

ELECTRICAL AND COMPUTER ENGINEERING (ELECTRICAL 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. 1)	43
	Major Requirements (p. 1)	61
	Other Requirements (p. 1)	21
Total Hours		125

General Education Core Curriculum (Standard)¹

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

¹

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

²

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

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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 311	Electronics Circuits Lab	1
ECE 312	Microprocessor Architecture Laboratory	1
ECE 315	Control System 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 334	Signal and System	3
ECE 335	Control Systems	3
ECE 338	Computer and Wireless Networks	3
ECE 339	Real-Time Embedded System	3
ECE 412	Communication System Lab	1
ECE 432	Communication Systems	3
ECE 430	Applied Electromagnetic	3
ECE 433	Microwave Engineering	3
ECE 437	Digital Signal Processing	3
ECE 438	Power System Analysis	3
ECE 441	Senior Project	4
ECE-ECX ECE Comprehensive Exam		0
Technical Elective ¹		3
Total Hours		61

¹

Technical Electives may be selected from ECE 336 Introductory VLSI Design, ECE 435 Network Programming, ECE 333 Software Engineering and ECE 239 Electromechanical Energy Conversions.

Other Requirements

Code	Title	Hours
CHEM 111	Chemistry I Lab	1
ENGR 131	Engineering Graphics	3
FS 102	Freshman Seminar/ first Year Experience	1
MATH 2414	Calculus & Analytic Geometry II	4
MATH 243	Calculus & Analytic Geometry III	4

MATH 251	Differential Equations	3
PHYS 217	University Physics Laboratory I	1
PHYS 218	University Physics Laboratory II	1
PHYS 2326	University Physics II	3
Total Hours		21

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Technical Electives may be selected from ECE 336 Introductory VLSI Design, ECE 435 Network Programming, ECE 333 Software Engineering, & ECE 239 Electromechanical Energy Conversions

Course	Title	Hours
First Year		
First Semester		
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 Geometry I	4
MUSI 1315	Fine Arts In Daily Living	3
FS 102	Freshman Seminar/ first Year Experience	1
Hours		18

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
Hours		15

Second Year

Third Semester		
COMM 1321 or COMM 1315	Business & Professional Comm or Public Address	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 2326	University Physics II	3
PHYS 218	University Physics Laboratory II	1
ECE 235	Digital System	3
ECE 215	Digital System Lab	1
ENG 2XX	Upper Level English	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
Hours		14

Sixth Semester		
ECE 334	Signal and System	3
ECE 335	Control Systems	3
ECE 315	Control System Laboratory	1
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		17

Fourth Year

Seventh Semester		
ECE 430	Applied Electromagnetic	3
ECE 432	Communication Systems	3
ECE 412	Communication System Lab	1
ECON 2301	Principles Of Economics I	3
Technical Elective ¹		3
Hours		13

Eighth Semester		
ECE 433	Microwave Engineering	3
ECE 437	Digital Signal Processing	3
ECE 438	Power System Analysis	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