

INDUSTRIAL AND SYSTEMS ENGINEERING: ANALYTICS, BACHELOR OF SCIENCE IN INDUSTRIAL AND SYSTEMS ENGINEERING/MASTER OF SCIENCE

Minimum Total Credit Hours: 152
 Overall GPA - Combined and OU: 3.00
 Major GPA - Combined and OU: 3.00
 Curriculum GPA - Combined and OU: 3.00

Program Code: A529/F529

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

Admission to the accelerated program is by application and requires a minimum OU GPA and combined GPA of 3.25. 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 Industrial Engineering.

Course	Title	Credit Hours
Freshman		
First Semester		
ENGL 1113	Principles of English Composition (Core I)	3
CHEM 1315	General Chemistry (Core II) ¹	5
MATH 1914	Differential and Integral Calculus I (Core I) ²	4
P SC 1113	American Federal Government (Core III)	3
ENGR 1411	Freshman Engineering Experience ³	1
Credit Hours		16
Second Semester		
ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
MATH 2924	Differential and Integral Calculus II ²	4
HIST 1483 or HIST 1493	United States, 1492 to 1865 (Core IV) or United States, 1865 to the Present	3
PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
C S 1323	Introduction to Computer Programming for Programmers	3
Credit Hours		17

Sophomore		
First Semester		
MATH 2934	Differential and Integral Calculus III ²	4
C S 2334	Programming Structures and Abstractions	4
CEES 2113	Statics	3
PHYS 2524	General Physics for Engineering and Science Majors	4
ISE 2823	Enterprise Engineering	3
Credit Hours		18

Second Semester		
CEES 2153	Mechanics of Materials	3
ISE 2303	Design and Manufacturing Process	3
ISE 2311	Computer Aided Design and Graphics Laboratory for Industrial Engineers	1
ISE 3293	Applied Engineering Statistics	3
C S 2413	Data Structures	3
MATH 2513	Discrete Mathematical Structures	3
Credit Hours		16

Junior		
First Semester		
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
C S 3202		2
Credit Hours		15

Second Semester		
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
ENGR 2461	Thermodynamics	1
ENGR 3441	Fluid Mechanics	1
Approved Elective: Artistic Forms (Core IV) ⁴		3
Credit Hours		18

Senior		
First Semester		
ISE 4333	Production Systems/Operations	3
ISE 4663	Systems Analysis Using Simul	3
ISE 5383	Systems Evaluation (Slashlisted with 4383) ⁵	3
ISE 5853	Data-Driven Decision Making II ⁵	3
C S 4513	Database Management Systems (or other C S Elective) ⁶	3
ENGR 2431	Electrical Circuits	1
Credit Hours		16

Second Semester		
ISE 4393	Capstone Design Project (Capstone)	3
ISE 5033	Systems Engineering	3
Approved Elective: Non-Western Culture (Core IV) ⁴		3
Approved Elective: Social Science (Core III) ⁴		3
Approved Elective: Western Civ. & Culture (Core IV) ⁴		3
Credit Hours		15

Fifth Year**First Semester**

ISE 5000-Level Graduate Elective ⁷	3
Graduate Elective	3
Graduate Elective	3
ISE 5980 Research for Master's Thesis	3
Credit Hours	12

Second Semester

ISE 5000-Level Graduate Elective ⁷	3
Graduate Elective	3
ISE 5980 Research for Master's Thesis	3
Credit Hours	9
Total Credit Hours	152

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 12 hours must be upper-division (3000-4000). See list in the Class Schedule.

⁵ These courses are dual-counted, fulfilling requirements for both the undergraduate and graduate Industrial and Systems Engineering degrees.

⁶ To be chosen from the C S Elective list available in the ISE office, CEC 116.

⁷ Must be approved by the Thesis Committee in accordance with current Master of Science requirements available in the ISE office, CEC 116.

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