










2014 - 2015 Major Map
Engineering (Mechanical Engineering Systems), BSE






College of Technology and Innovation
Polytechnic campus
TSEGRMEBSE

| Term 1 | 0 - 14 Credit Hours | Critical course signified by  | Hours | Minimum Grade | Notes |
|---|--|--|-------|---------------|--|
|  | CTI 101: Success in Technology & Innovation | | 1 | | <ul style="list-style-type: none"> An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses ASU Math Placement Exam score determines placement in Mathematics course CTI 101 First Year Seminar required of all freshman students |
|  | EGR 101: Foundations of Engineering Design Project I | | 3 | | |
|  | MAT 265: Calculus for Engineers I (MA) | | 3 | C | |
| | CHM 113: General Chemistry I (SQ) | | 4 | | |
| | ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | | 3 | C | |
| Term hours subtotal: | | | 14 | | |





| Mesa Community College | |
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| Course | Hours |
| CHM 151 and CHM 151LL | 4 |
| ECE 102 and ECE 103 | 2 2 |
| MAT 221 or MAT 220 | 4 5 |
| ENG 101 or ENG 102 OR ENG 107 or ENG 108 | 3 |

| Term 2 | 15 - 29 Credit Hours | Critical course signified by  | Hours | Minimum Grade | Notes |
|---|--|--|-------|---------------|--|
|  | EGR 102: Foundations of Engineering Design Project II | | 3 | | <ul style="list-style-type: none"> Please note that both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit. |
|  | MAT 266: Calculus for Engineers II (MA) | | 3 | C | |
|  | PHY 121: University Physics I: Mechanics (SQ) | | 3 | | |
| | EGR 104: Critical Inquiry in Engineering (L) | | 3 | | |
| | ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | | 3 | C | |
|  | Complete ENG 101 OR ENG 105 OR ENG 107 course(s). | | | | |
| Term hours subtotal: | | | 15 | | |

| Mesa Community College | |
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| Course | Hours |
| MAT 231 or MAT 230 | 4 5 |
| PHY 121 | 4 |
| ENG 101 or ENG 102 OR ENG 107 or ENG 108 | 3 |

| Term 3 | 30 - 44 Credit Hours | Critical course signified by  | Hours | Minimum Grade | Notes |
|---|--|--|-------|---------------|-------|
|  | EGR 201: Use-Inspired Design Project I | | 3 | | |
|  | EGR 216: Engineering Electrical Fundamentals | | 3 | | |
|  | EGR 218: Materials and Manufacturing Processes | | 3 | | |
|  | MAT 267: Calculus for Engineers III (MA) | | 3 | C | |
| | EGR 280: Engineering Statistics (CS) | | 3 | | |
| | Complete Mathematics (MA) requirement. | | | | |
| Term hours subtotal: | | | 15 | | |

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| Course | Hours |
| MAT 241 or MAT 240 | 4 5 |

| Term 4 | 45 - 59 Credit Hours | Critical course signified by  | Hours | Minimum Grade | Notes |
|---|---|--|-------|---------------|-------|
|  | EGR 202: Use-Inspired Design Project II | | 3 | | |
|  | EGR 217: Engineering Mechanics Fundamentals | | 3 | | |
|  | EGR 219: Computational Modeling of Engineering Systems | | 3 | | |
| | MAT 275: Modern Differential Equations (MA) OR MAT 274: Elementary Differential Equations (MA) | | 3 | | |
| | Humanities, Fine Arts and Design (HU) | | 3 | | |
| | Complete MAT 267 course(s). | | | | |
| Term hours subtotal: | | | 15 | | |

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| Course | Hours |
| ECE 214 | 4 |
| MAT 277 | 3 |
| General Studies (HU-C OR HU-G OR HU-H) | 3 |

| Term 5 | 60 - 75 Credit Hours | Necessary course signified by  | Hours | Minimum Grade | Notes |
|---|---------------------------------------|---|-------|---------------|--|
|  | EGR 303: Mechanical Systems Project I | | 3 | | <ul style="list-style-type: none"> A secondary focus area is a group of courses comprising 12 or more |
|  | EGR 340: Engineering Thermo-Fluids I | | 3 | | |

