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

Academic Year
For Students Entering the Oklahoma State System for Higher Education **Summer 2022 through Spring 2023**

General Requirements	
Minimum Total Credit Hours	**120-121**
Minimum Retention/Graduation Grade Point Averages:	
Overall - Combined and OU	**2.00**
Major - Combined and OU	**2.00**
Curriculum - Combined and OU	**2.00**

Program
Computer Science **B235** Bachelor of Science

OU encourages students to complete at least 30 hours of applicable coursework each year to have the opportunity to graduate in 4 years.

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 (minimum 3 hours)		
MATH 1914	Differential and Integral Calculus I (Core I) [1, 2]	4
Core Area II: Natural Science (minimum 7 hours, including one laboratory)		
Natural Science		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) [2, 3]	4
Natural Science with lab		
Choose one course from a different topic than natural science [3]		4
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course [4]		3
Core Area IV: Arts & Humanities		
Artistic Forms		
Choose one course [4]		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) [4]		3
World Culture		
Choose one course [4]		3
Core Area V: First-Year Experience		
Choose one course [4]		3
Total Credit Hours		39-49

[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]Courses taken to fulfill the Natural Science requirement must be chosen from the University-Wide General Education Approved Course List (Core II). At least one of the Natural Science courses must be a non-Physics course. All science courses must be for science or engineering majors.

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

FREE ELECTIVES

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

THIS PROGRAM HAS CHANGES PENDING STATE REGENTS APPROVAL FOR 2022-23. THESE PENDING CHANGES ARE NOT REFLECTED HERE.

ACCREDITED BY THE COMPUTING ACCREDITATION COMMISSION OF ABET, https://www.abet.org

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		
Choose one of the following:		1-4
C S 1323	Introduction to Computer Programming for Programmers	
C S 1321	Java for Programmers	
C S 1324	Introduction to Computer Programming for Non-Programmers	
C S 2334	Programming Structures and Abstractions	4
C S 2413	Data Structures	3
C S 2813	Discrete Structures	3
or MATH 2513	Discrete Mathematical Structures	
C S 2614	Computer Organization	4
C S 3323	Principles of Programming Languages	3
C S 3113	Introduction to Operating Systems	3
C S 3203	Software Engineering	3
C S 3823	Theory of Computation	3
C S 4173	Computer Security	3
C S 4413	Algorithm Analysis	3
C S 4513	Database Management Systems	3
C S 4273	Capstone Design Project	3
C S 4473	Parallel, Distributed, and Network Programming	3
C S Electives		**9**
Choose 9 approved C S electives from a list maintained by the department		
Total Credit Hours		51-54

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 3000-level or above and acceptable for credit for MATH majors, or Complete a minor		3
Choose one of the following:		3
Approved C S Elective		
MATH 4073	Numerical Analysis I	
MATH 4673	Graph Theory I	
MATH 4313	Introduction to Number Theory	
MATH 3333	Linear Algebra I	3
Choose one of the following:		3
MATH 4753	Applied Statistical Methods	
ISE 3293	Applied Engineering Statistics	
MATH 4743	Introduction to Mathematical Statistics	
PHYS 2514	General Physics for Engineering and Science Majors	4
PHYS 1311	General Physics Lab I	0-1
Approved Elective, Natural Science (Core II)		3
Additional College Requirements		
ENGR 1411	Freshman Engineering Experience [1]	1
ENGR 2002	Professional Development	2
Total Credit Hours		30-31

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

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

Accredited by the Computing Accreditation Commission of ABET, http://www.abet.org

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.

