BYU IDAHO | Department of Computer Science and Engineering

B.S. Computer Engineering

Suggested Four-Year Plan

for those starting in 2026-2027

Freshman Year

First Semester	Second Semester
Religion Cornerstone (2)	Religion Cornerstone (2)
ECEN100 – Intro to Elect and Comp Engr (2)	ECEN150 – Electric Circuit Analysis I (3)
MATH112X* – Calculus I (4)	CSE110† – Introduction to Programming (2)
BYUI101 – Experience BYU-Idaho (1)	CSE111 – Programming with Functions (2)
ENG150 – Writing and Reasoning (3)	Math & Science Elective (4) [for example, MATH215]
GE Arts and Humanities (3)	PH121 – Principles of Physics I (3)
First Semester Total Credits: 15	Second Semester Total Credits: 14 or 16

* If you are not ready for Calculus, take MATH109 your first semester and then MATH112X your second semester.

† You may test out of CSE110 after completing ECEN 100. Otherwise, take both CSE110 & 111 this sem. (1st/2nd block)

Sophomore Year

Third Semester	Fourth Semester
Religion Cornerstone (2)	Religion Cornerstone (2)
ECEN240 – Fundamentals of Digital Systems (3)	ECEN250 – Electric Circuit Analysis II (3)
CSE210 – Programming with Classes (2)	ECEN260 – Microprocessor-Based Sys Design (3)
Math & Science Elective (4) [for example, CHEM105/105L]	ECEN299 – Elect Circuit Fab and Eval Lab (1)
MATH341 (3) **-OR-** MATH316 (4)	CSE212 – Programming with Data Structures (2)
Third Semester Total Credits: 14 or 15	PH123 – Phys. II (3) **-OR-** PH220 – Phys. III (3)
	Fourth Semester Total Credits: 14

Begin applying for internships during the Fall of your Sophomore year

Junior Year

Fifth Semester	Sixth Semester
Religion Elective (2)	Religion Elective (2)
ECEN340 – Digital System Design (3)	ECEN324 – Computer Architecture (3)
ECEN350 – Electronic Devices and Circuits (3)	ECEN361 – Embedded Systems (3)
CSE280 – Discrete Mathematics I (3)	MATH221x (3) **-OR-** MATH330 (3) – Statistics
Math and Science Elective(s) (4 credits)	General Electives (4)
Fifth Semester Total Credits: 15	Sixth Semester Total Credits: 15

off semester: ECEN398R Internship (1)

Senior Year

Seventh Semester	Eighth Semester
Religion Elective (2)	ECEN499 – Senior Project (3)
CSE310 – Applied Programming (3)	Supplemental Engineering Elective (3)
Supplemental Engineering Elective (3)	Supplemental Engineering Elective (3)
BUS301 – Advanced Writing (3)	General Elective (3)
GE Social Science (3)	General Elective (3)
General Elective (1)	Eighth Semester Total Credits: 15
Seventh Semester Total Credits: 15	

Consult the BYU-I catalog for official requirements.

See full course list on backside.

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B.S. Computer Engineering

Course List

for those starting in 2026-2027

Core Computer Engineering (CompE) Courses

Complete all the following:

- ECEN100 – Intro to Electrical and Computer Engineering
- ECEN150 – Circuit Analysis I
- ECEN240 – Fundamentals of Digital Systems
- ECEN250 – Circuit Analysis II
- ECEN299 – Elect. Circuit Fabrication & Evaluation Lab
- ECEN260 – Microprocessor Based-System Design
- ECEN324 – Computer Architecture
- ECEN340 – Digital Systems Design
- ECEN350 – Electronic Devices and Circuits
- ECEN361 – Embedded Systems
- ECEN499 – Senior Project
- CSE110 – Intro to Prog. *(or test out after ECEN100)*
- CSE111 – Programming with Functions
- CSE210 – Programming with Classes
- CSE212 – Programming with Data Structures
- CSE310 – Applied Programming

General Education (GE) for ABET Majors

College Success:

- BYUI101 (recommended) or GE100/101/102/103/105

Religion:

- All four Religion Cornerstone: REL200C/225C/250C/275C
- Six more credits of Religion Electives

Writing:

- ENG150
- BUS301 (recommended) or ENG301

Breadth Courses:

- Choose one **Arts and Humanities** course**:**
  - Any Foreign Language Course, HUM110/201/202/214, ART101/201/202/231, ENG151/217, GECIV105, HIST201, MUSIC101/102, PHIL110, TA115/117
- Choose one **Social Science** course:
  - CHILD210, CIVIC150, ECON150/151, PSYCH111, SOC111 FAML160, GECIV100/210, GEINT212/213/215, PEACE101, HIST120/121/202, POLSC110/150/170

General Electives

You have up to 11 general elective credits to reach the 120 credits required for graduation. You may choose any course. Consider completing multiple *Emphasis Areas* (see column to the right.)

