

FUNDAMENTALS OF ALIGNMENT

"Mastering Alignment Techniques for Enhanced Machinery Performance and Longevity"

Schedule

Date	Venue	Fees (Face-to-Face)
18 - 19 Aug 2026	Doha, Qatar	USD 1995 per delegate

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

Introduction

This 2-day intensive training course is designed to provide participants with a thorough understanding of alignment principles and their crucial role in the performance and longevity of machinery. The course will cover the fundamental techniques of machinery alignment, from manual methods to advanced laser alignment technology.

Participants will gain hands-on experience in realigning critical machine components, reducing downtime, and enhancing equipment performance. The course will also focus on troubleshooting misalignment issues and implementing corrective measures to prevent costly damages.

Objectives

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

- Understand the importance of alignment in machinery operation
- Learn various alignment methods, including manual and laser alignment
- Diagnose and rectify alignment problems to improve performance
- Optimize machine life and performance through effective alignment practices
- Implement maintenance strategies to prevent future alignment issues

Why Attend

- Gain in-depth knowledge of alignment principles and methods
- Learn both traditional and modern techniques for aligning machinery
- Understand the impact of misalignment on machinery performance and costs
- Improve operational efficiency and extend the life of equipment
- Enhance your ability to troubleshoot and prevent alignment-related issues

Target Audience

This program is designed for:

- Mechanical engineers and technicians
- Maintenance managers and plant operators
- Machine operators responsible for equipment care and performance
- Anyone involved in machinery maintenance and troubleshooting
- Personnel seeking to enhance their skills in machinery alignment

Individual Benefits

Key competencies that will be developed include:

- Mastery of alignment techniques for various machine types
- Ability to diagnose misalignment problems and take corrective action
- Understanding of the role of precision alignment in machinery performance
- Confidence in using advanced alignment tools and technologies
- Knowledge of best practices for extending machine life and minimizing downtime

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Increased machine reliability and reduced breakdowns
- Improved operational efficiency and reduced maintenance costs
- Enhanced ability to prevent misalignment-related damage
- Extended service life of machinery and equipment
- A more skilled workforce in performing precision alignment tasks

Instructional Methodology

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

- Strategy Briefings - In-depth explanation of alignment principles, tools, and methods
- Case Studies - Real-world examples of alignment issues and their solutions
- Workshops - Practical, hands-on exercises in machine alignment using manual and laser tools
- Peer Exchange - Group discussions and experiences on alignment challenges and successes
- Tools - Reference guides, alignment templates, and diagnostic tools

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 Alignment Techniques

- Module 1: Overview of Alignment Principles (07:30 – 09:30)
 - Understanding the importance of alignment in machinery operations
 - Types of misalignment: Angular, parallel, and axial
 - Key factors affecting alignment quality
- Module 2: Manual Alignment Methods (09:45 – 11:15)
 - Tools and techniques for manual alignment
 - Step-by-step process of aligning machinery components
 - Common challenges and how to overcome them
- Module 3: Laser Alignment Technology (11:30 – 01:00)
 - Introduction to laser alignment tools and technologies
 - How laser systems improve accuracy and reduce downtime
 - Practical advantages of using laser alignment

Day 2: Advanced Alignment Techniques and Troubleshooting

- Module 1: Measuring and Monitoring Alignment (07:30 – 09:30)
 - Methods for measuring alignment precision
 - Importance of monitoring during machine operation
 - Real-time monitoring tools and techniques
- Module 2: Troubleshooting Alignment Issues (09:45 – 11:15)
 - Diagnosing common alignment problems
 - Identifying causes of misalignment: Load, vibration, thermal effects
 - Corrective measures to fix misalignment
- Module 3: Best Practices and Preventive Maintenance (11:30 – 01:00)
 - Preventive maintenance strategies to reduce misalignment risk
 - Scheduling alignment checks for optimal machine performance
 - Case study: Implementing alignment maintenance practices for long-term efficiency

Certification

Participants will receive a Certificate of Completion in Fundamentals of Alignment, validating their expertise in machinery alignment, optimization techniques, and maintenance best practices to enhance equipment performance and longevity.

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