

Individual Training Course Module Designed by DPA Training Center

Overview of Course Modules

This course consists of a series of ten modules, which differentiate DPA Certified Training from other institutes.

Module 1 Basics of electrical

- AC/ DC Principles, hydraulics, Pneumatics. Electrical symbols used in industries, 1Phase & 3Phase power supply. Limit Switch ,Sensors :Digital Sensor & Analog Sensor
- Control System: open & closed loop system, feedback system & types of feedbacks, types of controllers, difference between PLC & Microcontrollers.

Module 2 PLC Details

- History of PLC, difference between relay, contactor & PLC logic, PLC architecture, A detail description of different PLC modules & cards.

Module 3 I/O configuration & Memory Mapping

- Why I/O configuration is required?
- How the I/O modules are addressed for Modicon, Mitsubishi, AB & Siemens – PLCs

Module 4 Programs & Ladder diagrams

- First steps with the programming device, Introducing the basic ladder logic instructions, Contacts, coils, and PLC scan.

Module 5 The instruction Set

- A look at the instructions covered in all the PLC. Each instruction being illustrated by application specific program examples. The instructions covered are:
- NO/NC, Set, Reset, Timers, Counters, Comparison, Arithmetic, Logical & Move functions, Latch Instructions.

Module 6 Communications & fault finding

- An introduction to communication options available for the type of PLCs includes also how to find hardware faults and probable causes.

Module 7 MMI & HMI

- Introduction to MMI, its need, operation details, fundamentals of MMI, fault display in MMI, Interfacing with PLC.

Module 8 SCADA

- Introduction to SCADA, Applications of SCADA software, Different packages available with I/O structure, Features of SCADA software

Application development in Rockwell'

- Configuration of different drivers, gateway, 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, Data Change, Special functions
- 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
- Database of tags and its use.
- Interfacing with PLC and simulation of PLC
- Application in SCADA.

Module 9 AC Drive

- Fundamentals of AC Drive, block diagram of AC drive, Configuration of different drives, Control of drive with and without PLC, Local & Remote Mode
- Various applications of AC Drive: ACC, De ACC, High Speed, Low Speed, Present Speed, Selection Criteria
- Steps for setting up the Drive
- Interfacing with PLC.

Module 10 Penal designing

- Switch, L.E.D., Colour Condition
- Single fie & 3fie, earthing
- Relay, Contactor, MPCB, Fuse, General Tool, Timer, Count, DOL, Star – Delta, Rev – forward.