## 2022 - 2023 Major Map

**Mechanical Engineering (Computational Mechanics), BSE**

School/College: Ira A. Fulton Schools of Engineering  
Location: Tempe campus  
ESMAECBSE

### Term 1 - 16 Credit Hours Critical course signified by *  
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<tr>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
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| 3 | C | • ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students.  
• FSE 100 is required for first-year students and should be completed the first semester. Non-first year students: see advisor for petitioning replacement electives.  
• If ENG 105 is taken, a 3 hour applicable elective must also be taken prior to graduation. See advisor.  
• Prep for success using the First-Year Student Guide.  
• Join a Fulton community.  
• Explore engineering and technical professions. |

- **MAT 265: Calculus for Engineers I (MA)**  
- **ASU 101-MEE: The ASU Experience**  
- **CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)**  
- **ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition**  
- **FSE 100: Introduction to Engineering**  
- **Social-Behavioral Sciences (SB) AND Global Awareness (G)**  
- **Minimum 2.00 GPA ASU Cumulative.**  

Term hours subtotal: 16

### Term 2 - 16 Credit Hours Critical course signified by *  
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| 2 | C | • Create a Handshake profile.  
• Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center. |

- **MAT 242: Elementary Linear Algebra**  
- **MAT 266: Calculus for Engineers II (MA)**  
- **PHY 121: University Physics I: Mechanics (SQ)**  
- **ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition**  
- **MAE 215: Introduction to Programming in MATLAB**  
- **PHY 122: University Physics Laboratory I (SQ)**  
- **Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)**  
- **Complete ENG 101 OR ENG 105 OR ENG 107 course(s).**  
- **Minimum 2.00 GPA ASU Cumulative.**  

Term hours subtotal: 16

### Term 3 - 32 Credit Hours Critical course signified by *  
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<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
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<td>• Prep for success using the Sophomore Guide.</td>
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- **MAE 201: Mechanics of Particles and Rigid Bodies I: Statics**  
- **MAT 267: Calculus for Engineers III (MA)**

Term hours subtotal: 32
MAT 275: Modern Differential Equations (MA) 3 C  
PHY 131: University Physics II: Electricity and Magnetism (SQ) 3 C  
MAE 214: Computer-Aided Engineering I 1 C  
PHY 132: University Physics Laboratory II (SQ) 1 C  
Complete CHM 114 OR CHM 116 course(s).  
Complete First-Year Composition requirement.  
Minimum 2.00 GPA ASU Cumulative.  
Complete Mathematics (MA) requirement.

Term hours subtotal: 14

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<th>Term</th>
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<th>Minimum Grade</th>
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<tr>
<td><strong>Term 4 46 - 62 Credit Hours Critical course signified by ⭐</strong></td>
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| MAE 202: Mechanics of Particles and Rigid Bodies II: Dynamics | 3 | C | • Pursue an undergraduate research experience.  
| MAE 213: Mechanics of Materials | 3 | C | • Apply for internships.  
| MAE 241: Introduction to Thermodynamics | 3 | C | • Attend career fairs and events.  
| EEE 202: Circuits I | 4 | C | |
| MAE 384: Advanced Mathematical Methods for Engineers (CS) | 3 | C | |
| **Term hours subtotal:** | 16 | | |

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<tr>
<td><strong>Term 5 62 - 78 Credit Hours Necessary course signified by ⭐</strong></td>
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| MAE 242: Introduction to Fluid Mechanics | 3 | C | • Plan for success using the Junior Guide.  
| MEE 322: Structural Mechanics | 3 | C | • Network at student organization competitions or professional societies.  
| MEE 324: Structural Mechanics Laboratory | 1 | C | |
| MSE 250: Structure and Properties of Materials | 3 | C | |
| CSE 100: Principles of Programming with C++ (CS) OR CSE 110: Principles of Programming (CS) | 3 | C | |
| MAE 301: Applied Experimental Statistics | 3 | C | |
| **Term hours subtotal:** | 16 | | |

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<tr>
<td><strong>Term 6 78 - 93 Credit Hours Necessary course signified by ⭐</strong></td>
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| MAE 318: System Dynamics and Control I | 4 | C | • Research and prepare for graduate school  
| MEE 342: Principles of Mechanical Design | 3 | C | • Apply for an engineering 4+1 program  
| MEE 323: Computer-Aided Engineering II | 2 | C | • Develop a professional profile online.  
| MEE 340: Heat Transfer | 3 | C | |
| PH 103: Principles of Sound Reasoning (L or HU) | 3 | C | |
| Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s). | | | |
| **Term hours subtotal:** | 15 | | |

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<tr>
<td><strong>Term 7 93 - 108 Credit Hours Necessary course signified by ⭐</strong></td>
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</table>
| MEE 488: Mechanical Engineering Design I | 3 | C | • For additional information regarding Upper Division Computational Mechanics Technical Electives, please go to: Upper Division Computational Mechanics Technical Electives.  
| MAE 400: Engineering Profession (L) | 3 | C | • Plan for success using the Senior Guide.  
| Complete 2 courses: Upper Division Computational Mechanics Technical Elective | 6 | C | • Use Handshake to apply for full-time positions.  
| Social-Behavioral Sciences (SB) AND Historical Awareness (H) | 3 | | |
## Upper Division Computational Mechanics Technical Electives

- Upper Division Humanities, Arts and Design (HU)
- Upper Division Social-Behavioral Sciences (SB)

- By approval only:
  - MAE 484: Internship
  - MAE 492: Honors Directed Study
  - MAE 493: Honors Thesis (L)

For additional information about Upper Division Computational Mechanics Technical Electives, please go to: Upper Division Computational Mechanics Technical Electives.
Notes:

- First-Year Composition: All students are placed in ENG 101 unless submission of SAT, ACT, Accuplacer, IELTS, or TOEFL score, or college-level transfer credit or test credit equivalent to ASU’s first-year composition course(s), determine otherwise. Students on Polytechnic, Downtown Phoenix and West Campuses are encouraged to complete the Directed Self-Placement survey to choose the first-year composition option they believe best suits their needs. Visit: https://cisa.asu.edu/DSP
- Mathematics Placement Assessment score determines placement in first mathematics course.

General University Requirements Legend

- 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)

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 Studies Awareness Requirements:

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

First-Year Composition

General Studies designations listed on the major map are current for the 2022 - 2023 academic year.