


















2014 - 2015 Major Map

Biomedical Engineering, BSE

School/College: Ira A. Fulton Schools of Engineering
ESBMEBSE

Term 1 0 - 15 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CHM 114: General Chemistry for Engineers (SQ) or CHM 116: General Chemistry II (SQ)	4	C	<ul style="list-style-type: none"> • An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses. • ASU Math Placement Exam score determines placement in Mathematics course. • ASU 101 required of all students. • If ENG 105 taken, a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
ENG 101 or ENG 102: First-Year Composition OR			
 ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
 MAT 265: Calculus for Engineers I (MA)	3	C	
ASU 101-BME: The ASU Experience	1	C	
 BME 100: Introduction to Biomedical Engineering	3	C	
BME 182: Biomedical Engineering Product Design and Development I	1	C	
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		
Term 2 15 - 31 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 BME 111: Engineering Perspectives on Biological Systems	3	C	
ENG 101 or ENG 102: First-Year Composition OR			
 ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
 MAT 266: Calculus for Engineers II (MA)	3	C	
 PHY 121: University Physics I: Mechanics (SQ)	3	C	
 PHY 122: University Physics Laboratory I (SQ)	1	C	
CSE 100: Principles of Programming with C++ (CS)	3	C	
 Minimum 2.00 GPA ASU Cumulative.			
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	16		
Term 3 31 - 47 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 267: Calculus for Engineers III (MA)	3	C	
 PHY 131: University Physics II: Electricity and Magnetism (SQ)	3	C	
 PHY 132: University Physics Laboratory II (SQ)	1	C	
BME 213: Biomedical and Bioengineering Ethics	1	C	
BME 214: FDA Regulatory Processes and Technical Communications	1	C	
BME 235: Physiology for Engineers	4	C	
ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)	3		

❗ Minimum 2.00 GPA ASU Cumulative.

Complete Mathematics (MA) requirement.

Term hours subtotal: 16

Term 4 47 - 62 Credit Hours Critical course signified by ❗	Hours	Minimum Grade	Notes
❗ BME 200: Conservation Principles in Bioengineering	3	C	
BME 282: Biomedical Engineering Product Design and Development II	1	C	
CHM 231: Elementary Organic Chemistry (SQ) OR CHM 233: General Organic Chemistry I	3	C	
CHM 235: Elementary Organic Chemistry Laboratory (SQ) OR CHM 237: General Organic Chemistry Laboratory I	1	C	
EEE 202: Circuits I	4	C	
MAT 275: Modern Differential Equations (MA)	3	C	
Complete BME 111 AND BME 100 AND MAT 265 AND MAT 266 AND MAT 267 AND PHY 121 AND PHY 122 AND PHY 131 AND PHY 132 AND BME 200 AND CHM 114 OR CHM 116 course(s).			
Term hours subtotal:	15		

Term 5 62 - 77 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BME 300: Bioengineering Product Design	3	C	
BME 318: Biomaterials	4	C	
BME 322: Statistics for Biomedical Engineering	1	C	
BME 350: Signals and Systems for Bioengineers	3	C	
MAE 212: Engineering Mechanics	4	C	
Term hours subtotal:	15		

Term 6 77 - 92 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BME 370: Microcomputer Applications in Bioengineering	3	C	• A list of approved related electives can be found online at: http://sbhse.engineering.asu.edu/academics/currentstudents/undergraduate/curriculum/
BME 301: Numerical Methods in Biomedical Engineering	2	C	
BME 331: Transport Phenomena for Biomedical Engineering	3	C	
BME 382: Biomedical Engineering Product Design and Development III	1	C	
CHE 342: Introduction to Applied Chemical Thermodynamics	3	C	
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C) OR Humanities, Arts and Design (HU) AND Global Awareness (G) OR Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:	15		

Term 7 92 - 106 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BME 417: Biomedical Engineering Capstone Design I (L)	4	C	• A list of approved related electives can be found online at: http://sbhse.engineering.asu.edu/academics/currentstudents/undergraduate/curriculum/

BME 413: Biomedical Instrumentation (L) AND BME 423: Biomedical Instrumentation Laboratory (L)	4	C
Upper Division Related Elective	3	
Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C) OR Social-Behavioral Sciences (SB) AND Global Awareness (G) OR Social-Behavioral Sciences (SB) AND Historical Awareness (H)	3	
Term hours subtotal:	14	

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ BME 490: Biomedical Engineering Capstone Design II	4	C	• A list of approved related electives can be found at:
Upper Division Related Elective	4		http://sbhse.engineering.asu.edu/academics/currentstudents/undergraduate/curriculum/
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C) OR Humanities, Arts and Design (HU) AND Global Awareness (G) OR Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)	3		
★ Complete BME 300 AND BME 370 AND BME 417 AND BME 490 course(s).			
Term hours subtotal:	14		

Hide Course List(s)/Track Group(s)

Total Hours: 120

Upper Division Hours: 45 minimum

Major GPA: 2.00 minimum

Cumulative GPA: 2.00 minimum

Total hrs at ASU: 30 minimum

Hrs Resident Credit for

Academic Recognition: 56 minimum

Total Community College Hrs: 64 maximum

General University Requirements Legend

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed next to courses on the major map were valid for the 2014 - 2015 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.