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

**Brigham Young University**

**Computer 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
Computer Engineering Program Requirements

**Requirement 1: Complete 23 courses.**

- CS 111 – Introduction to Computer Science 3.0
- CS 235 – Data Structures and Algorithms 3.0
- CS 236 – Discrete Structures 3.0
- CS 240 – Advanced Programming Concepts 4.0
- 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 320 – Digital Systems 4.0
- EC EN 330 – Introduction to Embedded Systems Programming 4.0
- EC EN 340 – Electronic Circuit Design 1 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 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 423 – Computer Organization 4.0
- EC EN 426 – Computer Networking 4.0
- EC EN 427 – Embedded Systems 4.0

**Requirement 4: Complete at least 4.0 hours from the following:**

- CS 312 – Algorithm Design & Analysis 3.0
- 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 3.0
- 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 360 – Electromagnetic Fields and Waves 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
- IT&C 567 – Cybersecurity & Pen Test 3.0
- MATH 314 – Calculus of Several Variables 3.0