

# ROBOTICS TECHNICIAN, CERTIFICATE OF ACHIEVEMENT

Course	Title	Units
ELEC A122	Robotics 2- Sensors, Control Theory, and Programming	3
<b>Total Units</b>		<b>12-13</b>

**Control Number:** 41397

**Not Financial Aid Eligible**

Working with robots requires a specialized skill set. Students earning this certificate will be proficient in soldering, crimping, and mechanical assembly. Students will gain a working knowledge of control theory, become familiar with a wide range of sensors, and be able to write basic autonomous robot programs in C. Students will also be proficient in using electrical theory to calculate load and power requirements. This certificate is designed to provide the student with the electrical and systems knowledge required to successfully work on robotic systems at the technician level.

## Program Outcomes

1. Demonstrable ability to work with servos, motors, and stepper motors to power motion systems.
2. Acquire familiarity with a variety of sensors and how to integrate them into a functional robot.
3. Students will be able to use Ohm's Law and fundamental electrical math to analyze circuits.
4. Students will be able to program robots to conduct autonomous tasks using basic control theory.

## Certificate of Achievement Requirements

The Certificate of Achievement is a state-approved career program that requires a minimum of eight units and is designed to prepare the graduate to enter a particular field of employment. In order to be awarded a certificate, students are required to obtain a grade of "C" or better in all program-required courses. Grades of "CR" or "P" will be accepted whereas "CR" or "P" meets the equivalency of a "C" or better. At least 3 units in an advanced course from the certificate must be completed at OCC at the department's discretion. Certificates of Achievement are not automatically awarded. A petition must be filed in Enrollment Services or online at the beginning of the semester in which the student will be completing their final requirements. The petitioning periods are listed in the Graduation Requirements (<https://catalog.cccd.edu/orange-coast/graduation-requirements/>) section of this catalog. Check with a counselor to determine the requirements for completion.

A list of certificate programs can be found in the Programs A-Z (<https://catalog.cccd.edu/orange-coast/programs-study/>) section of this catalog.

Course	Title	Units
<b>Required Courses</b>		
ELEC A100	Electronic Problem Solving	3-4
or MATH A115	College Algebra	
or MATH A120	Trigonometry	
ELEC A111	D.C. Circuits	3
ELEC A121	Robotics 1- Mechanics & Design	3