



# PLC SCADA

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## PLC & SCADA

### INTRODUCTION TO AUTOMATION

- Brief Description of a Control System
- Pneumatic Controller, PID Controller, PLC Controller
- History & Need of Industrial Automation
- Application of Industrial Automation
- Basic Components of Automation
- Hardware Classification of Automation

### GETTING FAMILIAR WITH PLC OF ALLEN BRADLEY

- Type of PLC
- Hardware & Architecture of PLC
- Application and Advantage of PLCs
- Sourcing and Sinking concept
- Programming Language of a PLC
- Introduction to field Device (Input/output)
- Data files in PLC Programming
- Brief Description of a Logic Gates
- Simulator analysis of a PLC Programming
- Communication with PLC
- Wiring different field device to PLC
- Uploading, Downloading & Monitoring programs
- Introduction to SFC
- Introduction to Instruction List
- Introduction to Ladder Logic

### ADVANCE PROGRAMMING IN PLC

- Introduction to jump and label instruction.
- Introduction to SBR and JSR instruction.
- Forcing of I/O
- Monitoring/Modifying Data table values
- Hands on experience on real time applications
- Fault finding/troubleshooting and documentation
- Interfacing proximity sensor with PLC
- Interfacing with Relay
- Control circuit designing with feedback concept.

### LADDER LOGIC PROGRAMMING

- Comparison b/w Gates, Relay Logic & ladder logic
- Description of using Memory bit in a programming
- Mathematical Concept ADD, SUB, MUL, DIV and etc
- Logical Concept AND, ANI, OR, ORI, EXOR, NOT etc
- Special Function MOV, SET, RST, CMP, INC, DEC
- Programming based on Timer And Counter

### GETTING FAMILIAR WITH SCADA OF WONDERWARE

- Introduction to SCADA SoGware
- Creating new SCADA Project
- GUI Designing
- Tag Substitutions
- Dynamic Process Mimic

- Real Time Trend
- Historical Trend
- How to create Alarms & Event
- Recipe Management
- Introduction to graphic Properties like Sizing, Blinking, Filling, Analog Entry, Movement of Objects ,Visibility etc.
- Net DDE Communication
- Application of scripts
- Communication with PLC

## RELAY LOGIC

- Basic principle of Relay working
- Making AND ,OR gate ,NOT gate logic circuit
- Interfacing relay with sensor
- Relay based Control designing
- Interconnection between Different Relay & Switch `s

## CONTACTOR WORKING

- DOL Starter
- Forward And Reverse DOL
- Star Delta Starter(including timer)
- Interlocking Circuit
- Inching process
- Contactor Based control Diagram

## TIMER INTERFACING

- Basic Principle of Industrial Timer
- Delay generation
- Wiring connection of timer to the different device
- Controlling switching between different devices
- Interfacing with relay and contactor
- Alarm generation

## SENSOR AND PROCESS INSTRUMENTATION

- Introduction to various Sensors/Instrumentation used in a Industry
- Temperature measurement (Thermocouple, RTD, thermistor )
- Working on the proximity sensor
- Introduction to limit switch
- Working on the photo electric sensor
- Temperature controller
- Level sensor
- Flow measurement and its working principle
- Pressure measurement and its working principle
- LVDT Displacement Sensor
- Load and level measurement
- Solenoid valve working and it `s Principle
- Making Switches by using Sensor

## MOTION CONTROL SYSTEM(VFD OF ALLEN BRADLEY)

- AC Motor and its working
- Introduction to Stepper and Servo motor
- Motor control circuit, interlocking circuit
- Introduction to AC Drives & application

- Drive Parameter programming
- VFD controlling through Keypad ,External switch and PLC
- Basic Criteria for drives selection
- Drive Control Panel system designing

## **AUTOCAD DESIGNING ( 2D Draƒing)**

- Creating and managing workspace
- Erasing Object,Cancelling & Undoing a command
- Object selection method
- Setting unit and limits
- Drawing arc,rectangle,ellipses,polygon
- Edit ,Move,copy& paste command
- Offset,rotate,&scale,fillet,Chamfering,trim , ExtendStretch & lengthen command
- Zooming & Panning drawing
- Electrical Wiring Designing through Autocad
- Control panel designing through Autocad

## **HMI (HUMAN MACHINE INTERFACE) OF ALLEN BRADLEY**

- Getting started with HMI
- Creating applications, creating tags
- Downloading and uploading Programs
- Creating GUI screen on the HMI
- Alarm Messages
- Communicating with PLC Fault diagnostics and Troubleshooting

## **CONTROL PANEL DESIGNING**

- Discussion on Type of Switches;- PB, E- PB, Toggle Switches, Selector switches, Limit Switches
- Introduction to Contactor and it's Working
- Miniature Circuit Breaker
- Molded Case Circuit Breaker
- Over Load Relay
- Motor Protection Circuit Breaker
- Basic of Control & power drawing
- General wiring guidelines in a panel Designing
- Panel Indicator (Multifunction meter ,ammeter, Voltmeter)
- Preparation of general arrangement diagrams, busbar sizing
- Electrical Protection
- General wiring guidelines / practices
- Load management (connected load, running load ,load factor)
- Maintenance & troubleshooting of control circuit in live panels.