Required Math & Science

Complete all the following:

- MATH112X – Calculus
- MATH341 – Linear Algebra **-OR-** MATH316 – Diff. Eq. w/ Lin. Alg.
- MATH221x **-OR-** MATH330 – Statistics
- PH121 – Principles of Physics I
- PH123 – Physics II **-OR-** PH220 – Physics III
- CSE280 – Discrete Mathematics

Math & Science Electives

Complete 12 credits from the following **(no double counting)**:

- MATH113, MATH214, MATH215, MATH316, MATH411, MATH423, PH220, PH250, CHEM105, CHEM105L, CHEM106, CHEM106L, GEOL111, GEOL111L, GEOL112, GEOL404, GEOL435, BIO180, BIO180L, BIO181, BIO181L, BIO221, BIO222, BIO240, BIO264, BIO264L

Supplemental Engineering Elective Choices

Take 3 of the following:

- CSE450 – Machine Learning
- CSE455 – Developing AI Systems
- ECEN311 – Intro to Elect Power & Rotating Machines
- ECEN351 – VLSI System Design
- ECEN380 – Signals and Systems
- ECEN390†† – Electromagnetics
- ECEN411 – Power Systems Analysis
- ECEN420 – RF Circuits
- ECEN430 – Signal and Power Integrity
- ECEN451 – Semiconductor Device Engineering
- ECEN461 – Advanced Embedded Systems
- ECEN470 – Feedback Control of Dynamic Systems
- ECEN480 – Digital Signal Processing
- ECEN490R – Special Topics (often *F.E. Exam Prep*)
- ME310 – Mechatronics and Measurement Systems II
- ME410 – Autonomous Control of Dynamic Systems

†† For ECEN390, take MATH215 & 316 from Math & Science Electives

Emphasis Areas (optional, but recommended)

It is recommended that you complete 1-2 emphasis areas as you select Supplemental Engineering Electives and General Electives.

	Robotics & Embedded Sys.	*AI Engineering & Machine Learning*	*Microelectronics & Hardware Design*	*Control & Autonomous Sys.*
Supplemental and General Electives	ECEN 461 ECEN 470 ECEN 480	CSE 450 CSE 455 DS 460 or CSE 481	ECEN 351 ECEN 451 ECEN 430	ECEN 470 ME 310 or ECEN 461 ME 410 or CSE 450
Core CompE Courses	ECEN 324 ECEN 361	MATH 341 or 316 MATH 330 or 221x	ECEN 324 ECEN 340	ECEN 340 ECEN 361

Minors

The Computer Engineering degree does not require a minor. Rather, your elective credits are often best utilized by completing additional Emphasis Areas in the major. However, if you are careful with your selection of General Electives, Math & Science Electives, and Supplemental Engineering Elective courses, you may be able to complete one of these minors within the 120 credits of your degree:

A.I. Engineering Minor, Computer Science Minor, Math Minor, Statistics Minor, Physics Minor, Computer Programming Minor

Internship

Your internship is a temporary, semester-long engineering job that you apply for at a company while you are still a student. Computer Engineering internships are usually paid positions. An internship will give you relevant work experience that you can add to your résumé to help you be more qualified for a job when you graduate.

Complete your internship during any semester *before* your last semester, but do not delay applying – you should begin applying for internships during the Fall of your Sophomore year. Your internship can be during an on-track *or* off-track semester. Because it is typically a full-time position, it is not intended that you take many, if any, other courses in the same semester.

Take ECEN 398R (1 credit - online) during your internship.

Alternative to the Internship

Take ECEN397 – Professional Career Preparation (1)

AND

take 2 more of the *Supplemental Engineering Electives* listed at the top of this column, instead of other general electives.

Consult the BYU-I catalog for official requirements.

See *Four-Year Plan* on frontside.