

# B.S. IN ELECTRICAL & COMPUTER ENGINEERING

## CATALOG YEAR 2017-2018

Below is the *advised sequence* of courses for this degree program and prerequisites as of 3/07/17.  
The official degree requirements and prerequisites can be found in the University General Catalog and the prerequisites are subject to change.

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I or CHEM 105A/106A	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102 Introduction to Engineering or ENGR 102A and ENGR 102B	3	Concurrent enrollment or completion of MATH 122B or 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
ECE 175 Computer Programming for Engineering Applications	3	Concurrent enrollment or completion of MATH 122B or 125
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122A/B or 125; Concurrent enrollment or completion of MATH 129
ENGL 102 or 108 or 109H First-Year Composition	3	ENGL 101 or ENGL 107
Tier I General Education	3	
<b>3<sup>RD</sup> SEMESTER</b>		
ECE 274A Digital Logic	4	ECE 175, Concurrent enrollment or completion of MATH 129
ECE 275 Computer Programming for Engineering Applications II	3	Major ECE; ECE 175
MATH 223 Vector Calculus	4	MATH 129 with C or better
PHYS 241 Introductory Electricity and Magnetism or PHYS 261H	4	PHYS 141 or 161H; MATH 129
Tier I General Education	3	
<b>4<sup>TH</sup> SEMESTER</b>		
ECE 220 Basic Circuits	5	MATH 129, PHYS 241, Concurrent enrollment or completion of MATH 254
PHYS 143 Introductory Optics and Thermodynamics or PHYS 142 or PHYS 162H	2	PHYS 141 or 161H, MATH 129
MATH 243 Discrete Mathematics in Computer Science or CSC 245 Intro to Discrete Structures	3	CSC 245: Grade of C or better in CSC 120 or 127B or 227
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
Tier II General Education	3	

## ELECTRICAL OPTION

**COURSE NUMBER AND TITLE**

**UNITS**

**CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG**

**ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)**

### 5<sup>TH</sup> SEMESTER

ECE 310 Applications of Engineering Mathematics 4

ECE 320A Circuit Theory 3

ECE 381A Introductory Electromagnetics 4

Technical Elective – See major advisor for course approval 3

ECE 311 Engineering Ethics 1

### 6<sup>TH</sup> SEMESTER

ECE 340A Introduction to Communications 3

ECE 351C Electronic Circuits 4

ECE 372A Microprocessor Organization 4

ECE 352 Device Electronics 3

Tier I General Education 3

### 7<sup>TH</sup> SEMESTER

ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status 3

Engineering Elective Course II 3

Technical Elective – See major advisor for course approval 3

Technical Elective – See major advisor for course approval 3

Technical Elective – See major advisor for course approval 3

### 8<sup>TH</sup> SEMESTER

ENGR 498B Cross-disciplinary Design (Spring Only) – Senior Status 3

Technical Elective – See major advisor for course approval 3

Technical Elective – See major advisor for course approval 3

Technical Elective – See major advisor for course approval 3

Tier II General Education 3

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.

## COMPUTER OPTION

### COURSE NUMBER AND TITLE

### UNITS

**CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG**

**ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)**

### 5<sup>TH</sup> SEMESTER

ECE 310 Applications of Engineering Mathematics	4
ECE 369A Fundamentals of Computer Organization	4
ECE 320A Circuit Theory	3
ECE 373 Object-Oriented Software Design	3
ECE 311 Engineering Ethics	1

### 6<sup>TH</sup> SEMESTER

Technical Elective – See major advisor for course approval	3
ECE 351C Electronic Circuits	4
ECE 340A Introduction to Communications	3
ECE 372A Microprocessor Organization	4
Tier I General Education	3

### 7<sup>TH</sup> SEMESTER

ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status	3
Required Computer Course	3
Technical Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3

### 8<sup>TH</sup> SEMESTER

ENGR 498B Cross-disciplinary Design (Spring Only) – Senior Status	3
Technical Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3
Technical Elective – See major advisor for course approval	3
Tier II General Education	3

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.