



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

First Year Composition	Chemistry Requirements	Physics Requirements	Mathematics Requirements	Engineering Requirements
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>FYC</b> ENG 101 or 107 First-Year Comp (3) Completed: _____         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> <b>FYC</b> ENG 102 or 108 First-Year Comp (3) Completed: _____         </div>	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 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> <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;">           CHM 152/152LL General Chem II (4) Completed: _____         </div>	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Program Prerequisites</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           PHY 111 General Physics I (4) Completed: _____         </div> </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;"> <b>SQ</b> PHY 121 Univ Physics I (4) Completed: _____         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> <b>SQ</b> PHY 131 Univ Physics II (4) Completed: _____         </div>	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 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> <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;"> <b>MA</b> 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;">           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 111 Bioengineering Sys (3) 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;">           ECE 215 Mech of Materials (3) Completed: _____         </div>
<b>Social &amp; Behavioral Sciences</b>	<p><b>Note:</b> 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><b>Note:</b> 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>		
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>SB</b> _____ 3 Credits Completed: _____         </div> <div style="border: 1px solid black; padding: 5px;"> <b>SB</b> _____ 3 Credits Completed: _____         </div>				
<b>Humanities and Fine Arts</b>				
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>HU</b> _____ 3 Credits Completed: _____         </div> <div style="border: 1px solid black; padding: 5px;"> <b>HU</b> _____ 3 Credits Completed: _____         </div>				
<b>Reading and Communication</b>				
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>Oral Communication</b> COM 230 (0-3 Credits) Completed: _____         </div> <div style="border: 1px solid black; padding: 5px;"> <b>Critical Reading</b> CRE 101 (0-3 Credits) Completed: _____         </div>				

