

## College of Engineering & Applied Science – B.I. Electrical 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](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.

#### 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 Innovation, 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 – Arts, Humanities and Cultures</b>	INOV 1010
<b>Explore – Society, Behavior and Health</b>	ENTP 1000
<b>Explore – Physical and Natural World</b>	PES 1110
<b>Navigate</b>	INOV 3010
<b>Summit</b>	ENTP 4500
<b>Writing Intensive Course (WIC)<sup>1</sup></b> <i>Two courses with at least one upper-division (3000+ level).</i>	INOV 2010 INOV 3010
<b>Inclusiveness<sup>1</sup></b>	INOV 1010
<b>Sustainability<sup>1</sup></b>	ENTP 1000

<sup>1</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> (4339 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 3230	Electronics Lab I ( <i>co-req ECE 3210</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 4890	Senior Seminar (Must be taken prior to ECE 4898)	1
ECE 4898	Senior Project	3	
<b>Electrical Engineering Electives</b> (8 hours)	Complete 6 hours from the following courses		
	ECE 3220	Electronics II ( <i>pre-req ECE 3210</i> )	3
	ECE 3120	Electromagnetic Fields II ( <i>pre-reqs 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-reqs ECE 3020, ECE 3210</i> )	3
	ECE 4480	Computer Architecture & Design ( <i>pre-req ECE 3430 or instructor permission</i> )	3
	ECE 4510	Feedback Control System ( <i>pre-req ECE 2205</i> )	3
	ECE 4625	Communications Systems ( <i>pre-req ECE 3205</i> )	3
	ECE 4650	Modern Digital Signal Processing ( <i>pre-reqs 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 3240	Electronics Lab II ( <i>pre-req ECE 3210</i> )	1
	ECE 3440	Microcomputer Systems Lab ( <i>pre-reqs ECE 2411, ECE 3430</i> )	1
	ECE 4040	Intro VLSI Fabrication Lab ( <i>pre-reqs 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>Innovation Core</b> (24 hours)	Complete all of the following courses:		
	ENTP 1000	Introduction to Entrepreneurship	3
	INOV 1010	The Innovation Process	3
	BLAW 2010	Business and Intellectual Property Law ( <i>pre-req Soph Standing</i> )	3

	INOV 2010	Innovation Team: Analyze and Report ( <i>pre-req INOV 1010 and ENTP 1000</i> )		3
	INOV 2100	Technical Writing, Proposals, and Presentations ( <i>pre-req ENGL 1310 or ENGL 1410</i> )		3
	INOV 3010	Innovation Team: Research and Execute ( <i>pre-req INOV 2010</i> )		3
	INOV 4010	Innovation Team: Design and Lead ( <i>pre-req INOV 2100 and INOV 3010</i> )		3
	ENTP 4500	Entrepreneurship and Strategy ( <i>pre-req BLAW 2010 and INOV 3010</i> )		3
<b>Cross-Discipline Core</b> (15 hours)				
		Complete one of the Cross-Discipline Cores listed below. Each Cross-Discipline Core consists of 15 credit hours. See the BI website for specific courses ( <a href="http://innovation.uccs.edu">innovation.uccs.edu</a> ).		
		<b>Business</b>		
		<b>Creative Communication</b>		
		<b>Globalization</b>		15
<b>Composition Courses</b> (3 hours)				
		Complete all of the following courses:		
	ENGL 1310	Rhetoric & Writing I		3
	PORT 3000	Writing Portfolio Assessment		0
<b>Mathematics</b> (21 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 2350	Calculus III ( <i>pre-req MATH 1360</i> )		4
	MATH 3400	Intro to Differential Equations ( <i>pre-req MATH 2350</i> )		3
	ECE 3610	Engineering Probability and Statistics ( <i>pre-req MATH 2350</i> )		3
	MATH Elective	MATH elective number 3100 or higher (except MATH 3810)		3
<b>Basic Science</b> (11 hours)				
		Complete all of the following courses:		
	PES 1110	PES 1120	PES 2130	
<b>Compass Curriculum</b> (3 hours)				
		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>Open Electives</b> (3 hours)				
		Complete any 3 hours of Elective coursework except Computer Science courses numbered below CS 1150, or Math courses numbered below MATH 1350.		



## Four-Year Degree Plan – B.I. Electrical Engineering

The following four-year plan lists all the specific course requirements for the Bachelor of Innovation 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
	ECE 1001	3		ECE 1021	3
	ECE 1411	2		ECE 2411	2
	MATH 1350	3		INOV 1010	3
	ENTP 1000	4		MATH 1360	4
	GPS 1010	3		PES 1110	4
	<b>TOTAL</b>	<b>15</b>		<b>TOTAL</b>	<b>16</b>

### Suggested Second Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 2610	4		ECE 2205	4
	ENGL1310	3		ECE 2050	3
	INOV 2010	3		INOV 21000	3
	MATH 2350	4		MATH 3400	3
	PES 1120	4		PES 2130	3
	<b>TOTAL</b>	<b>18</b>		<b>TOTAL</b>	<b>16</b>

### Suggested Third Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 3205	4		ECE 3110	3
	ECE 3420	1		ECE 3610 (Spring Only)	3
	ECE 3430	3		INOV 3010	3
	BLAW 2010	3		Cross Discipline Elective	3
	MATH elective 3100+	3		Cross Discipline Core Course	3
	Cross Discipline Core Course	3			
	<b>TOTAL</b>	<b>18</b>		<b>TOTAL</b>	<b>15</b>

### Suggested Fourth Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	ECE 3210	3		ECE elective	3
	ECE 3230	3		ECE elective	3
	INOV 4010	1		ECE elective	3
	ECE 4890	3		ECE 4898	3
	ECE elective	3		Cross Discipline Core Course	3
	Cross Discipline Core Course	3			
	PORT 3000	0			
	<b>TOTAL</b>	<b>16</b>		<b>TOTAL</b>	<b>15</b>