

## Online 4 Weeks Training Program for College & Universities (OL-4WSP)

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### Objectives

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This compact course Making participants familiar with:

- Automation technologies and work with SIMATIC S7-1200 PLC with STEP 7 in TIA Portal
- Deals with the configuring of SCADA using SIMATIC WinCC. Course will be conducted by means of numerous practical exercises within the environment of SIMATIC S7. On completion of the course, you will have mastered the SCADA
- The participants will have a basic or fundamental knowledge of various AC Variable speed drives. Also, participants will know about the product specifications, range, hardware / constructional details and features of the product
- The main emphasis of the course is on teaching practical product knowledge, in order to understand the LV Switchgear system and products

### Target Group

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Diploma/Engineering Students

### Content

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#### Industrial PLC

- Basic of Automation Technology
- PLC block diagram and major components
- System Overview, PLC Tags, Programming Blocks
- Bit logic instructions
- Concept of RLO
- Logic gates in various programming languages
- Programming rules
- Elementary data types
- Arithmetic and logic operations
- Working with watch table
- Analog value processing
- Linear v/s structured programming approach
- Effective programming using function and function blocks
- Concept of Organization blocks
- Hands-On exercises based on Industrial applications.

#### Industrial SCADA

- Overview on SCADA, Application areas
- System overview of SIMATIC WinCC, Licensing Details, Architecture Etc....
- Configuring connections to the SIMATIC S7 PLC.
- HMI Tag Table and Tag Connections,
- Project creation
- Graphics Designer and Screen Development
- Testing functions with WinCC Simulation
- Message generation using Alarm logging,
- Storing process values like Temperature, Pressure Etc... using Tag logging
- User Administration option
- Hands-On exercises

#### Industrial Drive

- Brief Basic Power Electronics (Thyristors, Power-Transistors & IGBTs).
- DC Motor Basics (construction, principle of operation, T-N Characteristic).
- DC Drives Basics (Block diagram, 1Q-4Q principle of operation)
- AC Motor Basics (construction, principle of operation, T-N Characteristic).
- AC Drives Basics (Block diagram, 1Q-4Q principle of operation)
- Selections, calculations & applications of typical AC drives
- SINAMICS G120 Commissioning:
- Operation of Drive through BOP-2/IOP/IOP-2
- Quick commissioning by using STARTER software
- Motor ID/Optimization
- Hands on Practice

#### Industrial Switchgear

- Power Distribution Basics:
- Grid system
- Distribution types
- Basic Concepts of fault level

- Principle of selectivity and cascading
- Introduction and basic principles of low-voltage switchgear, switching principles

- Low Voltage Protection Devices: ACB:
  - Function and operation of Air Circuit breakers.
  - Standard accessories used inside breaker
  - Introduction of protection settings in circuit breakers
  - Communication regarding in Air circuit breakers

- Low Voltage Protection Devices: MCCB:
  - Function and operation of MCCB.
  - TMTU/ETU and standard accessories.
  - Overview of communication regarding MCCB.
  - Protections offered by MCCB

- Low Voltage Protection Devices: FUSES AND FUSE DISCONNECTORS:
  - Function and operation of HRC fuse and semiconductor fuses
  - Protection and types
  - Switch Disconnecter Fuse
  - Fuse Disconnectors

- Motor Starters:
  - Overview of Induction Motors
  - Starting Techniques- DOL starter, Star Delta Starter, Soft-starters

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**Type**

Online-Training

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**Duration**

20 days

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**Language**

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**Fee**

20,000 INR

18% GST additional on course fees. \* Special price for group booking \* GST additional on course fees