

**Major Map: Engineering Special Studies
(Pre-medical Engineering) –
Bachelor of Science in Engineering (B.S.E.)
Ira A. Fulton School of Engineering, Tempe Campus
Catalog Year: 2009-2010**

Course Subject and Title <i>(courses in bold/shading are critical)</i>	Hrs.	Upper Division	Completed ATP: <input type="checkbox"/> Yes <input type="checkbox"/> No		Completed AGECE: <input type="checkbox"/> Yes <input type="checkbox"/> No
			Transfer Course/Grade	Minimum Grade if Required	Additional Critical Requirement Notes
TERM ONE: 0-15 CREDIT HOURS					
ASU 101-FSE: The ASU Experience	1	<input type="checkbox"/>			<ul style="list-style-type: none"> • Complete BME 100 with a minimum grade of "C" or BIO 188 • Complete MAT 265 with a minimum grade of "C" • An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses • ASU Math Placement Exam score determines placement in Mathematics course ** If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
BME 100: Introduction to Bioengineering OR BIO 188: General Biology II (CS)	2 or 4	<input type="checkbox"/>		Grade of C in BME 100	
MAT 265: Calculus for Engineers I	3	<input type="checkbox"/>		Grade of C	
CHM 113: General Chemistry I (SQ)	4	<input type="checkbox"/>			
ENG 101 or 102: First-Year Composition OR ENG 105: Advanced First-Year Composition** OR ENG 107 or 108: English for Foreign Students	3	<input type="checkbox"/>		Grade of C	
TERM TWO: 16-30 CREDIT HOURS					
BME 100: Introduction to Bioengineering OR BIO 188: General Biology II (SQ)	2 or 4	<input type="checkbox"/>		Grade of C in BME 100	<ul style="list-style-type: none"> • Complete BIO 188; BME 100 with a minimum grade of "C"; CHM 116; MAT 266 with a minimum grade of "C"; PHY 121 & 122 • Complete ASU101-FSE
CHM 116: General Chemistry II (SQ)	4	<input type="checkbox"/>			
MAT 266: Calculus for Engineers II	3	<input type="checkbox"/>		Grade of C	
PHY 121/122: University Physics I/ Laboratory I (SQ)	3/1	<input type="checkbox"/>			
ENG 101 or 102: First-Year Composition OR ENG 105: Advanced First-Year Composition** OR ENG 107 or 108: English for Foreign Students	3	<input type="checkbox"/>		Grade of C	
TERM THREE: 31-45 CREDIT HOURS					
BME 235: Physiology for Engineers	4	<input type="checkbox"/>		Grade of C	<ul style="list-style-type: none"> • Complete PHY 131 & 132 • Complete First Year Composition requirement: ENG 101 & 102 or ENG 107 & 108 or ENG 105
PHY 131/132: University Physics II Electricity and Magnetism/Laboratory II (SQ)	3/1	<input type="checkbox"/>			
CHM 233/237: General Organic Chemistry I/Laboratory I	3/1	<input type="checkbox"/>			
CSE 100: Principles of Programming with C++ (CS)	3	<input type="checkbox"/>			
TERM FOUR: 46-60 CREDIT HOURS					
BME 200: Conservation Principles in Bioengineering	3	<input type="checkbox"/>		Grade of C	<ul style="list-style-type: none"> • Complete BME 200, 235 each with a minimum grade of "C"
EEE 202: Circuits I	4	<input type="checkbox"/>			
MAE 212: Engineering Mechanics	4	<input type="checkbox"/>			
MAT 275: Modern Differential Equations (MA)	3	<input type="checkbox"/>			
CHM 234/238: General Organic Chemistry II/Laboratory II OR Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	4 or 3	<input type="checkbox"/>			
TERM FIVE: 61-75 CREDIT HOURS					
# BME 318: Biomaterials	4	<input checked="" type="checkbox"/>		Grade of C	# Designates Major Course: A minimum cumulative GPA of 2.0 required.
# BME 350: Signals and Systems for Bioengineering	3	<input checked="" type="checkbox"/>		Grade of C	
# CHM 341: Elementary Physical Chemistry	3	<input checked="" type="checkbox"/>			
# MAT 343: Applied Linear Algebra	3	<input checked="" type="checkbox"/>			
Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>			
TERM SIX: 76-90 CREDIT HOURS					
# BME 300: Bioengineering Product Design	3	<input checked="" type="checkbox"/>		Grade of C	# Designates Major Course: A minimum cumulative GPA of 2.0 required.
# BME 331: Bioengineering Transport Phenomena	3	<input checked="" type="checkbox"/>		Grade of C	
# BME 370: Microcomputer Applications in Bioengineering	3	<input checked="" type="checkbox"/>		Grade of C	
CHM 234/238: General Organic Chemistry II/Laboratory II OR Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H) if CHM 234/238 completed	4 or 3	<input type="checkbox"/>			
# IEE 380: Probability and Statistics for Engineering Problem Solving	3	<input type="checkbox"/>			
TERM SEVEN: 91-105 CREDIT HOURS					
# BME 413: Biomedical Instrumentation (BME 413 + 423 = L)	3	<input checked="" type="checkbox"/>		Grade of C	# Designates Major Course: A minimum cumulative GPA of 2.0 required.
# BME 417: Biomedical Engineering Capstone Design I (L)	4	<input checked="" type="checkbox"/>		Grade of C	
# BME 423: Biomedical Instrumentation Laboratory	1	<input checked="" type="checkbox"/>		Grade of C	
# BME 434: Applications of Bioengineering OR # BME 416: Biomechanics OR # BME 419: Biocontrol Systems	3	<input checked="" type="checkbox"/>		Grade of C	
Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>			
TERM EIGHT: 106-120 CREDIT HOURS					
# BME 490: Biomedical Engineering Capstone Design II	4	<input checked="" type="checkbox"/>		Grade of C	# Designates Major Course: A minimum cumulative GPA of 2.0 required.
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input checked="" type="checkbox"/>			
# Technical Elective	1	<input checked="" type="checkbox"/>		Grade of C	
UD Humanities, Fine Arts & Design (HU) OR Social Behavioral Science (SB)	3	<input checked="" type="checkbox"/>			

Graduation Requirements Summary:

Total Hours Regular Curriculum (120)	Total Hrs at ASU (30 min)	Hrs Resident Credit for Academic Recognition (56 min)	Major GPA (2.000 Min. CUM GPA)	Total UD Hrs (45 min)	Total Comm. College Hrs. (64 Max)

General University Requirements: Legend

- General Studies Core Requirements:
 - Literacy and Critical Inquiry (L)
 - Mathematical Studies (MA)
 - Computer/Statistics/Quantitative applications (CS)
 - Humanities, Fine Arts, and Design (HU)
 - Social and Behavioral Sciences (SB)
 - Natural Science-Quantitative (SQ)
 - Natural Science-General (SG)
- General Studies Awareness Requirements
 - Cultural Diversity in the US (C)
 - Global Awareness (G)
 - Historical Awareness (H)
- First-Year Composition

Additional Notes: