B.S. IN INDUSTRIAL ENGINEERING
CATALOG YEAR 2015-2016

Below is the *advised sequence* of courses for this degree program and prerequisites as of 4/30/15.
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
1ST SEMESTER		
MATH 122A/B **OR** MATH 125 Calculus I with Applications	5/3	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	
2ND SEMESTER		
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 & MSE 110: CHEM 105A or CHEM 151 For MCB181R: concurrent enrollment or completion of MCB181L
ECE 175 Computer Programming for Engineering Applications **OR** CSC 127A Introduction to Computer Science	3/4	For ECE 175: concurrent enrollment or completion of MATH122B or 125
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
3RD SEMESTER		
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	
4TH SEMESTER		
SIE 265 Engineering Management I	3	ENGR 102A/B or ENGR 102 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	
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	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	
Tier I General Education	3	

COURSE NUMBER AND TITLE	UNITS	
CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG		
ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)		
5TH SEMESTER		
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	
6TH SEMESTER		
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	
7TH SEMESTER		
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	
Technical Elective - See major advisor for course approval	3	
Tier II General Education	3	
8TH SEMESTER		
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.