**Prerequisite Courses**

**MATH SEQUENCE:**

- MAT 082 (3) Basic Mathematics
- MAT 092/091 (3)/4 Introductory
- MAT 121 (3) Intermediate Algebra
- MAT 151 (4) College Algebra
- MAT 182 (3) Trigonometry
- MAT 187 (5) Pre-Calculus

These courses maybe taken together

**PHYSICS SEQUENCE:**

- PHY 111/111 LL and PHY 112/112LL or one year High School Physics

**ENGINEERING CORE:**

- ECE 103 AB (2) Intro to Engineering: Problem Solving and Design
- ECE 102 AA (2) Engineering Analysis Tools and Techniques
- ECE 101 (3) First year composition I
- ECE 102 (3) First year composition II
- ECE 214 (3) Engineering Mechanics Which is equivalent to: ECE 211 (statics) + ECE 212 (Dynamics)
- ECE 202 (5) Circuit Devices I
- CHM 230 and 230 LL or CHM 235 and 235 LL
- OR
- BIO 181 General Biology

**ENGLISH SEQUENCE:**

- ENG 061 Basic Writing Skills
- ENG 071 Fundamentals of Writing
- ENG 101 (3) First year composition I
- ENG 102 (3) First year composition II

**SCIENCE SEQUENCE:**

- CHM 130/130 LL or one year High School Chemistry
- CHM 151/LL (4) General Chemistry I
- CHM 152/LL (4) General Chemistry II
- OR
- BIO 181 General Biology
- BIO 181/111 LL (4) Gen Bio
- BIO 1 and 201 LL Human Anatomy and Physiology

**Required Courses**

**1st Semester**

- MAT 220/221 (4/5) Calculus I
- PHY 121/121 LL (4/5) University Physics I: Mechanics (Lect/Lab)
- ECE 103 AB (2)
- CHM 151/LL (4)
- BIO 181 General Biology

**2nd Semester**

- MAT 230/231 (4/5) Calculus II
- PHY 131/131 LL (4) University Physics II: Electricity & Magnetism (Lect/Lab)
- ECE 102 AA (2)
- CHM 152/LL (4)
- BIO 181/111 LL (4)

**1st Semester**

- MAT 240/241 (4/5) Calculus III
- PHY 131/131 LL (4)
- ECE 102 AA (2)
- CHM 230 and 230 LL or CHM 235 and 235 LL
- OR
- BIO 181 General Biology
- BIO 181/111 LL (4)

**2nd Semester**

- MAT 276 (4) Modern Differential Equations
- PHY 131/131 LL (4)
- ECE 202 (5)
- CHM 230 and 230 LL or CHM 235 and 235 LL
- OR
- BIO 181 General Biology
- BIO 181/111 LL (4)

*MAT 187 is a refresher course for those students who have taken college algebra and trigonometry.
### Course Subject and Title (courses in bold/shading are critical)

<table>
<thead>
<tr>
<th>ASU hrs</th>
<th>Applicable MCCCD course prefix &amp; number(s)</th>
<th>MCCCD hrs</th>
</tr>
</thead>
</table>

### TERM ONE: 0-16 CREDIT HOURS

- **ASU 101-MSE:** The ASU Experience  
  - ASU hrs: 1  
  - Applicable MCCCD course prefix & number(s): (content included in Intro to Engineering)  
  - MCCCD hrs: -  

**Notes:**  
- ASU 101-MSE should be completed first semester.
- CHM 113 is a prerequisite and does not apply toward degree credit.
- **If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.**

### TERM TWO: 17 CREDIT HOURS

- **BIO 181 + lab**  
  - ASU hrs: 4  
  - Applicable MCCCD course prefix & number(s): BIO 181  
  - MCCCD hrs: 4  

- **MAT 265:** Calculus for Engineers I  
  - ASU hrs: 3  
  - Applicable MCCCD course prefix & number(s): MAT 265  
  - MCCCD hrs: 3  

- **ENG 102:** First-Year Composition OR  
  - ASU hrs: 3  
  - Applicable MCCCD course prefix & number(s): ENG 102  
  - MCCCD hrs: 3  

**Notes:**  
- **If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.**

### TERM THREE: 31-45 CREDIT HOURS

- **BME 202/202L**  
  - ASU hrs: 3  
  - Applicable MCCCD course prefix & number(s): BIO 201, BIO201L, BIO202, BIO202L  
  - MCCCD hrs: 3

- **MAT 267:** Calculus for Engineers III  
  - ASU hrs: 3  
  - Applicable MCCCD course prefix & number(s): MAT 267  
  - MCCCD hrs: 3

- **PHY 121/122:** University Physics I/ Laboratory I (SQ)  
  - ASU hrs: 3/1  
  - Applicable MCCCD course prefix & number(s): PHY 115 or PHY 121  
  - MCCCD hrs: 5 or 4

**Notes:**  
- **If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.**

### TERM FOUR: 46-60 CREDIT HOURS

- **MAE 212**  
  - ASU hrs: 4  
  - Applicable MCCCD course prefix & number(s): ECE214 Engineering Mechanics  
  - MCCCD hrs: 4

- **MAT 275:** Modern Differential Equations (MA)  
  - ASU hrs: 3  
  - Applicable MCCCD course prefix & number(s): MAT 276 OR MAT 277  
  - MCCCD hrs: 4 or 3

- **ECE 202 Circuits I**  
  - ASU hrs: 4  
  - Applicable MCCCD course prefix & number(s): ECE 202 Circuits I  
  - MCCCD hrs: 5

**Notes:**  
- **If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.**

### TOTAL ASU HOURS: 63

**Notes:**  
- If all topics listed above are completed at MCCCD prior to transfer to ASU, you will have completed 63 out of 64 hours allowable for a transfer student. A minimum of 56 (120-64) hours that are applicable to the BSE degree must be taken at ASU.

