

ROBOTICS TECHNICIAN, CERTIFICATE OF ACHIEVEMENT

Banner Code: 1_CM_ELRT
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.

Review Graduation Requirements (<https://catalog.cccd.edu/orange-coast/graduation-requirements/certificates/#achievementtext>).

Course	Title	Units
Required Courses		
ELEC A100 or MATH A115 or MATH A120	Electronic Problem Solving College Algebra Trigonometry	3-4
ELEC A111	D.C. Circuits	3
ELEC A121	Robotics 1- Mechanics & Design	3
ELEC A122	Robotics 2- Sensors, Control Theory, and Programming	3
Total Units		12-13

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

Course	Title	Units
Year 1		
Semester 1		
ELEC A100 or MATH A115 or MATH A120	Electronic Problem Solving or College Algebra or Trigonometry	3-4
ELEC A111	D.C. Circuits	3
	Units	6-7
Semester 2		
ELEC A121	Robotics 1- Mechanics & Design	3
ELEC A122	Robotics 2- Sensors, Control Theory, and Programming	3
	Units	6
	Total Units	12-13