

B.S. IN BIOSYSTEMS ENGINEERING

CATALOG YEAR 2022-2023

Below is the *advised sequence* of courses for this degree program and prerequisites as of 11/01/21.

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
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 * Chemical Thinking 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; ENGR102B: Concurrently enrolled or completion of MATH 122B or 125; FR & SOPH Status
UNIV 101 Intro to the General Education Experience	1	
Semester Total		16/14
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 C or better
CHEM 152 Chemical Thinking II or CHEM 162/164	4	CHEM 151 or 141/143 or 161/163
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or appropriate Math Placement
ENGL 102 or ENGL 108 First-Year Composition	3	ENGL 101 or ENGL 107
GE Exploring Perspectives (Artist) or Building Connections	3	
Semester Total		17
3RD SEMESTER		
BE 201 Introduction to Biosystems Engineering	2	MATH 122B or 125
BE 284 Biosystems Thermal Engineering (Fall only)	3	MATH 129; PHYS 141
Biology I: MCB 181R/L Introductory Biology I OR PLS 240 Plant Bio	4	Appropriate Math Placement
CE 214 Statics	3	PHYS 141 or 161H; MATH 129
MATH 223 Vector Calculus	4	MATH 129 with C or better
Semester Total		16
4TH SEMESTER		
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
Biology II: 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
GE Exploring Perspectives (Humanist) or Building Connections	3	
Semester Total		17

COURSE NUMBER AND TITLE	UNITS
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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

BE 221 Introduction to Computer Aided Design or BE 220 Engineering Graphics and Design with Auto Cad	3
BE 310 Introductions to Biosystems Analytics	3
CE 218 Mechanics of Fluids or AME 331 Introduction to Fluid Mechanics	3
SIE 265 Engineering Management I	3
GE Exploring Perspectives (Social Scientist) or Building Connections	3
Semester Total	15

6TH SEMESTER

BE 423 Biosystems Analysis and Design	3
BE 493 Internship (To be completed prior to taking BE 496A)	1
BE Design Elective – See major advisor for course approval	3
BE Technical Elective – See major advisor for course approval	3
SIE 305 Engineering Probability and Statistics or AREC 239 Introduction to Statistics and Data Analysis MATH 263 Introduction to Statistics and Biostatistics	3
GE Building Connections or Exploring Perspectives	3
Semester Total	16

7TH SEMESTER

BE 496A Seminar in Engineering Careers and Professionalism	1
BE 447 Sensors and Controls	3
BE Design Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3
ENGR 498A Cross-disciplinary Design (Fall Only) or BE 498A – Senior Status	3
GE Building Connections or Exploring Perspectives	3
Semester Total	16

8TH SEMESTER

ENGR 498B Cross-disciplinary Design (Spring Only) or BE 498B – Senior Status	3
CE 301** or Engl 308 or ENV5 408	3
Technical Elective – See major advisor for course approval	3
BE Design Elective – See major advisor for course approval	3
AME 324A Mechanical Behavior of Engineering Materials	3
UNIV 301 General Education Portfolio	1
Semester Total	16

GE Exploring Perspective (1 of ea. Artist, Humanist, Natural Scientist, Social Scientist) and Building Connection Courses (3 courses, 9 units total) must meet University General Education requirements.

*Chemistry 151 will fulfill General Education Exploring Perspective – Natural Scientist course

** CE 301 will fulfill one of the General Education Building Connections course