

Only students starting the major during the 2023-2024 academic year follow this flowchart.

Brigham Young University

# Electrical Engineering Flowchart

Note: This flowchart is a graphical presentation of the requirements in the 2023-2024 catalog. Please refer to the catalog for exact requirements.

September 5, 2023

Phy 121 3 L   FWSp	Math 112 4   FWSS	Chem 105 4L   FWSS
Phy 220 3 L   FWSp	Math 113 4   FWSS	WRTG 312* (or WRTG 316) 3   FWSS

\*Recommended

**Supporting Courses**  
36.5 Credits

CS 111 3 L   FWSS	ECEn 191 0.5   FW	Math 213, 215 2,1   FWSS
CS 235 3 L   FWSp <small>Su odd years</small>	ECEn 224 4 L   FWSp	Math 334 3   FWSS
	ECEn 240 4 L   FWSp	Math 314 3   FWSS

**Jr. Core**

Fall	ECEn 391 0.5   F	ECEn 330 4 L   FSp	ECEn 340 4 L   F	ECEn 380 4 L   F	EE-Core 36.5 credits
Winter	ECEn 390 3 L   W	ECEn 320 4 L   W		Stat 201 3   FWSp	ECEn 360 4L   W

**Technical Electives**  
16 Credits

Complete requirements in advanced core electives. Choose remaining courses from additional advanced core electives; other ECEn tech electives; or CS, Math, or Physics as indicated.

ECEn 475 3 L   F	ECEn 423 4 L   W	ECEn 446 4 L   W	ECEn 487 4 L   W	ECEn 462 2 L   F/Term1
ECEn 476 3 L   W	ECEn 426 4 L   F	ECEn 445 4 L   F	ECEn 483 4 L   FW	ECEn 464 2 L   F/Term2
	ECEn 427 4 L   W	ECEn 450 4 L   F	ECEn 485 4 L   W	ECEn 466 2 L   F/Term2
	ECEn 412 Biomedical Instrumentation 4 L   W	ECEn 452 1 L   F		

Computer Engineering

Microelectronics

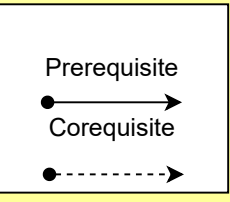
Signals and Systems

Electromagnetics

**Advanced Core Electives**  
Choose at least 8 credits

- CS 236, 240, 340, 345, 428, 431, 450, 452, 455, 456, 460, 462, 465, 470, 472, 474
- Math 341, 342, 352, 355, 371, 372, 411, 447, 450, 487
- Physics 222
- Other courses as approved by the department

- Notes:**
- Before enrolling in ECEn 240, you must pass Phy 220, Math 113, and CS 111 with an average grade of B or better.
  - Before taking any course, all prerequisite courses must be completed first with a grade of C- or better.
  - All classes in the supporting (green) and EE-core (blue) sections must be taken to graduate.



## Electrical Engineering Program Requirements

### Requirement 1: Complete 22 courses.

CS 111 – Introduction to Computer Science 3.0  
CS 235 – Data Structures and Algorithms 3.0  
EC EN 191 – New Student Seminar 0.5  
EC EN 224 – Intro to Computer Systems 4.0  
EC EN 240 – Circuit Analysis and Laboratory 4.0  
EC EN 330 – Introduction to Embedded Systems Programming 4.0  
EC EN 340 – Electronic Circuit Design 1 4.0  
EC EN 360 – Electromagnetic Fields and Waves 4.0  
EC EN 380 – Signals and Systems 4.0  
EC EN 390 – Junior Team Design Project 3.0  
EC EN 391 – Junior Seminar 0.5  
EC EN 475 – Capstone Design 1 3.0  
EC EN 476 – Capstone Design 2 3.0  
MATH 112 – Calculus 1 4.0  
MATH 113 – Calculus 2 4.0  
MATH 213 – Elementary Linear Algebra 2.0  
MATH 215 – Computational Linear Algebra 1.0  
MATH 314 – Calculus of Several Variables 3.0  
MATH 334 – Ordinary Differential Equations 3.0  
PHSCS 121 – Introduction to Newtonian Mechanics 3.0  
PHSCS 220 – Introduction to Electricity and Magnetism 3.0  
STAT 201 – Statistics for Engineers and Scientists 3.0

