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 2024 through Spring 2025**	Minimum Total Credit Hours ..... **146-149** **Minimum Retention/Graduation Grade Point Averages:** Overall - Combined and OU ..... **3.25** Major - Combined and OU ..... **3.25** Curriculum - Combined and OU **3.25**	**Computer Engineering/ Computer Science** **A225/F235 Q147** 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: 146-149

Overall GPA - Combined and OU: 3.25
Major GPA - Combined and OU: 3.25
Curriculum GPA - Combined and OU: 3.25

Program Code: A225/F235 Q147

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		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) [4]	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.
4. Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

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		
C S 1323	Introduction to Computer Programming for Programmers	3
C S 2334	Programming Structures and Abstractions	4
C S 2414	Data Structures	4
C S 2813	Discrete Structures	3
C S 3113	Introduction to Operating Systems	3
C S 3823	Theory of Computation	3
C S 4413	Algorithm Analysis	3
ECE 2214	Digital Design	4
ECE 2523	Probability, Statistics and Random Processes	3
ECE 2713	Digital Signals and Filtering	3
ECE 2723	Electrical Circuits I	3
ECE 3223	Microprocessor System Design	3
ECE 3723	Electrical Circuits II	3
ECE 3773	Electrical and Computer Engineering Circuits Laboratory	3
ECE 3793	Signals and Systems	3
ECE 3813	Introductory Electronics	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		**63**

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
Electives		
Choose one ECE G4000-level or higher elective [1]		2
Choose one C S G4000-/5000 approved elective [2]		3
Additional Requirements		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
Total Credit Hours		**25**

1. Electives to be selected from list available in the ECE Office, DEH-150.
2. Chosen from an approved list of courses maintained by the School of Computer Science.

Graduate Requirements

12 hours of graduate-level coursework are shared between the BS and MS degrees.

No more than three courses at the C S G4000 level are permitted. No more than 3 credit hours of C S 5990 **are permitted (students who have the graduate liaison's approval to complete a project option may take 6 hours). No more than 6 credit hours of Special Topics in Computer Science are permitted (even with a change in subject).**

Thesis Option

Code	Title	Credit Hours
Core Courses		
C S 4413	Algorithm Analysis (or equivalent as approved by the graduate liaison)	3
C S 4513	Database Management Systems	3
Four courses selected from an approved list maintained by the School of Computer Science		12
Electives		
Choose any Computer Science graduate class [1]		6
Thesis		
C S 5980	Research for Master's Thesis	6
Total Credit Hours		**30**

1. Any C S graduate class including MATH 5743, MATH 4753, MATH 4073, or ECE 4000G or higher as approved by the Computer Science graduate liaison. **Other courses outside C S require prior approval of the graduate liaison.**

Non-Thesis Option

The non-thesis degree is a coursework-only degree; a non-thesis examination is not required.

Code	Title	Credit Hours
Core Courses		
C S 4413	Algorithm Analysis (or equivalent as approved by the graduate liaison)	3
C S 4513	Database Management Systems	3
Four courses selected from a list maintained by the School of Computer Science		12
Electives		
Choose 15 hours from any Computer Science graduate class [1]		15
Total Credit Hours		**33**

[1] Any C S graduate class including MATH 5743, MATH 4753, MATH 4073, or ECE 4000G or higher as approved by the Computer Science graduate liaison. **Other courses outside C S require prior approval of the graduate liaison.**

More information in the catalog: (http://ou-public.courseleaf.com/gallogly-engineering/electrical-computer-engineering/computer-engineering-bachelor-science-computer-science-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 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 a 3.50 retention and 3.50 combined retention grade point average. 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 1413	Pathways to Engineering Thinking (Core V-FYE) [3]	3			
		CREDIT HOURS	**18**		**CREDIT HOURS**	**14**
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 2414	Data Structures	4
	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 Responsibilities and Skills of Engineers and Scientists	2
		CREDIT HOURS	**19**		**CREDIT HOURS**	**18**
JUNIOR	C S 3823	Theory of Computation	3	MATH 3333	Linear Algebra I	3
	ECE 3723	Electrical Circuits II	3	ECE 3223	Microprocessor System Design	3
	ECE 3773	Electrical and Computer Engineering Circuits Laboratory	3	ECE 3793	Signals and Systems	3
	ECE 3813	Introductory Electronics	3	ECE 3873	Electrical and Computer Engineering Electronics Laboratory	3
	ECE 2523	Probability, Statistics and Random Processes	3		Approved Elective, Artistic Forms (Core IV) [4]	3
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15**
SENIOR	C S 3113	Introduction to Operating Systems	3	ECE 4773	Laboratory (Special Projects)	3
	C S 4413	Algorithm Analysis	3		C S G4000/5000 Approved Elective [6]	3
	ECE 4273	Digital Design Laboratory	3	ECE 4613	Computer Architecture	3
		ECE G4000 or higher Elective [5]	2		Approved Elective, Social Science (Core III) [4]	3
		Approved Elective, Western Culture (Core IV) [4]	3		Approved Elective, World Culture (Core IV) [4]	3
		CREDIT HOURS	**14**		**CREDIT HOURS**	**15**
FIFTH YEAR	C S 4513	Database Management Systems	3		5000-level Approved Elective [6]	3
		5000-level Approved Elective [6]	3		5000-level C S Elective [7]	0-9
		5000-level C S Elective [7]	3	C S 5980	Research for Master's Thesis	0-6
		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 Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

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 Students must choose three courses (9 hours) from an approved list of courses maintained by the School of Computer Science.

7 Thesis option requires a total of 6 hours of 5000-level electives and 6 hours of C S 5980. Non-thesis option requires a total of 15 hours of 5000-level electives.

No more than three credit hours of C S 5990 allowed. Outside courses require approval from the School of Computer Science.

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.