## **INDUSTRIAL NETWORKING**

- Taking different device through network
- Different Networking Topologies and their importance
- Communicating with Nodes, Ports, drivers and Hardware
- DH-485, Ethernet , DeviceNet , ControlNet, Modbus, Profibus, fieldBus

## **HMI (HUMAN MACHINE INTERFACE) OF DELTA**

- Getting started with HMI
- Creating applications, creating tags
- Downloading and uploading Programs
- Creating GUI screen on the HMI
- Alarm Messages
- Communicating with PLC Fault diagnostics and Troubleshooting

## **MOTION CONTROL SYSTEM(VARIABLE FREQUENCY DRIVE OF DELTA)**

- AC Motor and its working
- Introduction to Stepper and Servo motor
- Motor control circuit, interlocking circuit
- Introduction to AC Drives & application
- Drive Parameter programming
- VFD controlling through Keypad ,External switch and PLC
- Basic Criteria for drives selection
- Drive Control Panel system designing

## **AUTOCAD DESIGNING ( 2D ADVANCE )**

- Arraying ,Mirroring, Breaking, dividing & joining
- Hatch and gradient
- Tool palette
- Region , explode

## **WORKING WITH OTHER PLC'S(DELTA AND MITSUBISHI)**

- Working with number of other PLC
- Hardware overview of that PLC
- Description of Programming language
- Uploading /Downloading and Monitoring the program
- Data files in used in a PLC
- Interfacing with Relay
- Control circuit designing with feedback concept
- Interfacing proximity sensor with PLC
- Communication with PC
- Wiring different field device to PLC
- Simulator analysis of a PLC Programming
- Fault finding and Troubleshooting
- Description of using Memory bit in a programming
- Mathematical & logical concept
- Compare and jump statement
- Advance control function operation
- Fault diagnostics and Troubleshooting

## **WORKING WITH DIFFERENT SCADA TOOLS (RS VIEW 32 – ALLEN BRADLEY )**

- Introduction to other SCADA
- Communication through DDE/OPC/DIRECT driver
- Various other related properties
- Features – recipe , security, trends, data Base connectivity, alarm



**Q: Why should I choose Training Basket over other training providers?**

Ans. Training Basket provides a unique amalgamation of quality, convenience, flexibility and cost. Training Basket has some of the best trainers in the industry. Our trainers excel not just in depth and width of knowledge, but also in their patience and ability to explain difficult concepts in simple terms.

Training Basket has made serious investments with long-term vision for ensuring good environmental factor for studies by first buying their own suites in the prestigious iThum Towers in NOIDA, Sec-62. This lets us configure our labs and classroom suited best to our student's comfort and focused studies.

**Q: What is the criterion for availing the Training Basket job assistance program?**

Ans: All Training Basket students who have successfully completed their training in any of our courses are directly eligible for placement assistance.

**Q: Which are the companies that Training Basket has placed students in the past?**

Ans: We have exclusive tie ups with MNC's like Ericsson, Cisco, Cognizant, Tech Mahindra, MEON, Bingo, Genpact etc.

**Q: Do I need a prior industry experience in getting an interview opportunity?**

Ans: There is no need to have prior opportunity for getting an interview call. The successful completion of any industry level technology training at Training Basket is like an industry experience. This training makes you confident to clear interviews and we also conduct in-house mock interviews on our online assessment platform where we assess our student's skills by testing their code online or industry specific assessment before sending them for interviews.

**Q: How does Training Basket assist in placement?**

Ans: You will be guided on creating an attractive template based resume. You will get opportunity to attend free personality development program and mock interviews conducted by our SME's to boost your confidence for real interviews. Plus you will be given our level assessment platform where we assess our student's skills by testing their code online or industry specific assessment.

**Q: If I don't clear in first attempt, will I get another chance?**

Ans: Yes, for sure. Your resume will be active on our job portal and will be visible to all our associates and clients. Training Basket will continue to send your resume to future job requirements matching your profile till you land a job.

**Q: Does Training Basket Guarantee job through it's job assistance program?**

Ans: Training Basket does not guarantee job placement but it will continue to assist you on best efforts basis to place you in it's affiliated companies' network.



# COMPANIES WHERE OUR STUDENTS ARE PLACED

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**Source Soft Solutions**  
We only believe in the best

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DELIVERING GREAT SURFACES

**BioMax™**



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Change • Innovate • Lead

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**WTS Webtech Solutions**

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**CoreIP**  
Technology Pvt Ltd

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**network  
solutions**



**Shailers**  
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