COMPUTERIZED CONTROL SYSTEMS (DCS & SCADA)

COURSE DESCRIPTION
Recent trends in globalization, mobile devices, remote operations, and system integration are blurring the lines between distributed control systems (DCS) and supervisory control and data acquisition (SCADA). This course has been designed with these recent trends in mind while covering the most important components of a DCS in detail. Advanced PLC Systems and their relationship to DCS are included to provide participants with the most up to date developments in process control and SCADA systems.

COURSE OBJECTIVES
After completing this module, you will be able to:

- Understand Hierarchical Structure Automation and Control Systems:
- Learn DCS fundamentals and architectures;
- Understand DCS programming for logic and front end displays
- Understand DCS communications, alarm management, data logging, trends and reports;
- Have knowledge on DCS project Engineering, Design and selection vis-à-vis applications;
- Know DCS configuration, installation and commissioning;
- Know various DCS applications for continues and batch process control.

WHO SHOULD ATTEND?
This course is suitable for and is designed to attract and be of benefit to a range of people who work in Industrial plant. Typically but not exclusively this seminar will be of benefit to:

- Professionals involved in designing, selecting, sizing, specifying, installing, testing, operating and maintaining process instrumentation and control systems
- Production Engineers/Technician
- Maintenance Engineers/Technicians
- Operations Engineers
- System Integrators

TRAINING METHODOLOGY

- Standard lecture with the use of Power Point presentation and audio-visual media and practical case studies will be analyzed critically to boost hands – on experience.
- Interactive class sessions with active involvement of participants to be facilitated by experienced certified engineers.

COURSE OUTLINE
DAY 1

- Evolution of process Control /Automation
- Continues and Discrete Control
- Basic Concepts-Open /Close loop
- Control Loop Components and SMART Instruments
- Current Scenario-PLC, SCADA and DCS based automation
- Hierarchical Structure of Control Systems
DAY 2
• DCS Block Diagram, Components, Architecture, Redundancy, Concepts
• DCS hardware configuration
• DCS software configuration
• Discrete Control and Sequential Control
• Safety Interlocks and Analog Control
• Continuous Process Control Application and Case Study
• Programmable Logic Controller (PLC) – overview

DAY 3
• Introduction to HMI and SCADA functionality
• Plant Mimic and Animations
• DCS Operator Stations and Operations
• Alarms Philosophy, Configuration and Management
• Development and Application of Data Logs, Trends and Reports
• Security and Access Controls

DAY 4
• DCS Communications
• DCS Engineering
• Design/Specifications and Selection
• Documentation and Project Engineering
• Panel and Field Wiring
• Installation and Commissioning

DAY 5
• DCS Diagnostics
• DCS Troubleshooting
• Basics of Advance Process Control and Optimization
• Batch Process Control Application and Case Study