

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 2024 through Spring 2025

General Requirements	
Minimum Total Credit Hours	129
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
Industrial and Systems Engineering - Analytics Option
B529
Bachelor of Science

OU encourages students to complete at least 33 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		
<i>English Composition</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-10 hours in the same language)</i>		
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)		
<i>Mathematics</i>		
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
Natural Science Elective with Lab ⁴		4
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course ³		3
Core Area IV: Arts & Humanities		
<i>Artistic Forms</i>		
Choose one course ³		3
<i>Western Culture</i>		
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
<i>World Culture</i>		
Choose one course ³		3
Core Area V: First-Year Experience		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ⁵	3
Total Credit Hours		39-49

- MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.
- Major support requirements that also satisfy University General Education requirements.
- 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.
- 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 and come from the natural science elective list maintained by the department.
- 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 Industrial and Systems Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Industrial Engineering and Similarly Named Engineering Programs 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		
ISE 2823	Enterprise Engineering	3
ISE 2311	Computer Aided Design and Graphics Laboratory for Industrial Engineers	1
ISE 2303	Design and Manufacturing Process	3
ISE 3293	Applied Engineering Statistics	3
ISE 3304	Design and Manufacturing II	4
ISE 4113	Spreadsheet Dec Support Sys	3
ISE 4553	Data-Driven Decision Making I	3
ISE 4623	Deterministic Systems Models	3
ISE 4223	Fundamentals of Engineering Economy	3
ISE 4563	Quality & Reliability Engineering	3
ISE 4633	Probabilistic Systems Models	3
ISE 4804	Ergonomics in Systems Design	4
ISE 4333	Production Systems/Operations	3
ISE 4383	Systems Evaluation	3
ISE 4663	Systems Analysis Using Simulation	3
ISE 4853	Data-Driven Decision Making II	3
ISE 4393	Capstone Design Project	3
ISE Elective		
Choose a three-hour approved ISE Elective ¹		3
Total Credit Hours		54

- List of ISE Electives and is available in the ISE office, CEC 124

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 2513	Discrete Mathematical Structures	3
Additional College Requirements		
C S 1323	Introduction to Computer Programming for Programmers	3
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
CEES 2113	Statics	3
CEES 2153	Mechanics of Materials	3
C S 2334	Programming Structures and Abstractions	4
C S 2414	Data Structures	4
6 hours of C S Electives chosen from an approved list ²		6
Total Credit Hours		36

- To be chosen from the C S Elective list available in the ISE office CEC 124. CS 3203 and C S 4513 are recommended electives

More information in the catalog: (<http://ou-public.courseleaf.com/gallogly-engineering/industrial-systems-engineering/industrial-systems-engineering-analytics-bachelor-science/>).

SUGGESTED SEMESTER PLAN OF STUDY

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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) ²	4	MATH 2924	Differential and Integral Calculus II ²	4
	ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ³	3	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3
		Natural Science Elective with Lab ¹	4	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
				C S 1323	Introduction to Computer Programming for Programmers	3
	CREDIT HOURS		14	CREDIT HOURS		17
SOPHOMORE	MATH 2934	Differential and Integral Calculus III ²	4	CEES 2153	Mechanics of Materials	3
	C S 2334	Programming Structures and Abstractions	4	ISE 2303	Design and Manufacturing Process	3
	CEES 2113	Statics	3	ISE 2311	Computer Aided Design and Graphics Laboratory for Industrial Engineers	1
	ISE 2823	Enterprise Engineering	3	ISE 3293	Applied Engineering Statistics	3
	ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2	C S 2414	Data Structures	4
			MATH 2513	Discrete Mathematical Structures	3	
	CREDIT HOURS		16	CREDIT HOURS		17
JUNIOR	ISE 3304	Design and Manufacturing II	4	ISE 4223	Fundamentals of Engineering Economy	3
	ISE 4113	Spreadsheet Dec Support Sys	3	ISE 4563	Quality & Reliability Engineering	3
	ISE 4553	Data-Driven Decision Making I	3	ISE 4633	Probabilistic Systems Models	3
	ISE 4623	Deterministic Systems Models	3	ISE 4804	Ergonomics in Systems Design	4
	C S 3203	Software Engineering	3		Approved Elective: Artistic Forms (Core IV) ⁴	3
	P SC 1113	American Federal Government (Core III)	3			
	CREDIT HOURS		19	CREDIT HOURS		16
SENIOR	ISE 4333	Production Systems/Operations	3	ISE 4393	Capstone Design Project	3
	ISE 4383	Systems Evaluation	3		ISE Elective	3
	ISE 4663	Systems Analysis Using Simulation	3		Approved Elective: World Culture (Core IV) ⁴	3
	ISE 4853	Data-Driven Decision Making II	3		Approved Elective: Social Science (Core III) ⁴	3
	C S 4513	Database Management Systems (or other C S Elective) ⁵	3		Approved Elective: Western Culture (Core IV) ⁴	3
	CREDIT HOURS		15	CREDIT HOURS		15

¹ 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 and come from the natural science elective list maintained by the department.

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 To be chosen from the C S Elective list available in the ISE office, CEC 124

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