



*Training Course:
Oil and Gas Processing Flow Measurement*

*10 - 21 January 2027
Cairo (Egypt)*

Training Course: Oil and Gas Processing Flow Measurement

Training Course code: EN616 From: 10 - 21 January 2027 Venue: Cairo (Egypt) - Training Course Fees: 6950 € Euro

Introduction

Flow measurement is a critical function in oil and gas processing, directly impacting production efficiency, process control, and financial accountability. Accurate measurement of liquids, gases, and multiphase flows is essential across upstream, midstream, and downstream operations.

This program, designed by Global Horizon Training Center, provides a comprehensive 10-day training that equips participants with advanced technical knowledge and practical skills to design, operate, calibrate, and optimize flow measurement systems in oil and gas facilities in compliance with international standards.

Course Objectives

By the end of this program, participants will be able to:

- Understand advanced principles of fluid flow and measurement
- Select and design flow measurement systems for oil and gas processes
- Apply measurement techniques for liquids, gases, and multiphase flow
- Perform calibration, proving, and uncertainty analysis
- Integrate flow measurement systems with control and data systems
- Analyze measurement data and detect errors
- Apply international standards API, ISO
- Optimize measurement accuracy and system performance

Target Audience

This program is designed for:

- Instrumentation and Control Engineers
- Process and Production Engineers
- Measurement and Calibration Specialists
- Oil & Gas Operations Personnel
- Pipeline and Facility Engineers
- Technical professionals involved in metering systems

Outline

Day 1: Fundamentals of Flow Measurement

- Fluid flow principles laminar, turbulent
- Flow measurement units and standards
- Types of fluids liquid, gas, multiphase
- Measurement system overview
- Safety considerations

Day 2: Fluid Properties and Flow Behavior

- Density, viscosity, and compressibility
- Flow regimes and Reynolds number
- Pressure and temperature effects
- Multiphase flow behavior
- Measurement challenges

Day 3: Differential Pressure Flow Meters

- Orifice plates, venturi, and flow nozzles
- Design and installation
- Flow equations and calculations
- Advantages and limitations
- Performance optimization

Day 4: Mechanical and Positive Displacement Meters

- Turbine meters
- Positive displacement meters
- Application in custody transfer
- Accuracy and maintenance
- Calibration techniques

Day 5: Advanced Flow Measurement Technologies

- Ultrasonic flow meters
- Coriolis flow meters
- Electromagnetic flow meters
- Selection criteria and applications
- Installation best practices

Day 6: Multiphase Flow Measurement

- Principles of multiphase flow measurement
- Measurement techniques and technologies
- Challenges and limitations
- Applications in upstream operations
- Data interpretation

Day 7: Calibration, Proving, and Uncertainty Analysis

- Calibration standards and procedures
- Proving systems pipe provers, master meters

- Measurement uncertainty calculations
- Traceability and compliance
- Quality assurance

Day 8: Data Acquisition and Control Systems

- Flow computers and data logging
- Integration with SCADA and control systems
- Signal processing and communication
- Data validation and reporting
- Cybersecurity considerations

Day 9: Troubleshooting and Maintenance

- Identifying measurement errors
- Diagnostic tools and techniques
- Preventive and predictive maintenance
- Root cause analysis
- System reliability improvement

Day 10: Standards, Optimization, and Case Studies

- API MPMS and ISO standards
- Compliance and auditing
- Performance optimization strategies
- Best practices in flow measurement
- Case studies and real-world applications

Registration form on the Training Course: Oil and Gas Processing Flow Measurement

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
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3 Oudai street, Aldouki,
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