INDUSTRIAL PROCESS MEASUREMENT

COURSE OVERVIEW

This comprehensive training course provides participants with a strong foundation in the principles, technologies, and practical applications of industrial process measurement. Accurate measurement is crucial for the control, optimization, and safety of industrial operations. This course covers the measurement of key process variables such as pressure, temperature, flow, and level, with an emphasis on instrument selection, installation, calibration, troubleshooting, and integration into control systems.

Through lectures, case studies, and practical exercises, participants will develop the skills required to ensure accurate and reliable process measurements that meet both operational and regulatory requirements.

DATES, VENUES AND FEES

14 – 18 December 2025 - Dubai

(5 Days)

Fees US$ 4500

Note: Fee is per participant + 5% VAT (if applicable).
Groups from the same company can enjoy a **discounted** price.

WHO SHOULD ATTEND?

This course is appropriate for a wide range of professionals but not limited to:

- Instrumentation and control technicians/engineers
- Process and plant engineers
- Maintenance personnel
- Automation specialists
- Technical supervisors and managers
- Anyone involved in specifying, operating, or maintaining process measurement systems

CONTACT US NOW

+971 (4) 4539841 – 42 – 43
WhatsApp: +971 52 398 7781

Millennium Solutions Training Center FZ-LLC
Block 2B, 1st Floor, Office 134, Knowledge Park, Dubai, UAE
Email: info@mstcme.com
Website: www.mstcme.com

ACCREDITATION

This training course is certified by CPD.

The CPD Certification Service is the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice, and recognised independent CPD accreditation compatible with global CPD principles. CPD is the term used to describe the learning activities professionals engage in to develop and enhance their abilities and keep skills and knowledge up to date. CPD Units are only awarded to programmes after each programme is scrutinised to ensure integrity and quality according to CPD standards and benchmarks.

COURSE CERTIFICATE

MSTC certificate will be issued to all attendees completing a minimum of 80% of the total tuition hours of the course.

CPD internationally recognized certificate will be issued for all participants who will meet the course requirements.
CPD certificates will be issued within a month of the successful completion of the course.

TRAINING METHODOLOGY

- Expert-led sessions with dynamic visual aids
- Comprehensive course manual to support practical application and reinforcement
- Interactive discussions addressing participants' real-world projects and challenges
- Insightful case studies and proven best practices to enhance learning

LEARNING OBJECTIVES

By the end of this course, participants should be able to:

- Understand the principles and importance of accurate process measurement.
- Identify and describe the functions of common measurement instruments.
- Select appropriate instruments for specific industrial applications.
- Perform basic calibration and maintenance of measurement devices.
- Troubleshoot and resolve common instrument-related issues.
- Interpret technical documentation such as P&IDs and loop diagrams.
- Integrate measurement systems into control and automation environments.

CONTACT US NOW

+971 (4) 4539841 – 42 – 43
WhatsApp: +971 52 398 7781

Millennium Solutions Training Center FZ-LLC
Block 2B, 1st Floor, Office 134, Knowledge Park, Dubai, UAE
Email: info@mstcme.com
Website: www.mstcme.com

COURSE OUTLINE

DAY 1

Fundamentals of Process Measurement

- Pre test
- Introduction to process measurement
- Role of measurement in process control
- Key terms: accuracy, precision, repeatability, resolution
- Measurement standards and units
- Overview of industrial measurement variables (pressure, temperature, flow, level, etc.)
- Introduction to instrumentation symbols and P&ID interpretation

DAY 2

Pressure and Temperature Measurement

- Principles of pressure measurement: gauge, absolute, differential
- Pressure sensors: strain gauge, capacitive, piezoelectric, etc.
- Installation considerations and calibration
- Principles of temperature measurement
- Temperature sensors: thermocouples, RTDs, thermistors
- Signal conditioning and compensation techniques

DAY 3

Flow Measurement Techniques

- Basic fluid dynamics related to flow measurement
- Flow measurement methods: differential pressure, magnetic, Coriolis, vortex, ultrasonic, turbine
- Advantages and limitations of each method
- Installation requirements and straight-run considerations
- Flow meter selection criteria
- Flow calibration and troubleshooting

DAY 4

Level and Analytical Measurement

- Level measurement techniques: hydrostatic, ultrasonic, radar, DP, float-type, guided wave radar
- Continuous vs. point level measurement
- Analytical instrumentation basics: pH, conductivity, dissolved oxygen, turbidity
- Sample conditioning and sensor maintenance
- Integration of analytical instruments with control systems

DAY 5

Instrument Integration, Calibration, and Troubleshooting

- Instrument loop design and signal transmission (4-20mA, HART, fieldbus)
- Loop diagrams, wiring practices, grounding and shielding
- Calibration procedures and tools
- Troubleshooting techniques for common measurement issues
- Case studies: diagnosing and solving instrument problems
- Emerging technologies in process measurement (wireless, IIoT)
- Post test

CONTACT US NOW

+971 (4) 4539841 – 42 – 43
WhatsApp: +971 52 398 7781

Millennium Solutions Training Center FZ-LLC
Block 2B, 1st Floor, Office 134, Knowledge Park, Dubai, UAE
Email: info@mstcme.com
Website: www.mstcme.com