



**CERTIFICATE VOCATIONAL TRAINING PROGRAMME  
ON  
INDUSTRIAL AUTOMATION  
(PLC/SCADA/HMI/DRIVES)**

**Objective:**

To provide participant a detailed knowledge about PLC. Hardware configurations, Programming, Wiring Diagram, faults & Troubleshooting. To introduce participant with various Industrial Applications & Control.

**Who should Attend:**

Engineering student from Electrical/ Instrumentation/ Electronics doing undergraduation with basic knowledge,

**Contents:**

1. Review of Basics of Electricity & Basic Calculation
2. Review and study of Electrical Symbols required.
3. Single Line Diagram and Distribution of Electrical power
4. Electrical Tools, Cables requirement, Standards & Selection.
5. Protective Devices: Fuse, ELCB, MCB, MCCB etc.
6. Selection of Electrical Equipments: criteria and selection

**PLC BASICS & HARDWARE CONFIGURATION: ENGINEERING FUNDAMENTALS & MAINTENANCE**

**Contents:**

- Introduction to PLC - Need & Advantages,
- Comparison with Electrical circuit using Relays (Relay Wiring Diagrams)
- PLC Hardware structure & Operating Principles.
- Overview of Popularly used PLCs -(Siemens, Allen Bradley, GE Fanuc etc..)
- Digital & Analog I/O Addressing- Basics
- PLC Programming using STL, LAD, FBD- basics & Introduction
- PLC Trouble-shooting & Fault finding
- PLC panel: components, wiring, testing, earthing
- SCADA
- HMI
- Drives

**Maintenance Practices & Exercise (Hands ON):**

Upload, Download, Restore, Backup, Data Watch, Data monitor, Fault tables, temporary IP address setting, Module insertion and removal, hot and cold restart, debugging communication, fault indicators, battery replacement, cable testing, forcing of inputs and outputs, I/O Wiring, I/O Testing and troubleshooting,

Documentation (I/O list, Loop wiring diagram, panel wiring diagrams,architecture, test procedures, reports writing)

**Certification:**

Every successful participant will be awarded a course completion certificate.