

Certificate of Achievement Industrial Controls: Programmable Logic Controller

PLC.CA

FIRST YEAR/FIRST SEMESTER			
Course #	Course Name	Credits	Notes
CIM-211	PLC Programming	4	
FIRST YEAR/SECOND SEMESTER			
CIM-212	Advanced PLC Programming	3	Prerequisite: CIM-211
CIM-231	Motors, Controllers & Sensors	3	Prerequisite: CIM-211
TOTAL CREDITS		10	

PROGRAM DESCRIPTION

The Industrial Controls: Programmable Logic Controller (PLC) Certificate of Achievement is a course of study designed to quickly train new learners and/or incumbent electrical mechanics in the skills necessary to troubleshoot and program the PLCs used in batch and/or discrete automation. A PLC is a real-time industrially-hardened computer running a specialized Operating System which is typically programmed via the Relay Ladder Logic (RLL) programming language. PLCs are used to control high-speed factory automation equipment and manufacturing processes used in packaging, sorting, chemical processing, amusement parks, textiles, animatronics, conveyor belts, mining, petrochemical, and other manufacturing enterprises to name a few.

The PLC certificate includes courses that will investigate both discrete and analog sensors, pneumatic directional control valves, AC and DC motors, and single-phase and three-phase power. The PLC used will be the Allen Bradley SLC 500 and the CompactLogix 5000-scale processor running RSLogix software. No special skills are required, however prior industrial electrical experience will prove beneficial to the student.

PROGRAM STUDENT LEARNING OUTCOMES

- At the end of the program, the graduate will be able to:
1. Specify, populate, and install a Programmable Logic Controller and its input and output modules.
 2. Develop and troubleshoot RLL program code for Allen-Bradley 500 and 5000 processors
 3. Identify, work with, and explain the operating principles of those inductive elements found in typical industrial settings including AC, DC, stepping, and universal motors; electromechanical and solid state relays; solenoids; and transformers.
 4. Read and interpret single phase and three phase motor name plates and wiring diagrams and ISO 1219 pneumatic symbols.
 5. Describe and discuss the differences and similarities between capacitive, inductive, and photoelectric proximity detectors.

CONTACT PERSONS

Dr. Melvin L. Roberts, Coordinator
(856) 227-7200, ext. 4942
email: mroberts@camdencc.edu

Kevin Schmidt
(856) 227-7200, ext. 4517
email: kschmidt@camdencc.edu

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