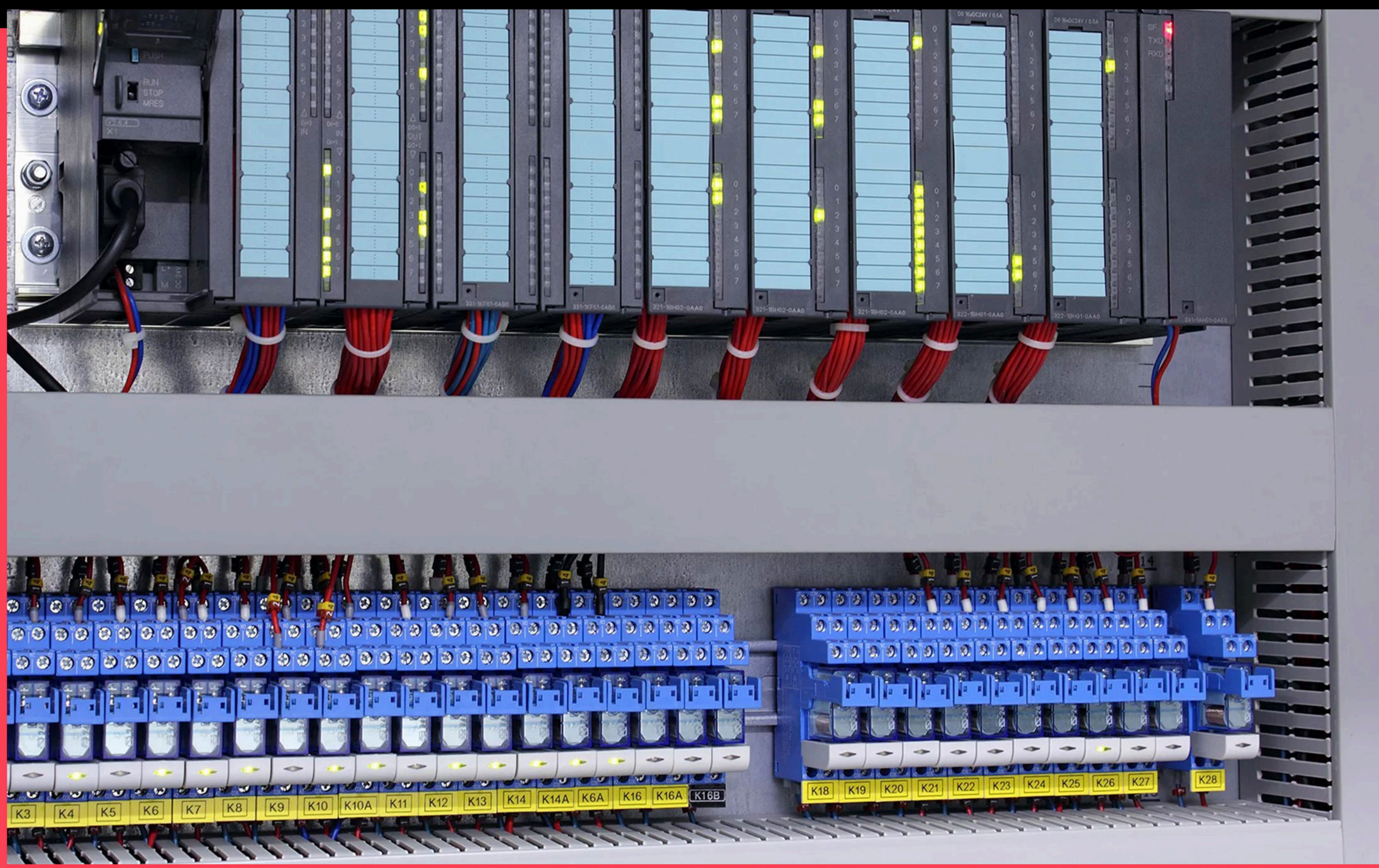
M.A.T
Madesoft Academy of Technology

PROGRAMMABLE LOGIC CONTROLLER II CERTIFICATE OF ACHIEVEMENT



Course Syllabus

PROGRAMMABLE LOGIC CONTROLLER II
CERTIFICATE OF ACHIEVEMENT

This program concentrates on programming both Allen Bradley ControlLogix and SIEMENS S7 PLCs using IEC61131-3 languages learned in the PLC Level 1 certificate.
Students will build and program Human Machine Interface (HMI) and Open Platform Communication (OPC).
Learn and utilize programmable drives that are common in the industry.

