Electrical and Computer Engineering, A.A.S.

Visit the Electrical and Computer Engineering Department page (https://www.uvu.edu/cet/ece/) for more information on the program and access to advising.

Program Description

The Electrical and Computer Engineering, A.A.S. provides students with a strong foundation in computer systems, including hardware, software, device drivers, and peripheral technologies. The curriculum emphasizes both theoretical foundations and practical application in areas such as computer architecture, data structures, algorithms, and engineering methods. Students gain valuable hands-on experience with integrated hardware and software platforms that drive modern technologies. Graduates are prepared for immediate entry into the technical workforce or to pursue further studies in computer engineering, electrical engineering, and related fields.

Program Requirements

Code	Title	Credit Hours
Total Credit Hours		**60**
General Education Requirements:		**13 Credits**
ENGL 1010	Introduction to Academic Writing	3
or ENGL 1005	Foundations of Academic Writing	
ENGL 2010	Intermediate Academic Writing	3
MATH 1210	Calculus I	4
American Institutions		3
HIST 1700	American History (3)	
HIST 1740	US Economic History (3)	
HIST 2700 & HIST 2710	US History to 1877 and US History since 1877 (6)	
POLS 1000	American Heritage (3)	
POLS 1100	American National Government (3)	
Discipline Core Requirements:		**31 Credits**
ECE 1000	Introduction to Electrical and Computer Engineering	3
ECE 2250	Circuit Theory	3
ECE 2255	Circuit Theory Lab	1
ECE 2700	Digital Design I	3
ECE 2705	Digital Design I Lab	1
ECE 2750	Engineering Analysis	3
CS 1400	Fundamentals of Programming	3
PHYS 2210	Physics for Scientists and Engineers I	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
PHYS 2220	Physics for Scientists and Engineers II	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
MATH 1220	Calculus II	4
Elective Requirements		**16 Credits**
Students should select electives from the list below, or other advisor-approved courses. For Computer Engineering (B.S.) Pathway, select CS 1410, CS 2300, CS 2370, CS 2420, plus 4 credits of department-approved electives. For Electrical Engineering (B.S.) Pathway, select COMM 1020, COMM 2110, CHEM 1210, CHEM 1215, one Biology Distribution course, one Fine Arts Distribution course, and one Personal/Professional/Civic Growth course. Students are encouraged to consult with their advisor to ensure elective selections align with their academic and career goals.		16
CS 1410	Object Oriented Programming (undefined)	
CS 2300	Discrete Mathematical Structures I (undefined)	
CS 2370	C Plus Plus Programming (undefined)	

CS 2420	Introduction to Algorithms and Data Structures (undefined)
COMM 1020	Public Speaking (3)
COMM 2110	Interpersonal Communication (3)
CHEM 1210	Principles of Chemistry I (4)
CHEM 1215	Principles of Chemistry I Laboratory (1)
Biology Distribution	
Fine Arts Distribution	
Personal, Professional, and Civic Growth	
Any department approved elective course	

Graduation Requirements

1. Completion of a minimum of 60 semester credits.
2. Overall grade point average of 2.5 (C) or above.
3. Residency hours-- minimum of 20 credit hours through course attendance at UVU.

Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track (http://www.uvu.edu/wolverinetrack/).

First Year		
Semester 1		**Credit Hours**
ENGL 1010 or ENGL 1005	Introduction to Academic Writing or Foundations of Academic Writing	3
MATH 1210	Calculus I	4
American Institutions		3
CS 1400	Fundamentals of Programming	3
ECE 1000	Introduction to Electrical and Computer Engineering	3
	Credit Hours	**16**
Semester 2		
ECE 2700	Digital Design I	3
ECE 2705	Digital Design I Lab	1
MATH 1220	Calculus II	4
PHYS 2210	Physics for Scientists and Engineers I	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
Elective		3
	Credit Hours	**16**
Second Year		
Semester 3		
ECE 2750	Engineering Analysis	3
PHYS 2220	Physics for Scientists and Engineers II	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
ENGL 2010	Intermediate Academic Writing	3
Elective		3
	Credit Hours	**14**
Semester 4		
ECE 2250	Circuit Theory	3
ECE 2255	Circuit Theory Lab	1
Electives		10
	Credit Hours	**14**
	Total Credit Hours	**60**

Program Learning Outcomes

1. Apply core principles of engineering, science, and mathematics to identify and solve technical problems while recognizing impacts on public health, safety, and sustainability.
2. Communicate and work effectively in teams to foster collaboration, set goals, coordinate tasks, and achieve shared objectives.
3. Analyze and interpret experimental data to judge and reach sound engineering conclusions.

Architectural and engineering managers

- Total Positions210,200
- Field Growth5.5%
- Median Salary$165,370
- Average Openings15.0

Computer network architects

- Total Positions177,800
- Field Growth13.4%
- Median Salary$129,840
- Average Openings12.3

Database architects

- Total Positions61,400
- Field Growth10.8%
- Median Salary$134,700
- Average Openings4.2

Software developers

- Total Positions1,692,100
- Field Growth17.9%
- Median Salary$132,270
- Average Openings125.1

Software quality assurance analysts and testers

- Total Positions205,000
- Field Growth11.8%
- Median Salary$101,800
- Average Openings15.0

Computer hardware engineers

- Total Positions84,100
- Field Growth7.2%
- Median Salary$138,080
- Average Openings5.0

Engineering teachers, postsecondary

- Total Positions48,800
- Field Growth9.2%
- Median Salary$106,910
- Average Openings4.2