

B.S. IN ELECTRICAL & COMPUTER ENGINEERING

CATALOG YEAR 2021-2022

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/18/20.

The official degree requirements and prerequisites found in the University General Catalog and the prerequisites are subject to change.

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I or CHEM 161/163	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/102B Introduction to Engineering or ENGR 102	3	<u>ENGR102A</u> : MATH 112; <u>ENGR102B</u> : Concurrently enrolled or completion of MATH 122B or 125; FR & SOPH Status
Tier I General Education	3	
Semester Total		18/16
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
ECE 175 Computer Programming for Engineering Applications	3	MATH 122B or 125, concurrent enrollment or completion
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or appropriate Math Placement Level
ENGL 102 or 108 First Year Composition	3	ENGL 101 or ENGL 107
Tier I General Education	3	
Semester Total		16
3RD SEMESTER		
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	For PHYS 241 or 261H: PHYS 141 or 161H; MATH 129
Tier I General Education	3	
Semester Total		18
4TH SEMESTER		
ECE 220 Basic Circuits	5	MATH 129, PHYS 241
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	<u>For MATH 243</u> : MATH 122B or 125 or 129; <u>For CSC 245</u> : 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	
Semester Total		16

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)

5TH SEMESTER

ECE 310 Applications of Engineering Mathematics	4
ECE 320A Circuit Theory	3
ECE 372A Microprocessor Organization	4
Technical Elective – See major advisor for course approval	3
ECE 311 Engineering Ethics	1
Semester Total	15

6TH SEMESTER

ECE 340A Introduction to Communications	3
ECE 351C Electronic Circuits	4
ECE 381A Introductory Electromagnetics (Spring Only)	4
ECE 352 Device Electronics (Spring Only)	3
Tier I General Education	3
Semester Total	17

7TH SEMESTER

ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status	3
Engineering Electrical Course II – 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
Technical Elective – See major advisor for course approval	3
Semester Total	15

8TH 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
Semester Total	15

*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)

5TH SEMESTER

ECE 310 Applications of Engineering Mathematics	4
ECE 369A Fundamentals of Computer Organization (Fall Only)	4
ECE 320A Circuit Theory	3
ECE 373 Object-Oriented Software Design (Fall Only)	3
ECE 311 Engineering Ethics	1
Semester Total	15

6TH 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
Semester Total	17

7TH SEMESTER

ENGR 498A Cross-disciplinary Design (Fall Only) – Senior Status	3
Required Computer Course - 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
Technical Elective – See major advisor for course approval	3
Semester Total	15

8TH 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
Semester Total	15

*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.