### Requirement 2: Complete 2 options.

*Option 2.1: Complete 1 course.*  
CHEM 105 – General College Chemistry 1 with Lab (Integrated) 4.0  
CHEM 111 – Principles of Chemistry 1 4.0  
*Option 2.2: Complete 1 course. Note: WRTG 312 recommended.*  
WRTG 312 – Persuasive Writing 3.0  
WRTG 316 – Technical Communication 3.0

### Requirement 3: Complete at least 8.0 hours from the following:

EC EN 445 – Introduction to Mixed-Signal VLSI 4.0  
EC EN 446 – Power Electronics 4.0  
EC EN 450 – Introduction to Semiconductor Devices 3.0  
EC EN 452 – Experiments in Integrated Circuit Development 1.0  
EC EN 462 – Electromagnetic Radiation and Propagation 2.0  
EC EN 464 – Wireless Communication Circuits 2.0  
EC EN 466 – Introduction to Optical Engineering 2.0  
EC EN 483 – Design of Control Systems 4.0

EC EN 485 – Introduction to Digital Communication Theory 4.0  
EC EN 487 – Introduction to Discrete-Time Signal Processing 4.0

### Requirement 4: Complete at least 8.0 hours from the following:

CS 236 – Discrete Structures 3.0  
CS 240 – Advanced Programming Concepts 4.0  
CS 340 – Software Design 3.0  
CS 345 – Operating Systems Design 3.0  
CS 428 – Software Engineering 3.0  
CS 431 – Algorithmic Languages and Compilers  
CS 452 – Database Modeling Concepts 3.0  
CS 455 – Computer Graphics 3.0  
CS 456 – Mobile & Ubiquitous HCI 3.0  
CS 460 – Computer Communications and Networking 3.0  
CS 462 – Distributed System Design 3.0  
CS 465 – Computer Security 3.0  
CS 470 – Introduction to Artificial Intelligence 3.0  
CS 472 – Introduction to Machine Learning 3.0  
CS 474 – Deep learning 3.0  
EC EN 320 – Digital Systems 4.0  
EC EN 412 – Biomedical Instrumentation 4.0  
EC EN 423 – Computer Organization 4.0  
EC EN 426 – Computer Networking 4.0  
EC EN 427 – Embedded Systems 4.0  
EC EN 445 – Introduction to Mixed-Signals VLSI 4.0  
EC EN 446 – Power Electronics 4.0  
EC EN 450 – Introduction to Semiconductor Devices 3.0  
EC EN 452 – Experiments in Integrated Circuit Development 1.0  
EC EN 462 – Electromagnetic Radiation and Propagation 2.0  
EC EN 464 – Wireless communication Circuits 2.0  
EC EN 466 – Introduction to Optical Engineering 2.0  
EC EN 483 – Design of Control Systems 4.0  
EC EN 485 – Introduction to Digital Communication Theory 4.0  
EC EN 487 – Introduction to Discrete-Time Signal Processing 4.0  
MATH 341 – Theory of Analysis 1 3.0  
MATH 342 – Theory of Analysis 2 3.0  
MATH 352 – Introduction to Complex Analysis 3.0  
MATH 355 – Graph Theory 3.0  
MATH 371 – Abstract Algebra 1 3.0  
MATH 372 – Abstract Algebra 2 3.0  
MATH 411 – Numerical Methods 3.0  
MATH 447 – Introduction to Partial Differential Equations 3.0  
MATH 450 – Combinatorics 3.0  
MATH 487 – Number Theory 3.0  
PHSCS 222 – Modern Physics 3.0