

Training & Certification Program in **PLC & Automation**

Overview:

- Overview of Industry and Scope.
- Role of Automation Engineer in various types of Industries.
- Knowing Client requirements and collection of specific data for projects.
- Relevant Codes & Standards.
- Complete Industrial Training on Selection, Installation and Troubleshooting of PLC (Programmable Logic Controllers), DCS (Distributed Control System) and SCADA (Supervisory Control And Data Acquisition) for various processes.
- Complete Industrial Training on MMI (Man Machine Interface), Panel Designing, Variable Speed Drives and motors, Process Instrumentation and their interfacing with PLC, DCS, and SCADA.
- PLC vendor's details and specification of PLC, DCS and SCADA.
- Preparation Ladder Diagram.
- Basic automation requirements based on the type of plant e.g. Chemical, Petrochemical, Pharmaceutical Industrial, power plant etc.
- Selection of Instruments for Controlling Flow, Temperature, level and Pressure.
- The various Process Conditions.
- Vendor's details and specification for all Instruments used to control Flow, Level,
- Temperature and Pressure.
- Installation and maintenance Tips of all Instruments.
- Detailed Design of Automation & Instrumentation systems including Layouts.
- Procurement Requirements.
- Inspection of Equipments/system
- Preliminary Project design requirements.

Module Details

Industrial Process Management

- Instrumentation in process industry.
- Erection and installation guidelines.
- HART Communication.
- Advancement in the instrumentation technology.
- Measurement Practices.
- Calibration practices.
- Field bus technology.
- Troubleshooting.

Programmable Logic Controller

- Introduction to PLC hardware.
- Role of PLC in automation.
- PLC Fundamentals - (Block diagram of PLC's)
- Types of Inputs & outputs.
- Concept of flags.
- Architectural Evolution of PLC.
- Introduction to the field devices attached to PLC.
- Various ranges available in PLCs.
- Source Sink Concept in PLC.
- Scan cycle execution.
- Detail information about PLC components.
 - Power supply
 - CPU
 - I/O modules
 - Communication bus

Practical Exposure Allen Bradley, Siemens and Modicon PLCs

- Introduction to PLC programming software.
- Introduction to bit, byte & word concept.
- Addressing concepts.
- Programming instructions arithmetic and logical.
 - Load /and /or/out / and Read / Write
 - Leading edge / trailing edge instructions
 - Timer Blocks programming
 - Advanced instructions
 - Comment functions
 - MOVE block application
 - Compare / Add / Sub /And /Or - Blocks
 - Counter Block programming
 - File handling
 - Master control /set /reset function
- Upload, download, Monitoring of programs.
- Monitoring / Modifying data table values.
- Troubleshooting and fault diagnostics of PLC.
- Program assignments for real time applications.
- Forcing I/P & O/P.
- Standard procedure to be followed in wiring / writing ladder etc.
- Documenting the project.
- Hands on experience on writing programs.
- Case studies for conveyer, motors control, timer & counter applications etc.

Panel Designing

- Preparing general arrangement diagram.
- Load calculations.
- Panel designing.

Supervisory Control & Data Acquisition

- Applications of SCADA software.
- Different packages available with I/O structure.
- Features of SCADA software.

Application development in Wonderware In Touch

- Creating a new SCADA application.
- Creating Database of Tags.
- Creating & editing graphic display with animation.
 - Data Entry / Start Stop command
 - Sizing
 - Blinking
 - Filling
 - Analog entry
 - Movement, Visibility, Trending
 - Creating & Accessing Real-time Trends
 - Creating & Accessing Historical Trends
- Creating Alarms & Events.
- Writing logic through script.
 - Application script
 - Condition
 - Special functions
 - Data Change
 - Window script
- Connectivity with the different hardware.
 - Communication protocols
 - Communication with PLC Communication with Data Acquisition System
- Connectivity between software
 - Communication with Excel
 - Communication with Visual Basic
- Commissioning the network nodes.
- Troubleshooting the application.

Variable Speed Drives

- Introduction to AC/DC Drives.
- Selection criteria of the drives for particular application i.e. Speed /Torque Characteristic etc.
- Configuration of different motor parameter for drives i.e. speed and torque control, types of braking, ramp selection, jog/inch selection, flux optimization, No. of poles, load equalization, selection of slip & skip frequencies, preset speed selection, RPM etc.
- Remote and Local operation of Variable Speed Drives.
- Communication with PLC, MMI/SCADA Software.
- Study of different operational methods like PWM method, flux vector control, vector voltage control, direct torque control etc. on which Variable Speed Drives work.
- Troubleshooting.
- Case study and different applications of Drives in the industry.

HMI

- Getting started with HMI.
- Creating applications, Creating Tags.
- Downloading/Uploading Programs..
- Communication with PLC.
- Fault Diagnostics.
- Creating alarm messages.
- Develop an understanding of animation configuration.
- Develop an understanding of drivers and data transfers to PLC.

Application Procedure

Submit Dully filled attached Admission Query Form, along with your updated CV at our office or mail it to “info@smartbrains.in”.

Admission would be given only to shortlisted candidates. Please confirm your admission on allotted dates.

Documents Required

- 2 PP Size Photograph.
- 1Photo ID Proof, 1 Address Proof.
- 1 Photo stat of qualifying exam certificate
- 1 hard copy of your CV.

For further Information and Admissions Contact:

SmartBrains Engineers & Technologist Pvt. Ltd.

12 - A, 2nd Floor

Ahinsa Khand - II

Indirapuram, Ghaziabad-201010

Off. +91-120-4104994

Mob: +91- 9891108700/9810554003

Email: info@smartbrains.in

Website: www.smartbrains.in