



MAESTRO
CONSULTANTS

CONTROL AND MEASUREMENT OPERATIONS

COURSE OUTLINE 2025

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TRAINING TITLE

CONTROL AND MEASUREMENT OPERATIONS

VENUE

DUBAI, UAE

DURATION

5 Days

DATES

24 – 28 November 2025

PRICE

\$5,250 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch.

TRAINING INTRODUCTION

The Control and Measurement Operations course is designed to provide participants with a deep understanding of control systems, instrumentation, and measurement techniques used in various industries such as manufacturing, oil & gas, utilities, and engineering. The course focuses on the theory, practical applications, and troubleshooting of control systems and measurement devices to ensure accurate, reliable, and efficient operations. Participants will also gain insight into calibration, data analysis, and maintaining optimal system performance.

TRAINING OBJECTIVES

By the end of the course, participants will be able to:

- Understand the principles of control systems and measurement technologies.
- Identify and operate key instruments used in industrial processes.
- Perform calibration and maintenance of measurement devices.
- Analyze and interpret control system data to optimize performance.
- Troubleshoot and resolve issues related to measurement inaccuracies or control malfunctions.
- Apply control strategies to improve operational efficiency and system reliability.

- Understand the importance of process control and measurement for safety and compliance.

TRAINING AUDIENCE

- Instrumentation and Control Engineers
- Process Engineers and Technicians
- Maintenance Personnel
- Operations Managers and Supervisors
- HSE (Health, Safety, and Environment) Officers

TRAINING OUTLINE

Day 1: Introduction to Control and Measurement Systems

- **Module 1: Overview of Control and Measurement Principles**
 - Control systems: open-loop vs. closed-loop control
 - Importance of measurement accuracy in industrial settings
- **Module 2: Key Components of Measurement Systems**
 - Sensors, transmitters, and controllers
 - Signal conditioning and data acquisition

Day 2: Measurement Technologies and Instruments

- **Module 3: Types of Measurement Instruments**
 - Temperature, pressure, flow, and level instruments
 - Common measurement technologies: RTDs, thermocouples, differential pressure transmitters
- **Module 4: Instrument Calibration and Accuracy**
 - Methods for calibrating instruments
 - Tolerance, range, and resolution considerations

Day 3: Control Systems Operation and Maintenance

- **Module 5: Control Systems (PID Controllers, SCADA)**
 - Understanding PID control loops: Proportional, Integral, and Derivative action
 - SCADA and DCS systems overview

- **Module 6: Troubleshooting Control Systems**
 - Common faults in control systems and their resolutions
 - Preventive maintenance practices

Day 4: Data Analysis and Process Optimization

- **Module 7: Analyzing Control and Measurement Data**
 - Techniques for data collection and analysis
 - Performance indicators for control systems
- **Module 8: Process Control and Optimization**
 - Using control systems to optimize energy usage and throughput
 - Process monitoring, diagnostics, and performance tuning

Day 5: Advanced Applications

- **Module 9: Advanced Control Strategies**
 - Model predictive control (MPC) and adaptive control
 - Implementing advanced strategies in complex systems
- **Module 10 Review and Final Q&A**
 - Recap of key learnings
 - Open Q&A session and course wrap-up

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course.

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.