

# INDUSTRIAL AUTOMATION CERTIFICATE OF ACHIEVEMENT

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Students will be prepared for high paying careers in the many existing and future automated manufacturing plants, smart warehouses, and high technology distribution and material handling centers, usually located near major railroad hubs, airports, and interstate freeways. Nearly every product in the supply chain is processed through a complex network of automated material handling, transportation, and logistics centers. This certificate program focuses on the electronic technology, including the Mechatronics responsible for monitoring, controlling, and actuating automated processes involved with all phases of material processing, packaging, and handling systems. Students will be equipped with technical information on mechanical, electrical, analog and digital electronics, Programmable Logic Controllers (PLCs), Programmable Automation Controllers (PACs), Supervisory Control and Data Acquisition (SCADA) systems, fluid power systems, computer hardware and software, networking, interfacing, robotics, sensors and actuators typically used in automated equipment.

Code	Title	Units
<b>Required Courses:</b>		
OSHA 035	Federal OSHA Outreach: General Industry Safety	2
ELECTR 110	Direct Current Circuit Analysis	3
ELECTR 111	Direct Current Circuit Laboratory	1
ELECTR 115	Alternating Current Circuit Analysis	3
ELECTR 116	Alternating Current Circuit Laboratory	1
ELEC 101	Supply Chain Technology	3
ELEC 215C	Electrical Control of Hydraulic-Pneumatic Systems	4
ELEC 217C	Industrial Electricity	4
ELEC 218C	Controlling Industrial Electricity	4
ELEC 219C	Industrial Electronic Systems Controls II	4
ELECTR 265	Digital Logic Design	4
<b>Total Units</b>		<b>33</b>

*This is a Gainful Employment Program*

## Program Learning Outcomes

At the completion of this program, students will be able to:

- Create Radio Frequency identification (RFID) and optical bar-code reading and communication systems.
- Use PLCs, VFDs, and HMIs in the design, configuration and control of conveyor belt systems for the supply chain industry.
- Compose written documents on occupation safety and health in general industry, demonstrating a high level of competency.
- Use quantitative measurement of electrical circuit parameters; assemble and test, both direct current (DC), and alternating current (AC), series, parallel, and combination series parallel circuits.
- Deliver formal presentations as required by technicians working the field of supply chain technology, on a variety of subjects, to a wide range of audiences.