



**BS in COMPUTER ENGINEERING (393540) MAP Sheet**  
 Department of Electrical and Computer Engineering  
 For students entering the degree program during the 2000–2001 curricular year.

This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center or department office for information regarding requirements for admission to this major.

GENERAL EDUCATION AND UNIVERSITY REQUIREMENTS (52.5–57.0 hours)				MAJOR REQUIREMENTS (94–95.0 total hours)			
<b>GENERAL EDUCATION REQUIREMENTS (38.5–43.0 hours)</b>				<b>Complete the following preprofessional courses or approved equivalent courses:</b>			
<u>Requirements</u>	<u># Classes</u>	<u>Hours</u>	<u>Classes</u>	ECEn 191	Freshman Seminar	0.5	<b>And complete three courses from the following:</b>
				Math 112*	Calculus 1	4.0	
				Math 113	Calculus 2	4.0	
				Phscs 121*	Princ of Physics	3.0	
				Phscs 122*	Princ of Physics	3.0	
<b>Languages of Learning</b>				<b>Note:</b> ECEn 191 is recommended to be taken as early as possible but is not required prior to application for professional status.			<b>And complete two courses from the following:</b>
Precollege Math	0–1	0–3.0	Math 97 or equivalent	CS 345	Operating Systems Design	3.0	
1st Year Writing	1	3.0	Engl 115	CS 428	Software Systems Design	3.0	
Advanced Writing	1	3.0	Engl 312* or 316*	CS 431	Algorithmic Lang & Compilers	3.0	
Advanced Languages/Math/Music	1	4.0	Math 112*	CS 452	Database Modeling Concepts	3.0	
<b>Liberal Arts Core</b>				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.)			CS 453 Database Implement 3.0 CS 455 Computer Graphics 3.0 CS 456 Intro User Interface Software 3.0 CS 460 Computer Comm & Networking 3.0 CS 470 Intro Artificial Intelligence 3.0
Biological Science	1	3.0	Biol 100	<b>Complete the following supporting courses:</b>			
Physical Science	2	6–7.0	Chem 105* or 111*, Phscs 121*	CS 142	Intro Comp Prog	3.0	
American Heritage	1	3.0	AHtg 100	ECEn 225	Intro to Computing Systems	4.0	
Civilization	2	6.0	from approved list	ECEn 491	Senior Seminar	0.5	
Wellness	1–3	1.5–2.0	from approved list	Math 214	Calculus of Several Variables	3.0	<b>Complete at least four hours from the list below:</b> (1) Courses from the above list and selected 500-level CS courses (2) Any 300-level and higher ECEn course except 301R. (3) 300-level and higher courses in other engineering, mathematics, and/or physics as specified below: ChEn 493R Integrated Circuit Proc 3.0 Math 332 Intro Complex Analysis 3.0 Math 347 Intro Partial Differential 3.0 Math 411 Numerical Methods 3.0 Other courses as approved by the department.
				Math 334	Ordinary Differential Equations	3.0	
				Math 343	Elementary Linear Algebra	3.0	
				Phscs 281	Prin of Solid St	3.0	
				Stat 421	Prob & Dist Theory	3.0	
<b>Arts and Sciences Electives</b>				<b>And complete one course from the following:</b>			<b>Note:</b> Contact the Electrical and Computer Engineering Department for current information about added and/or deleted courses, as well as information about when courses are offered.
Arts and Letters	1	3.0	from approved list	Chem 105*	Gen College Chem	4.0	
Natural Sciences	1	3.0	Phscs 122*	Chem 111*	Principles of Chemistry	3.0	
Social & Behavioral Sciences	1	3.0	from approved list	<b>And complete one course from the following:</b>			
				Engl 312*	Persuasive Writing	3.0	
<b>UNIVERSITY REQUIREMENTS</b>				Engl 316*	Technical Writing	3.0	<b>Complete the following professional courses:</b>
<b>Religion Courses (14.0 hours)</b>				ECEn 212	Circuit Analysis and Laboratory	5.0	
Book of Mormon	2	4.0	RelA 121 and 122	ECEn 313	Electronic Circuit Design 1	4.0	
New Testament	1	2.0	RelA 211 or 212	ECEn 317	Electronics Lab 1	1.0	
Doctrine & Covenants	1	2.0	RelC 324 or 325	ECEn 320	Fundamentals of Digital Systems	5.0	
Elective courses	2–6	6.0		ECEn 380	Signal and Systems	5.0	
<b>Graduation Requirements</b>				ECEn 492A	Design Project Proposal	0.5	ECEn 492B Senior Design Project 1.0 ECEn 492C Design Project Report 0.5 CS 235 Foundations Computer Sci 1 4.0 CS 240 Advanced Programming Concepts 3.0
Residence hours		30.0		<b>FOR GE QUESTIONS CONTACT THE ADVISEMENT CENTER — FOR MAJOR QUESTIONS SEE YOUR FACULTY ADVISOR</b>			
Minimum hours needed to graduate		120.0		<b>*THESE CLASSES FILL BOTH GE AND MAJOR REQUIREMENTS (16–17.0 hours overlap)</b>			

