REQUIREMENTS FOR THE BACHELOR 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 .... **120** **Minimum Retention/Graduation Grade Point Averages:** Overall - Combined and OU .... **2.00** Major - Combined and OU .... **2.00** Curriculum - Combined and OU **2.00**		**Engineering Analytics** **B365** 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		
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 [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		
ENGR 1413 Pathways to Engineering Thinking [2, 5]		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 courses must be chosen from a 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 list maintained by the department.
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 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 requirements.

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 2913	Introduction to Python for Analytics and Engineering	3
ISE 3293	Applied Engineering Statistics	3
ISE 3813	Statistical Computing	3
ISE 3913	Introduction to Machine Learning and Data Analytics	3
ISE 4113	Spreadsheet Dec Support Sys	3
ISE 4223	Fundamentals of Engineering Economy	3
ISE 4383	Systems Evaluation	3
ISE 4393	Capstone Design Project	3
ISE 4553	Data-Driven Decision Making I	3
ISE 4563	Quality & Reliability Engineering	3
ISE 4623	Deterministic Systems Models	3
ISE 4633	Probabilistic Systems Models	3
ISE 4663	Systems Analysis Using Simulation	3
ISE 4853	Data-Driven Decision Making II	3
ISE 4913	Advanced Machine Learning and Data Analytics	3
ISE Electives		
Choose 3 three hour approved ISE electives [1]		9
Total Credit Hours		**57**

1 To be chosen from an approved list of ISE electives 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 3333	Linear Algebra I	3
ISE Technical Elective		
Choose a three hour ISE Technical Elective from approved list maintained by the department		3
Additional College Requirements		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
C S 1323	Introduction to Computer Programming for Programmers	3
DSA 3023	Big Data Engineering	3
Total Credit Hours		**22**

More information in the catalog: (http://ou-public.courseleaf.com/gallogly-engineering/industrial-systems-engineering/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	HIST 1483 or HIST 1493	United States to 1865 or United States, 1865 to the Present	3
	ENGR 1413	Pathways to Engineering Thinking [3]	3	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
		Natural Science Elective with Lab [7]	4	MATH 2924 or MATH 2423	Differential and Integral Calculus II 2 or Calculus and Analytic Geometry II [2]	4
					Free Elective, lower-division	1
		CREDIT HOURS	14		CREDIT HOURS	15
SOPHOMORE	ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2	P SC 1113	American Federal Government	3
	MATH 2934 or MATH 2433	Differential and Integral Calculus III 2 or Calculus and Analytic Geometry III [2]	4	ISE 2913	Introduction to Python for Analytics and Engineering	3
	ISE 2823	Enterprise Engineering	3	ISE 3293	Applied Engineering Statistics	3
	MATH 3333	Linear Algebra I	3	ISE 4223	Fundamentals of Engineering Economy	3
	C S 1323	Introduction to Computer Programming for Programmers	3		Approved Elective Artistic Forms (Core IV) [4]	3
		CREDIT HOURS	15		CREDIT HOURS	15
JUNIOR	ISE 3813	Statistical Computing	3	DSA 3023	Big Data Engineering	3
	ISE 4113	Spreadsheet Dec Support Sys	3	ISE 3913	Introduction to Machine Learning and Data Analytics	3
	ISE 4553	Data-Driven Decision Making I	3	ISE 4563	Quality & Reliability Engineering	3
	ISE 4623	Deterministic Systems Models	3	ISE 4633	Probabilistic Systems Models	3
		Approved Elective: Social Science (Core IV) [4]	3		Approved Elective World Culture (Core IV) [4]	3
		CREDIT HOURS	15		CREDIT HOURS	15
SENIOR	ISE 4383	Systems Evaluation	3	ISE 4393	Capstone Design Project	3
	ISE 4913	Advanced Machine Learning and Data Analytics	3		ISE Elective [5]	3
	ISE 4663	Systems Analysis Using Simulation	3		ISE Elective [5]	3
	ISE 4853	Data-Driven Decision Making II	3		ISE Technical Elective [6]	1
		ISE Elective [5]	3		ISE Technical Elective [6]	3
					Approved Elective: Western Culture (Core IV) [4]	3
		CREDIT HOURS	15		CREDIT HOURS	16

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 requirements.

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 an approved list of ISE electives available in the ISE office, CEC 124.

6   To be chosen from an approved list of ISE technical electives available in the ISE office, CEC 124.

7   Courses taken to fullfill the Natural Science requirement must be chosen form 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.

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.