

# B.S. IN BIOSYSTEMS 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	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	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
CHEM 152 General Chemistry II OR CHEM 105B/106B	4	CHEM 151 or CHEM 105A/106A
PHYS 141 Introductory Mechanics OR PHYS 161H	4	MATH 122B or MATH 125; Concurrent enrollment or completion of MATH 129
ENGL 102 OR 108 OR 109H First-Year Composition	3	ENGL 101 or ENGL 107
Tier I General Education	3	
<b>3<sup>RD</sup> SEMESTER</b>		
CE 214 Statics	3	PHYS 141 or PHYS 161H; MATH 129
ABE 284 Biosystems Thermal Engineering	3	MATH 129; PHYS 141
ABE 201 Introduction to Biosystems Engineering	2	MATH 122A/122B or MATH 125
MATH 223 Vector Calculus	4	MATH 129 or 250A with C or better
MCB 181R/L Introductory Biology I OR PLS 240 Plant Bio	4	Appropriate Math Placement
<b>4<sup>TH</sup> SEMESTER</b>		
ABE 205 Engineering Analytic Computer Skills	3	MATH 122A/122B or MATH 125
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
PHYS 241 Introductory Electricity and Magnetism OR PHYS 261H	4	PHYS 141
ECOL 182R/L Introductory Biology II OR MIC 205 A/L General Microbiology OR PSIO 201 Human Anatomy and Physiology	4	For ECOL 182L: ECOL 182R or concurrent registration; For MIC 205: MCB 181R or PSIO 201; CHEM 101B or CHEM 103A.
Tier 1 General Education	3	

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>	
CE 218 Mechanics of Fluids <b>OR</b> AME 331 Introduction to Fluid Mechanics	3
SIE 265 Engineering Management I	3
ABE 221 Introduction to Computer Aided Design	3
ABE 447 Sensors and Controls	3
SIE 305 Engineering Probability and Statistics	3
<b>6<sup>TH</sup> SEMESTER</b>	
ABE 423 Biosystems Analysis and Design	3
ABE Design Elective – See major advisor for course approval	3
ABE Technical Elective – See major advisor for course approval	3
ENGL 308 Technical Writing <b>OR</b> AGTM 422 Communicating Knowledge in Ag and Life Sciences	3
Tier I General Education	3
<b>7<sup>TH</sup> SEMESTER</b>	
ABE 496A Seminar in Engineering Careers and Professionalism	1
ABE 498A Senior Capstone: Biosystems Engineering Design I	3
ABE Technical Elective – See major advisor for course approval	3
ABE Design Elective – See major advisor for course approval	3
ABE 393 Internship	1
AME 324A Mechanical Behavior of Engineering Materials	3
Tier II General Education	3
<b>8<sup>TH</sup> SEMESTER</b>	
ABE 498B Senior Capstone: Biosystems Engineering Design II	3
ABE 400 Elective as approved by ABE advisor <b>OR</b> AME 431 <b>OR</b> AME 432	3
ABE Technical Elective – See major advisor for course approval	3
ABE Design Elective – See major advisor for course approval	3
Tier II General Education	3

\*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.