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 \*THESE CLASSES FILL BOTH GE AND MAJOR REQUIREMENTS (16–17.0 hours overlap)

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## 2000–2001

**Suggested Sequence of Courses (assuming AP credit received for Math 112):**

### FRESHMAN YEAR

<u>1st Semester</u>	
ECEn 191 (FW)	0.5
Math 113 (FWSpSu)	4.0
Phscs 121 (FWSpSu)	3.0
RelA 121 (FWSpSu)	2.0
1 <sup>st</sup> Year Writing	3.0
AHtg 100	3.0
<b>Total Hours</b>	<b>15.5</b>

### 2nd Semester

CS 142 (FWSpSu)	3.0
Chem 111 (F) or 105 (FWSpSu)	3–4.0
Phscs 122 (FWSpSu)	3.0
HEPE 129 (FWSpSu)	2.0
RelA 122 (FWSpSu)	2.0
Social Science elective	3.0
<b>Total Hours</b>	<b>16–17.0</b>

### Spring Term

Biological Science	3.0
Arts and Letters elective	3.0
<b>Total Hours</b>	<b>6.0</b>

### SOPHOMORE YEAR

<u>3rd Semester</u>	
ECEn 212 (FWSp)	5.0
ECEn 225 (FWSu)	4.0
Math 343 (FWSpSu)	3.0
RelA 211 or 212 (FWSpSu)	2.0
<b>Total Hours</b>	<b>14.0</b>

### 4th Semester

ECEn 313 (FWSp)	4.0
ECEn 317 (FWSp)	1.0
ECEn 320 (FW)	5.0
Math 214 (FWSpSu)	3.0
RelC 324 or 325 (FWSpSu)	2.0
<b>Total Hours</b>	<b>15.0</b>

### JUNIOR YEAR

<u>5th Semester</u>	
CS 235	4.0
Math 334 (FWSpSu)	3.0
Phscs 281 (F)	3.0
Stat 421 (FW)	3.0
Religion elective	2.0
<b>Total Hours</b>	<b>15.0</b>

### 6th Semester

CS 240	3.0
ECEn 380 (FWSp)	5.0
ECEn 492A (FW)	0.5
Engl 312 or 316	3.0
Civilization 1	3.0
Religion elective	2.0
<b>Total Hours</b>	<b>16.5</b>

### SENIOR YEAR

<u>7th Semester</u>	
CS 4xx – CS elective	3.0
ECEn 42x - computer elective	4.0
ECEn 42x - computer elective	4.0
ECEn 491 (F)	0.5
ECEn 492B (FW)	1.0
Religion elective	2.0
<b>Total Hours</b>	<b>14.5</b>

### 8th Semester

CS 4xx – CS elective	3.0
ECEn 42x - Advanced core elective	4.0
ECEn 492C	0.5
Technical elective	4.0
Civilization 2	3.0
<b>Total Hours</b>	<b>14.5</b>

### THE DISCIPLINE:

Electrical and computer engineers study phenomena, devices, and systems for information processing, communication, and systems control. These studies, 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.

Although 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 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).

Your faculty advisor can assist you in choosing electives to meet your total hour requirement.

**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.

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