# ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

## ELECTRONIC CIRCUITS AND SYSTEMS

**LOWER DIVISION COURSES [72 UNITS]**
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C-D
- CHEM 6A
- ECE 5, 15, 25, 30, 35, 45, 65

**UPPER DIVISION COURSES [68 UNITS]**
- **Breadth**: ECE 100, 101, 102, 103, 107, 109
- **Depth**: ECE 164, 165, 166
- **Technical Electives**: five upper division engineering, math, or physics courses
- **Professional Electives**: two upper division courses
- **Design**: one of ECE 111, 115, 140B, 190, or 191

## ELECTRONIC DEVICES AND MATERIALS

**Lower Division Courses [72 units]**
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C-D
- CHEM 6A
- ECE 5, 15, 25, 30, 35, 45, 65

**Upper Division Courses [68 units]**
- **Breadth**: ECE 100, 101, 102, 103, 107, 109
- **Depth**: ECE 135A-B, 136L, 183
- **Technical Electives**: four upper division engineering, math, or physics courses
- **Professional Electives**: two upper division courses
- **Design**: one of ECE 111, 115, 140B, 190, or 191

## PHOTONICS

**Lower Division Courses [72 units]**
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C-D
- CHEM 6A
- ECE 5, 15, 25, 30, 35, 45, 65

**Upper Division Courses [68 units]**
- **Breadth**: ECE 100, 101, 103, 107, 109
- **Depth**: ECE 181, 182, 183 and either ECE 184 or 185
- **Technical Electives**: five upper division engineering, math, or physics courses
- **Professional Electives**: two upper division courses
- **Design**: one of ECE 111, 115, 140B, 190, or 191

## POWER ENGINEERING

**LOWER DIVISION COURSES [72 UNITS]**
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C-D
- CHEM 6A
- ECE 5, 15, 25, 30, 35, 45, 65

**UPPER DIVISION COURSES [68 UNITS]**
- **Breadth**: ECE 100, 101, 102, 103, 107, 109
- **Depth**: ECE 121A-B, 125A, 128A and either ECE 125B or 128B
- **Technical Electives**: three upper division engineering, math, or physics courses
- **Professional Electives**: two upper division courses
- **Design**: one of ECE 111, 115, 140B, 190, or 191

2020-2021 DEPTH REQUIREMENTS CONTINUED ON NEXT PAGE →
## COMMUNICATION SYSTEMS

### Lower Division Courses [72 units]
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C
- CHEM 6A
- ECE 5, 15, 17, 25, 30, 35, 45, 65

### Upper Division Courses [68 units]
- **Breadth:** ECE 100, 101, 102, 107, 109
- **Depth:** ECE 153, 155, 157A, 158A, 159
- **Technical Electives:** four upper division engineering, math, or physics courses
- **Professional Electives:** two upper division courses
- **Design:** one of ECE 111, 115, 140B, 190, or 191

## MACHINE LEARNING AND CONTROLS

### Lower Division Courses [72 units]
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C
- CHEM 6A
- ECE 5, 15, 17, 25, 30, 35, 45, 65

### Upper Division Courses [68 units]
- **Breadth:** ECE 100, 101, 107, 109
- **Depth:** ECE 171A, 174, 175A and one of ECE 171B, 172A, or 175B
- **Technical Electives:** six upper division engineering, math, or physics courses
- **Professional Electives:** two upper division courses
- **Design:** one of ECE 111, 115, 140B, 190, or 191

## SIGNAL AND IMAGE PROCESSING

### Lower Division Courses [72 units]
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C
- CHEM 6A
- ECE 5, 15, 17, 25, 30, 35, 45, 65

### Upper Division Courses [68 units]
- **Breadth:** ECE 100, 101, 107, 109
- **Depth:** ECE 153, 161A-B-C
- **Technical Electives:** six upper division engineering, math, or physics courses
- **Professional Electives:** two upper division courses
- **Design:** one of ECE 111, 115, 140B, 190, or 191

## COMPUTER SYSTEM DESIGN

### Lower Division Courses [76 units]
- MATH 18, 20A-B-C-D-E
- PHYS 2A-B-C
- CHEM 6A
- ECE 5, 15, 16, 17, 25, 30, 35, 45, 65

### Upper Division Courses [64 units]
- **Breadth:** ECE 100, 101, 109
- **Depth:** Any five of ECE 102, 103, 111*, 140A-B, 141A-B, 143, 158A-B, or 165
- **Technical Electives:** five upper division engineering, math, or physics courses
- **Professional Electives:** two upper division courses
- **Design:** one of ECE 111*, 115, 140B, 190, or 191

*ECE 111 MUST be taken as either a depth, tech. Elective or design course

### NOTES:
- ALL courses used to satisfy major requirements must be taken for a letter grade and passed with a C– or better.
- Due to seven different college requirements, only major requirements are listed. Students must speak to their college advisor for questions regarding General Education requirements.

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2020-2021 DEPTH REQUIREMENTS CONTINUED ON NEXT PAGE →