NANO SCIENTIFIC RESEARCH CENTRE PVT.LTD

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NRC
10+ YEARS OF EXCELLENCE

INDUSTRIAL AUTOMATION

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Module 1: (Field Instrumentation)

- Basic block of instrumentation system types of transducers (active and passive)
- Temperature measurement, working principle, types, and selection guidelines.
- Pressure measurement, working principle, types, and selection guidelines.
- Flow measurement, working principle, types, and selection guidelines.
- Level measurement, working principle, types, and selection guidelines.
- Displacement measurement, working principle, types, and selection guidelines.
- Angular displacement and speed measurement, working principle, types, and selection guidelines.
- Current to pressure converter

Module 2: (General PLC)

- Components of plc
    - Power supply module
    - CPU
    - Input and output Module
    - Bus system
    - Communication system
- Block Diagram of PLC
- Source and sink concept
- Features of plc

- Need & Advantages of PLC
- Introduction to Number System
- Types of Programming language
- Uploading and Downloading Program

Module 3 (PLC Programming)

- Introduction to PLC programming
  Software Addressing Concept

- Introduction to BIT, BYTE &WORD concept
  Programming Instructions Arithmetic and logic
      Advanced Instructions
      Leading & trailing edge instructions
      File Handling
      Timer & counter Blocks Programming
      Master Control/set/reset function
- Monitoring of Programs
- Forcing I/P & O/P
- Troubleshooting and fault Diagnostics of PLC
- Documenting the project

Module 4: (DCS)

- Introduction of DCS system
- Architecture of DCS System
- Hardware of DCS
- Types of I/O
- Comparison between PLC & DCS
- Need of DCS
- Applications of DCS
- Block Diagram of DCS

Module 5: (VFD)

- Introduction to VFD
- Importance of VFD
- VFD selection
- Parameter Programming
- Applications

Module 6 (SCADA)

- Introduction to SCADA
- Applications of SCADA
- Difference between SCADA and HMI
- Different packages available with I/O structure
- Features of SCADA
- Creating new SCADA Application
- Creating Database of Tags
- Creating & Editing Graphical display with animation Trends
        Real-time trends
        Historical trends
- Creating Alarms
- Writing the Logic through Scripts
- Connectivity with different Hardware
        Communication with PLC
        Communication protocols
- Connectivity between software
        Communication with EXCEL

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