multisoft
Systems

Distributed Control System (DCS) Training

COURSE CONTENT

GET IN TOUCH

Multisoft Systems
B - 125, Sector - 2, Noida

(+91) 9810-306-956

info@multisoftsystems.com

www.multisoftsystems.com

About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

The Distributed Control System (DCS) Training & Certification Course offered by Multisoft Systems is designed to equip professionals with the expertise needed to manage and operate advanced DCS platforms. This comprehensive program covers fundamental concepts to advanced functionalities of DCS, including system architecture, component integration, and application development.

Module 1: Introduction to computer-based control systems

- ✓ Introduction to computer-based measurement and control systems
- ✓ Role of computers in measurement and (process) control
- ✓ Basic components of computer-based measurement and control systems
- ✓ Architecture – computer-based process control system
- ✓ Human Machine Interface (HMI)
- ✓ Hardware for computer-based process control system
- ✓ Interfacing computer system with process
- ✓ Economics of computer-based system for industrial application

Module 2: Overview of distributed control systems

- ✓ Introduction
- ✓ Basic concepts of a Distributed Computing System (DCS)
- ✓ Evolution of a DCS
- ✓ Present market trends in DCSs
- ✓ Basic DCS specifications
- ✓ General description of a commercial DCS
- ✓ Advantage of DCSs
- ✓ DCS selection criteria
- ✓ DCS architecture

Module 3: An overview of SCADA systems

- ✓ Introduction
- ✓ Basics of SCADA system
- ✓ SCADA key features
- ✓ Remote terminal units (RTUs)
- ✓ Typical requirements for an RTU system
- ✓ PLCs used as RTUs
- ✓ Consideration and benefits of SCADA system

- ✓ DCS versus SCADA terminology
- ✓ SCADA software package

Module 4: The basic controller

- ✓ Introduction
- ✓ Identification of the controller boards
- ✓ Discrete and logic control
- ✓ Sequential and batch control

Module 5: Basic DCS controller configuration

- ✓ Historical
- ✓ Control modes
- ✓ Tracking and initialization in control slots used for cascade control
- ✓ Control functions
- ✓ Control algorithms
- ✓ Sequential programs for batch processing
- ✓ Defining equipment procedures
- ✓ Phase logic programming
- ✓ Phase logic interface
- ✓ Logic block functions in advanced controller
- ✓ DCS controller configuration

Module 6: Introduction to communications for DCS and SCADA systems

- ✓ Purpose
- ✓ Basic communications principles
- ✓ Balanced and unbalanced transmission lines
- ✓ EIA-232 interface standard (CCITT V.24 interface standard)
- ✓ The EIA-485 interface standard

- ✓ Open systems
- ✓ Interoperability
- ✓ ModBus protocol
- ✓ HART protocol
- ✓ The promise of FieldBus and DeviceNet
- ✓ Benefits

Module7: Programming of DCSS

- ✓ Block configuration
- ✓ IEC 61131-3 "open" programming languages (structured text, function block, ladder, sequential)
- ✓ Tips and tricks in programming

Module 8: Alarm system management

- ✓ Philosophies of alarm management
- ✓ Design overview:
- ✓ Human and ergonomic factors
- ✓ Structure of good alarm system
- ✓ Safety Integrity Level (SIL)
- ✓ Analyze the alarms
- ✓ Design of alarm system
- ✓ Measurement of performance

Module 9: Distributed control system reporting

- ✓ The operation of advanced DCS by use of multi-screen displays, cross screen invocation and linking
- ✓ Alarm reporting, types of alarms generated and acceptance of alarms
- ✓ The different types of logs and reports which can be configured on a DCS
- ✓ Data history use in logs, reports and trend displays

Module 10: Distributed control system configuration

- ✓ The organization of system data files
- ✓ Data configuration procedures necessary for setting up the DCS area database
- ✓ The need for multiple personalities attached to operator stations
- ✓ The need for different security levels attached to various operating parameters
- ✓ Configuration control procedures adopted to ensure data integrity

Module 11: Maintenance considerations

- ✓ Maintenance requirements of system and system elements
- ✓ The requirements for inbuilt diagnostics and for maintenance diagnostic routines
- ✓ The requirements for installation of UPS system
- ✓ Recovery of a DCS following a power outage

Module 12: Typical distributed control systems and SCADA systems

- ✓ Introduction
- ✓ Honeywell PlantScape system
- ✓ Foxboro I/A series distributed control systems
- ✓ Delta V system
- ✓ Citect
- ✓ Wonderware

Module 13: Distributed control system applications

- ✓ The use of a DCS in a paper-manufacturing environment
- ✓ The use of a DCS in a petroleum-refining environment
- ✓ The benefits of a DCS when used in an offshore oil and gas processing environment

Module 14: Distributed control systems implementation

- ✓ Introduction
- ✓ System strategy
- ✓ Automation plan
- ✓ Project implementation
- ✓ Installation and commissioning
- ✓ Change management