**INDUSTRIAL AUTOMATION (PLC \_ HMI)**

**Instructor Profile**

* EJAZ Ahmad
* BS Electronics
* 15 year Experience

**TRAINING OBJECTIVES:**

The objective of the course is to impart training in field of automation. As in this age industrial automation is growing more and more rapidly. The objective is to introduce the people with the application of PLC as a part of the automation in various sectors of industry like Textile, Cement, Fertilizer, Chemical, Petrol Chemical and Manufacturing Industry as well as is domestic and commercial sectors.

At the end of the course the participant should have:

1. Attained the knowledge of phenomena of automation.

2. Acquired the know how about the principle of automation.

3. The capability to understand the PLC based systems and machinery.

4. The potential to diagnose and troubleshoot. The PLC based machines.

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| **CURRICULUM SALIENTS** Entry Level  | **TTC / D.A.E / Engineering** in Electrical / Electronics /Mechanical/ Instrumentation/HVAC **OR** Relevant Experience in INDUSTRY  |
| **Duration of course**  | 12-weeks(only Sunday)  |
| **Total training hours** **Course Fee** | 6 hours/day **21000/-**   |
| **Training methodology**  | Theory 10% Practical 90%  |

**COURSE OUTLINE**

* PLC Introduction
* Relay Logic System
* Digital INPUTS and OUTPUTS Devices, its wiring details and voltage standards
* Analog INPUTS and OUTPUTS Devices, its wiring details and voltage standards
* PLC Scanning cycle and Error Detail
* PLC memory types
* PLC wiring
* PLC selection according to application
* PLC languages
* PLC software installation and simulator introduction
* Communication between PLC and COMPUTER
* Program reading and writing to PLC
* PLC INPUTS and OUTPUTS online testing
* Logic gates circuit design
* Multi INPUTS and outputs programming technique
* Interlocking
* Latching / Holding
* Set / Reset Function
* Memory Bits uses and Application
* Timers time calculation and Applications
* Counters Application( up and down counting)
* DATA Memory Registers Applications
* Arithmetic Logic
* Comparison
* Floating Values
* REAL Time Clock
* High speed INPUTS and OUTPUTS
* Analog to Digital conversion programming technique
* Digital to Analog conversion programming technique
* RTD (Temperature Detection) programming technique

**HUMAN MACHINE INTERFACE (HMI)**

* Software installation
* HMI and PLC drivers selection
* Software OFF line Simulation
* Software Online Simulation
* HMI and PLC communication setting
* Bit Devices in HMI
* Function KEYS
* Numeric Display and Numeric Inputs
* Bar graph Display
* Meter display
* Traffic signal Design
* Alarm Display
* Alarm History
* Trends Graph