










2014 - 2015 Major Map
Electrical Engineering (Electric Power and Energy Systems), BSE

Ira A. Fulton Schools of Engineering
Tempe campus
ESEEEPBSE




Term 1	0 - 16 Credit Hours	Critical course signified by 	Hours	Minimum Grade	Notes
	MAT 265: Calculus for Engineers I (MA)		3	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 First Year Seminar required of all freshman students and should be taken the first semester. If ENG 105 taken, a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
	ASU 101-EEE: The ASU Experience		1		
	CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)		4		
	CSE 100: Principles of Programming with C++ (CS)		3		
	FSE 100: Introduction to Engineering		2		
	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	
	Minimum 2.00 GPA ASU Cumulative.				
	Term hours subtotal:		16		

Mesa Community College	
Course	Hours
MAT 221 or MAT 220	4 5
ECE 102 and ECE 103	2 2
CHM 152 and CHM 152LL	4
CSC 100	3
ENG 101 or ENG 102 OR ENG 107 or ENG 108	3


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

Term 2	17 - 32 Credit Hours	Critical course signified by 	Hours	Minimum Grade	Notes
	MAT 266: Calculus for Engineers II (MA)		3	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 First Year Seminar required of all freshman students and should be taken the first semester. If ENG 105 taken, a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
	PHY 121: University Physics I: Mechanics (SQ)		3	C	
	PHY 122: University Physics Laboratory I (SQ)		1	C	
	EEE 120: Digital Design Fundamentals		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	
	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
MAT 231 or MAT 230	4 5
PHY 121	4
CSC 120	4
ENG 101 or ENG 102 OR ENG 107 or ENG 108	3
General Studies (HU-C OR HU-G OR HU-H)	3

Term 3	33 - 46 Credit Hours	Critical course signified by 	Hours	Minimum Grade	Notes
	EEE 202: Circuits I		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 and should be taken the first semester. If ENG 105 taken, a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
	MAT 267: Calculus for Engineers III (MA)		3	C	
	MAT 274: Elementary Differential Equations (MA) OR 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	
	Minimum 2.00 GPA ASU Cumulative.				
	Complete Mathematics (MA) requirement.				
	Term hours subtotal:		14		

Mesa Community College	
Course	Hours
EEE 202	5
MAT 241 or MAT 240	4 5
MAT 277	3
PHY 131	4

Term 4	47 - 61 Credit Hours	Critical course signified by 	Hours	Minimum Grade	Notes
	EEE 203: Signals and Systems I		3	1 of 3	

♦ EEE 241: Fundamentals of Electromagnetics	3	
MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	3	C
PHY 241: University Physics III	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	

Term 5 62 - 75 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ EEE 334: Circuits II	4		
EEE 230: Computer Organization and Assembly Language Programming	3		
EEE 350: Random Signal Analysis	3		
EEE 360: Energy Systems and Power Electronics	4		
Term hours subtotal:	14		

Term 6 76 - 90 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Complete 3 courses: Upper Division Area Pathway Course	12		
ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)	3		
Term hours subtotal:	15		

Term 7 91 - 105 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ EEE 488: Senior Design Laboratory I (L)	3		
BIO OR CHM OR PHY OR MAT OR BME OR CEE OR CHE OR CPI OR CSE OR FSE OR IEE OR MAE OR MSE Upper Division Elective OR Upper Division Technical Elective	3		
Upper Division Power Technical Electives	6		
Social and Behavioral Sciences (SB)	3		
Term hours subtotal:	15		

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ EEE 489: Senior Design Laboratory II (L)	3		
Upper Division Power Technical Electives	3		
Upper Division Humanities, Fine Arts and Design (HU) OR Upper Division Social and Behavioral Sciences (SB)	3		
Upper Division Power Technical Electives OR Upper Division Technical Elective	6		
Term hours subtotal:	15		

Technical Electives	Power Technical Electives	Area Pathway Course
EEE 404: Real-Time DSP Systems	EEE 460: Nuclear Power Engineering	EEE 304: Signals and Systems II
EEE 407: Digital Signal Processing	EEE 463: Electrical Power Plants	EEE 333: Hardware Design Languages and Programmable Logic
EEE 425: Digital Systems and Circuits	EEE 470: Electric Power Devices	EEE 335: Analog and Digital Circuits
EEE 433: Analog Integrated Circuits	EEE 471: Power System Analysis	EEE 341: Engineering Electromagnetics
EEE 434: Quantum Mechanics for Engineers	EEE 472: Power Electronics and Power Management	EEE 352: Properties of Electronic Materials
EEE 435: Fundamentals of CMOS and MEMS	EEE 473: Electrical Machinery	EEE 360: Energy Systems and Power Electronics
EEE 436: Fundamentals of Solid-State Devices		
EEE 437: Optoelectronics		
EEE 439: Semiconductor Facilities and		

Mesa Community College	
Course	Hours
PHY 241	4
General Studies (HU-C OR HU-G OR HU-H)	3

Mesa Community College	
Course	Hours
ECN 211 or ECE 212	3

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

Cleanroom Practices

EEE 443: Antennas for Wireless Communications

EEE 445: Microwaves

EEE 448: Fiber Optics

EEE 455: Communication Systems

EEE 459: Communication Networks

EEE 460: Nuclear Power Engineering

EEE 463: Electrical Power Plants

EEE 470: Electric Power Devices

EEE 471: Power System Analysis

EEE 472: Power Electronics and Power Management

EEE 473: Electrical Machinery

EEE 480: Feedback Systems

EEE 481: Computer-Controlled Systems

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.