

# INDUSTRIAL AND SYSTEMS ENGINEERING: ANALYTICS, BACHELOR OF SCIENCE IN INDUSTRIAL AND SYSTEMS ENGINEERING

Minimum Total Credit Hours: 131

Overall GPA - Combined and OU: 2.00

Major GPA - Combined and OU: 2.00

Curriculum GPA - Combined and OU: 2.00

Program Code: B529

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.

Course	Title	Credit Hours
<b>Freshman</b>		
<b>First Semester</b>		
ENGL 1113	Principles of English Composition (Core I)	3
CHEM 1315	General Chemistry (Core II) <sup>1</sup>	5
MATH 1914	Differential and Integral Calculus I (Core I) <sup>2</sup>	4
P SC 1113	American Federal Government (Core III)	3
ENGR 1411	Freshman Engineering Experience <sup>3</sup>	1
Credit Hours		16
<b>Second Semester</b>		
ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
MATH 2924	Differential and Integral Calculus II <sup>2</sup>	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
<b>Sophomore</b>		
<b>First Semester</b>		
MATH 2934	Differential and Integral Calculus III <sup>2</sup>	4
C S 2334	Programming Structures and Abstractions	4
CEES 2113	Statics	3
ISE 2823	Enterprise Engineering	3
PHYS 2524	General Physics for Engineering and Science Majors	4
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) <sup>4</sup>		3
Credit Hours		18

## Senior

### First Semester

ISE 4333	Production Systems/Operations	3
ISE 4383	Systems Evaluation	3
ISE 4663	Systems Analysis Using Simul	3
ISE 4853	Data-Driven Decision Making II	3
C S 4513	Database Management Systems (or other C S Elective) <sup>5</sup>	3
ENGR 2431	Electrical Circuits	1
Credit Hours		16

### Second Semester

ISE 4393	Capstone Design Project (Capstone)	3
ISE Elective		3
Approved Elective: Non-Western Culture (Core IV) <sup>4</sup>		3
Approved Elective: Social Science (Core III) <sup>4</sup>		3
Approved Elective: Western Civ. & Culture (Core IV) <sup>4</sup>		3
Credit Hours		15
Total Credit Hours		131

<sup>1</sup> CHEM 1315 can be substituted with CHEM 1335 (Fall only).

<sup>2</sup> MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

<sup>3</sup> Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

<sup>4</sup> 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.

<sup>5</sup> To be chosen from the C S Elective list 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.