



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



MUE156

Rotating Equipment: Operation Maintenance & Troubleshooting



ACTVET
Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
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Course Introduction:

This course aims at providing the participants with a comprehensive theoretical and practical knowledge, and enhancing their skills for the maintenance and operation of rotating equipment. Emphasis shall be laid on topics relevant to machinery maintenance requirements, identify and diagnose the typical faults and troubles of rotating equipment. This includes equipment lubrication, bearing, different types of sealing, coupling, alignment, balance, vibration and analyzes the performance of the rotating equipment components. Selecting the most efficient maintenance strategy will be addressed too.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Apply techniques for troubleshooting failure causes and consequences
- ✓ Identify causes of machinery failures (5 whys)
- ✓ Apply condition monitoring technique
- ✓ Understand equipment reliability and predictive maintenance fundamentals
- ✓ Carryout lubrication monitoring and analysis
- ✓ Operate procedures best practices
- ✓ Describe RCFA (Root Cause Failure Analysis) procedures and techniques (rotors, journal bearings and vibration, thrust bearings, balance drums, pump mechanical seals, compressor seals - liquid and dry gas, and auxiliary systems)

Who Should Attend?

The course is designed and targeted to rotating equipment technicians and engineers in charge of troubleshooting, operating and maintaining of rotating equipment. Also personnel involved in balancing, aligning and analyzing vibration of rotating machinery.

Course Outline:

Day 1:

Principles and Procedures

- Rotating machinery maintenance requirement
- Types of maintenance and the scope of implementation
- Basic guidelines for implementing the convenient type of maintenance.
- Symptoms indicating rotating equipment condition

Rotating Equipment Maintenance

- Rotating equipment monitoring techniques
- Diagnosis the rotating equipment
- Troubleshooting data and investigation guidelines
- Build up a troubleshooting expert system

Day 2:

Vibration Monitoring and Analysis

- Vibration detection and analysis
- Balancing single plane and two planes
- Computer vibration based balancing

Day 3:

Alignment Monitoring and Correction

- Alignment theory and alignment methods
- Measuring and correction misalignment
- Laser, rim and face, reverse indicator alignment

Day 4:

Bearings

- Bearings types
- Bearings applications
- Bearings selection
- Lubrication purpose, method of lubrication and tools for application

Day 5:

Gears and Gearbox

- Gearbox, coupling and other rotating machinery components
- Failure analysis techniques of gearbox, bearing, coupling and shafts
- Rotating equipment replacement analysis

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Coffee/Tea/Snacks)
13:30 - 15:00	Last Session