B.S. IN BIOMEDICAL ENGINEERING

CATALOG YEAR 2020-21

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/18/19.
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 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	
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
CHEM 152 General Chemistry II or CHEM 162/164	4	CHEM 151 or CHEM 161/163
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or appropriate Math Placement Level
ENGL 102 or 108 First-Year Composition	3	ENGL 101 or ENGL 107
BME 295C Challenges in Biomedical Engineering (Spring only)	1	
Tier I General Education	3	
3RD SEMESTER		
BE 284 Biosystems Thermal Engineering (Fall only) or AME 230 Thermodynamics (supports ME minor)	3	For BE 284: MATH 129; PHYS 141; For AME 230: PHYS 141
BME 214 Introduction Biomechanics (Fall only) or CE 214 Statics	3	For both: PHYS 141; MATH 129;
MATH 223 Vector Calculus	4	MATH 129 with C or better
MCB 181 R Introductory Biology I and MCB 181 L Biotechnology Laboratory	3 1	Appropriate Math Placement
ECE 175 Computer Programming for Engineering Application or CSC 250 Essential Computing for the Sciences (CSC Spring Only)	3	For ECE 175: Concurrent enrollment or completion of MATH 122B or 125
4TH SEMESTER		
BME 210 Intermediate BME Design: Electronics, Mechanisms, Controllers. (Spring only)	3	ECE 175
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
PSIO 201 Human Anatomy and Physiology I	4	
Tier I General Education	3	

COURSE NUMBER AND TITLE	UNITS	COMMENTS
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		
BME 447 Sensors and Controls (Fall only)	3	
PSIO 202 Human Anatomy and Physiology II or ECOL 182 R/L Introductory Biology II and Laboratory	4	
BME 376 Biomedical Statistics (Fall only) or DATA 363 Introduction to Statistical Methods	3	
AME 301 Engineering Analysis or MATH 322 Mathematical Analysis for Engineers	3	
Tier I General Education	3	
6TH SEMESTER		
BME 330 Biomedical Instrumentation (Spring Only)	4	Prerequisite for ENGR 498A
BME 331 Introduction to Fluid Mechanics	3	
BME 480 Translational Biomedical Engineering (Spring only)	3	
BME Technical Elective ** – See major advisor for course approval or BME 310 Medical Device Design (Spring only)	3	
Tier II General Education*	3	
7TH SEMESTER		
ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status	3	
BME 497G Clinical Rotation (Fall Only)	1	
BME Technical Elective ** - See major advisor for course approval	3	
Technical Elective *** - See major advisor for course approval	3	
Technical Elective *** – See major advisor for course approval	3	
8TH SEMESTER		
ENGR 498B Cross-disciplinary Design (Spring Only) – Senior Status	3	
BME Technical Elective ** – See major advisor for course approval	3	
Technical Elective *** – See major advisor for course approval	3	
Technical 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.

** 9 or more units of BME.

*** Technical Electives: three units of Engineering Technical Electives and 9 units of Technical Electives in consultation with an advisor for a total of 21 units.