

# AUTOMATION FUNDAMENTALS, CERTIFICATE OF ACHIEVEMENT

**Control Number:** 41369  
**Not Financial Aid Eligible**

The Automation Fundamentals Certificate courses provide students with the foundational skills training needed for a multitude of careers in Automation. This certificate creates a pathway into capstone career programs, either advanced certificates or AS degrees or BS degrees, in disciplines such as Electrical Technology, Industrial Electronics, Industrial Automation, Mechatronics, Robotics, Building Automation Systems, HVAC/R, and Water-Wastewater Technology. This certificate is transferrable between six partner colleges in Orange County that offer these career programs.

## Program Outcomes

1. Students will be able to use fundamental electrical laws and mathematics to analyze AC and DC Circuits.
2. Students will be able to use diagnostic tools on industrial systems and work safely in accordance with NFPA 70E.
3. Students will acquire the skills necessary to connect to a PLC, diagnose system problems, backup a program, and restore a program to a controller.
4. Students will gain proficiency in reading and creating schematics, wiring diagrams, and ladder logic diagrams for advanced control systems.

## 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 A102	Safety, Maintenance, and Calibration	1
ELEC A111	D.C. Circuits	3
ELEC A112	A.C. Circuits	3

Course	Title	Units
ELEC A131	Automation 1- Industrial Control Systems	4
<b>Total Units</b>		<b>11</b>

## Program Sequence

These sequences at Orange Coast College are curriculum maps for students to finish all requirements for the certificate. There may be advisories, prerequisites, or time requirements that students need to consider before following these maps. **Students are advised to meet with an Orange Coast College Counselor for alternate sequencing.**

Course	Title	Units
<b>Year 1</b>		
<b>Semester 1</b>		
ELEC A111	D.C. Circuits	3
ELEC A112	A.C. Circuits	3
ELEC A102	Safety, Maintenance, and Calibration	1
ELEC A131	Automation 1- Industrial Control Systems	4
<b>Units</b>		<b>11</b>
<b>Total Units</b>		<b>11</b>