

2014 - 2015 Major Map
Construction Engineering, BSE

Ira A. Fulton Schools of Engineering
Tempe campus
ESCONBSE

Term 1	0 - 16 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes	
		🔻	FSE 100: Introduction to Engineering	2	C	<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 required of all freshman students ASU 101-CON should be completed the first semester. If ENG 105 is taken, a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
		🔻	MAT 265: Calculus for Engineers I (MA)	3	C	
			ASU 101-CON: The ASU Experience	1		
		🔻	CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (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	
			Social and Behavioral Sciences (SB) AND Global Awareness (G) OR Social and Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)	3		
		🔻	Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:			16			

Mesa Community College	
Course	Hours
ECE 102 and ECE 103	2
MAT 221 or MAT 220	4
CHM 152 and CHM 152LL	5
ENG 101 or ENG 102 OR ENG 107 or ENG 108	4
General Studies (SB-G OR SB-C)	3

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

Term 2	17 - 31 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes	
		🔻	MAT 242: Elementary Linear Algebra	2	C	
		🔻	MAT 266: Calculus for Engineers II (MA)	3	C	
		🔻	PHY 121: University Physics I: Mechanics (SQ)	3	C	
		🔻	PHY 122: University Physics Laboratory I (SQ)	1	C	
			CON 101: Construction and Culture: a Built Environment (HU & H & G)	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).			
		🔻	Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:			15			

Mesa Community College	
Course	Hours
MAT 225	3
MAT 231 or MAT 230	4
PHY 121	5
CNS 101	4
ENG 101 or ENG 102 OR ENG 107 or ENG 108	3

Term 3	32 - 47 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes	
		🔻	CNE 210: Engineering Mechanics I: Statics	3	C	
		🔻	MAT 267: Calculus for Engineers III (MA)	3	C	
		🔻	MAT 275: Modern Differential Equations (MA)	3	C	
		🔻	PHY 131: University Physics II: Electricity and Magnetism (SQ)	3	C	
		🔻	PHY 132: University Physics Laboratory II (SQ)	1	C	
			ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)	3		
		🔻	Minimum 2.00 GPA ASU Cumulative.			
		🔻	Complete CHM 114 AND FSE 100 AND MAT 265 AND MAT 242 AND MAT 266 AND PHY 121 AND PHY 122 AND CEE 210 AND MAT 267 AND PHY 131 AND PHY 132 AND MAT 275 course(s).			
Term hours subtotal:			16			

Mesa Community College	
Course	Hours
ECE 201 and ECE 202 and ECE 203	6
MAT 241 or MAT 240	4
MAT 277	5
PHY 131	3
ECN 211 or ECN 212	4

*** ECE 201 and ECE 202 and ECE 203 satisfy both CEE 210 and CEE 212

Term 4	48 - 63 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
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📌 CNE 212: Engineering Mechanics II: Dynamics	3	C
📌 CNE 213: Introduction to Deformable Solids	3	C
📌 CNE 243: Heavy Construction Equipment, Methods and Materials	3	
CNE 271: Construction Safety	3	
EEE 202: Circuits I OR MAE 240: Thermofluids I	4	
Term hours subtotal:	16	

Term 5 64 - 79 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
★ IEE 380: Probability and Statistics for Engineering Problem Solving (CS)	3		
BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG) OR BME 111: Engineering Perspectives on Biological Systems OR CHM 231: Elementary Organic Chemistry (SQ) OR GLG 101: Introduction to Geology I (Physical) (SQ & G)	3-4		
CNE 353: Civil Engineering Materials	3		
★ CNE 321: Structural Analysis and Design	4		
Humanities, Fine Arts and Design (HU) OR Social and Behavioral Sciences (SB)	3		
Term hours subtotal:	16-17		

Term 6 80 - 93 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
★ CNE 383: Construction Estimating	4		
CNE 351: Geotechnical Engineering	4		
CNE 241: Surveying	3		
CNE 400: Earth Systems Engr & Mgmt ((L or HU) & H)	3		
Term hours subtotal:	14		

Summer 6 94 - 94 Credit Hours	Hours	Minimum Grade	Notes
CNE 484: Internship	1		
Term hours subtotal:	1		

Term 7 95 - 107 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
★ CNE 453: Construction Project Management I	3		<ul style="list-style-type: none"> • Technical Elective and Design Elective requirements: Complete a total of 2 design electives. • Technical Elective(s) must add up to 4 hours. Students can either take one class at 4 hours or take two courses at 3 hours and 1 hour.
Upper Division Design Elective	3	C	
Upper Division Technical Elective	3	C	
Technical Elective	1	C	
CNE 495: Construction Planning and Scheduling (CS)	3		
Term hours subtotal:	13		

Term 8 108 - 120 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
CON 496: Construction Contract Administration (L)	3		<ul style="list-style-type: none"> • Technical Elective and Design Elective requirements: Complete a total of 2 design electives.
Upper Division Design Elective	3	C	
★ CNE 486: Integrated Civil Engineering Design (L)	4		
CON 455: Construction Project Management II	3		
Term hours subtotal:	13		

Design Elective	Technical Elective
CEE 420: Steel Structures	CEE 372: Transportation Engineering
CEE 421: Concrete Structures	CEE 412: Pavement Analysis and

Mesa Community College	
Course	Hours
ECE 201 and ECE 202 and ECE 203	6
ECE 215	3
EEE 202	5

*** ECE 201 and ECE 202 and ECE 203 satisfy both CEE 210 and CEE 212

Mesa Community College	
Course	Hours
BIO 181 or BIO 182 OR CHM 230 or GLG 101	3
General Studies (HU OR SB)	3

CEE 452: Foundations

Design

CEE 420: Steel Structures
CEE 421: Concrete Structures
CEE 423: Structural Design
CEE 432: Developing Software for Engineering Applications
CEE 440: Hydrology
CEE 441: Water Resources Engineering
CEE 452: Foundations
CEE 462: Unit Operations in Environmental Engineering
CEE 466: Urban Water System Design
CEE 467: Environmental Microbiology
CEE 474: Transportation Systems Planning
CEE 475: Highway Geometric Design
CEE 481: Civil Engineering Project Management
CEE 483: Highway Materials, Construction, and Quality
CEE 494: Concrete Canoe Design
CEE 494: Steel Bridge Design
CON 296: Field Internship
CON 310: Testing of Materials for Construction
CON 345: Mechanical Systems
CON 494: Trenchless Construction Mth
CON 494: Alt Project Delivery Mthds
CON 448: Sustainable Construction
CON 494: Sustainability in Construction

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.