



مركز الوقت للتدريب
Time Training Center

**MECHANICAL SHAFT ALIGNMENT &
VIBRATIONAL ANALYSIS COURSE**



Introduction

This course delivers comprehensive training in shaft alignment and vibration analysis techniques essential for maintaining the health of rotating machinery. Focused on reducing unplanned downtime and enhancing machine reliability, the course blends theoretical concepts with hands-on practice using dial indicators, laser alignment tools, and vibration analyzers. Designed for professionals in industries such as oil & gas, manufacturing, and power generation, the course equips participants to detect, diagnose, and correct common alignment and vibration issues efficiently.

Learning Objectives

- Diagnose machinery faults using vibration signatures
- Apply phase, frequency, and amplitude analysis
- Use dial indicators and laser systems effectively
- Improve machine reliability and reduce failure rates

Course Details

Mode of Training	Classroom or Online
Duration	5 Days

Who Should Attend?

- Maintenance and mechanical technicians
- Rotating equipment engineers and supervisors
- Condition monitoring and reliability professionals
- Mechanical fitters and millwrights in industrial plants

Certificate(s)

Participants who complete a minimum of 80% of the total training hours will receive a **Certificate of Completion** issued by **Time Training Center**. This certificate reflects their active participation and commitment to professional development in the relevant field.



Course Outline

Module 1: Fundamentals of Shaft Alignment

- Introduction to Shaft Misalignment and Its Consequences
- Pre-Alignment Procedures and Soft Foot Correction
- Basics of Dial Indicator and Laser Alignment Methods
- Thermal Growth and Machine Movement Considerations
- Practical Exercise: Initial Shaft Alignment Checks

Module 2: Advanced Shaft Alignment Techniques

- Reverse Dial and Rim-Face Methods
- Precision Laser Alignment Techniques
- Alignment of Horizontally and Vertically Mounted Machines
- Machine Train Alignment Challenges and Solutions
- Practical Workshop: Shaft Alignment using Simulators

Module 3: Basics of Vibrational Analysis

- Principles and Terminology of Vibration
- Data Collection Techniques and Equipment
- Signal Processing: Filters, Sampling, and Spectrum Analysis
- Practical Session: Vibration Data Acquisition and Interpretation

Module 4: Advanced Vibration Diagnosis and Condition Monitoring

- Fault Diagnosis using FFT and Phase Analysis
- Vibration Severity and Fault Severity Charts
- Corrective Actions and Equipment Testing
- Building a Condition Monitoring Program
- Integrated Practical Session: Combined Alignment and Vibration Case Studies
- Final Review and Certification Assessment



Methodology

We employ a comprehensive and applied learning strategy, integrating theory with real-world implementation:

- ❖ **Conceptual Learning:** Expert-led sessions on catalytic theory and engineering principles
- ❖ **Interactive Workshops:** Group exercises, presentations, and technical discussion forums
- ❖ **Case-Based Learning:** Industry-specific examples and troubleshooting scenarios
- ❖ **Technology Integration:** Digital tools, simulations, and catalyst modeling applications
- ❖ **Assessment:** Pre-tests, post-tests, and Competence Validation Exams for Certified courses to ensure knowledge transfer and skills validation

Note: Instructors may adjust the training approach to fit technical requirements or participant engagement levels.

Instructors

Our instructors are certified mechanical and reliability engineers with over 10 years of experience in shaft alignment, condition monitoring, and machinery diagnostics. Their field backgrounds span oil & gas, utilities, and manufacturing sectors. Each trainer is known for delivering practical, safety-focused instruction that blends ISO-aligned technical training with real maintenance insights. Detailed trainer profiles will be shared upon request.

About Time Training Center

Time Training Center is a leading professional training institute in Abu Dhabi that provides students and professionals with quality education and skill development programs. Time Training Center is accredited by the Abu Dhabi Center for Technical Vocational Education & Training (ACTVET) with a specialization in Computer and Management Training programs and certified by QA QC with ISO 9001:2015.

Operating in Abu Dhabi for over 3 decades, Time Training Center has established brand value as a high-quality Management & Technical Training Center in Abu Dhabi. We have also secured strong loyalty from corporate companies and associations with our holistic and practical teaching approach.

Contact us at
Time Training Center
Office 901
Khalaf Al Otaiba Tower,
Electra Street - Abu Dhabi - United Arab Emirates
Phone: +97126713828
Whatsapp: +971558564000
E-mail: info@timetraining.ae