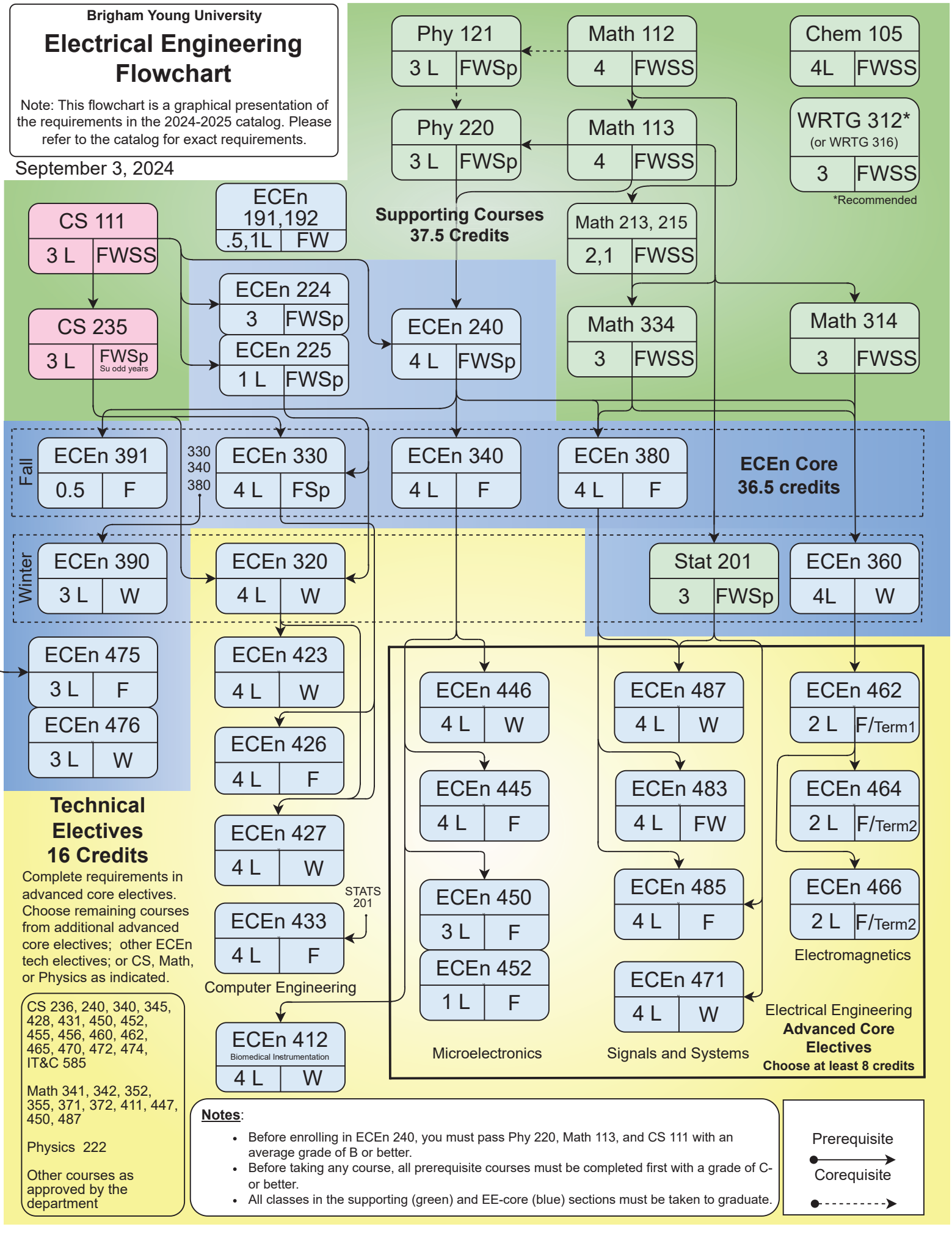
Only students starting the major during the 2024-2025 academic year follow this flowchart.

Brigham Young University

Electrical Engineering Flowchart

Note: This flowchart is a graphical presentation of the requirements in the 2024-2025 catalog. Please refer to the catalog for exact requirements.

September 3, 2024



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.

CS 236, 240, 340, 345, 428, 431, 450, 452, 455, 456, 460, 462, 465, 470, 472, 474, IT&C 585

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.

Prerequisite →

Corequisite ⇢

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 192 – Freshman Project 1.0
EC EN 224 – Introduction to Computer Systems 3.0
EC EN 225 – Computer Systems Laboratory 1.0
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 471 – Machine Learning: Foundations and Applications 4.0
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:

C S 236 – Discrete Structures 3.0
C S 240 – Advanced Programming Concepts 4.0
C S 340 – Software Design 3.0
C S 345 – Operating Systems Design 3.0
C S 428 – Software Engineering 3.0
C S 431 – Algorithmic Languages and Compilers
C S 452 – Database Modeling Concepts 3.0
C S 455 – Computer Graphics 3.0
C S 456 – Mobile & Ubiquitous HCI 3.0
C S 460 – Computer Communications and Networking 3.0
C S 462 – Distributed System Design 3.0
C S 465 – Computer Security 3.0
C S 470 – Introduction to Artificial Intelligence 3.0
C S 472 – Introduction to Machine Learning 3.0
C S 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 433 – Introduction to Robotics & Autonomy 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
IT&C 585 – Encryption Implementation 3.0