



Associate in Science (AS) Degree
MCC/ASU Fulton Bioengineering Advisement Flow Chart
2009-2010 Catalog Year

<u>First Year Composition</u>	<u>Chem & Bio Requirements</u>	<u>Physics Requirements</u>	<u>Mathematics Requirements</u>	<u>Engineering Requirements</u>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> FYC ENG 101 or 107 First-Year Comp (3) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> FYC ENG 102 or 108 First-Year Comp (3) Completed: _____ </div>	<div style="text-align: center; padding: 5px;"> Program Prerequisites ↓ </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> CHM 130/130LL General Chem I (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> CHM 151/151LL General Chem I (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> CHM 152/152LL General Chem II (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> CHM 230/230LL Organic Chemistry (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> BIO 182 General Biology I (4) Completed: _____ </div>	<div style="text-align: center; padding: 5px;"> Program Prerequisites ↓ </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> PHY 111 General Physics I (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> PHY 112 General Physics 2 (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> SQ PHY 121 Univ Physics I (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> SQ PHY 131 Univ Physics II (4) Completed: _____ </div>	<div style="text-align: center; padding: 5px;"> Program Prerequisites ↓ </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> MAT 150, 151 or 152 College Algebra (3) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> MAT 182 or 187 Trig or PreCalc (3) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> MA MAT 221 Calculus I (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> MAT 231 Calculus II (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> MAT 241 Calculus III (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> MAT 262 Diff Equations (3) Completed: _____ </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> CSC 100 Intro to Comp Sci (3) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ECE 102 Engineering Anal (2) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ECE 103 Engineering Design (2) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ECE 214 Engineering Mech (4) Completed: _____ </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> EEE 202 Circuits & Devices (5) Completed: _____ </div>
<u>Social & Behavioral Sciences</u>				
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> SB _____ 3 Credits Completed: _____ </div> <div style="border: 1px solid black; padding: 5px;"> SB _____ 3 Credits Completed: _____ </div>				
<u>Humanities and Fine Arts</u>				
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> HU _____ 3 Credits Completed: _____ </div> <div style="border: 1px solid black; padding: 5px;"> HU _____ 3 Credits Completed: _____ </div>	<p>Note: Students who have not completed high school chemistry or completed high school chemistry more than two years prior to enrolling in CHM 151 should take CHM 130/130LL.</p>	<p>Note: Students who have not completed high school physics or completed high school physics more than two years prior to enrolling in PHY 121 should take PHY 111.</p>		
<u>Reading and Communication</u>				
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Oral Communication COM 230 (0-3 Credits) Completed: _____ </div> <div style="border: 1px solid black; padding: 5px;"> Critical Reading CRE 101 (0-3 Credits) Completed: _____ </div>				

Course Subject and Title (courses in bold/shading are critical)	Hrs.	Upper Division	Completed ATP: <input type="checkbox"/> Yes <input type="checkbox"/> No		Completed AGEC: <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 MAT 265 with a minimum grade of "C" Complete 2 of: BME 111& 112 OR BIO 188; CHM 114 or 116, each with a minimum grade of "C"; BME 100 An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses ASU Math Placement Exam score determines placement in Mathematics course * CHM 113 is a prerequisite and does not apply towards degree credit ** If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
BME 100: Introduction to Bioengineering OR BME 111/112: Engineering Perspectives on Biological Systems/Laboratory or BIO 188: General Biology II (SQ)	2 or 4	<input type="checkbox"/>		Grade of C in BME 111/112	
CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II *	4	<input type="checkbox"/>		Grade of C	
MAT 265: Calculus for Engineers I (MA)	3	<input type="checkbox"/>		Grade of C	
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 BME 111/112: Engineering Perspectives on Biological Systems/Laboratory or BIO 188: General Biology II (SQ)	2 or 4	<input type="checkbox"/>		Grade of C in BME 111/112	<ul style="list-style-type: none"> Complete ASU101-FSE Complete BME 100 Complete BME 111& 112 with a minimum grade of "C" or BIO 188 Complete CHM 114 or 116 with a minimum grade of "C" Complete MAT 266 with a minimum grade of "C" Complete PHY 121/122
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 MAT 267; PHY 131, 132, each with a minimum grade of "C" Complete First-Year Composition requirement: ENG 101 & 102 or ENG 107 & 108 or ENG 105
MAT 267: Calculus for Engineers III	3	<input type="checkbox"/>		Grade of C	
PHY 131/132: University Physics Electricity and Magnetism II/Laboratory II (SQ)	3/1	<input type="checkbox"/>		Grade of C	
CHM 231/235: Elementary Organic Chemistry/Laboratory or 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 of 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"/>		Grade of C	
MAE 212: Engineering Mechanics	4	<input type="checkbox"/>		Grade of C	
MAT 275: Modern Differential Equations (MA)	3	<input type="checkbox"/>		Grade of C	
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>			
TERM FIVE: 61-75 CREDIT HOURS					
# BME 318: Biomaterials	4	<input checked="" type="checkbox"/>			# Designates Major Course: A minimum cumulative GPA of 2.0 required.
# BME 350: Signals and Systems for Bioengineering	3	<input checked="" type="checkbox"/>			
# CHM 341: Elementary Physical Chemistry	3	<input checked="" type="checkbox"/>		Grade of C	
# MAT 343: Applied Linear Algebra	3	<input checked="" type="checkbox"/>			
# IEE 380: Probability and Statistics for Engineering Problem Solving (CS)	3	<input checked="" 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"/>			
# BME 370: Microcomputer Applications in Bioengineering	4	<input checked="" type="checkbox"/>			
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input 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 SEVEN: 91-105 CREDIT HOURS					
# BME 413: Biomedical Instrumentation(BME 413 & 423 = L)	3	<input checked="" type="checkbox"/>			# 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"/>			
# BME 434: Applications of Bioengineering OR # BME 416: Biomechanics OR # BME 419: Biocontrol Systems	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"/>			

Course Subject and Title <i>(courses in bold/shading are critical)</i>	Hrs.	Upper Division	Transfer Course/Grade	Minimum Grade if Required	Additional Critical Requirement Notes
TERM EIGHT: 106-120 CREDIT HOURS					
# BME 490: Biomedical Engineering Capstone Design II	4	<input checked="" type="checkbox"/>			# Designates Major Course: A minimum cumulative GPA of 2.0 required.
# Technical Elective	3	<input checked="" type="checkbox"/>			
# Technical Elective	2	<input checked="" type="checkbox"/>			
UD Humanities, Fine Arts & Design (HU) OR Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input checked="" type="checkbox"/>			

Graduation Requirements Summary:

Total Hours Regular Curriculum (120)	Total UD Hrs (45 min)	Total Hrs at ASU (30 min)	Cumulative GPA (2.00 minimum)	Major GPA (2.00 minimum GPA)	Hrs Resident Credit for Academic Recognition (56 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: