### 2019 - 2020 Major Map

**Engineering (Automotive Systems), BSE**

**School/College:** Ira A. Fulton Schools of Engineering  
**Location:** Polytechnic campus

#### Term 1 0 - 16 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td><strong>ASU 101-TPS: The ASU Experience</strong></td>
</tr>
<tr>
<td><strong>EGR 101: Foundations of Engineering Design Project I</strong></td>
</tr>
<tr>
<td><strong>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</strong></td>
</tr>
<tr>
<td><strong>MAT 265: Calculus for Engineers I (MA)</strong></td>
</tr>
<tr>
<td><strong>Humanities, Arts and Design (HU) AND Historical Awareness (H)</strong></td>
</tr>
<tr>
<td><strong>Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)</strong></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Notes:**
- ASU 101 is required of all freshman students; FSE 310 is required for all new transfer students; LIA 294 is highly recommended for all new veteran students.
- An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses.
- Mathematics Placement Assessment score determines placement in mathematics course.
- Prep for success using the *Freshman Guide*.
- Join a Fulton community.
- Explore engineering and technical professions.

#### Term 2 16 - 32 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>EGR 102: Foundations of Engineering Design Project II</strong></td>
</tr>
<tr>
<td><strong>CHM 113: General Chemistry I (SQ)</strong></td>
</tr>
<tr>
<td><strong>EGR 104: Critical Inquiry in Engineering (L)</strong></td>
</tr>
<tr>
<td><strong>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</strong></td>
</tr>
<tr>
<td><strong>MAT 266: Calculus for Engineers II (MA)</strong></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Notes:**
- Create a *Handshake* profile.
- Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
- Complete ENG 101 OR ENG 105 OR ENG 107 course(s).
- Complete MAT 265 course(s).

#### Term 3 32 - 48 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>EGR 201: Use-Inspired Design Project I</strong></td>
</tr>
<tr>
<td><strong>EGR 216: Engineering Electrical Fundamentals</strong></td>
</tr>
<tr>
<td><strong>EGR 218: Materials and Manufacturing Processes</strong></td>
</tr>
<tr>
<td><strong>MAT 267: Calculus for Engineers III (MA)</strong></td>
</tr>
<tr>
<td><strong>PHY 121: University Physics I: Mechanics (SQ)</strong></td>
</tr>
<tr>
<td><strong>PHY 122: University Physics Laboratory I (SQ)</strong></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Notes:**
- Prep for success using the *Sophomore Guide*.
- Consult the *Resume, Presentation, and Resource Library* for tips on how to create a technical resume, job shadow, do informational interviews and mentor with alumni.
- Complete Mathematics (MA) requirement.

#### Term 4 48 - 63 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>EGR 202: Use-Inspired Design Project II</strong></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Notes:**
EGR 217: Engineering Mechanics Fundamentals 3 C
EGR 219: Computational Modeling of Engineering Systems 3 C
EGR 280: Engineering Statistics (CS) 3 C
MAT 275: Modern Differential Equations (MA) 3 C

- Complete EGR 216 AND EGR 217 AND EGR 218 AND EGR 219 course(s).
- Complete MAT 267 course(s).

Term hours subtotal: 15

Term 5 63 - 75 Credit Hours Necessary course signified by ★ | Hours | Minimum Grade |
--- | --- | --- |
EGR 306: Automotive Systems Project I | 3 | C |
EGR 340: Engineering Thermo-Fluids I | 3 | C |
PHY 321: Vector Mechanics and Vibration | 3 |
Secondary Focus Area | 3 |
Term hours subtotal: 12

- Students are encouraged to enroll in EGR 394: Intro to Concepts in Automotive Engineering as part of the secondary focus.
- A secondary focus area is a group of courses comprising of 12 or more credit hours (at least 6 must be at the upper division level) which form a coherent theme. For example, all courses may share a common subject prefix. Students work with an academic success specialist to identify their secondary focus area.
- Plan for success using the Junior Guide.
- Network at student organization competitions or professional societies.

Term 6 75 - 90 Credit Hours Necessary course signified by ★ | Hours | Minimum Grade |
--- | --- | --- |
EGR 316: Automotive Systems Project II | 3 | C |
EGR 363: Automotive Powertrains and Thermal Systems | 3 | C |
HST 318: History of Engineering ((L or SB) & G) | 3 |
MAT 343: Applied Linear Algebra | 3 |
Secondary Focus Area | 3 |
Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s). | |
Term hours subtotal: 15

- A secondary focus area is a group of courses comprising of 12 or more credit hours (at least 6 must be at the upper-division level) which form a coherent theme. For example, all courses may share a common subject prefix. Students work with an academic success specialist to identify their secondary focus area.
- Research and prepare for graduate school.
- Apply for an engineering 4+1 program.
- Develop a professional profile online.

Term 7 90 - 105 Credit Hours Necessary course signified by ★ | Hours | Minimum Grade |
--- | --- | --- |
EGR 401: Professional Design Project I (L) | 3 | C |
EGR 330: Design of Electrical Systems OR EGR 432: Engineering Thermo-Fluids II | 3 |
Upper Division Secondary Focus Area | 3 |
Science Elective | 3 |
Humanities, Arts and Design (HU) | 3 |
Term hours subtotal: 15

- A secondary focus area is a group of courses comprising of 12 or more credit hours (at least 6 must be at the upper division level) which form a coherent theme. For example, all courses may share a common subject prefix. Students work with an academic success specialist to identify their secondary focus area.
- Students must select 4 hours of Science Elective from the listed courses.
- Plan for success using the Senior Guide.
- Use Handshake to apply for full-time positions.
- Complete an in-person or virtual practice interview.
General Studies designations listed on the major map are current for the 2019 - 2020 academic year.

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 2019 - 2020 academic year.

<table>
<thead>
<tr>
<th>Term 8 105 - 120 Credit Hours Necessary course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>✮ EGR 402: Professional Design Project II</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>EGR 463: Vehicle Electrical Systems and Hybrid Systems</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGR 465: Ground Vehicle Dynamics</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Secondary Focus Area</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)</td>
<td>3</td>
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<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 15

Hide Course List(s)/Track Group(s)

Science Elective
- BIO 181: General Biology I (SQ)
- CHM 116: General Chemistry II (SQ)
- GLG 101: Introduction to Geology I (Physical) (SQ)
- GLG 103: Introduction to Geology I-Laboratory (SQ)
- PHY 131: University Physics II: Electricity and Magnetism (SQ)
- PHY 132: University Physics Laboratory II (SQ)

General University Requirements Legend

General Studies Core Requirements:
- 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)

A secondary focus area is a group of courses comprising of 12 or more credit hours (at least 6 must be at the upper division level) which form a coherent theme. For example, all courses may share a common subject prefix. Students work with an academic success specialist to identify their secondary focus area.

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