



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



Gas Measurement and Flow Metering Station



Course Introduction:

Accurate gas measurement and flow metering are essential for the efficient and transparent operation of gas production, transportation, and distribution systems. Ensuring the accuracy and reliability of these systems directly impacts revenue, regulatory compliance, and operational efficiency. This comprehensive 5-day training program focuses on the principles, technologies, and best practices for gas measurement and flow metering station management.

Course Objectives:

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

- Understand the principles and methods of gas measurement and flow metering
 - Learn about different types of flow meters and their applications
 - Gain insights into metering station design and configuration
 - Develop skills in calibration, validation, and maintenance of metering systems
 - Explore data acquisition, analysis, and reporting techniques
 - Understand regulatory requirements and compliance standards
-

Who Should Attend?

This course is designed for all:

- Gas measurement engineers and technicians
- Flow metering specialists
- Operations and maintenance personnel
- Project engineers involved in metering station design
- Quality assurance and regulatory compliance professionals

Course Outline:

Fundamentals of Gas Measurement and Flow Metering

- Introduction to Gas Measurement Principles
 - Properties of natural gas and gas behavior
 - Importance of accurate measurement
- Types of Flow Meters

- Orifice meters, turbine meters, ultrasonic meters, and Coriolis meters
- Selection criteria for different applications

Metering Station Design and Configuration

- Components of a Flow Metering Station
 - Filtration, pressure regulation, and flow control
 - Piping and instrumentation layout
- : Design Considerations
 - Sizing and selection of components
 - Ensuring safety and accuracy

Calibration and Validation Techniques

- Meter Calibration Methods
 - Static and dynamic calibration techniques
 - Traceability and reference standards
- Validation and Performance Testing
 - Ensuring meter accuracy over time
 - Troubleshooting metering errors

Data Acquisition, Analysis, and Reporting

- Data Acquisition Systems
 - SCADA systems and data integration
 - Real-time monitoring and control
- Data Analysis and Reporting
 - Analyzing flow data for anomalies
 - Generating compliance reports

Regulatory Compliance and Emerging Technologies

- Regulatory Standards and Compliance
 - Industry regulations and best practices

- Auditing and documentation requirements
- Emerging Trends in Gas Measurement
 - Smart metering technologies
 - Automation and AI in metering operations

Course Methodology:

A variety of methodologies will be used during the course that including:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks

10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

