



Consulting and Training | Reach New Heights

Course Name

SCADA & HMI for Industrial Operations

Sector Name

Instrumentation & Controls

Document Type

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SCADA & HMI for Industrial Operations

Course Introduction

Industrial operators and control teams depend on SCADA and HMI systems to understand what is happening across processes and equipment, recognize abnormal conditions, and take timely operational action. However, displaying more data does not automatically improve control. Poor screen organization, unclear process information, excessive alarms, weak navigation, and ineffective operator interaction can make critical conditions harder to recognize and increase the risk of delayed or incorrect responses.

Boost Consulting & Training offers this course to develop practical capability in applying SCADA and HMI systems to industrial operations. Participants explore system architecture, process visualization, tag and data management, operator displays, alarms, trends, supervisory control, communication with field control systems, and operational troubleshooting. Practical activities focus on organizing information so operators can recognize process conditions quickly and interact with the control system effectively.

The main concept of this course is to transform industrial process data into clear operational information that supports effective monitoring, timely intervention, and reliable supervisory control.

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Target Audience

- ✓ Instrumentation and control engineers
- ✓ Automation and SCADA engineers
- ✓ Control system specialists and technicians
- ✓ Engineers responsible for industrial operations and process monitoring

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Learning Objectives

- ✓ Explain the architecture and operational roles of SCADA and HMI systems.
- ✓ Trace process information from field and control systems to operator interfaces.
- ✓ Organize tags and process data for effective monitoring and control.
- ✓ Develop clear HMI displays that support operator situational awareness.
- ✓ Structure alarms according to operational significance and required response.
- ✓ Use trends and historical data to investigate process and equipment behavior.
- ✓ Diagnose common SCADA, HMI, communication, and data-quality problems.
- ✓ Evaluate and improve operator interaction with industrial control systems.

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Course Outline

✓ DAY 01

Understanding the SCADA and HMI Environment

Mapping the Industrial Control Architecture

- ✓ Distinguish the roles of field devices, PLCs, controllers, HMIs, SCADA servers, and operator stations.
- ✓ Trace process information from field measurement to supervisory monitoring and control.
- ✓ Understand where SCADA and HMI functions sit within the wider industrial control environment.

Managing Operational Data

- ✓ Understand tags, process variables, equipment states, commands, and calculated information.
- ✓ Organize naming, engineering units, ranges, and status information consistently.
- ✓ Complete a SCADA Data Mapping Exercise from field signals to operator information.

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Course Outline

✓ DAY 02

Designing Effective Operator Displays

Presenting Process Information Clearly

- ✓ Organize displays according to operator tasks and operational priorities.
- ✓ Distinguish essential process information from unnecessary visual detail.
- ✓ Apply hierarchy and navigation principles across overview, process, and equipment displays.

Supporting Situational Awareness

- ✓ Use values, states, trends, symbols, and visual emphasis to communicate operating conditions.
- ✓ Highlight abnormal conditions without overwhelming the operator.
- ✓ Complete an HMI Display Evaluation Challenge by identifying and correcting weaknesses in an operator screen.

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Course Outline

✓ DAY 03

Managing Alarms and Abnormal Conditions

Building Meaningful Alarm Information

- ✓ Distinguish alarms from events, status indications, warnings, and equipment trips.
- ✓ Prioritize alarms according to operational significance and required response.
- ✓ Recognize nuisance, repetitive, standing, and poorly configured alarms.

Supporting Effective Operator Response

- ✓ Present alarm information with sufficient context for timely action.
- ✓ Connect alarm conditions with process displays, equipment status, and operating procedures.
- ✓ Complete an Alarm Response Scenario involving multiple simultaneous process abnormalities.

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Course Outline

✓ DAY 04

Using Trends and Historical Information

Reading Process Trends

- ✓ Configure meaningful variables, ranges, and time periods for operational analysis.
- ✓ Recognize gradual deterioration, cycling, disturbances, and abnormal process patterns.
- ✓ Compare related variables to understand equipment and process behavior.

Investigating Operational Problems

- ✓ Combine real-time information, alarms, events, and historical trends.
- ✓ Reconstruct the sequence of events surrounding an operational disturbance.
- ✓ Conduct a Process Trend Investigation to determine what occurred before, during, and after an abnormal event.

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Course Outline

✓ DAY 05

Improving SCADA and HMI Performance

Troubleshooting System Information Flow

- ✓ Diagnose missing, frozen, incorrect, delayed, and inconsistent process information.
- ✓ Trace problems through tags, communication paths, controllers, field signals, and configuration.
- ✓ Distinguish interface problems from underlying process or control-system faults.

Strengthening Operator Interaction

- ✓ Evaluate displays, alarms, trends, commands, and navigation as one operational environment.
- ✓ Identify improvements that reduce operator workload and strengthen response to abnormal conditions.
- ✓ Complete a SCADA & HMI Operational Simulation requiring participants to monitor process conditions, investigate abnormalities, interpret alarms and trends, and determine appropriate operational actions.

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Dec. 7, 2026	Dec. 11, 2026	5 days	5950.00 \$	USA , Texas
Jan. 4, 2027	Jan. 8, 2027	5 days	4250.00 \$	UAE , Dubai
May 30, 2027	June 3, 2027	5 days	4250.00 \$	UAE , Abu Dhabi
Aug. 8, 2027	Aug. 12, 2027	5 days	4250.00 \$	Bahrain , Manama

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