**Note:** You may need to take some BME courses at ASU while attending GCC.

### 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)

### Contact Information

**Harrington Bioengineering Program | ECG 334**

sbhse@asu.edu 4809653028
2014-2015 Catalog Year - MAPP
Biomedical Engineering (BSE)

ASU Major

Biomedical Engineering, BSE - Ira A. Fulton Schools of Engineering

Special Requirements

Completion of the Maricopa to ASU Engineering Pathway and all special requirements meets ASU major map requirements and guarantees admission to the Biomedical Engineering BSE degree program. Note: Engineering Core Courses should be completed prior to enrolling in any additional lower division requirement courses. While requirements listed will meet ASU degree requirements, only 64 credit hours are transferable to ASU. Special Requirements: 3.0 transfer GPA as calculated by ASU for admissions. All courses must be completed with a grade of "C" or better.

Maricopa Community College District Course Requirements

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Pathway AGEC-S Program</th>
<th>ASU Min</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Credits</td>
<td>Reqs</td>
<td>Trk</td>
</tr>
<tr>
<td><strong>Engineering Core Courses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 101: First-Year Composition</td>
<td>SUN</td>
<td>3(3 ASU)</td>
<td>⬤</td>
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<tr>
<td>ENG 1101 OR</td>
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<td></td>
</tr>
<tr>
<td>ENG 107: First-Year Composition for ESL</td>
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<tr>
<td>ENG 102: First-Year Composition</td>
<td>SUN</td>
<td>3(3 ASU)</td>
<td>⬤</td>
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<tr>
<td>ENG 1102 OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 108: First-Year Composition for ESL</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ECE 102: Engineering Analysis Tools</td>
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<td>4(2 ASU)</td>
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</tr>
<tr>
<td>An AND ECE 103: Engineering Problem Solving</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SUN</td>
<td>EGR 1102</td>
<td></td>
<td></td>
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<tr>
<td>MAT 221/220: Calculus With Analytic Geometry I</td>
<td></td>
<td>4-5(3 ASU)</td>
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<tr>
<td>MAT 231/230: Calculus With Analytic Geometry II</td>
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<td>4-5(3 ASU)</td>
<td>⬤</td>
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<tr>
<td>MAT 241/240: Calculus With Analytic Geometry III</td>
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<td>4-5(3 ASU)</td>
<td>⬤</td>
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<tr>
<td>PHY 121: University Physics I: Mechanics SUN</td>
<td>PHY 1121 B</td>
<td>4(4 ASU)</td>
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<tr>
<td>PHY 131: University Physics II: Electricity and Magnetism SUN</td>
<td>PHY 1131 B</td>
<td>4(4 ASU)</td>
<td>⬤</td>
</tr>
<tr>
<td>MAT 277/276: Modern Differential Equations</td>
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<td>3-4(3 ASU)</td>
<td>⬤</td>
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<tr>
<td>CHM 151: General Chemistry I AND Laboratory SUN</td>
<td>CHM 1151</td>
<td>4(0 ASU)</td>
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<tr>
<td>CHM 152: General Chemistry II AND Laboratory SUN</td>
<td>CHM 1152</td>
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<td>⬤</td>
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<tr>
<td>Humanities and Fine Arts AND</td>
<td>3(3 ASU)</td>
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</table>
Awareness Area

| Social and Behavioral Sciences AND Awareness Area | 3(3 ASU) | C |

### Additional Lower Division Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>CHM 230: Fundamental Organic Chemistry</td>
<td>4(4 ASU)</td>
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<tr>
<td>CHM 230LL: Fundamental Organic Chemistry</td>
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<tr>
<td>CHM 235: General Organic Chemistry I</td>
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<tr>
<td>CHM 235LL: General Organic Chemistry I</td>
<td>3(3 ASU)</td>
<td>C</td>
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<tr>
<td>CSC 100: Introduction To Computer Science</td>
<td>3(3 ASU)</td>
<td>C</td>
</tr>
<tr>
<td>ECE 111: Bioengineering Systems</td>
<td>3(3 ASU)</td>
<td>C</td>
</tr>
<tr>
<td>ECN 211: Macroeconomic Principles</td>
<td>0-3(3 ASU)</td>
<td>C</td>
</tr>
<tr>
<td>ECN 212: Microeconomic Principles</td>
<td>0-3(3 ASU)</td>
<td>C</td>
</tr>
<tr>
<td>EEE 202: Circuits And Devices</td>
<td>5(4 ASU)</td>
<td>C</td>
</tr>
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</table>

**Required Credits**

| Required Credits | 62 |

Required Credits CGCC (62-73 Credits) Transfer to ASU (59 Credits) (less than the maximum allowable of 64 transfer credits)