconductor Devices II				3	
	ECE 4242	Advanced Digital Design Methodology				3	
	ECE 4340	VLSI Circuit Design I				3	
	ECE 4480	Computer Architecture & Design					
	ECE 4510	Feedback Control System				3	
	ECE 4625	Communications Systems I				3	
	ECE 4650	Modern Digital Signal Processing				3	
	ECE 4910	Power Systems II				3	
	<b>Complete 2 hours from the following lab courses.</b>						
	ECE 3440	Microcomputer Systems Lab				1	
	ECE 4040	Intro VLSI Fabrication Lab				1	
	ECE 4150	Microwave Measurement Lab				1	
	ECE 4200	Advanced Digital Design Lab				1	
	ECE 4530	Control Systems Lab				1	
	ECE 4560	Digital Control Lab				1	
	ECE 4670	Communications Lab				1	
	ECE 4680	Signal Processing Lab				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 <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							

<b>Composition Courses</b> (6 hours)	Complete all of the following courses:					
	ENGL 1310	Rhetoric & Writing I			3	
	ENGL 2090	Technical Writing & Presentation			3	
	PORT 3000	Writing Portfolio Assessment			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			4	
	MATH 1360	Calculus II			4	
	MATH 2350	Calculus III			4	
	MATH 3400	Intro to Differential Equations			3	
	MATH Elective	Math 3110 or higher			3	
<b>Basic Science</b> (16 hours)	Complete PES 1110, PES 1120, PES 2130 and 5 more hours from the list below. <i>(Or any other PES course with a prerequisite of PES 1110.)</i>					
	<b>PES 1110</b>	<b>PES 1120</b>	<b>PES 2130</b>	BIOL 1300	BIOL 1310	BIOL 1350
	BIOL 1360	CHEM 1401	CHEM 1402	CHEM 1411	CHEM 1412	GEOL 1010
	GEOL1020					
<b>Compass Curriculum/ Humanities/ Social Science Requirements</b> (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.	<b>COMPASS CURRICULUM</b> – In addition to the courses outlined above, a Gateway Seminar ( <b>GPS 1010</b> ) must be completed by all students to complete the Compass Curriculum. To see a list of all Compass Curriculum courses, please visit: <a href="http://www.uccs.edu/compasscurriculum">www.uccs.edu/compasscurriculum</a> .					
	<b>GPS 1010</b>					
	<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 (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	3		ECE 1021	3
	ECE 1411	2		MATH 1360	4
	MATH 1350	4		ENGL 1310	3
	PES 1110	4		PES 1120	4
	GPS 1010	3			
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>14</b>

### Suggested Second Year

FALL			SPRING**		
√	Course	Hours	√	Course	Hours
	ECE 2610	4		ECE 2050	3
	MATH 2350	4		ECE 2205	4
	Basic Science Elective (w/lab)	5		MATH 3400	3
	Explore – Society, Behavior & Health Course	3		PES 2130	3
				ENGL 2090	3
				ECE 2411	2
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>18</b>

### 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 Lab Elective	1
	ECE 3430	3		Technical Elective Course	3
	Electrical Engineering Elective	3		2000+ HUM/SS Elective (Inclusiveness/WIC)	3
				PORT 3000	0
<b>TOTAL</b>		<b>18</b>	<b>TOTAL</b>		<b>17</b>

### Suggested Fourth Year

FALL**			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 4890	1		ECE 4898	3
	Electrical Engineering Elective	3		Electrical Engineering Elective	3
	Electrical Engineering Lab Elective	1		Electrical Engineering Elective	3
	MATH Elective (3110+)	3		Technical Elective Course	3
	Technical Elective Course	3		Explore – Arts, Humanities & Cultures Course	3
	2000+ HUM/SS Elective (Sustainability)	3			
<b>TOTAL</b>		<b>14</b>	<b>TOTAL</b>		<b>15</b>