










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






College of Technology and Innovation
Polytechnic campus
TSEGRESBSE

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 CTI 101 First Year Seminar required of all freshman students
	CTI 101: Success in Technology & Innovation		1		
	EGR 101: Foundations of Engineering Design Project I		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	
	MAT 265: Calculus for Engineers I (MA)		3	C	
	Term hours subtotal:		14		





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

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.
	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	
	MAT 266: Calculus for Engineers II (MA)		3	C	
	PHY 121: University Physics I: Mechanics (SQ)		3		
	Complete ENG 101 OR ENG 105 OR ENG 107 course(s).				
	Term hours subtotal:		15		


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

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		
	EGR 280: Engineering Statistics (CS)		3		
	MAT 267: Calculus for Engineers III (MA)		3	C	
	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) AND Historical Awareness (H)		3		
	Term hours subtotal:		15		

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Course	Hours
ECE 214	4
MAT 277	3
General Studies (HU-H)	3

Term 5	60 - 75 Credit Hours	Necessary course signified by 	Hours	Minimum Grade	Notes
	BIO 181: General Biology I (SQ) OR CHM 116: General Chemistry II (SQ) OR GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I-Laboratory (SQ) OR PHY 122: University Physics Laboratory I (SQ) OR		4		Secondary Focus Area <ul style="list-style-type: none"> A secondary focus area is a group of courses comprising of 12 or

Mesa Community College	
Course	Hours
BIO 181 or CHM 152 and CHM 152LL or PHY 131	4

PHY 131: University Physics II: Electricity and Magnetism (SQ) AND PHY 132: University Physics Laboratory II (SQ) OR BIO 182: General Biology II (SG)	
★ EGR 304: Electrical Systems Project I	3
★ EGR 330: Design of Electrical Systems	3
★ EGR 334: Analog-Digital Interface	3
Secondary Focus Area	3
Term hours subtotal:	16

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
See advisor for secondary focus area	3

Term 6 76 - 90 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ EGR 314: Electrical Systems Project II	3		Secondary Focus Area
★ EGR 338: Microcontrollers in Smart Systems	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.
HST 318: History of Engineering ((L or SB) & G)	3		
MAT 343: Applied Linear Algebra	3		
Upper Division Secondary Focus Area	3		
Term hours subtotal:	15		

Term 7 91 - 105 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ EGR 401: Professional Design Project I (L)	3		Secondary Focus Area
★ EGR 430: Design, Fabrication, and Architecture of Electronic Devices	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.
PHY 331: Principles of Modern Electromagnetism	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		Secondary Focus Area
★ EGR 431: Power Management	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.
Humanities, Fine Arts and Design (HU)	3		
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		

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

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.