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	Additional Critical Requirement Notes
			Transfer Course/Grade	Minimum Grade if Required		
<b>TERM ONE: 0-15 CREDIT HOURS</b>						
ASU 101-FSE: The ASU Experience	1	<input type="checkbox"/>				<ul style="list-style-type: none"> <li>Complete MAT 265 with a minimum grade of "C"; CHM 113 or 114; MSE 100.</li> <li>ASU 101-FSE should be completed first semester.</li> <li>Minimum CUM ASU 2.0 GPA required</li> <li>An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses</li> <li>ASU Math Placement Exam score determines placement in Mathematics course</li> <li>**If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.</li> <li># Designates Major Course: A minimum cumulative GPA of 2.0 required.</li> </ul>
<b>CHM 114: General Chemistry for Engineers (SQ) OR CHM 113/116 : General Chemistry I/General Chemistry II (SQ)</b>	4	<input type="checkbox"/>				
<b>MAT 265: Calculus for Engineers I</b>	3	<input type="checkbox"/>			Grade of C	
<b># MSE 100: Introduction of Materials Engineering</b>	2	<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	
Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>				
<b>TERM TWO: 16-30 CREDIT HOURS</b>						
<b>MAT 266: Calculus for Engineers II</b>	3	<input type="checkbox"/>			Grade of C	<ul style="list-style-type: none"> <li>MSE 250 must be completed by the end of the 4<sup>th</sup> semester with a minimum grade of "C"</li> <li>CHM 116 must be completed for those who took CHM 113</li> <li>Complete MAT 266 with a minimum grade of "C"; and PHY 121 &amp; 122</li> <li>Minimum CUM ASU 2.0 GPA required</li> <li># Designates Major Course: A minimum cumulative GPA of 2.0 required.</li> </ul>
<b># MSE 250: Structure and Properties of Materials</b>	3	<input type="checkbox"/>			Grade of C	
<b>PHY 121/122: University Physics I/Laboratory I (SQ)</b>	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	
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>				
<b>MAT 267: Calculus for Engineers III</b>	3	<input type="checkbox"/>			Grade of C	
<b>TERM THREE: 31-45 CREDIT HOURS</b>						
<b>PHY 131/132: University Physics II Electricity and Magnetism/Laboratory II (SQ)</b>	3/1	<input type="checkbox"/>				<ul style="list-style-type: none"> <li>Complete MAT 267 with a minimum grade of "C"; and PHY 131 &amp; 132</li> <li>Complete First-Year Composition requirement: ENG 101 &amp; 102 OR ENG 107 &amp; 108 or ENG 105</li> <li>Minimum CUM ASU 2.0 GPA required</li> <li># Designates Major Course: A minimum cumulative GPA of 2.0 required.</li> </ul>
BME 111: Engineering Perspectives on Biological Systems	3	<input type="checkbox"/>				
<b>#MSE 215: Materials Synthesis</b>	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"/>				
<b>MAT 275: Modern Differential Equations (MA)</b>	3	<input type="checkbox"/>			Grade of C	
<b>PHY 131/132: University Physics II Electricity and Magnetism/Laboratory II (SQ)</b>	3/1	<input type="checkbox"/>				
<b>TERM FOUR: 46-60 CREDIT HOURS</b>						
<b>MAT 275: Modern Differential Equations (MA)</b>	3	<input type="checkbox"/>				<ul style="list-style-type: none"> <li>Minimum CUM ASU 2.0 GPA required</li> <li>MSE 250 must be completed with a minimum grade of "C".</li> <li># Designates Major Course: A minimum cumulative GPA of 2.0 required.</li> </ul>
<b>MAT 343: Applied Linear Algebra</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 211: Introduction to Mechanics of Materials</b>	3	<input type="checkbox"/>				
IEE 220: Business/Industrial Engineering	3	<input type="checkbox"/>				
<b># Advanced Science Elective</b>	3	<input checked="" type="checkbox"/>				
<b>MAT 343: Applied Linear Algebra</b>	3	<input checked="" type="checkbox"/>				
<b>TERM FIVE: 61-75 CREDIT HOURS</b>						
Math or Science Elective	3	<input type="checkbox"/>				# Designates Major Course: A minimum cumulative GPA of 2.0 required.
<b># MSE 315: Mathematical and Computer Methods in Materials (CS)</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 330: Thermodynamics of Materials</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 355: Materials Structure and Microstructure</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 356: Materials Structure and Microstructure Laboratory</b>	1	<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"/>				
<b>TERM SIX: 76-90 CREDIT HOURS</b>						
<b># MSE 335: Materials Kinetics and Processing</b>	3	<input checked="" type="checkbox"/>				# Designates Major Course: A minimum cumulative GPA of 2.0 required.
<b># MSE 358: Introduction to Electronic, Magnetic, &amp; Optical Properties</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 420: Physical Metallurgy</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 421: Physical Metallurgy Laboratory</b>	1	<input checked="" type="checkbox"/>				
<b># MSE 450: Introduction to Materials Characterization</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 451: Introduction to Materials Characterization Laboratory</b>	1	<input checked="" type="checkbox"/>				
<b>TERM SEVEN: 91-105 CREDIT HOURS</b>						
<b># MSE 440: Mechanical Properties of Solids</b>	3	<input checked="" type="checkbox"/>				# Designates Major Course: A minimum cumulative GPA of 2.0 required.
<b># MSE 470: Polymers and Composites</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 471: Introduction to Ceramics</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 482: Materials Engineering Design (L)</b>	3	<input checked="" type="checkbox"/>				
<b># Advanced Science Elective</b>	3	<input checked="" type="checkbox"/>				
<b># MSE 482: Materials Engineering Design (L)</b>	3	<input checked="" type="checkbox"/>				
<b>TERM EIGHT: 106-120 CREDIT HOURS</b>						
<b># MSE 490: Capstone Design Project (L)</b>	3	<input checked="" type="checkbox"/>				# Designates Major Course: A minimum cumulative GPA of 2.0 required.
<b># MSE Technical Elective</b>	3	<input type="checkbox"/>				
<b># MSE Technical Elective</b>	3	<input type="checkbox"/>				
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 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:**