

# B.S. IN BIOMEDICAL ENGINEERING

*College of the Sciences and Mathematics*

## Curriculum

Code	Title	Credits
General Education Requirements ( <a href="http://catalog.wcupa.edu/undergraduate/general-education-requirements/">http://catalog.wcupa.edu/undergraduate/general-education-requirements/</a> )		
First Year Experience		4
<b>Academic Foundations</b>		
English Composition requirement		6
Mathematics requirement		3
MAT 161	Calculus I	
Interdisciplinary requirement		3
Diverse Communities requirement		3
<b>Distributive Requirements</b>		
Science requirement		6
BIO 110	General Biology I	
CHE 103	General Chemistry I	
Behavioral & Social Science requirement		6
ECO 112	Principles of Economics (Micro)	
Humanities requirement		6
PHI 180	Introduction to Ethics	
Arts requirement		3
<b>Additional Baccalaureate Requirements</b>		
Writing Emphasis requirement		9
Speaking Emphasis requirement		9
Ethics requirement		3
<b>Major and Major-Related Courses</b>		
BME 110	Introduction to Biomedical Engineering	3
BME 120	Introduction to Computer Aided Engineering Design	3
MAT 125	Introduction to Statistics and Probability	3
PHY 170	Physics I	4
PHY 180	Physics II	4
BME 220	Statics	3
BME 230	Dynamics	3
CHE 230	Introduction to Organic and Biological Chemistry	3
BIO 265	Anatomy and Physiology for Engineers	4
BME 310	Engineering Thermodynamics	3
BME 315	Biomedical Engineering Laboratory I	2
BME 325	Biomedical Engineering Laboratory II	2
BME 335	Biomaterials	3
BME 345	Biotransport Phenomena	4
BME 355	Biomedical Instrumentation	3
BME 365	Biomechanics	3
BME 401	Senior Seminar I	1
BME 402	Senior Seminar II	1
BME 420	Senior Design II	1
BME 450	Regulatory and GMP	3
<b>Major Electives</b>		<b>9</b>
Select 9 credit of BME electives.		
<b>Related Cognates</b>		

MAT 162	Calculus II	4
MAT 261	Calculus III	4
MAT 315	Differential Equations and Linear Algebra	3
CHE 104	General Chemistry II	3
CRL 103	General Chemistry I Lab	1
CRL 104	General Chemistry II Lab	1

### Capstone Requirement

BME 410	Senior Design I <sup>1</sup>	3
<b>Total Minimum Credits Required</b>		<b>126</b>

<sup>1</sup> This course fulfills the general education Capstone requirement.

## Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit [wcupa.edu/DegreeProgressReport](http://wcupa.edu/DegreeProgressReport) (<http://wcupa.edu/degreeprogressreport/>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Course	Title	Credits
<b>Year One</b>		
<b>Fall</b>		
BME 110	Introduction to Biomedical Engineering	3
MAT 161	Calculus I	4
CHE 103	General Chemistry I	3
WRT 120	Effective Writing I	3-4
or	or Effective Writing with Supplemental	
WRT 123	Writing Workshop	
FYE 100X	First Year Experience	4
<b>Credits</b>		<b>17-18</b>
<b>Spring</b>		
BME 120	Introduction to Computer Aided Engineering Design	3
MAT 162	Calculus II	4
CRL 103	General Chemistry I Lab	1
CHE 104	General Chemistry II	3
PHY 170	Physics I	4
<b>Credits</b>		<b>15</b>
<b>Year Two</b>		
<b>Fall</b>		
BME 220	Statics	3
MAT 261	Calculus III	4
BIO 110	General Biology I	4
PHY 180	Physics II	4
CRL 104	General Chemistry II Lab	1
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
BME 230	Dynamics	3
MAT 315	Differential Equations and Linear Algebra	3
BIO 265	Anatomy and Physiology for Engineers	4
CHE 230	Introduction to Organic and Biological Chemistry	3
WRT 2XX	200-Level WRT Course	3
<b>Credits</b>		<b>16</b>
<b>Year Three</b>		
<b>Fall</b>		
BME 310	Engineering Thermodynamics	3

BME 315	Biomedical Engineering Laboratory I	2
BME 335	Biomaterials	3
MAT 125	Introduction to Statistics and Probability	3
PHI 180	Introduction to Ethics	3
ECO 112	Principles of Economics (Micro)	3
<b>Credits</b>		<b>17</b>
<b>Spring</b>		
BME 325	Biomedical Engineering Laboratory II	2
BME 345	Biotransport Phenomena	4
BME 355	Biomedical Instrumentation	3
BME 365	Biomechanics	3
Humanities Gen Ed		3
<b>Credits</b>		<b>15</b>
<b>Year Four</b>		
<b>Fall</b>		
BME 401	Senior Seminar I	1
BME 410	Senior Design I	3
BME 450	Regulatory and GMP	3
BME XXX	Tech Elective I	3
Arts Gen Ed		3
Interdisciplinary Gen Ed		3
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
BME 402	Senior Seminar II	1
BME 420	Senior Design II	1
BME XXX	Tech Elective II	3
BME XXX	Tech Elective III	3
Diverse Communities Gen Ed		3
Behavioral & Social Science Gen Ed		3
<b>Credits</b>		<b>14</b>
<b>Total Credits</b>		<b>126-127</b>