BOOST
THE LEADING TRAINING PROVIDER

Instrumentation & Controls

Standard Application for SCADA & Automation Systems

Course Introduction

This course has been developed to give participants an understanding of Supervisory Control and Data Acquisition (SCADA) systems and their applications in Industrial Automation Systems (IAS) extensively within the Oil & Gas, Petrochemical, Power Generation, Water/Waste Water Treatments, Pharmaceutical, Food and beverage, Transportation, Pulp and Paper and other Process Industries.

The course also includes a study of modern SCADA technologies, with a hands-on approach using a modern industrial compliant SCADA software package, the delegate will acquire new and updated skills essential in any fast moving industrial environment.

On completion of this course, the trainee will be able to evaluate the suitability and application of current in-house SCADA systems and offer guidance and advise on whether such systems may be modified or improved, consequently he will be able to leverage his skills to potentially cause an increase within the plant or process in terms of overall productivity and efficiency through analysis of current systems, also the trainee will be better equipped to advise on new system communication installations in terms of evaluating choices between different industrial automation systems

Target Audience

Control & Instrumentation Engineer
Controls Technologist
Instrumentation Technician / Systems Control Tech
Senior Control & Instrumentation Engineer
Maintaining Equipment Engineer
Facilities I&E / Controls Engineer
Offshore Instrumentation Engineer

Learning Objectives

Familiarization with the codes, standards and the terminologies used in industrial automation systems
Understanding of the fundamentals concepts and features of the SCADA
Understanding of every aspect of what makes a SCADA system works
Gain knowledge of SCADA system programming
Have a full understanding of the SCADA architectures and standards
Gain a knowledge to maintain, diagnostic and troubleshoot the automated system
Develop a level of confidence to work with a SCADA system
Be aware of the latest techniques employed the SCADA system

Course Outline

- **01 Day One**

Module (01) Background to SCADA

1.1 Introduction and Brief History of SCADA

1.2 Fundamental Principles of the SCADA Systems
1.3 Real-Time Monitoring and Control Principals
1.4 Overview of Industrial Control Systems (ICS)
1.5 Introduction to SCADA Engineering
1.6 SCADA Basic Functions

Module (02) Comparison of the Terms SCADA, DCS, PLC and Smart Instrument

2.1 SCADA System
2.2 Distributed Control System (DCS)
2.3 Programmable Logic Controller (PLC)
2.4 Smart Instrument (SI)
2.5 Considerations and Benefits of SCADA System

- **02 Day Two**

Module (03) Engineering Hardware and Firmware

3.1 Remote Terminal Units
3.2 PLCs used as RTUs
3.3 The Master Station
3.4 System Reliability and Availability
3.5 Communication Architectures and Philosophies
3.6 Typical Considerations in Configuration of Master Station

Module (04) Engineering Software & Protocols

4.1 The Components of A SCADA System
4.2 The SCADA Software Package
4.3 Specialized SCADA Protocols
4.4 Distributed Network Protocol
4.5 SCADA Security
4.6 New Technologies in SCADA Systems

- **03 Day Three**

Module (05) Maintenance and Troubleshooting

5.1 Troubleshooting The Telemetry System
5.2 Maintenance Tasks
5.3 The Maintenance Unit System

Module (06) SCADA Standards and Specification

6.1 Common Pitfalls
6.2 SCADA Standards
6.3 Performance Criteria
6.4 SCADA Testing

6.5 SCADA Documentation
6.6 SCADA Future

- **04 Day Four**

  Module (07) SCADA Systems Evaluation

7.1 Evaluate SCADA Systems and Hardware
7.2 Important Components of the SCADA System
7.3 Communications Media and Signals
7.4 Access Control
7.5 Alarm Handling
7.6 Logging/Archiving
7.7 SCADA Reliability, Redundancy and Safety Issues
7.8 SCADA Failure Modes
7.9 Security Levels Applied to SCADA

- **05 Day Five**

  Module (08) SCADA Practical Session

8.1 Design and Development of the New SCADA Application
8.2 Hardware/Software Requirements
8.3 PC/Workstation Configuration
8.4 SCADA Software Package Installation
8.5 System Configurations Single/Multi User Network
8.6 Create a SCADA Project
8.7 Configuration of Communication Drivers
8.8 Real Time Database Configurations
8.9 Graphic Design Editor/ Mimic Display
8.10 Alarm Massage Configuration
8.11 Reporting Design Configuration Editor
8.12 Archiving Massage Configurations
8.13 Security Access Control Configurations
8.14 Test and Commissioning
8.15 Project Documentations

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 12, 2025	May 16, 2025	5 days	4250.00 $	UAE - Dubai
Sept. 1, 2025	Sept. 5, 2025	5 days	4250.00 $	UAE - Dubai
Oct. 13, 2025	Oct. 17, 2025	5 days	4250.00 $	UAE - Abu Dhabi
Jan. 13, 2025	Jan. 17, 2025	5 days	4950.00 $	Thailand - Bangkok