29TH NOV, 2025, 9AM - 4PM

Vibration Analysis in a Day

Overview of Vibration Analysis & Maintenance Practices

MOBIUS INSTITUTE

STRATEGIC RELIABILITY SOLUTIONS LTD.

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Description

Vibration-based condition monitoring and analysis provide valuable insights into the health of rotating assets. Many companies have vibration-based programs managed internally or by service providers who generate asset condition reports. However, these reports often contain technical terminology that can be confusing or misleading, leading to ineffective decision-making.

This course is designed to help plant personnel and key decision-makers better understand the fundamentals of vibration analysis, including essential terminology, core concepts, and how it can be used to diagnose faults in rotating assets within modern manufacturing facilities.

Who should attend?

This course is intended for individuals who need a fundamental understanding of vibration analysis but do not need the expertise required to perform in-depth analysis of vibration data.

Examples may include:

- Maintenance Managers
- Maintenance Planners
- Purchasing
- Schedulers
- Production Managers
- Operations Staff, etc.

Instructors

Leston Bethelmy,
VA CAT IV

40 years combined experience

Christopher Goonai,
VA CAT III

Key Learning Objectives

- **Learn the objectives of vibration analysis used in industry.**
- **Learn the basics of what vibration is, the terminology, and what is measured.**
- **Learn best practice measurement setups for rotating equipment fault detection and analysis.**
- **Learn best-practice sensor mounting practices and optimum measurement locations.**
- **Learn fundamentals of spectrum analysis.**
- **Learn and review vibration data representing multiple machinery faults found in rotating equipment used in the industry.**

Details

- **Location: COSTAATT City Campus, Port of Spain**
- **Price: TTD 2,000 + VAT per person**

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Course Outline

Earn 0.5 CPD units

Module 1 - Vibration Basics

- What is Vibration
- Collect Useful Information
- Measurement Best Practices
- Sensors, Mounting, and Measurement Locations

Module 2 – Spectrum Analysis

- Importance of Running Speed
- Spectral Pattern Recognition
- Harmonics
- Sidebands
- Noise Floor
- Synchronous, Non-Synchronous, and Sub- Synchronous Frequencies
- Importance of Trending
- Alarm Limits
- Band Alarms
- Envelope Alarms

Module 3 – Unbalance

- Causes of Unbalance
- Types of Unbalance
- Eccentricity
- Case Study

Module 4 – Misalignment

- Causes of Misalignment
- Types of Misalignment
- Bent Shaft
- Case Study

Module 5 – Mechanical Looseness

- Causes of Mechanical Looseness
- Types of Mechanical Looseness
- Case Study

Module 6 – Rolling Element Bearings

- Bearing Facts
- Bearing Load
- Bearing Failure Stages and Monitoring Techniques

Module 7 – Electric Motors

- Common Motor Faults
- Component Defects

Module 8 – Pumps, Fans, and Compressors

- Common Faults
- Blade Pass

Module 9 – Belt Drives

- Pulleys, Ratios, and Speed
- Belt Misalignment
- Belt Resonance
- Belt Wear

Module 10 – Gearboxes

- Common Gearbox Failures
- Forcing Frequencies

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