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
	MATH 1914	Differential and Integral Calculus I (Core I) [1]	4	MATH 2924	Differential and Integral Calculus II [1]	4
	ENGR 1411	Freshman Engineering Experience [2]	1	C S 2334	Programming Structures and Abstractions	4
		Choose one of the following:	1-4		Approved Elective, Natural Science (Core II) [6]	3
	C S 1323	Introduction to Computer Programming for Programmers [4]				
	C S 1321	Java for Programmers [4]				
	C S 1324	Introduction to Computer Programming for Non-Programmers [4]				
		Approved Elective, First-Year Experience (Core V) [5]	3			
		Approved Elective, Artistic Forms (Core IV) [5]	3			
		CREDIT HOURS	**15-18**		**CREDIT HOURS**	**14**
SOPHOMORE	MATH 2934	Differential and Integral Calculus III [1]	4	C S 2614	Computer Organization	4
	ENGR 2002	Professional Development	2	C S 3323	Principles of Programming Languages	3
	C S 2413	Data Structures [3]	3	PHYS 2514	General Physics for Engineering and Science Majors (Core II) [6]	4
	C S 2813 or MATH 2513	Discrete Structures or Discrete Mathematical Structures	3	PHYS 1311	General Physics Lab I (Core II-Lab) [6,7]	0-1
		Approved Elective, Social Science (Core III) [5]	3		Open Elective [4, 6]	4
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15-16**
JUNIOR		MATH 3000-level or above and acceptable for credit for MATH Majors, or Complete a Minor	3	MATH 3333	Linear Algebra I	3
		Open Elective [6]	3		Approved C S Elective 8	3
	C S 3113	Introduction to Operating Systems	3		Choose one of the following:	3
	C S 3203	Software Engineering	3	MATH 4753	Applied Statistical Methods	
	C S 3823	Theory of Computation	3	ISE 3293	Applied Engineering Statistics	
				MATH 4743	Introduction to Mathematical Statistics	
				P SC 1113	American Federal Government (Core III)	3
					Approved Elective, Western Culture (Core IV) [5]	3
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15**
SENIOR	C S 4173	Computer Security	3	C S 4273	Capstone Design Project	3
	C S 4413	Algorithm Analysis	3	C S 4473	Parallel, Distributed, and Network Programming	3
		Approved C S Elective 8	3		Approved C S Elective 8	3
		Choose one of the following:	3	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3
		Approved C S Elective 8			Approved Elective, World Culture (Core IV) [5]	3
	MATH 4073	Numerical Analysis I				
	MATH 4673	Graph Theory I				
	MATH 4313	Introduction to Number Theory				
	C S 4513	Database Management Systems	3			
		CREDIT HOURS	**15**		**CREDIT HOURS**	**15**

1 MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934. MATH 1523 will have to be taken by students who are not ready to start MATH 1823 or MATH 1914. **Note:** See an advisor in the Arts and Sciences Advising Center (EL 124) about a possible minor in mathematics.

2 Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

3 In addition to the other required prerequisites for C S 2413, students are required to make a grade of B or better in C S 1323/C S 1324/C S 1321 or C S 2334.

4 The credits from C S 1321, C S 1323, and C S 1324 plus the open electives must add up to 5.

5 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.

6 Courses taken to fulfill the Natural Science requirement must be chosen from the University-Wide General Education Approved Course List (Core II). At least one of the Natural Science courses must be a non-Physics course. The number of credits in Core II Natural Science and open electives must be 14 credit hours or more. All science courses must be for science or engineering majors. Open electives are not required to be General Education approved. Laboratory Core II requirement must be met.

7 Another laboratory science Core II course may be substituted for PHYS 1311.

8 Honors College students may substitute C S 3980 for an approved C S elective.

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.

Students should read the Gallogly College of Engineering Scholastic Regulations posted on the WSSC website.

APPROVED C S ELECTIVES

Code	Title	Credit Hours
C S 4013	Artificial Intelligence	3
C S 4023	Introduction to Intelligent Robotics	3
C S 4033	Machine Learning	3
C S 4053	Computer Graphics	3
C S 4063	Human Computer Interaction	3
C S 4113	Distributed Operating Systems	3
C S 4133	Data Networks	3
C S 4323	Compiler Construction	3

C S 4433	Computational Methods in Discrete Optimization	3
C S 4613	Computer Architecture	3
C S 4743	Scientific Computing I	3
C S 4823	Cryptography	3
C S 4973	Special Topics	3