REQUIREMENTS FOR THE BACHELOR OF SCIENCE/MASTER OF SCIENCE
GALLOGLY COLLEGE OF ENGINEERING
THE UNIVERSITY OF OKLAHOMA

Academic Year	General Requirements		Program
For Students Entering the Oklahoma State System for Higher Education **Summer 2023 through Spring 2024**	Minimum Total Credit Hours .... **147-150** **Minimum Retention/Graduation Grade Point Averages:** Overall - Combined and OU .... **3.00** Major - Combined and OU .... **3.00** Curriculum - Combined and OU **3.00**		**Computer Engineering/Electrical & Computer Engineering** **A226/F226** Bachelor of Science/Master of Science

OU encourages students to complete at least 30 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

Minimum Total Credit Hours: 147-150
Overall GPA - Combined and OU: 3.00
Major GPA - Combined and OU: 3.00
Curriculum GPA - Combined and OU: 3.00

Program Code: A226/F226

General Education and College Requirements

Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. **Courses graded P/NP will not apply.**

A grade of C or better is required in each course in the curriculum, including all prerequisite courses.

UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS

Code	Title	Credit Hours
Core Area I: Symbolic and Oral Communication		
English Composition		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
Language (0-10 hours in the same language)		
This requirement can be met by two years of the same language in high school:		0-10
Beginning Course (0-5 hours)		
Beginning Course, continued (0-5 hours)		
Mathematics		
MATH 1914	Differential and Integral Calculus I (Core I) [1,2]	4
Core Area II: Natural Science (including one laboratory)		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) [2]	4
CHEM 1315	General Chemistry (Core II-Lab) [2]	5
or CHEM 1335	General Chemistry I: Signature Course	
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course [3]		3
Core Area IV: Arts & Humanities		
Artistic Forms		
Choose one course [3]		3
Western Culture		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
Choose one course (excluding HIST 1483 and HIST 1493) [3]		3
World Culture		
Choose one course [3]		3
Core Area V: First-Year Experience		
Choose one course [3]		3
Total Credit Hours		**40-50**

[1]MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

[2]Major support requirements that also satisfy University General Education requirements.

[3]To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.

Free Electives

Electives to bring total applicable hours to the minimum total required for the degree including a minimum of 40 upper-division hours.

Bachelor of Science in Computer Engineering accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, **under the General Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Program Criteria.**

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a **grade of C** or better is required in each course in the curriculum, including all prerequisite courses.

Major Requirements

Code	Title	Credit Hours
Required Courses		
ECE 2214	Digital Design	4
ECE 2713	Digital Signals and Filtering	3
ECE 2723	Electrical Circuits I	3
ECE 2523	Probability, Statistics and Random Processes	3
ECE 3723	Electrical Circuits II	3
ECE 3773	Electrical and Computer Engineering Circuits Laboratory	3
ECE 3813	Introductory Electronics	3
ECE 3223	Microprocessor System Design	3
ECE 3793	Signals and Systems	3
ECE 3873	Electrical and Computer Engineering Electronics Laboratory	3
ECE 4273	Digital Design Laboratory	3
ECE 4613	Computer Architecture	3
ECE 4773	Laboratory (Special Projects)	3
Total Credit Hours		**40**

Major Support Requirements

Code	Title	Credit Hours
Math and Science		
MATH 2924	Differential and Integral Calculus II	4
MATH 2934	Differential and Integral Calculus III	4
MATH 3113	Introduction to Ordinary Differential Equations	3
MATH 3333	Linear Algebra I	3
PHYS 2524	General Physics for Engineering and Science Majors	4
Technical Electives		
Choose two ECE/C S G4000 or higher electives [1,2]		6
Choose one ECE G4000 or higher elective [1,2]		3
Choose one ECE 5000 or higher electives [1,2]		3
Professional Elective		
Choose one course from approved list maintained by the department [1]		3
Additional College Requirements		
ENGR 1411	Pathways to Engineering Thinking [3]	1
ENGR 2002	Professional Development	2
C S 1323	Introduction to Computer Programming for Programmers	3
C S 2334	Programming Structures and Abstractions	4
C S 2813	Discrete Structures	3
C S 2413	Data Structures	3
Total Credit Hours		**49**

[1]Electives to be selected from list available in the ECE Office, DEH-150.

[2]Shared courses between the BS and MS degrees. Electives must satisfy MSECE Approved Requirements.

[3]Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

Graduate Requirements

Up to 12 hours of graduate level electives that satisfy MS in electrical and computer engineering requirements can be shared between the BS and MS degrees.

