

MECHANICAL & DRY SEALS SELECTION, MAINTENANCE & TROUBLESHOOTING

"Master Seal Selection and Troubleshooting for Optimal Equipment Performance"

Schedule

Date	Venue	Fees (Face-to-Face)
28 - 30 Jul 2026	Manama, Bahrain	USD 2495 per delegate
01 - 03 Sep 2026	Manama, Bahrain	USD 2495 per delegate
17 - 19 Nov 2026	Manama, Bahrain	USD 2495 per delegate

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

Introduction

The Mechanical & Dry Seals Selection, Maintenance & Troubleshooting course is designed to provide participants with the knowledge and skills necessary to select, maintain, and troubleshoot mechanical and dry seals in various industrial applications. This 3-day course focuses on understanding seal technology, the role of seals in preventing leakage, and the necessary maintenance to ensure optimal equipment performance and reliability.

Participants will learn how to select the right seals for different equipment types, understand their operational mechanics, and apply troubleshooting methods to minimize downtime and increase the lifespan of machinery. The course includes hands-on exercises and case studies to address real-world seal challenges encountered in industries such as manufacturing, petrochemical, and power generation.

Objectives

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

- Select the appropriate mechanical and dry seals based on application requirements
- Perform effective maintenance on mechanical seals to enhance their performance and lifespan
- Identify and troubleshoot common seal failures and issues
- Implement best practices for sealing systems in industrial applications
- Understand the factors affecting seal performance, including temperature, pressure, and chemical compatibility
- Reduce downtime and extend the operational life of sealing systems

Why Attend

- Gain expertise in selecting the correct seals for different industrial applications
- Learn effective maintenance strategies to enhance seal performance and reliability
- Develop troubleshooting skills to quickly identify and resolve seal-related issues
- Increase equipment uptime and reduce operational costs
- Network with industry professionals and exchange valuable insights on seal technology

Target Audience

This program is designed for:

- Maintenance engineers and technicians
- Mechanical engineers involved in seal selection, maintenance, and troubleshooting
- Reliability engineers and asset management professionals
- Operations managers and supervisors responsible for equipment reliability
- Professionals in the petrochemical, manufacturing, and energy industries

Individual Benefits

Key competencies that will be developed include:

- In-depth understanding of mechanical and dry seal technologies
- Skills in selecting seals for specific applications based on operational requirements
- Expertise in troubleshooting seal failures and implementing corrective actions
- Knowledge of maintenance best practices for optimizing seal life and equipment reliability
- Hands-on experience in solving real-world seal-related challenges

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved selection and maintenance of seals, reducing failure rates and associated costs
- Enhanced troubleshooting capabilities, leading to faster issue resolution and less downtime
- Increased equipment reliability and performance across operations
- Better understanding of sealing systems and their impact on overall equipment efficiency
- Optimized maintenance processes that align with organizational goals and improve profitability

Instructional Methodology

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

- Strategy Briefings - Introduction to mechanical and dry seal technologies, selection criteria, and troubleshooting techniques
- Case Studies - Real-world examples of seal-related challenges and successful solutions
- Workshops - Hands-on exercises to apply seal selection, maintenance, and troubleshooting methods
- Peer Exchange - Group discussions on common seal issues and best practices for resolution
- Tools - Use of diagnostic tools, seal maintenance schedules, and troubleshooting templates

Course Outline

Detailed 3-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to Mechanical & Dry Seals and Selection Criteria

- Module 1: Overview of Mechanical and Dry Seals (07:30 – 09:30)
 - The role of seals in industrial equipment
 - Types of mechanical and dry seals and their applications
 - Understanding seal construction and material choices
- Module 2: Seal Selection Criteria (09:45 – 11:15)
 - Factors to consider when selecting seals (temperature, pressure, chemical compatibility)
 - Understanding operating conditions and performance requirements
 - Best practices for seal selection in different industrial sectors
- Module 3: Seal Installation and Maintenance Basics (11:30 – 01:00)
 - Seal installation procedures for maximum effectiveness
 - Regular maintenance routines for seals
 - Common mistakes in seal installation and how to avoid them

Day 2: Troubleshooting and Failure Analysis

- Module 4: Common Seal Failures and Their Causes (07:30 – 09:30)
 - Understanding common mechanical and dry seal failure modes
 - Root cause analysis of seal failures
 - Identifying signs of wear, leakage, and damage
- Module 5: Troubleshooting Techniques (09:45 – 11:15)
 - Step-by-step troubleshooting methods for mechanical seals
 - Diagnostic tools and techniques for identifying seal issues
 - Repair strategies for seals in operation
- Module 6: Case Studies in Seal Troubleshooting (11:30 – 01:00)
 - Analyzing real-world case studies of seal failures and their solutions
 - Learning from industry-specific seal challenges and solutions
 - Group discussion on best practices for effective troubleshooting

Day 3: Advanced Seal Maintenance, Performance Optimization, and Best Practices

- Module 7: Advanced Maintenance Techniques (07:30 – 09:30)
 - Predictive maintenance techniques for seals
 - Managing seal performance and monitoring using sensors and data analytics
 - Extending the lifespan of mechanical and dry seals
- Module 8: Optimizing Sealing Systems for Efficiency (09:45 – 11:15)
 - Integrating sealing systems into overall equipment management strategies
 - Understanding the role of seals in minimizing downtime and enhancing productivity
 - Techniques for optimizing seal performance and reliability
- Module 9: Best Practices and New Developments in Seal Technology (11:30 – 01:00)
 - Overview of the latest advancements in seal technology
 - Industry best practices for sealing systems and maintenance
 - Future trends and innovations in mechanical and dry seals

Certification

Participants will receive a Certificate of Completion in Mechanical & Dry Seals Selection, Maintenance & Troubleshooting, recognizing their expertise in seal technologies, maintenance strategies, and troubleshooting techniques.

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