

2025 ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

ELECTRONIC CIRCUITS AND SYSTEMS

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E
PHYS 2A-B-C-D
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: three upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses
Professional Electives: two upper division courses
Design: one of ECE 111, 115, 140B, 190, or 191

ELECTRONIC DEVICES AND MATERIALS

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E
PHYS 2A-B-C-D
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: two upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses
Professional Electives: two upper division courses
Design: one of ECE 111, 115, 140B, 190, or 191

PHOTONICS

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E
PHYS 2A-B-C-D
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: three upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses
Professional Electives: two upper division courses
Design: one of ECE 111, 115, 140B, 190, or 191

POWER ENGINEERING

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E
PHYS 2A-B-C-D
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: one upper-division engineering, math, or physics course, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses
Professional Electives: two upper division courses
Design: one of ECE 111, 115, 140B, 190, or 191

COMMUNICATION SYSTEMS

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E

PHYS 2A-B-C

ECE 5, 15, 17 or 18, 25, 30, 35, 45, 65

UPPER DIVISION COURSES [68 UNITS]

Breadth: ECE 100, 101, 102, 107, 109

Depth: ECE 153, 155, 157A, 158A, 159, 161A

Technical Electives: one upper-division engineering, math, or physics course, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses

Professional Electives: two upper division courses

Design: one of ECE 111, 115, 140B, 190, or 191

MACHINE LEARNING AND CONTROLS

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E

PHYS 2A-B-C

ECE 5, 15, 17 or 18, 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: four upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses

Professional Electives: two upper division courses

Design: one of ECE 111, 115, 140B, 190, or 191

SIGNAL AND IMAGE PROCESSING

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E

PHYS 2A-B-C

ECE 5, 15, 17 or 18, 25, 30, 35, 45, 65

UPPER DIVISION COURSES [68 UNITS]

Breadth: ECE 100, 101, 107, 109

Depth: ECE 153, 161A-B-C

Technical Electives: four upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology courses

Professional Electives: two upper division courses

Design: one of ECE 111, 115, 140B, 190, or 191

COMPUTER SYSTEM DESIGN

LOWER DIVISION COURSES [68 UNITS]

MATH 18, 20A-B-C-D-E

PHYS 2A-B-C

ECE 5, 15, 17 or 18, 25, 30, 35, 45, 65

UPPER DIVISION COURSES [68 UNITS]

Breadth: ECE 100, 101, 109, 116

Depth: Any five of ECE 102, 103, 111*, 140A-B, 141A-B, 143, 158A-B, or 165

Technical Electives: three upper-division engineering, math, or physics courses, AND two upper-division or lower division engineering, math, physics, chemistry or biology 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 eight different college requirements, only **major** requirements are listed. Students must speak to their college advisor for questions regarding General Education requirements.