











2014 - 2015 Major Map
Engineering, BSE






College of Technology and Innovation
Polytechnic campus
TSEGRBSE

Term 1	0 - 14 Credit Hours	Critical course signified by 	Hours	Minimum Grade	Notes
	CHM 113: General Chemistry I (SQ)		4		<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 ASU 101 or College specific equivalent First Year Seminar required of all freshman students CTI 101 required of all freshman students
	CTI 101: Success in Technology & Innovation		1		
	EGR 101: Foundations of Engineering Design Project I		3		
	MAT 265: Calculus for Engineers I (MA)		3	C	
	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	
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	
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		

Mesa Community College	
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)		3		
	Humanities, Fine Arts and Design (HU)		3		
Term hours subtotal:			15		

Mesa Community College	
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
	HST 318: History of Engineering ((L or SB) & G)		3		<ul style="list-style-type: none"> A secondary focus area is a group of courses

★ Upper Division Primary Focus Area	3
BIO 181: General Biology I (SQ) 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) OR BIO 182: General Biology II (SG)	4
Secondary Focus Area	3
★ Upper Division Primary Focus Area - Project I	3
Term hours subtotal:	16

comprising of 12 or more credit hours, of which a minimum of 6 must be upper division, which form a coherent theme. Students may use a second primary focus track for their Secondary Focus requirement.

Mesa Community College	
Course	Hours
BIO 181 or CHM 152 and CHM 152LL or PHY 131	4
See advisor for secondary focus area	3

★ Term 6 76 - 90 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
★ Upper Division Primary Focus Area	3		<ul style="list-style-type: none"> A secondary focus area is a group of courses comprising of 12 or more credit hours, of which a minimum of 6 must be upper division, which form a coherent theme. Students may use a second primary focus track for their Secondary Focus requirement.
MAT 343: Applied Linear Algebra	3		
Secondary Focus Area	3		
Social and Behavioral Sciences (SB)	3		
★ Upper Division Primary Focus Area - Project II	3		
Term hours subtotal:	15		

Mesa Community College	
Course	Hours
See advisor for secondary focus area	3
General Studies (SB-C OR SB-G OR SB-H)	3

★ Term 7 91 - 105 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
★ EGR 401: Professional Design Project I (L)	3		<ul style="list-style-type: none"> A secondary focus area is a group of courses comprising of 12 or more credit hours, of which a minimum of 6 must be upper division, which form a coherent theme. Students may use a second primary focus track for their Secondary Focus requirement.
★ Upper Division Primary Focus Area	3		
PHY 321: Vector Mechanics and Vibration OR PHY 331: Principles of Modern Electromagnetism OR ERM 406: Environmental Chemistry	3		
Upper Division Secondary Focus Area	3		
Humanities, Fine Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:	15		

Mesa Community College	
Course	Hours
General Studies (HU-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 of 12 or more credit hours, of which a minimum of 6 must be upper division, which form a coherent theme. Students may use a second primary focus track for their Secondary Focus requirement.
Complete 2 courses: Upper Division Primary Focus Area	6		
Upper Division Secondary Focus Area	3		
Upper Division Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C) OR Upper Division Social and Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)	3		
Term hours subtotal:	15		

- Students select both a primary and secondary focus area. Primary focus areas are available from options selected by the faculty.
 - Upon selection of a primary focus area, students must complete their respective Primary Focus Area Project courses prior to Term 7.
 - A secondary focus area is a group of courses comprising of 12 or more credit hours which form a coherent theme. Students may use a second primary focus track for their Secondary Focus requirement.

Primary Focus Area: Automotive	Primary Focus Area: Environmental Systems
EGR 306: Automotive Systems Project I AND EGR 316: Automotive Systems Project II	EGR 310: Environmental Systems Project I AND EGR 312: Environmental Systems Project II
EGR 330: Design of Electrical Systems or EGR 432: Engineering Thermo-Fluids II	EGR 321: Water Resource Systems
EGR 340: Engineering Thermo-Fluids I	EGR 325: Water and Wastewater Treatment
EGR 363: Automotive Powertrains and	EGR 426: Integrated Solid Waste

Thermal Systems

EGR 463: Vehicle Electrical Systems & Hybrid Systems

EGR 465: Ground Vehicle Dynamics

Systems

EGR 427: Principles of Hazardous Waste and Materials

Upper Division EGR or Upper Division ERM

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 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 U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

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