

# B.S. IN INDUSTRIAL ENGINEERING

## CATALOG YEAR 2016-2017

Below is the *advised sequence* of courses for this degree program and prerequisites as of 2/10/16. The official degree requirements and prerequisites can be found in the University General Catalog and the prerequisites are subject to change.

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122A/B OR MATH 125 Calculus I with Applications	3	Appropriate Math Placement
CHEM 151 General Chemistry I OR CHEM 105A/106A	4	
ENGL 101 OR 107 OR 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering OR ENGR 102	3	Concurrent Enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or MATH 125
CHEM 152 General Chemistry II OR CHEM 105B/106B OR MSE 110 Solid State Chemistry OR MCB 181R/L Intro Biology I	4	For CHEM 152 and MSE 110: CHEM 151 or CHEM 105A. For MCB181R: concurrent enrollment or completion of MCB181L
ECE 175 Computer Programming for Engineering Applications OR CSC 127A Introduction to Computer Science OR CSC 227 Program Design and Development	3	For ECE 175: MATH122B or 125 or Concurrently enrolled.
ENGL 102 OR 108 OR 109H First-Year Composition	3	ENGL 101, ENGL 107
PHYS 141 Introductory Mechanics OR PHYS 161H	4	MATH 122B or MATH 125; concurrent enrollment or completion of MATH 129
<b>3<sup>RD</sup> SEMESTER</b>		
SIE 250 Introduction to Systems and Industrial Engineering	3	ENGR 102A/B or ENGR 102 and MATH 129
MATH 223 Vector Calculus	4	MATH 129 with C or better
PHYS 241 Introductory Electricity and Magnetism OR PHYS 261H	4	PHYS 141 or PHYS 161H; MATH 129
SIE 277 Object-Oriented Modeling and Design	3	ECE 175 or CSC 127A
Tier I General Education	3	
<b>4<sup>TH</sup> SEMESTER</b>		
SIE 265 Engineering Management I	3	ENGR 102A/B and MATH 122B or 125
SIE 270 Mathematical Foundations of SIE	3	ECE 175 or CSC 127A; MATH 129; PHYS 141
SIE 295S Systems and Industrial Engineering Sophomore Colloquium	1	SIE 250
ECE 207 Elements of Electrical Engineering OR ECE 220 Basic Circuits OR AME 230 Thermodynamics OR CE 214 Statics OR CHEE 201 Elements of Chemical Engineering I (Fall Only)	3	For ECE 207/220: PHYS 241, MATH 129, concurrent enrollment or completion of MATH 254; For AME 230: MATH 223; For CE 214: PHYS 141, MATH 129; For CHEE 201: MATH 122B, CHEM 152, ECE 175
Tier I General Education	3	
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COURSE NUMBER AND TITLE	UNITS
<b>CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG</b>	
<b>ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)</b>	
<b>5<sup>TH</sup> SEMESTER</b>	
SIE 305 Introduction to Engineering Probability and Statistics	3
SIE 340 Deterministic Operations Research	3
Technical Elective - See major advisor for course approval	3
SIE 377 Software for Engineers	3
SIE 410A Human Factors & Ergonomics in Design	3
<b>6<sup>TH</sup> SEMESTER</b>	
SIE 321 Probabilistic Models in Operations Research	3
SIE 383 Integrated Manufacturing Systems	3
SIE 370 Embedded Computer Systems	4
SIE 330R Engineering Experiment Design	3
Technical Elective - See major advisor for course approval	3
<b>7<sup>TH</sup> SEMESTER</b>	
SIE 431 Simulation Modeling and Analysis	3
ENGR 498A Cross-disciplinary Design	3
ENGL 308 Technical Writing	3
Technical Elective - See major advisor for course approval	3
Tier II General Education	3
<b>8<sup>TH</sup> SEMESTER</b>	
ENGR 498B Cross-disciplinary Design	3
SIE 462 Production Systems Analysis	3
Technical Elective - See major advisor for course approval	3
Social Science Requirement	3
Tier II General Education	3
Free Elective-See major advisor for course approval	1

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.