ELECTRICAL ENGINEERING
MAJOR REQUIREMENTS
2018-19

ELECTRICAL AND COMPUTER ENGINEERING STUDENT AFFAIRS OFFICE | JACOBS HALL 2701 & 2702 | ECE.UCSD.EDU

▶ Students must **pick one Depth** to complete the EE Major requirements. Due to six different college requirements, only **major** requirements are listed below.

▶ Students must speak to their college advisor for questions regarding General Education and University of California requirements.

▶ ALL courses used to satisfy major requirements must be taken for **a letter grade and passed with a C– or better.**

ELECTRONIC CIRCUITS & SYSTEMS

Lower Division (72 units)
MATH 18, 20A, 20B, 20C, 20D, 20E
PHYS 2A, 2B, 2C, 2D
CHEM 6A
ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (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 & MATERIALS

Lower Division (72 units)
MATH 18, 20A, 20B, 20C, 20D, 20E
PHYS 2A, 2B, 2C, 2D
CHEM 6A
ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (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 (72 units)
MATH 18, 20A, 20B, 20C, 20D, 20E
PHYS 2A, 2B, 2C, 2D
CHEM 6A
ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (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

ELECTRICAL ENGINEERING
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COMMUNICATION SYSTEMS

Lower Division (68 units)

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

PHYS 2A, 2B, 2C

CHEM 6A

ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (72 units)

Breadth:

ECE 100, 101, 102, 107, 109

Depth:

ECE 153, 154A-B-C, 158A

Technical Electives:

five upper-division engineering, math, or physics courses

Professional Electives:

two upper-division courses

Design Course:

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

MACHINE LEARNING & CONTROLS

Lower Division (68 units)

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

PHYS 2A, 2B, 2C

CHEM 6A

ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (72 units)

Breadth:

ECE 100, 101, 107, 109

Depth:

ECE 171A, 174, 175A and one of ECE 171B, 172A, or 175B

Technical Electives:

seven upper-division engineering, math, or physics courses

Professional Electives:

two upper-division courses

Design:

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

SIGNAL & IMAGE PROCESSING

Lower Division (68 units)

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

PHYS 2A, 2B, 2C

CHEM 6A

ECE 5, 15, 25, 30, 35, 45, 65

Upper Division (72 units)

Breadth:

ECE 100, 101, 107, 109

Depth:

ECE 153, 161A-B-C

Technical Electives:

seven 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 (72 units)

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

PHYS 2A, 2B, 2C

CHEM 6A

ECE 5, 15, 16, 25, 30, 35, 45, and 65

Upper division (68 units)

Breadth:

ECE 100, 101, 109

Depth:

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

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

*ECE 111 MUST be taken as a depth, technical elective, or design course

COMMUNICATION SYSTEMS DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 ECE 109
YEAR 2	ECE 100 ECE 101 TECH. ELECTIVE	ECE 102 ECE 107 TECH. ELECTIVE	ECE 153 TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 154A ECE 158A PROF. ELECTIVE	ECE 154B TECH. ELECTIVE PROF. ELECTIVE	ECE 154C DESIGN

- Due to six different college requirements, only **major** requirements are listed. Students must contact their college advisors for questions regarding General Education and University of California requirements.

- This plan assumes that transfer students have completed all the transferable lower division MATH, PHYS and CHEM courses at the community college that are required by the major.

- Course offerings are subject to change. Please go to http://www.ece.ucsd.edu/courses for more information.

- Go to http://www.ece.ucsd.edu/undergraduate/ee-ep-electives for a list of acceptable electives.

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COMPUTER SYSTEM DESIGN DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 ECE 65	ECE 16 ECE 30 MATH 20E
YEAR 2	ECE 100 ECE 101 DEPTH*	ECE 109 DEPTH* TECH. ELECTIVE	DEPTH* TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	DEPTH* TECH. ELECTIVE PROF. ELECTIVE	DEPTH* TECH. ELECTIVE PROF. ELECTIVE	DESIGN TECH. ELECTIVE

* Pick any five of ECE 102, 103, 111, 140A-B, 141A-B, 143, 158A-B or 165 to satisfy the Computer System Design Depth. ECE 111 must be taken either as a Depth, Elective or Design course.

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ELECTRONIC CIRCUITS & SYSTEMS DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 PHYS 2D
YEAR 2	ECE 100 ECE 101 ECE 103	ECE 102 ECE 107 ECE 109	ECE 165 TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 164 ECE 166 PROF. ELECTIVE	TECH. ELECTIVE TECH. ELECTIVE PROF. ELECTIVE	DESIGN TECH. ELECTIVE

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ELECTRONIC DEVICES & MATERIALS DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 PHYS 2D
YEAR 2	ECE 100 ECE 101 ECE 103	ECE 102 ECE 107 ECE 109	TECH. ELECTIVE TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 135A TECH. ELECTIVE PROF. ELECTIVE	ECE 135B ECE 183 PROF. ELECTIVE	ECE 136L DESIGN

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MACHINE LEARNING & CONTROLS DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 ECE 109
YEAR 2	ECE 100 ECE 101 TECH. ELECTIVE	ECE 107 TECH. ELECTIVE TECH. ELECTIVE	ECE 171A TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 174 ECE 171B* PROF. ELECTIVE TECH. ELECTIVE	ECE 175A ECE 172A* PROF. ELECTIVE	ECE 175B* DESIGN TECH. ELECTIVE

***Pick one of ECE 171B, 172A or 175B to satisfy the 4th course in the Machine Learning & Controls Depth.**

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PHOTONICS DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 PHYS 2D
YEAR 2	ECE 100 ECE 101 ECE 103	ECE 107 ECE 109 TECH. ELECTIVE	ECE 181 TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 182 TECH. ELECTIVE PROF. ELECTIVE	ECE 183 ECE 184* PROF. ELECTIVE	ECE 185* DESIGN TECH. ELECTIVE

* Pick ECE 184 or ECE 185 for the 4th course in the Photonics Depth.

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SIGNAL & IMAGE PROCESSING DEPTH

	Fall quarter	Winter quarter	Spring quarter
YEAR 1	ECE 5 or 15 ECE 25 ECE 35	ECE 15 or 5 ECE 45 MATH 20E	ECE 30 ECE 65 ECE 109
YEAR 2	ECE 100 ECE 101 TECH. ELECTIVE	ECE 107 TECH. ELECTIVE TECH. ELECTIVE	ECE 153 TECH. ELECTIVE TECH. ELECTIVE
YEAR 3	ECE 161A TECH. ELECTIVE PROF. ELECTIVE	ECE 161B TECH. ELECTIVE PROF. ELECTIVE	ECE 161C DESIGN

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