

Course No. 1164

Process Measurement Training Course

INSTRUMENTATION & CONTROL
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Process Measurement Training Course is a comprehensive professional development program designed to provide engineers, technicians, and industrial professionals with the knowledge and practical skills required to accurately measure, monitor, analyze, and optimize process variables across industrial operations. Accurate process measurement is fundamental to achieving efficient process control, product quality, operational safety, regulatory compliance, and reliable plant performance. As industries increasingly rely on automation and real-time data, effective process measurement has become a strategic requirement for operational excellence and continuous improvement.

This course provides participants with a thorough understanding of measurement principles, process variables, industrial instrumentation, sensor technologies, signal transmission, measurement accuracy, calibration, installation practices, and performance verification. Participants will gain practical knowledge of measuring pressure, temperature, flow, level, and analytical process variables while learning how accurate measurements contribute to process stability, improved decision-making, reduced operational risks, and optimized production performance.

Industries including oil and gas, petrochemicals, power generation, manufacturing, mining, water and wastewater treatment, pharmaceuticals, food processing, utilities, and chemical processing depend on reliable process measurement systems to maintain operational integrity, maximize equipment efficiency, reduce waste, and improve product consistency. This Process Measurement Training Course enables participants to develop practical competencies that support effective instrumentation management, process optimization, preventive maintenance, and long-term asset reliability.

Through a combination of engineering theory, practical workshops, industrial case studies, and real-world applications, this course prepares participants to select, install, calibrate, maintain, troubleshoot, and optimize process measurement systems according to internationally recognized engineering practices. By the end of the program, participants will possess the technical confidence to improve measurement reliability, strengthen process performance, and contribute to automation and operational improvement initiatives across industrial facilities.

Objectives

- Analyze the principles of industrial process measurement and their importance in operational performance throughout the course.
- Develop practical skills for selecting appropriate measurement technologies for industrial applications.
- Evaluate pressure, temperature, flow, level, and analytical measurement systems.
- Apply engineering principles for installing, calibrating, and maintaining process measurement instruments.
- Design reliable measurement solutions that improve process control and operational efficiency.
- Improve troubleshooting capabilities for identifying measurement errors and instrumentation faults.
- Strengthen maintenance strategies that enhance measurement accuracy and equipment reliability.
- Implement performance verification techniques for industrial measurement systems.
- Assess measurement performance using operational data and engineering analysis.
- Align process measurement practices with quality, safety, reliability, environmental, and operational excellence objectives.

Who Should Attend

This Process Measurement Training Course is designed for instrumentation engineers, process engineers, control engineers, automation engineers, electrical engineers, maintenance engineers, reliability engineers, commissioning engineers, project engineers, quality engineers, inspection engineers, laboratory specialists, and technical professionals responsible for industrial measurement systems and process instrumentation. It is equally valuable for instrumentation technicians, calibration technicians, maintenance technicians, operations personnel, and field service engineers seeking to strengthen their expertise in industrial measurement technologies.

The course is also suitable for maintenance managers, engineering managers, operations managers, production managers, plant managers, quality managers, reliability managers, technical supervisors, asset management specialists, project managers, industrial consultants, and decision makers responsible for improving process performance, equipment reliability, product quality, and operational efficiency.

Professionals working within government entities, ministries, public sector organizations, oil and gas companies, petrochemical facilities, power generation plants, manufacturing organizations, water treatment facilities, mining operations, pharmaceutical companies, food processing industries, engineering contractors, testing laboratories, and large industrial enterprises will gain practical knowledge that supports process optimization, operational excellence, measurement reliability, and sustainable industrial performance.

Learning Outcomes

- By the end of this Process Measurement Training Course, participants will be able to:
- Explain the principles and applications of industrial process measurement.
- Select appropriate measurement technologies for different industrial processes.
- Evaluate the performance of pressure, temperature, flow, level, and analytical measurement systems.
- Apply best practices for installing, calibrating, and maintaining process measurement instruments.
- Diagnose measurement errors and instrumentation problems using structured methodologies.
- Improve measurement accuracy and operational reliability through effective maintenance practices.
- Verify instrument performance using engineering testing and validation procedures.
- Analyze process measurement data to support operational decision-making and process improvement.
- Apply industry best practices for lifecycle management of process measurement systems.
- Develop practical improvement plans that enhance process measurement performance and organizational efficiency.

Course Outline

DAY 01

Fundamentals of Process Measurement

- Introduction to industrial process measurement
- Principles of measurement accuracy, precision, repeatability, and uncertainty
- Process variables and measurement fundamentals

DAY 01 — CONTINUED

- Industrial instrumentation and sensor technologies

PRACTICAL APPLICATION

Evaluating measurement requirements for industrial processes

DAY 02

Pressure, Temperature, Flow, and Level Measurement

- Pressure measurement principles and technologies
- Temperature measurement systems and industrial applications
- Flow measurement methods and instrument selection
- Level measurement technologies and performance evaluation

PRACTICAL APPLICATION

Selecting measurement instruments for process applications

DAY 03

Instrument Installation, Calibration, and Verification

- Instrument installation best practices
- Calibration principles and measurement traceability
- Signal transmission and industrial communication
- Performance verification and measurement validation

PRACTICAL APPLICATION

Performing calibration and measurement verification activities

DAY 04

Maintenance and Troubleshooting of Measurement Systems

- Preventive and predictive maintenance strategies
- Instrument diagnostics and fault identification

DAY 04 — CONTINUED

- Troubleshooting measurement errors and performance issues
- Improving measurement reliability and operational continuity

PRACTICAL APPLICATION

Diagnosing and resolving industrial measurement problems

DAY 05

Process Optimization and Measurement Excellence

- Measurement performance analysis and continuous improvement
- Data interpretation for process optimization
- Best practices for documentation, quality assurance, and lifecycle management
- Emerging technologies in industrial process measurement

FINAL WORKSHOP

Design, evaluate, calibrate, troubleshoot, and optimize a complete process measurement system, including instrument selection, installation planning, performance verification, maintenance strategy, operational improvement, and an implementation plan that enhances measurement accuracy, process reliability, and organizational performance.

Register or Request More Information

Course page: <https://quest-training.com/courses/process-measurement-training-course>

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