











2014 - 2015 Major Map
Engineering (Humanitarian Engineering), BSE






College of Technology and Innovation
Polytechnic campus
TSEGRHEBSE

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		
	Social and Behavioral Sciences (SB)		3		
Term hours subtotal:			15		

Mesa Community College	
Course	Hours
ECE 214	4
MAT 277	3
General Studies (SB-C OR SB-G OR SB-H)	3

Term 5	60 - 75 Credit Hours	Necessary course signified by 	Hours	Minimum Grade	Notes
	EGR 307: Humanitarian Engineering Project I		3		<ul style="list-style-type: none"> Student will select one four credit science

★ EGR 321: Water Resource Systems	3
★ EGR 371: Best Practices for Humanitarian Engineering	3
Secondary Focus Area	3
Science Elective AND Natural Science - Quantitative (SQ)	4
Term hours subtotal:	16

elective satisfying SQ OR PHY 122 which (combined with PHY 121) completes the SQ requirement and a 3 credit science elective.

- 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.

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
★ EGR 317: Humanitarian Engineering 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 (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.
★ EGR 325: Water and Wastewater Treatment	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 340: Engineering Thermo-Fluids I	3		<ul style="list-style-type: none"> • 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.
★ EGR 401: Professional Design Project I (L)	3		
ERM 485: GIS in Natural Resources	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 (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.
★ EGR 476: Energy Infrastructures	3		
Upper Division Secondary Focus Area	3		
Upper Division Social and Behavioral Sciences (SB) OR Upper Division Humanities, Fine Arts and Design (HU)	3		
Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
Term hours subtotal:	15		

Mesa Community College	
Course	Hours
General Studies (HU-C)	3

- Students must select 4 credit hours of Science Elective.

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)
PHY 122: University Physics Laboratory I (SQ)

Notes:

- 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 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.