

# ELECTRICAL AND COMPUTER ENGINEERING (COMPUTER ENGINEERING CONCENTRATION), BACHELOR OF SCIENCE

The University Core Curriculum is the same across all undergraduate bachelor's programs. Please consult the academic advisor for your designated major before selecting courses in this area.

## Summary

Code	Title	Hours
	General Education Core Curriculum (p. )	43
	Major Requirements (p. 1)	60
	Other Requirements (p. 1)	22
<b>Total Hours</b>		<b>125</b>

## General Education Core Curriculum (Standard)<sup>1</sup>

Code	Title	Hours
<b>Communication</b>		
ENGL 1301	Freshman English I	3
ENGL 1302	Freshman English II	3
<b>Mathematics</b>		
MATH 2413	Calculus & Analytic Geometry I	4
<b>Life and Physical Sciences</b>		
CHEM 1311	Chemistry I	3
PHYS 2325	University Physics I	3
<b>Language, Philosophy, and Culture</b>		
ENG 2XX	Any 200-level English	3
<b>Creative Arts</b>		
MUSI 1315	Fine Arts In Daily Living	3
<b>American History</b>		
HIST 1301	Soc & Pol Hist US to 1877	3
HIST 1302	Soc & Pol Hist US Since 1877	3
<b>Government/Political Science</b>		
POLS 2305	American Government	3
POLS 2306	Texas Government	3
<b>Social and Behavioral Sciences</b>		
ECON 2301	Principles Of Economics I	3
<b>Institutional Options</b>		
COMM 1321	Business & Professional Comm	3
	or COMM 1315 Public Address	
ECE 130	Programming Engineering Applications <sup>3</sup>	3
<b>Total Hours</b>		<b>43</b>

<sup>1</sup>

Students should be advised by a major advisor prior to registering for any credit, particularly any core curriculum credit as listed.

<sup>2</sup>

MATH 2413 Calculus & Analytic Geometry I will be taken in lieu of MATH 2312 to satisfy the mathematics core requirement. For engineering majors only.

<sup>3</sup>

ECE 130 Programming Engineering Applications will be taken in lieu of COSC 1301 Intro To Computer Science I to satisfy the institutional option of core requirement.

## Major (Electrical and Computer Engineering)

Code	Title	Hours
ECE 110	Introduction to Engineering	1
ECE 111	Engineering Analysis Lab I	1
ECE 131	Circuit Analysis I	3
ECE 211	Circuit Analysis Lab II	1
ECE 215	Digital System Lab	1
ECE 231	Circuit Analysis II	3
ECE 235	Digital System	3
ECE 236	Java Programming	3
ECE 311	Electronics Circuits Lab	1
ECE 312	Microprocessor Arch Laboratory	1
ECE 319	Real-Time Embedded System Lab	1
ECE 330	Engineering Mathematics Analysis	3
ECE 331	Electronic Circuits	3
ECE 332	Microprocessor Architecture	3
ECE 336	Introductory VLSI Design	3
ECE 337	Operating System	3
ECE 338	Computer and Wireless Networks	3
ECE 339	Real-Time Embedded System	3
ECE 414	Data Communications Lab	1
ECE 434	Data Communications	3
ECE 436	Artificial Intelligence	3
ECE 437	Digital Signal Processing	3
ECE 439	Applied Cyber Security	3
ECE 441	Senior Project	4
ECE-ECX	ECE Comprehensive Exam	0
Technical Elective <sup>1</sup>		3
<b>Total Hours</b>		<b>60</b>

<sup>1</sup>

Technical Electives may be selected from ECE 333 Software Engineering, ECE 435 Network Programming, & ECE 239 Electromechanical Energy Conversions.

## Other Requirements

Code	Title	Hours
CHEM 111	Chemistry I Lab	1
ENGR 131	Engineering Graphics	3
ENGT 111	Intro to Project Mgmt	1
MATH 2414	Calculus & Analytic Geometry II	4
MATH 243	Calculus & Analytic Geo III	4
MATH 251	Differential Equations	3

PHYS 217	University Physics Laboratory I	1
PHYS 218	University Physics Laboratory II	1
PHYS 252	University Physics II	3
FS 102	Freshman Seminar/ first Year Experience	1

**Total Hours** 22

Course	Title	Hours
<b>First Year</b>		
<b>First Semester</b>		
ECE 110	Introduction to Engineering	1
ECE 130	Programming Engineering Applications	3
ENGL 1301	Freshman English I	3
ENGR 131	Engineering Graphics	3
MATH 2413	Calculus & Analytic Geomtry I	4
ENGT 111	Intro to Project Mgmt	1
FS 102	Freshman Seminar/ first Year Experience	1

**Hours** 16

**Second Semester**

ECE 131	Circuit Analysis I	3
ECE 111	Engineering Analysis Lab I	1
ENGL 1302	Freshman English II	3
CHEM 1311	Chemistry I	3
CHEM 111	Chemistry I Lab	1
MATH 2414	Calculus&Analytic Geometry II	4
COMM 1321 or COMM 1315	Business & Professional Comm or Public Address	3

**Hours** 18

**Second Year**

**Third Semester**

ENG 2XX Any 200-Level English		3
MATH 243	Calculus & Analytic Geo III	4
PHYS 2325	University Physics I	3
PHYS 217	University Physics Laboratory I	1
ECE 231	Circuit Analysis II	3
ECE 211	Circuit AnalysisLab II	1
POLS 2305	American Government	3

**Hours** 18

**Fourth Semester**

MATH 251	Differential Equations	3
PHYS 252	University Physics II	3
PHYS 218	University Physics Laboratory II	1
ECE 235	Digital System	3
ECE 215	Digital System Lab	1
ECE 236	Java Programming	3
POLS 2306	Texas Government	3

**Hours** 17

**Third Year**

**Fifth Semester**

ECE 330	Engineering Mathematics Analysis	3
ECE 331	Electronic Circuits	3
ECE 311	Electronics Circuits Lab	1
ECE 332	Microprocessor Architecture	3

ECE 312	Microprocessor Arch Laboratory	1
HIST 1301	Soc & Pol Hist US to 1877	3
MUSI 1315	Fine Arts In Daily Living	3

**Hours** 17

**Sixth Semester**

ECE 336	Introductory VLSI Design	3
ECE 337	Operating System	3
ECE 338	Computer and Wireless Networks	3
ECE 339	Real-Time Embedded System	3
ECE 319	Real-Time Embedded System Lab	1
HIST 1302	Soc & Pol Hist US Since 1877	3

**Hours** 16

**Fourth Year**

**Seventh Semester**

ECE 434	Data Communications	3
ECE 414	Data Communications Lab	1
ECE 436	Artificial Intelligence	3
ECON 2301	Principles Of Economics I	3

**Hours** 10

**Eighth Semester**

ECE 437	Digital Signal Processing	3
ECE 439	Applied Cyber Security	3
Technical Elective <sup>1</sup>		3
ECE 441	Senior Project	4
ECE-ECX ECE Comprehensive Exam		0

**Hours** 13

**Total Hours** 125

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The Technical Elective should be selected from one of the following three-credit courses:

ECE 239 Electromechanical Energy Conversions

ECE 333 Software Engineering

ECE 435 Network Programming