



BS in ELECTRICAL ENGINEERING (393550)
 Department of Electrical and Computer Engineering
 For students entering the degree program during the 1998–99 curricular year.

GENERAL EDUCATION AND UNIVERSITY REQUIREMENTS (53.5–57.0 hours)				MAJOR REQUIREMENTS (94–97.0 total hours)		
GENERAL EDUCATION REQUIREMENTS (39.5–43.0 hours)				Complete the following preprofessional courses or approved equivalent courses:		
<u>Requirements</u>	<u># Classes</u>	<u>Hours</u>	<u>Classes</u>	ECEn 191	Freshman Seminar	0.5
Academic Skills				Math 112*	Calculus 1	4.0
Precollege Math	1	0–3.0	Math 97 or equivalent	Math 113	Calculus 2	4.0
1st Year Writing	1	3.0	Engl 115	Phscs 121*	Princ of Physics	3.0
Advanced Writing	1	3.0	Engl 316*	Phscs 122*	Princ of Physics	3.0
Advanced Languages/Math/Music	1	4.0	Math 112*	Note: ECEn 191 is recommended to be taken as early as possible but is not required prior to application for professional status.		
Core Courses				During the semester of completing the above, obtain an application from the college advisement center and apply for professional status. (Contact the department office or the college advisement center for additional details.)		
Biological Science	1	3.0	Biol 100	Complete the following supporting courses:		
Physical Science	2	7.0	Chem 105*, Phscs 121*	Chem 105*	Gen College Chem	4.0
American Heritage	1	3.0	A Hgt 100	CS 142	Intro Comp Prog	3.0
Civilization	2	6.0	from approved list	ECEn 220	Digital State Machines	4.0
Wellness	1–3	1.5–2.0	from approved list	ECEn 491	Senior Seminar	0.5
Elective Courses				Engl 316*	Technical Writing	3.0
Arts and Letters	1	3.0	from approved list	Phscs 281	Prin of Solid St	3.0
Natural Sciences	1	3.0	Phscs 122*	Stat 421	Prob & Dist Th	3.0
Social & Behavioral Sciences	1	3.0	from approved list	And complete one of the following sequences:		
				1) For the standard math sequence, complete the following:		
				Math 312	Adv Engr Math	3.0
				Math 313	Adv Engr Math	3.0
				2) For the optional math sequence, complete the following:		
				Math 343	Elem Linear Al	3.0
				Math 344	Calculus Svr Variables	3.0
				Math 434	Ord Diff Equat	3.0
				Complete the following professional courses:		
				ECEn 311	Circuits Lab	1.0
				ECEn 312	Circuit Analysis	4.0
				ECEn 313	Electron Ckt D	4.0
				ECEn 315	Signals & Syst	4.0
				ECEn 316	Sig & Sys Lab	1.0
				ECEn 317	Electronics Lab 1	1.0
				ECEn 325	Int Comp Des	5.0
				ECEn 360	Lines and Fields	4.0
				ECEn 361	Lines & Fields Lab	1.0
				ECEn 492A	Design Project Prop	0.5
				ECEn 492B	Senior Design Project	1.0
				ECEn 492C	Design Project Rep	0.5
UNIVERSITY REQUIREMENTS				And complete one course from the following:		
Religion Courses (14.0 hours)				MeEn 321	Thermodynamics	3.0
Book of Mormon	2	4.0	RelA 121 and 122	MeEn 401	Intro Thermal Engr	3.0
New Testament	1	2.0	RelA 211 or 212	Advanced 400 level courses: Complete 14 hours from the following:		
Doctrine & Covenants	1	2.0	RelC 324 or 325	ECEn 411	Feedback Conce	3.0
Elective courses	2–6	6.0		ECEn 415	Intro D S P	3.0
Graduation Requirements				ECEn 425	Comp Arch & Ap	4.0
Upper division hours		40.0	300+ level courses	ECEn 443	Electron Ckt D	4.0
Residence hours		30.0	at BYU	ECEn 444	Anal/Dig Com	3.0
Total hours needed to graduate		128.0		ECEn 450	Intro Semicond	3.0
				ECEn 451	Intro Dig Vlsi	4.0
				ECEn 452	Exp In IC Development	1.0
				ECEn 460	Electromagnetics	3.0
				ECEn 461	Electromagnetics Lab	1.0
				Note ECEn 450 and 452, 460 and 461 must be taken as pairs.		
				Technical elective courses: Enroll in 10 hours (or 9 for math minor) from the following.		
				(1) additional 400-level courses from above list.		
				(2) ECEn 427, or any 500 level course		
				(3) From selected 300-level and higher courses in MeEn, CEEn, Math, Phscs, or CS as posted in the ECEn office (459 CB).		

