



*Training Course:
Pump Technology*

*13 - 24 December 2026
Istanbul (Turkey)
DoubleTree by Hilton Istanbul Esentepe*

Training Course: Pump Technology

Training Course code: EN6025 From: 13 - 24 December 2026 Venue: Istanbul (Turkey) - DoubleTree by Hilton Istanbul Esentepe Training Course Fees: 11150 € Euro

Introduction

Pumps are vital components in industrial systems, responsible for transporting fluids across pipelines, processing units, and utility systems. Their proper design, selection, operation, and maintenance directly impact system efficiency, reliability, and energy consumption.

This program, designed by Global Horizon Training Center, provides a comprehensive 10-day training that equips participants with advanced knowledge and practical skills in pump technology, including performance analysis, system design, troubleshooting, and optimization.

Course Objectives

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

- Understand advanced principles of pump operation and fluid dynamics
- Identify and select suitable pump types for various applications
- Analyze pump performance and system characteristics
- Apply pump sizing and selection calculations
- Diagnose and troubleshoot pump-related issues
- Implement maintenance and reliability strategies
- Optimize pump systems for energy efficiency
- Ensure compliance with industry standards API, ISO

Target Audience

This program is designed for:

- Mechanical and Process Engineers
- Maintenance and Reliability Engineers
- Plant Operators and Technicians
- Oil & Gas and Industrial Professionals
- Facility and Utility Engineers
- Technical staff involved in pumping systems

10-Day Detailed Outline

Day 1: Fundamentals of Pump Technology

- Overview of pump types and applications
- Fluid mechanics fundamentals
- Pump components and terminology
- Safety considerations
- Industrial applications

Day 2: Pump Types and Characteristics

- Centrifugal pumps and their operation
- Positive displacement pumps
- Specialty pumps gear, diaphragm, screw
- Applications and limitations
- Selection criteria

Day 3: Pump Performance and Curves

- Pump characteristic curves
- System curves and interaction
- Efficiency and performance evaluation
- Affinity laws
- Practical analysis

Day 4: Pump Sizing and Selection

- Flow rate and head calculations
- System resistance and pressure drop
- Pump selection process
- Software tools and calculations
- Case exercises

Day 5: Cavitation and NPSH Analysis

- Cavitation causes and effects
- Net Positive Suction Head NPSH
- Prevention and mitigation strategies
- Design considerations
- Troubleshooting

Day 6: Pump Installation and Commissioning

- Installation best practices
- Alignment and coupling
- Piping considerations
- Commissioning procedures
- Testing and validation

Day 7: Operation and Control

- Pump operation techniques
- Flow control methods valves, VFDs

- Monitoring and instrumentation
- System optimization
- Automation basics

Day 8: Maintenance and Reliability

- Preventive and predictive maintenance
- Condition monitoring vibration, temperature
- Lubrication and sealing systems
- Reliability-centered maintenance RCM
- Maintenance planning

Day 9: Troubleshooting and Failure Analysis

- Identifying common pump failures
- Root cause analysis RCA
- Repair techniques
- Performance degradation analysis
- Case studies

Day 10: Optimization, Standards, and Best Practices

- Energy efficiency improvement
- Lifecycle cost analysis
- API standards API 610, API 674
- Best practices in pump systems
- Final review and practical applications

Registration form on the Training Course: Pump Technology

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