

# B.S. IN BIOSYSTEMS ENGINEERING

## CATALOG YEAR 2021-2022

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/18/18.

The official degree requirements and prerequisites 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 161/163	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	ENGR102A: MATH 112 or 120R & CHEM 151; Concurrent enrollment or completion of MATH 122B or 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122A/B or 125 C or better
CHEM 152 General Chemistry II or CHEM 162/164	4	CHEM 151 or 161/163
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122A/B or 125 or appropriate Math Placement
ENGL 102 or ENGL 108 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 161H; MATH 129
BE 284 Biosystems Thermal Engineering (Fall only)	3	MATH 129; PHYS 141
BE 201 Introduction to Biosystems Engineering	2	MATH 122B or 125
MATH 223 Vector Calculus	4	MATH 129 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>		
BE 205 Engineering Analytic Computer Skills (Spring only)	3	
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	For PHYS 241 or 261H: PHYS 141 or 161H; MATH 129 or appropriate Math Placement Level
ECOL 182R/L Introductory Biology II or MIC 205 A/L General Microbiology or PSIO 201 Human Anatomy and Physiology	4	ECOL182R/L & MIC 205: Appropriate Math Placement
Tier I 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 or AME 331 Introduction to Fluid Mechanics	3
SIE 265 Engineering Management I	3
BE 221 Introduction to Computer Aided Design or BE 220 Engineering Graphics and Design with Auto Cad	3
BE 447 Sensors and Controls	3
BE 310 Introduction to Biosystems Analytics	3
<b>6<sup>TH</sup> SEMESTER</b>	
BE 423 Biosystems Analysis and Design	3
BE Design Elective – See major advisor for course approval	3
SIE 305 Engineering Probability and Statistics or AREC 239 Introduction to Statistics and Data Analysis or MATH 263 Introduction to Statistics and Biostatistics	3
ALC 422 or ENGL 308 or ENVS 408 Technical Writing	3
Tier I General Education	3
<b>7<sup>TH</sup> SEMESTER</b>	
BE 496A Seminar in Engineering Careers and Professionalism	1
ENGR 498A Cross-disciplinary Design (Fall Only) or BE 498A – Senior Status	3
Technical Elective – See major advisor for course approval	3
BE Design Elective – See major advisor for course approval	3
BE 493 Internship	1
AME 324A Mechanical Behavior of Engineering Materials	3
Tier II General Education	3
<b>8<sup>TH</sup> SEMESTER</b>	
ENGR 498B Cross-disciplinary Design (Spring Only) or BE 498B – Senior Status	3
Technical Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3
BE 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.