

BEARING INSTALLATION, MAINTENANCE, TROUBLESHOOTING & FAILURE ANALYSIS

"Master Bearing Maintenance to Enhance Performance and Prevent Failures"

Schedule

Date	Venue	Fees (Face-to-Face)
02 - 04 Jun 2026	Muscat, Oman	USD 2,495 per delegate
24 - 26 Aug 2026	Doha, Qatar	USD 2,495 per delegate

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

Introduction

This 3-day training course focuses on the essential aspects of bearing installation, maintenance, troubleshooting, and failure analysis. Bearings are critical components in many mechanical systems, and their proper functioning is vital for the overall performance of machinery. This course provides in-depth knowledge and hands-on experience on the best practices for bearing installation and maintenance to avoid downtime and reduce repair costs.

The course also covers common bearing failures, their causes, and techniques to analyze and prevent such failures. Participants will gain practical skills to improve bearing reliability, extend service life, and prevent unexpected breakdowns, ultimately optimizing the performance and longevity of their equipment.

Objectives

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

- Understand the critical role of bearings in machinery and their common failure modes
- Properly install and maintain different types of bearings
- Identify and troubleshoot bearing-related issues in mechanical systems
- Perform failure analysis to determine the root causes of bearing failures
- Develop strategies to improve bearing reliability and minimize unplanned downtime

Why Attend

- Gain practical, hands-on experience in bearing installation and maintenance
- Learn how to diagnose and troubleshoot bearing issues effectively
- Understand the key causes of bearing failures and how to prevent them
- Improve your ability to extend the lifespan and reliability of bearings in equipment
- Enhance your knowledge to reduce maintenance costs and downtime associated with bearing failure

Target Audience

This program is designed for:

- Maintenance engineers and technicians
- Reliability engineers and asset managers
- Operations managers responsible for machinery upkeep
- Anyone involved in the maintenance and troubleshooting of mechanical systems

Individual Benefits

Key competencies that will be developed include:

- Expertise in bearing installation and maintenance techniques
- Ability to troubleshoot and resolve bearing-related problems effectively
- Skills to conduct failure analysis and identify root causes of bearing issues
- Knowledge of the latest best practices and tools for bearing maintenance
- Enhanced ability to improve machinery reliability and minimize downtime

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced downtime and improved productivity by preventing bearing failures
- Enhanced ability to perform maintenance tasks more efficiently and cost-effectively
- Increased reliability of mechanical systems and equipment
- Better understanding of failure modes, leading to proactive maintenance strategies
- Improved operational performance through optimized bearing management

Instructional Methodology

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

- Strategy Briefings - Deep dive into bearing installation, maintenance, and troubleshooting techniques
- Case Studies - Real-world examples of bearing failures and lessons learned
- Workshops - Hands-on exercises to practice installation, maintenance, and failure analysis
- Peer Exchange - Group discussions on common bearing-related challenges and solutions
- Tools - Templates and checklists for bearing maintenance, failure analysis, and troubleshooting

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 Bearings and Installation Best Practices

- Module 1: Overview of Bearings and Their Function (07:30 – 09:30)
 - Understanding the types of bearings and their applications
 - Key features and design considerations of bearings
 - Common bearing failure modes and their impact on machinery
- Module 2: Bearing Installation Techniques (09:45 – 11:15)
 - Step-by-step process for correct bearing installation
 - Tools and techniques for effective bearing mounting
 - Common installation mistakes and how to avoid them
- Module 3: Maintenance Fundamentals for Bearings (11:30 – 01:00)
 - Routine maintenance practices for different bearing types
 - Lubrication techniques and their impact on bearing performance
 - Inspection methods for early detection of potential issues

Day 2: Troubleshooting and Failure Analysis

- Module 1: Identifying Bearing Failures (07:30 – 09:30)
 - Signs and symptoms of bearing failure
 - How to diagnose bearing-related issues in machinery
 - Using vibration analysis and temperature monitoring for early detection
- Module 2: Root Cause Analysis of Bearing Failures (09:45 – 11:15)
 - Performing a failure analysis to determine the underlying causes of bearing issues
 - Techniques such as forensic analysis and visual inspection
 - Case studies of common bearing failures and how to prevent them
- Module 3: Troubleshooting and Problem-Solving Techniques (11:30 – 01:00)
 - Step-by-step process for troubleshooting bearing problems
 - Practical exercises to solve common bearing issues
 - Preventative measures to reduce the likelihood of future failures

Day 3: Advanced Maintenance and Long-Term Bearing Reliability

- Module 1: Advanced Bearing Maintenance Strategies (07:30 – 09:30)
 - Implementing predictive and condition-based maintenance for bearings
 - Techniques for improving bearing reliability and extending service life
 - Tools and technologies for monitoring bearing health
- Module 2: Bearing Life Cycle Management (09:45 – 11:15)
 - Best practices for managing bearings throughout their life cycle
 - Optimizing bearing replacement schedules and maintenance intervals
 - Cost-benefit analysis of various bearing maintenance strategies
- Module 3: Final Review and Q&A (11:30 – 01:00)
 - Review of key takeaways from the course
 - Group discussion on implementation strategies for attendees' specific needs
 - Open Q&A session to address any remaining questions

Certification

Upon successful completion of the course, participants will receive a Certificate of Completion in Bearing Installation, Maintenance, Troubleshooting & Failure Analysis, validating their proficiency in bearing management and failure prevention techniques.

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