London TDM

Mechanical and Electrical Engineering Training Courses

Course Venue: United Kingdom - London

Course Date: From 02 August 2026 To 06 August 2026

Course Place: London Paddington

Course Fees: 7,500 USD

Introduction

Condition monitoring of mechanical systems is a critical aspect of modern maintenance strategies aimed at predicting equipment failures before they occur. This 5-day professional course is designed to provide participants with a comprehensive understanding of the techniques, tools, and technologies used in condition monitoring. Attendees will gain practical insights into the selection and application of condition monitoring methods to enhance maintenance planning, reduce downtime, and increase reliability and performance of mechanical systems.

Objectives

- Understand the fundamentals of condition monitoring and its significance in predictive maintenance.
- Explore various techniques and tools used for condition monitoring of mechanical systems.
- Develop skills to analyze and interpret condition monitoring data for actionable insights.
- Learn best practices for implementing condition monitoring programs in industrial settings.
- Evaluate the latest advancements and technologies in the field of condition monitoring.

Course Outlines

Day 1: Introduction to Condition Monitoring

- Overview of maintenance strategies: Predictive, Preventive, and Reactive
- Fundamental concepts of condition monitoring
- Key benefits and challenges of implementing condition monitoring
- Introduction to common condition monitoring techniques
- Case studies highlighting successful applications

Day 2: Vibration Analysis Techniques

- The role of vibration analysis in machinery diagnostics
- Tools and equipment for vibration data collection
- Understanding frequency spectra and time-waveform analysis
- Fault detection and diagnosis using vibration analysis
- Hands-on exercises in vibration data interpretation

Day 3: Thermography and Oil Analysis

- Principles of thermography in condition monitoring
- Applications of infrared thermography in mechanical systems
- Introduction to oil analysis and its importance
- Techniques and interpretation of oil analysis results
- Integrating thermography and oil analysis in monitoring programs

Day 4: Ultrasound and Acoustic Emission Techniques

- Understanding ultrasound technology for predictive maintenance
- Applications of ultrasonic testing in mechanical systems
- Basics of acoustic emission testing

- Common applications of acoustic methods in condition monitoring
- Case studies and hands-on practice with ultrasound tools

Day 5: Implementing Condition Monitoring Programs

- Steps to develop and implement a condition monitoring program
- Tools for data management and analysis in monitoring systems
- Evaluating return on investment (ROI) of condition monitoring
- Integration of condition monitoring with other maintenance strategies
- Review of emerging trends and future directions in condition monitoring