Machinery Failure, Vibration and Predictive Maintenance

Venue Information

Venue: London UK

Place:

Start Date: 2026-11-17

End Date: 2026-11-21

Course Details

Net Fee: £4750.00

Duration: 1 week

Category ID: METC

Course Code: METC-7

Syllabus

courses Syllabus

Introduction

Machines undergo wear and tear over time, leading to performance decline and general deterioration. By understanding the underlying failure mechanisms, we can effectively identify signs of machine deterioration. This courses delves into failure analysis and predictive maintenance techniques, including vibration analysis, with the aim of optimizing maintenance efforts while maximizing production. Additional techniques covered include infrared thermography, passive ultrasonics, tribology, and performance monitoring.

Objectives

Upon completion of this courses, participants will:

- Learn how these technologies can complement and support each other.
- Receive practical tips for implementing these technologies effectively.
- Develop an action plan for integrating these technologies into their maintenance strategy and measuring benefits.

courses Content

Day 1 - Understanding Failures

- Explore machine failure analysis techniques.
- Study wear and tribology, fatigue mechanisms, and bearing and seal failures.

Day 2 - Avoiding Failures

- Learn troubleshooting techniques.
- Understand statistical analysis of machinery failures.

Day 3 - Understanding Predictive Maintenance

- Gain insight into predictive maintenance concepts and strategies.
- Explore predictive maintenance technologies and potential failure analysis.

Day 4 - Using Predictive Maintenance

- Delve into vibration analysis, including frequency analysis and vibration transducers.
- Learn about vibration standards, diagnostics, amplitude demodulation, and resonance.

Day 5 - Control Mechanisms

- Understand how to manage predictive maintenance efforts effectively.
- Learn about performance and efficiency monitoring, cost analysis, and reporting techniques.
- Explore methods for integrating predictive maintenance into the overall maintenance plan.