



# Electrical Engineering A.S. Degree

**PART TIME**

This program roadmap represents one possible pathway to complete the program. **Please see a counselor** to create an education plan that is customized to meet your needs. This roadmap is not a guarantee of course availability or financial aid applicability.

**Catalog:** 2025-26

**GE Pattern:** Cal-GETC

**Total Units:** 73

## First Year

### Semester 1

7 Units

| CAT. | COURSE   | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| RC   | ENGR 300<br>Introduction to Engineering                              | 1    |               |         |
| GE   | ENGL C1000<br>Academic Reading and Writing<br>or                     | 3    |               | 1A      |
|      | ENGL C1000H <sup>H</sup><br>Academic Reading and Writing<br>- Honors | 3    |               |         |
| GE   | any Area 3A (Arts) course  | 3    |               | 3A      |

### Semester 2

8 Units

| CAT. | COURSE   | UNIT | PREREQUISITES                 | GE AREA |
|------|--|------|-------------------------------|---------|
| Req  | MATH 400<br>Calculus I                                 | 5    | through the placement process | 2       |
| GE   | any Area 1B (Critical Thinking and Composition) course | 3    |                               | 1B      |

## Second Year

### Semester 3

9 Units

| CAT. | COURSE   | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| Req  | MATH 401<br>Calculus II  | 5    | MATH 400      |         |
| RC   | ET 302 <sup>1</sup><br>Principles of Electricity and Electronics | 4    |               |         |

### Semester 4

9 Units

| CAT. | COURSE                   | UNIT | PREREQUISITES | GE AREA |
|------|--------------------------|------|---------------|---------|
| Req  | MATH 402<br>Calculus III | 5    | MATH 401      |         |

## TRANSFER PATH

### Potential Transfer Majors:

- Electrical Engineering B.S.

This map prepares students for the A.S. degree. Additional major requirements and general education courses are needed for transfer. See a counselor to create an educational plan that prepares you to transfer.

### Potential Career/Options After Completing a Bachelor's Degree:

- electronics engineer
- computer engineer
- power engineer
- control systems engineer
- communications engineer

### Advising Notes:

- Students working on this major are placed directly into MATH 400. See a counselor to determine if you would benefit from additional preparation or support courses.
- Students can substitute ESLW 340 for ENGL C1000/C1000H (formerly known as ENGWR 300/480).
- This degree can be completed using either the local AA/AS general education (GE) pattern or the Cal-GETC transfer GE pattern. See a counselor to

| CAT. | COURSE   | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| RC   | ET 335 <sup>1</sup><br>Integrated Circuits with<br>Computer Applications | 4    | ET 302        |         |

<sup>1</sup> ET 335 is not required for the degree but it better prepares students for transfer, and it has a prerequisite of ET 302.

## Third Year

### Semester 5

8 Units

| CAT. | COURSE   | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| Req  | CHEM 400<br>General Chemistry I  | 5    | (see below)   | 5A, 5C  |
| GE   | any Area 4 (Social & Behavioral<br>Sciences) course (from 2<br>academic disciplines) | 3    |               | 4       |

**CHEM 400 prerequisite:** CHEM 310 or another college chemistry course or a year of high school chemistry, AND a passing score on the Chemistry Assessment Test at American River College

### Semester 6

12 Units

| CAT. | COURSE                                     | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| Req  | MATH 420<br>Differential Equations         | 4    | MATH 401      |         |
| Req  | PHYS 410<br>Mechanics of Solids and Fluids | 5    | MATH 400      |         |
| GE   | any Area 1C (Oral<br>Communication) course | 3    |               | 1C      |

## Fourth Year

### Semester 7

10 Units

| CAT. | COURSE   | UNIT | PREREQUISITES            | GE AREA |
|------|--|------|--------------------------|---------|
| Req  | PHYS 421<br>Electricity and Magnetism  | 4    | MATH 401 and<br>PHYS 410 |         |
| GE   | any Area 4 (Social & Behavioral<br>Sciences) course (from 2<br>academic disciplines) | 3    |                          | 4       |
| GE   | any Area 5B (Biological<br>Sciences) course  | 3    |                          | 5B      |

### Semester 8

10 Units

| CAT. | COURSE   | UNIT | PREREQUISITES | GE AREA |
|------|--|------|---------------|---------|
| Req  | ENGR 401<br>Introduction to Electrical<br>Circuits and Devices | 4    | PHYS 421      |         |

determine which pattern is best for you based on your academic goals.

## Other Notes to Students

### Preparing to Transfer:

- Additional coursework may be required. Work with a counselor and [ASSIST.ORG](https://www.assist.org) to determine the courses needed for your goals.
- The CSU system requires every student receiving a bachelor's degree to be knowledgeable about the Constitution of the United States, American history, and state and local government. This requirement is generally known as the American Institutions requirement. Students can complete this requirement at ARC before transferring. [See a counselor](#) for a list of approved courses.

### Honors Courses (H):

Students with a cumulative GPA of 3.2 or better who complete 15 or more units of Honors coursework earn an [Honors](#) Transfer Certificate and can take advantage of honors-to-honors transfer agreements with highly selective colleges and universities, both public and private.

| CAT. | COURSE                             | UNIT | PREREQUISITES | GE AREA |
|------|------------------------------------|------|---------------|---------|
| GE   | any Area 3B (Humanities) course    | 3    |               | 3B      |
| GE   | any Area 6 (Ethnic Studies) course | 3    |               | 6       |

#### EXPLANATION OF CATEGORIES

|     |                    |   |
|-----|--------------------|---|
| RC  | Recommended Course | A course that is not part of this program but is included in its roadmap  |
| GE  | General Education  | A course that fulfills a specific general education requirement for a degree, which can be replaced with another course that meets the same requirement |
| Req | Required Core      | A course that is required for this program  |

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