# ENGINEERING: ELECTRICAL SPECIALTY (A.S.)

## ASSOCIATE OF SCIENCE

An associate of science degree in engineering with a specialty in electrical engineering provides students with an introductory knowledge of physics and math and provides the skills necessary to pursue upper-division coursework at a four-year university as well as the experience needed for undergraduate research and entry-level internships. The degree program is composed of some common courses that are consistent with the transfer requirements to both UC and CSU systems and some elective and specialty courses that allow the student to tailor the degree to match the specific requirements of his or her transfer institution. This enables efficient completion of the A.S. degree while simultaneously completing transfer requirements, thus promoting timely completion of a bachelor's degree in electrical engineering. Electrical engineering does require a great deal of math and science preparation that may lead to a longer time in school and a higher number of units. This should be considered before following this path.

## Program Student Learning Outcomes

- Identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

## Program Requirements

| Code Number | Course Title | Units |
|---|---|---|
| **Core Requirements** | | |
| MATH 170 | Analytic Geometry and Calculus I | 4.0 |
| MATH 190 | Analytic Geometry and Calculus II | 4.0 |
| MATH 225 | Calculus III | 5.0 |
| PHYS 201 | Engineering Physics | 4.0 |
| PHYS 202 | Engineering Physics | 4.0 |
| Subtotal | | 21 |
| **Specialty Requirements** | | |
| Select three of the following: | | 6.0-14.5 |
| CHEM 111 | General Chemistry (5) | |
| CIS 180 | Programming in C/C++ (3.5) | |
| ENGR 110 | Introduction to Engineering (2) | |
| ENGR 215 | Circuits (3) | |
| ENGR 215L | Circuits Laboratory (1) | |
| MATH 250 | Linear Algebra and Differential Equations (5) | |
| PHYS 203 | Engineering Physics (4) | |
| **Total Units** | | **27-35.5** |

## ASSOCIATE OF SCIENCE DEGREE REQUIREMENT

Completion of a minimum of 60 semester-units to include (1) the courses listed above, (2) the A.A. degree general education requirements, and (3) a grade of "C" or better in all courses required for the major.