

GLOBAL EXPERTS INSTITUTE FOR TRAINING.
ISO 9001-2008 TRAINING PROVISION CERTIFIED

Pump Operation, Maintenance and Troubleshooting

Schedule Dates:

Start Date	End Date	Place
22 Sept 2025	26 Sept 2025	Madrid / Spain – Perciados Hotel

Program Introduction:

Pumps are essential components in a wide range of industries including water treatment, oil and gas, petrochemicals, HVAC systems, and manufacturing. Their proper operation, maintenance, and troubleshooting are critical to ensure system reliability and efficiency. This course equips participants with the theoretical knowledge and hands-on skills to operate, maintain, and troubleshoot various types of pumps effectively.

Program Objectives:

- ✓ Identify different types of pumps and their applications.
- ✓ Understand the working principles of centrifugal and positive displacement pumps.
- ✓ Apply proper pump start-up and shut-down procedures.
- ✓ Implement preventive and corrective maintenance techniques.
- ✓ Diagnose and troubleshoot common pump failures.
- ✓ Make informed repair or replacement decisions.
- ✓ Interpret and analyze pump performance curves.
- ✓ Improve pump efficiency and reduce energy consumption.

Who should attend?

- Mechanical Maintenance Technicians
- Pump Operators
- Field and Plant Engineers
- Maintenance Supervisors
- Technical and Engineering Students

Program Outlines

Day One

- Introduction to Pumping Systems and Industrial Applications
- Types of Pumps: Centrifugal vs. Positive Displacement
- Main Components of Pumps and Their Functions
- Operating Principles of Centrifugal Pumps
- Operating Principles of Positive Displacement Pumps

Day Two

- Flow, Head, and Pressure Calculations
- Reading and Understanding Pump Performance Curves
- Best Efficiency Point (BEP) and Its Importance
- Pump Selection Criteria Based on Application
- Installation of Pumps and Piping Layout

Day Three:

- Start-up and Shut-down Procedures
- Preventive and Predictive Maintenance Techniques
- Lubrication and Vibration Control
- Mechanical Seals: Inspection and Maintenance
- Pump and Motor Alignment Techniques

Day Four:

- Common Pump Problems and Their Causes (Cavitation, Overheating, etc.)
- Troubleshooting Methods and Tools
- Manual and Automatic Pump Control Systems
- Deep Well and Feedwater Pumps
- Corrective Maintenance and Repair Planning

Day Five:





- Suction and Discharge Piping Design Considerations
- Energy Management and Pump Efficiency Optimization
- Workplace Safety and Best Practices Around Pumps
- Real-world Case Studies and Problem Solving
- Practical Sessions and/or Virtual Simulations

Training Methodology:

- Slide presentations
- Interactive discussion
- Simulations and Gamification
- Online Video material

Cost Quotation in Kuwaiti Dinars

The total cost includes:

-  Instructor(s) expenses
-  Training materials
-  Certification
-  Lunch Included

Total Cost: 1800 KD per Participant

(One Thousand Eight Hundred Kuwaiti Dinar)