COURSE OBJECTIVES

Students who successfully complete the programme will have the ability to construct, integrate, maintain, debug, and manage PLC programmes.

COURSE FLOW

This is a 4 Weekends based course whereas a student you will spend 4 Weekends of intensive training learning the overall PLC programming concepts, engage in Practical Programming Exercise, Labs, Case study and Assignments

DELIVERY METHODS

This Program Consist of Physical Classes at the Madesoft Academy Training Facility, as well as Mentorship, Workshops, Modularized lessons managed by Learning Management System with Assignments, Lab exercise, Practical case study, Downloadable study resources and Video lectures to fully engage the student.

Student will be involved in practical lab Exercise and Assignment after each key concept is taught, the lab work shall be in the form of practical with guide from instructors.

PREREQUISITE

Applicant for this course must have completed the Madesoft Academy PLC Level I certificate of Achievement course. Also, Applicant with 1+ year working experience with PLC shall be considered for a place in the program.

COURSE OUTCOME

The expected learning outcome for each student participating in the Programmable Logic Controller I Course are listed below.

1. Develop a PLC program TIA Portal and RSLogix 5000.
2. Build and program an HMI.
3. Use OPC to communicate to various devices.
4. Configure and Interface Modbus Devices e.g programmable drives to PLCs.
5. Create proportional integral derivative (PID) control Loops
6. Create customized programs that are specific to your equipment and needs.
7. Develop understanding of System Integration Philosophy

MODULES

1. **Module 1** - Ladder Logic & FBD Programming with Siemens S7 PLC
2. **Module 2** - Ladder Logic & FBD Programming with ControlLogix PLC
3. **Module 3** - Human Machine Interface
4. **Module 4** - Open Platform Communications (OPC)
5. **Module 5** - Control Systems Fundamentals
6. **Module 6** - Introduction to System Integration

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LADDER LOGIC & FBD PROGRAMMING WITH SIEMENS S7 PLC - MODULE 1

MODULE OBJECTIVES

Get hands-on experience by implementing Ladder Logic & FBD instructions with focus on Siemens S7 PLCs using TIA Portal programming software.

LADDER LOGIC & FBD PROGRAMMING WITH CONTROLLOGIX PLC - MODULE 2

MODULE OBJECTIVES

Get hands-on experience by implementing Ladder Logic & FBD instructions with focus on ControlL ogix PLCs using RSLogix 5000 programming software.

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HUMAN MACHINE INTERFACE - MODULE 3

MODULE OBJECTIVES

With Human Machine Interfaces (HMI), students will be able to take their PLC knowledge to the next level. HMIs can improve your efficiency by allowing quick responses to new production demands and permitting you to oversee fine details of production. Configure and program the SCADA HMI using Ignition SCADA software, Configure and program Siemens HMI using TIA Portal programming software. With the skills gained in this course, you will be able to use PLC-HMI communication, link HMIs to different machines, and create a simulation.

OPEN PLATFORM COMMUNICATIONS (OPC) - MODULE 4

MODULE OBJECTIVES

Set up OPC communication with Siemens and Allen Bradley PLCs. Access, manage, and transfer data from Microsoft Excel and process control hardware with OPC. With the skills gained from this course, you will be able to operate and configure OPC software e.g Kepware OPC Server.

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CONTROL SYSTEMS FUNDAMENTALS - MODULE 5

MODULE OBJECTIVES

In this Module students will explore proportional integral derivative control systems (PIDs), control loop feedback mechanisms that automatically apply correction to a control function. Create open and closed loops while using PIDs. With the skills gained in this course, you will be able to configure, commission, and program control loops.

INTRODUCTION TO SYSTEM INTEGRATION - MODULE 6

MODULE OBJECTIVES

Lastly each student will put their Programmable Logic Controller (PLC) theory to the test in real-world scenarios. Bring to life a project with multiple PLCs and Human Machine Interface (HMI) stations. Display your expertise with Allen Bradley PLC, Siemens PLC, Ignition SCADA, OPC, SIMATIC HMI, and other control system equipment. Integrate multiple systems using PLCs, HMIs, Workstations, and communication protocols.

Ready To Take The Next Step?

APPLY NOW

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