

2014 - 2015 Major Map
Industrial Engineering, BSE

Ira A. Fulton Schools of Engineering
Tempe campus
ESIEEBSE

Term 1	0 - 15 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
	Basic Science Elective		3		
	⚠ MAT 265: Calculus for Engineers I (MA)		3	C	<ul style="list-style-type: none"> An SAT, ACT, Accuplacer, TOEFL or IELTS 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 and should be taken the first semester. If ENG 105 is taken, a 3 hour applicable elective must also be taken prior to graduation. Contact CIDSE Advising.
	⚠ 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	
	FSE 100: Introduction to Engineering		2	C	
	ASU 101-IEE: The ASU Experience		1		
	Social and Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C) OR Social and Behavioral Sciences (SB) AND Global Awareness (G) OR Social and Behavioral Sciences (SB) AND Historical Awareness (H)		3		
	⚠ Minimum 2.00 GPA ASU Cumulative.				
	Term hours subtotal:		15		

Mesa Community College	
Course	Hours
BIO 181 or BIO 182 OR GLG 101/102 or GLG 110	3
ENG 101 or ENG 102 OR ENG 107 or ENG 108	3
MAT 221 or MAT 220	4 5
ECE 102 and ECE 103	2 2
General Studies (SB-C OR SB-G OR SB-H)	3

*** ECE 102 and ECE 103 satisfy both
ASU 101 and FSE 100


Term 2	16 - 31 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
	⚠ PHY 121: University Physics I: Mechanics (SQ)		3	C	
	⚠ PHY 122: University Physics Laboratory I (SQ)		1	C	
	⚠ MAT 266: Calculus for Engineers II (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	
	⚠ CSE 110: Principles of Programming with Java (CS)		3	C	
	Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C) OR Humanities, Fine Arts and Design (HU) AND Global Awareness (G) OR Humanities, Fine Arts and Design (HU) AND Historical Awareness (H)		3		
	Complete ENG 101 OR ENG 105 OR ENG 107 course(s).				
	⚠ Minimum 2.00 GPA ASU Cumulative.				
	Term hours subtotal:		16		

Mesa Community College	
Course	Hours
PHY 121	4
MAT 231 or MAT 230	4 5
ENG 101 or ENG 102 OR ENG 107 or ENG 108	3
CSC 110	3
General Studies (HU-C OR HU-G OR HU-H)	3

Term 3	32 - 47 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
	PHY 131: University Physics II: Electricity and Magnetism (SQ)		3		
	PHY 132: University Physics Laboratory II (SQ)		1		
	MAT 267: Calculus for Engineers III (MA)		3		
	⚠ IEE 210: Introduction to Industrial Engineering		3	C	
	CSE 205: Object-Oriented Programming and Data Structures (CS)		3	C	
	⚠ ECN 211: Macroeconomic Principles (SB)		3	C	
	Complete Mathematics (MA) requirement.				
	⚠ Minimum 2.00 GPA ASU Cumulative.				
	Term hours subtotal:		16		

Mesa Community College	
Course	Hours
PHY 131	4
MAT 241 or MAT 240	4 5
CSC 205	3
ECN 211	3

Term 4	48 - 63 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
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CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)	4	
MAE 212: Engineering Mechanics	4	
MAT 275: Modern Differential Equations (MA)	3	
IEE 300: Economic Analysis for Engineers	3	C
MAT 242: Elementary Linear Algebra OR MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	2-3	C
 Complete ECN 211 AND ENG 101 AND ENG 102 OR ENG 105 OR ENG 107 AND ENG 108 AND MAT 265 AND MAT 266 AND PHY 121 AND PHY 122 AND IEE 210 AND CSE 110 course(s).		
Term hours subtotal:	16-17	

★ Term 5 64 - 78 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
MSE 250: Structure and Properties of Materials	3		
Engineering Science Elective	3-4		
★ IEE 380: Probability and Statistics for Engineering Problem Solving (CS)	3	C	
IEE 305: Information Systems Engineering (CS)	3	C	
Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C) OR Humanities, Fine Arts and Design (HU) AND Global Awareness (G) OR Humanities, Fine Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:	15-16		

★ Term 6 79 - 93 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Upper Division Career Focus Study Area	3	C	
★ IEE 385: Engr Statistics - Probability	3	C	
IEE 369: Work Analysis and Design (L)	3	C	
IEE 376: Operations Research Deterministic Techniques/Applications	3	C	
Upper Division Humanities, Fine Arts and Design (HU) OR Upper Division Social and Behavioral Sciences (SB)	3		
Term hours subtotal:	15		

★ Term 7 94 - 108 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
IEE 470: Stochastic Operations Research	3	C	
IEE 461: Production Control	3	C	
IEE 485: Systems Design Capstone I	3	C	
IEE 474: Quality Control	3	C	
★ IEE 475: Simulating Stochastic Systems (CS)	3	C	
Term hours subtotal:	15		

★ Term 8 109 - 120 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
Upper Division Career Focus Study Area	3	C	
Upper Division Career Focus Study Area	3	C	
★ IEE 486: Systems Design Capstone II (L)	3	C	
Upper Division IEE Technical Elective	3	C	
Term hours subtotal:	12		

- Visit [CIDSE](#) website for Career Focus Area and Technical Elective courses.

Engineering Science Elective	Basic Science Elective
CEE 384: Numerical Methods for Engineers (CS)	BIO 181: General Biology I (SQ) BIO 182: General Biology II (SG)

Mesa Community College	
Course	Hours
CHM 152 and CHM 152LL	4
ECE 214	4
MAT 277	3
MAT 225	3

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

CSE 120: Digital Design Fundamentals	BME 111: Engineering Perspectives on Biological Systems
CSE 240: Introduction to Programming Languages	GLG 101: Introduction to Geology I (Physical) (SQ & G)
EEE 202: Circuits I	GLG 102: Introduction to Geology II (Historical) (SG & H)
MAE 240: Thermofluids I	GLG 110: Dangerous World (SG & G)

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.