

# Industrial Automation using PLC

## Description

Our Programmable Logic Controller (PLC) course is designed around industrial maintenance personnel, to help them diagnose and repair faults in PLC controlled production equipment. The PLC is a vital element in modern industry and this course provides a solid basis for maintenance personnel to progress in this area.

## Expectations and Goals

- Fundamental idea about the industrial hardware components.
- Making practical circuits by using the industrial hardware components.
- Learn about the Industrial circuit formation.
- The most important thing is & how to make a circuit of a logic.
- Detailed understanding of circuits.
- Establishing communication between PLC to PC.
- Establish Interfacing between PLC to Industrial components.
- Practice real-life projects using PLC.

## Prerequisites

Anybody interested in PLC can take this training. Though basic knowledge of electrical will be a plus point.

## Course Schedule

| Module   | Topic   |
|----------|---|
| Module 1 | <b>An Overall Look at Programmable Logic Controllers</b><br>1 Definition and History of PLC   |
| Module 2 | <b>PLC Architecture</b><br>1.1 PLC Architecture<br>1.2 PLC Interfacing Devices<br>1.3 Types of PLC  |
| Module 3 | <b>PLC Control &amp; Actuation</b><br>1.1 PLC Control & Actuation<br>1.2 OLD Diagram OLD Diagram  |
| Module 4 | <b>Hardware components require in PLC</b><br>1.1 Switches (Theory with assignments)<br>1.2 Relay (Theory with assignments)<br>1.3 Contactor(Theory with assignments)<br>1.4 Timer(Theory with assignments)<br>1.5 Sensor(Theory with assignments) |
| Module 5 | <b>Hardware Practical</b>   |
| Module 6 | <b>Create the OB1 in SIMATIC Manager</b>  |
| Module 7 | <b>Basic PLC Programming</b><br>LADDER Logic Overview(Simatic Manager)<br>1.1 Normally Open, Normally Close<br>1.2 Latching<br>1.3 SPDT   |
| Module 8 | <b>STL Programming</b><br>1.1 Introduction to STL Programming<br>1.2 Normally Open, Normally Close<br>1.3 Latching<br>1.4 SPDT  |
| Module 9 | <b>FBD Programming</b><br>1.1 Introduction to FBD Programming   |

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|------------------|---|
|                  | <ul style="list-style-type: none"> <li>1.2 Normally Open, Normally Close</li> <li>1.3 Latching</li> <li>1.4 SPDT</li> </ul>   |
| <b>Module 10</b> | <b>Advance Programming</b> <ul style="list-style-type: none"> <li>1.1 Counter</li> <li>1.2 Comparator</li> <li>1.3 Timer</li> </ul>   |
| <b>Module 11</b> | <b>Advance Programming</b> <ul style="list-style-type: none"> <li>1.1 Bit Logic</li> <li>1.2 Converter</li> </ul>   |
| <b>Module 12</b> | <b>Concepts of Analog Uses</b> <ul style="list-style-type: none"> <li>1.1 Integer and Floating Point Function of Analog I/O</li> <li>1.2 Analog simulator</li> <li>1.3 Assignments</li> </ul>                             |
| <b>Module 13</b> | <b>Honeywell PLC</b> <ul style="list-style-type: none"> <li>1.1 Brief Idea On PLC</li> <li>1.2 Master Logic Software</li> <li>1.3 Communication between ML and Honeywell PLC</li> <li>1.4 How Honeywell Works.</li> </ul> |
| <b>Module 14</b> | <b>Project work and Documentation</b>   |