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|--|----|
| BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG) OR CHM 116: General Chemistry II (SQ) OR GLG 101: Introduction to Geology I (Physical) (SQ & G) AND GLG 103: Introduction to Geology I-Laboratory (SQ) OR PHY 122: University Physics Laboratory I (SQ) OR PHY 131: University Physics II: Electricity and Magnetism (SQ) AND PHY 132: University Physics Laboratory II (SQ) | 4 |
| Secondary Focus Area | 3 |
| Humanities, Fine Arts and Design (HU) AND Historical Awareness (H) | 3 |
| Term hours subtotal: | 16 |

hours, with a minimum 6 hours upper division, which form a coherent theme. For example, all courses may share a common subject prefix. Students must work with an academic success specialist to identify their secondary focus area.

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| Course | Hours |
| BIO 181 or CHM 152 and CHM 152LL or PHY 131 | 4 |
| See advisor for secondary focus area | 3 |
| General Studies (HU-H) | 3 |

| Term 6 76 - 90 Credit Hours Necessary course signified by | Hours | Minimum Grade | Notes |
|---|-------|---------------|--|
| EGR 313: Mechanical Systems Project II | 3 | | <ul style="list-style-type: none"> A secondary focus area is a group of courses comprising 12 or more hours, with a minimum 6 hours upper division, which form a coherent theme. For example, all courses may share a common subject prefix. Students must work with an academic success specialist to identify their secondary focus area. |
| EGR 343: Mechanics of Solid Materials | 3 | | |
| HST 318: History of Engineering ((L or SB) & G) | 3 | | |
| MAT 343: Applied Linear Algebra | 3 | | |
| Secondary Focus Area | 3 | | |
| Term hours subtotal: | 15 | | |

| Mesa Community College | |
|--------------------------------------|-------|
| Course | Hours |
| See advisor for secondary focus area | 3 |

| Term 7 91 - 105 Credit Hours Necessary course signified by | Hours | Minimum Grade | Notes |
|--|-------|---------------|--|
| EGR 346: Engineering Design | 3 | | <ul style="list-style-type: none"> A secondary focus area is a group of courses comprising 12 or more hours, with a minimum 6 hours upper division, which form a coherent theme. For example, all courses may share a common subject prefix. Students must work with an academic success specialist to identify their secondary focus area. |
| EGR 401: Professional Design Project I (L) | 3 | | |
| PHY 321: Vector Mechanics and Vibration | 3 | | |
| Upper Division Secondary Focus Area | 3 | | |
| Social and Behavioral Sciences (SB) | 3 | | |
| Term hours subtotal: | 15 | | |

| Mesa Community College | |
|--|-------|
| Course | Hours |
| General Studies (SB-C OR SB-G OR SB-H) | 3 |

| Term 8 106 - 120 Credit Hours Necessary course signified by | Hours | Minimum Grade | Notes |
|--|-------|---------------|--|
| EGR 402: Professional Design Project II | 3 | | <ul style="list-style-type: none"> A secondary focus area is a group of courses comprising 12 or more hours, with a minimum 6 hours upper division, which form a coherent theme. For example, all courses may share a common subject prefix. Students must work with an academic success specialist to identify their secondary focus area. |
| EGR 432: Engineering Thermo-Fluids II | 3 | | |
| EGR 445: Mechanical Engineering Systems | 3 | | |
| Upper Division Secondary Focus Area | 3 | | |
| Upper Division Humanities, Fine Arts and Design (HU) OR Upper Division Social and Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C) | 3 | | |
| Term hours subtotal: | 15 | | |

- A secondary focus area is a group of courses comprising of 12 or more credit hours (minimum 6 hours upper division at the 300 or 400 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

General University Requirements Legend
General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)

General Studies Awareness Requirements:

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

Academic Recognition: 56
minimum
Total Community College Hrs: 64
maximum

- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Fine Arts and Design (HU)
- Social and Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

First-Year Composition

General Studies designations listed on the major map are current for the 2014 - 2015 academic year.