

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

## **Mechanical Equipment Compressors, Pumps, Seals, Motors & Variable Speed Drives**

### **Schedule Dates:**

Start Date	End Date	Place
1 Dec 2025	5 Dec 2025	London – Double Tree by Hilton - Kensington

### **Program Introduction:**

Mechanical equipment plays a vital role in the reliability, efficiency, and safety of industrial operations. This training program provides participants with a comprehensive understanding of the design, operation, maintenance, and troubleshooting of critical rotating machinery, including compressors, pumps, seals, motors, and variable speed drives (VSDs). The course is designed to bridge theoretical knowledge with practical applications, enabling participants to enhance asset reliability, optimize performance, and minimize downtime.

### **Program Objectives:**

- ✓ Understand the fundamentals and working principles of compressors, pumps, seals, motors, and VSDs.
- ✓ Identify common operating issues and apply effective troubleshooting techniques.
- ✓ Implement preventive and predictive maintenance practices to enhance equipment reliability.
- ✓ Analyze performance characteristics and efficiency parameters of rotating machinery.
- ✓ Apply best practices in alignment, balancing, and condition monitoring.
- ✓ Integrate safety standards and operational procedures in daily equipment handling.
- ✓ Optimize system performance through correct equipment selection and operation.

### Who should attend?

- Mechanical engineers and technicians
- Maintenance and reliability engineers
- Operations and production supervisors
- Plant engineers and supervisors
- Technical staff involved in rotating machinery operations
- Anyone seeking to improve knowledge of mechanical equipment and asset management

### Program Outlines

#### *Day One*

- Introduction to Rotating Mechanical Equipment
- Overview of Compressors: Types & Applications
- Positive Displacement vs. Dynamic Compressors
- Pump Fundamentals: Centrifugal & Positive Displacement
- Pump Performance Curves and System Interaction

#### *Day Two*

- Mechanical Seals: Types, Functions, and Applications
- Seal Failure Modes and Troubleshooting
- Bearings: Types, Lubrication, and Failure Analysis
- Electric Motors: Principles of Operation
- Induction vs. Synchronous Motors

### **Day Three:**

- Motor Performance Characteristics & Selection
- Variable Speed Drives (VSDs): Concepts & Benefits
- VSD Applications in Pumps and Compressors
- Couplings and Alignment Techniques
- Shaft Balancing and Vibration Analysis

### **Day Four:**

- Condition Monitoring and Predictive Maintenance
- Reliability-Centered Maintenance (RCM) for Rotating Equipment
- Troubleshooting Compressors: Common Problems & Solutions
- Troubleshooting Pumps: Cavitation, NPSH, and Failures
- Troubleshooting Motors and VSDs

### **Day Five:**

- Energy Efficiency and Optimization of Rotating Equipment
- Materials of Construction and Equipment Reliability
- Operational Safety and Risk Mitigation in Mechanical Equipment
- Case Studies: Failures and Lessons Learned
- Best Practices for Equipment Selection, Operation, and Maintenance

### 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 )