FOR GE QUESTIONS CONTACT THE ADVISEMENT CENTER — FOR MAJOR QUESTIONS SEE YOUR FACULTY ADVISOR

*THESE CLASSES FILL BOTH GE AND MAJOR REQUIREMENTS (17 hours overlap)

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1998–99

Suggested Sequence of Courses:

FRESHMAN YEAR

<u>1st Semester</u>	
CS 142 (FWSpSu)	3.0
ECEn 191 (FW)	0.5
Math 112 (FWSpSu)	4.0
Phscs 121 (FWSpSu)	3.0
RelA 121 (FWSpSu)	2.0
General Education courses	4.5
Total Hours	17.0

2nd Semester

ECEn 220 (FWSu)	4.0
Math 113 (FWSpSu)	4.0
Phscs 122 (FWSpSu)	3.0
RelA 122 (FWSpSu)	2.0
General Education courses	4.0
Total Hours	17.0

SOPHOMORE YEAR

<u>3rd Semester</u>	
ECEn 311 (FWSp)	1.0
ECEn 312 (FWSp)	4.0
ECEn 325 (FWSu)	5.0
Math 312 (FWSp)	3.0
RelA 211 or 212 (FWSpSu)	2.0
General Education courses	2.5
Total Hours	17.5

4th Semester

Chem 105 (FWSpSu)	4.0
ECEn 313 (FWSp)	4.0
ECEn 317 (FWSp)	1.0
Math 313 (FWSu)	3.0
RelC 324 or 325 (FWSpSu)	2.0
General Education courses	2.0
Total Hours	16.0

JUNIOR YEAR

<u>5th Semester</u>	
ECEn 315 (FWSp)	4.0
ECEn 316 (FWSp)	1.0
ECEn 360 (FW)	4.0
ECEn 361 (FW)	1.0
Phscs 281 (F)	3.0
Religion elective	2.0
General Education courses	1.0
Total Hours	16.0

6th Semester

ECEn 400-level electives (FWSu)	7.0
MeEn 321 (FWSp)	3.0
Religion elective	2.0
General Education courses	4.0
Total Hours	16.0

SENIOR YEAR

<u>7th Semester</u>	
ECEn 491 (F)	0.5
ECEn 492A (FW)	0.5
ECEn 400-level electives (FWSu)	7.0
Engl 316 (FWSpSu)	3.0
Technical elective	3.0
Religion elective	2.0
Total Hours	16.0

8th Semester

ECEn 492B (FWSp)	1.0
ECEn 492C (FWSp)	0.5
Stat 421 (FW)	3.0
Technical electives	7.0
General Education courses	4.5
Total Hours	16.0

THE DISCIPLINE:

Electrical and computer engineers study phenomena, devices, and systems for information processing, communication, and systems control. These studies, which are grounded primarily in physics and mathematics, have enabled engineers to develop the innovative new technologies for information acquisition, processing, storage, and communication that have made possible our contemporary Age of Information.

Examples of systems developed by electrical and computer engineers include radio, television, radar, satellite communication systems, cellular telephones, laptop computers, fiber-optic communications devices, global and local computer networks, robotic systems, control systems, fax machines, medical image processing, computer modems, lasers, pagers, computer vision, programmable calculators, VLSI chips, computer-aided design tools, and medical instruments.

While it is the goal of engineering to produce useful objects, electrical and computer engineers typically play a limited role in construction, assembly, or mass production. Instead, they focus on design, analysis, and the development of the underlying theory and knowledge applied in the design process.

CO-OP EXPERIENCES:

Optional co-op experiences with engineering firms throughout the USA are available. These experiences typically extend over one semester plus the spring/summer terms, for a total of eight months.

PROFESSIONAL AND HONOR SOCIETIES:

The student chapter of the Institute of Electrical and Electronic Engineers, Eta Kappa NU, is the electrical and computer engineering honor society, and Tau Beta Pi is the honor society for all engineering fields.

CAREERS:

Electrical and computer engineers are among the most actively recruited students graduating from a four-year program. Baccalaureate engineers typically start their careers as members of project teams with one or more of the following responsibilities: designing digital, analog, or opto-electronic circuits; creating or testing application specific software; testing components or systems; or providing technical support for sales. Later on, many engineers find themselves pursuing managerial careers, starting their own companies, or even in managing entrepreneurial funds. Top graduates are also well received by medical schools, law schools, and professional and management programs.

The BS curriculum for both the electrical engineering and computer engineering degrees is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (ABET).

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Note: Students are encouraged to complete an average of 16 credit hours each semester or 32 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.