INDUSTRIAL PLC TECHNICIAN, ASSOCIATE IN SCIENCE DEGREE

Banner Code: 1_AS_ELIP
Control Number: 41480
Financial Aid Eligible

The Industrial PLC Technician Associate of Science degree is designed to provide students who have completed the PLC Technician Certificate of Achievement the opportunity to earn an associate's degree. Students will leave with the skills and knowledge required to work on the PLC-based industrial control systems commonly found in advanced manufacturing facilities. Students will gain hands-on experience with Siemens and Allen-Bradley controllers. Upon completion of this certificate, students will be able to troubleshoot PLC based systems, replace faulty electrical components, and program and commission systems.

Students must complete the Industrial Electronics Technician Certificate of Achievement (13-14 units) as a part of the required coursework.

Program Outcomes

1. Students will gain the basic knowledge required to take the CET (Certified Electronics Technician) exam.
2. Students will be able to 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.
5. Students will acquire hands-on skills working with HMIs, SCADA, and industrial communication protocols.

Review Graduation Requirements (https://catalog.cccd.edu/orange-coast/graduation-requirements/associate-degree/) and General Education (https://catalog.cccd.edu/orange-coast/general-education-patterns/).

Required Prerequisites

Industrial Electronics Technician Certificate of Achievement (13-14 Units)

Course	Title	Units
Required Courses		
ELEC A100	Electronic Problem Solving	3-4
or MATH A115	College Algebra	
or MATH A120	Trigonometry	
ELEC A111	D.C. Circuits	3
ELEC A112	A.C. Circuits	3
ELEC A131	Automation 1- Industrial Control Systems	4
Total Units		**13-14**

Required Courses

Course	Title	Units
Required Courses		
ELEC A232	Automation 2 - Programmable Logic Controller	4
ELEC A233	Automation 3 - Industrial Networks, HMI, and SCADA	4
ELEC A102	Safety, Maintenance, and Calibration	1
ELEC A103	Computer Hardware Configuration & Diagnostics	3
or ELEC A290	Electronic Troubleshooting	
Total Major Units		*25 - 26*
OCC AS General Education [1,2]		*up to 21*
Transferable electives as needed to satisfy unit requirements		*varies*
Total Minimum Degree Units - OCC AS GE		**60**

[1] Some program major units may also meet GE requirements.
[2] Cal-GETC pattern (up to 34 units) may be substituted.

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 [1] or College Algebra or Trigonometry	3-4
ELEC A111	D.C. Circuits	3
ELEC A102	Safety, Maintenance, and Calibration	1
OCC AS GE AREA 1A- CHOOSE ONE		3
OCC AS GE AREA 4 - CHOOSE ONE		3
	Units	**13-14**
Semester 2		
ELEC A112	A.C. Circuits	3
ELEC A131	Automation 1- Industrial Control Systems	4
ELEC A232	Automation 2 - Programmable Logic Controller	4
OCC AS GE AREA 1B - CHOOSE ONE		3
	Units	**14**
Year 2		
Semester 1		
ELEC A103 or ELEC A290	Computer Hardware Configuration & Diagnostics or Electronic Troubleshooting	3
OCC AS GE AREA 3 - CHOOSE ONE		3
OCC AS GE AREA 2 - CHOOSE ONE [2]		3-4

Course	Title	Units
ELECTIVE (DEGREE APPLICABLE) [3]		3
	Units	**12-13**
Semester 2		
ELEC A233	Automation 3 - Industrial Networks, HMI, and SCADA	4
OCC AS GE AREA 5 - CHOOSE ONE		3-4
OCC AS GE AREA 6 - CHOOSE ONE		3
ELECTIVE (DEGREE APPLICABLE) [3]		11
	Units	**21-22**
	Total Units	**60-63**

[1] MATH A115 or MATH A120 Satisfies OCC AS GE, Area 2

[2] Required if level MATH A100+ will not be taken, if Math A100+ taken, needs to take degree applicable elective units.

[3] VARIES TO REACH MINIMUM 60 DEGREE APPLICABLE UNITS