

VALVES - OPERATION, MAINTENANCE, TROUBLESHOOTING & OVERHAUL

““Ensuring Safe and Efficient Valve Performance Across Industrial Systems””

Schedule

Date	Venue	Fees (Face-to-Face)
08 - 09 Jul 2026	Dubai - UAE	USD 1995 per delegate
27 - 28 Oct 2026	Muscat - Oman	USD 1995 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Valves are critical components in industrial systems, playing a vital role in controlling the flow of liquids, gases, and slurries. Improper valve operation or maintenance can lead to significant losses, unsafe conditions, and operational inefficiencies. Understanding valve types, correct handling procedures, troubleshooting methods, and overhaul practices is essential for engineers and technicians working in sectors such as oil & gas, power, water, and manufacturing.

This 2-day hands-on course provides in-depth knowledge of valve types, applications, common faults, and maintenance protocols. Participants will gain practical insights into troubleshooting techniques and best practices for overhaul and repair to maximize reliability and minimize downtime.

Objectives

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

- Identify different types of industrial valves and their working principles
- Operate valves safely and efficiently in various system conditions
- Diagnose valve failures and performance issues
- Apply preventive and corrective maintenance procedures
- Understand overhaul techniques and component replacement methods

Why Attend

- Avoid costly valve failures and unplanned shutdowns
- Boost system reliability and safety through proper valve handling
- Develop hands-on maintenance and troubleshooting skills
- Understand valve materials, pressure ratings, and application-specific considerations
- Gain technical confidence when working with control, isolation, and safety valves

Target Audience

This program is designed for:

- Maintenance Technicians and Engineers
- Process and Mechanical Engineers
- Plant Supervisors and Operators
- Instrumentation and Control Technicians
- Utility and Facility Managers

Individual Benefits

Key competencies that will be developed include:

- Valve identification and selection
- Practical fault diagnosis techniques
- Safe disassembly, inspection, and reassembly procedures
- Use of valve test equipment and seal replacement
- Understanding of valve codes and specifications

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved system performance through reliable valve operation
- Reduction in equipment downtime and maintenance costs
- Enhanced safety across pressurized systems
- Standardized valve inspection and overhaul procedures
- Improved asset lifecycle management

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Overview of valve types, standards, and system integration
- Case Studies - Failure investigations and lessons learned from real industry events
- Workshops - Disassembly, inspection, and reassembly of typical valve units
- Peer Exchange - Practical problem-solving sessions with industry peers
- Tools - Checklists, maintenance logs, troubleshooting charts, and overhaul kits

Course Outline

DETAILED 2-DAY COURSE OUTLINE

Training Hours: 07:30 AM – 03:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Valve Design, Operation & Fault Analysis

- Module 1: Types and Functions of Valves (07:30 – 09:30) • Gate, globe, ball, butterfly, plug, check, control valves • Applications and selection criteria • Flow characteristics and pressure ratings
- Module 2: Valve Components and Materials (09:45 – 11:15) • Body, stem, disc, seat, actuator types • Material compatibility with process fluids • Valve standards: API, ANSI, ASME, etc.
- Module 3: Common Valve Failures and Troubleshooting (11:30 – 01:00) • Leakage, sticking, vibration, noise • Damage from corrosion, cavitation, and erosion • Systematic root cause diagnosis
- Module 4: Workshop – Troubleshooting Simulations (02:00 – 03:30) • Group-based valve failure analysis • Use of troubleshooting flowcharts and guides

Day 2: Valve Maintenance, Overhaul & Safety Practices

Module 5: Preventive and Predictive Maintenance (07:30 – 09:30) • Inspection intervals and lubrication techniques • Condition monitoring and wear tracking • Valve tagging and records management

- Module 6: Disassembly and Reassembly Techniques (09:45 – 11:15) • Safe shutdown and depressurization procedures • Component inspection and damage detection • Seal replacement and torque guidelines
- Module 7: Valve Testing and Re-Commissioning (11:30 – 01:00) • Pressure testing (hydrostatic and pneumatic) • Leak testing and actuator calibration • Documentation and QA requirements
- Module 8: Workshop – Hands-On Valve Overhaul (02:00 – 03:30) • Participants simulate a full valve maintenance cycle • Group presentation and expert feedback

Certification

Participants will receive a Certificate of Completion in Valve Operation, Maintenance, Troubleshooting & Overhaul, validating their technical ability to ensure safe and effective management of industrial valve systems.

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