- **All courses must be G4000 level or higher, or from a list of approved non-ECE G3000 courses (list is maintained in the ECE department).**
- **No more than 12 hours below the 5000 level may be applied to the degree, of which no more than 9 hours may be ECE coursework below the 5000 level.**
- **Any cross-listed course must be taken under the ECE prefix. Any slash-listed course must be taken at the graduate level.**
- **No more than 6 hours of** ECE 5990 **may be taken.**
- **No more than 12 hours of** ECE 5973 **may be taken.**

Thesis Option

Code	Title	Credit Hours
Core Courses		
Electrical and Computer Engineering		
Choose at least 12 credit hours of ECE coursework at the 5000 level or higher		12
Electives		
Choose 12 hours of electives		12
Thesis		
ECE 5980	Research for Master's Thesis	6
Total Credit Hours		**30**

Non-Thesis Option

Code	Title	Credit Hours
Core Courses		
Electrical and Computer Engineering		
Choose at least 12 credit hours of ECE coursework at the 5000 level or higher		12
Math/Physics		
Choose at least 3 graduate credit hours in either math or physics		3
Electives		
Choose 18 hours of electives		18
Total Credit Hours		**33**

More information in the catalog: (http://ou-public.courseleaf.com/gallogly-engineering/electrical-computer-engineering/computer-engineering-bachelor-science-electrical-computer-engineering-master-science/).

Suggested Semester Plan of Study

Bachelor of Science in Computer Engineering accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org**, under the General Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Program Criteria.**

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students who must take a language at the University will have an additional 6-10 hours of coursework.

Students are eligible to enter accelerated program after application is granted for unconditional enrollment in upper-division ECE courses and meeting minimum requirements, including 3.25 retention and 3.25 combined retention grade point averages. Students may enter the accelerated program based on the undergraduate degree pattern offered in the year they first enrolled in the Oklahoma State System of Higher Education or later.

Students are eligible for graduate status upon graduation with the Bachelor of Science in Computer Engineering.

Year		FIRST SEMESTER	Hours		SECOND SEMESTER	Hours
FRESHMAN	ENGL 1113	Principles of English Composition (Core I)	3	ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
	CHEM 1315	General Chemistry (Core II-Lab) [1]	5	MATH 2924	Differential and Integral Calculus II [2]	4
	MATH 1914	Differential and Integral Calculus I (Core I) [2]	4	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3	C S 1323	Introduction to Computer Programming for Programmers	3
	ENGR 1411	Pathways to Engineering Thinking [3]	1		Approved Elective: First-Year Experience (Core V) [4]	3
		CREDIT HOURS	**16**		**CREDIT HOURS**	**17**
SOPHOMORE	MATH 2934	Differential and Integral Calculus III [2]	4	MATH 3113	Introduction to Ordinary Differential Equations	3
	PHYS 2524	General Physics for Engineering and Science Majors	4	C S 2413	Data Structures	3
	C S 2334	Programming Structures and Abstractions	4	C S 2813	Discrete Structures	3
	ECE 2214	Digital Design	4	ECE 2713	Digital Signals and Filtering	3
	P SC 1113	American Federal Government (Core III)	3	ECE 2723	Electrical Circuits I	3
				ENGR 2002	Professional Development	2
		CREDIT HOURS	**19**		**CREDIT HOURS**	**17**
JUNIOR	ECE 2523	Probability, Statistics and Random Processes	3	ECE 3223	Microprocessor System Design	3
	ECE 3723	Electrical Circuits II	3	ECE 3793	Signals and Systems	3
	ECE 3773	Electrical and Computer Engineering Circuits Laboratory	3	ECE 3873	Electrical and Computer Engineering Electronics Laboratory	3
	ECE 3813	Introductory Electronics	3	MATH 3333	Linear Algebra I	3
		Approved Elective, Social Science (Core III) [4]	3		Approved Elective, Artistic Forms (Core IV) [4]	3
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15**
SENIOR	ECE 4273	Digital Design Laboratory	3	ECE 4773	Laboratory (Special Projects)	3
	ECE 4613	Computer Architecture	3		ECE G4000 or higher Elective [6]	3
		Professional Elective [5]	3		ECE 5000 or higher Elective [5,6]	3
		ECE/C S G4000 or higher Elective [6]	3		ECE/C S G4000-level Elective [5,6]	3
		Approved Elective, Western Culture (Core IV) [4]	3		Approved Elective, World Culture (Core IV) [4]	3
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15**
FIFTH YEAR		G4000/5000 Electives [6]	6		Choose one of the following options:	9-12
		Choose one of the following:	3		Non-Thesis Option:	
	ECE 5980	Research for Master's Thesis			5000 or higher Electives (12 hours) [6,7]	
		5000 or higher Elective			Thesis Option:	
				ECE 5980	Research for Master's Thesis (3 hours)	
					ECE 5000 or higher Electives (6 hours) [6,7]	
		CREDIT HOURS	**9**		**CREDIT HOURS**	**9-12**

[1] CHEM 1315 can be substituted with CHEM 1335 (Fall only).

[2] MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

[3] Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

[4] To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.

[5] Electives to be selected from list available in the ECE Office, DEH-150.

[6] Fourth and fifth year electives (G4000 or higher, including technical electives for MS) must satisfy MSECE Approved Requirements.

[7] Thesis option requires nine hours; non-thesis requires 12 hours.

Courses designated as Core I, II, III, IV or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.