

VIBRATION ANALYSIS FOR PREDICTIVE MAINTENANCE

MCE022

COURSE DESCRIPTION

This 5-day course is designed for practicing participants, who may be involved in vibration design, analysis, and/or test, and who want to bridge that educational gap. This course will also be of interest to those already familiar with one aspect of vibrations and are interested in broadening their horizons, e.g., from analysis to testing.

In this course, the fundamentals of vibrations theory are explained, including the definition and explanation of special terms. Practical aspects of vibration measurements, analysis and calibration; sinusoidal and random vibration testing; ESS; HASS and HALT; vibration and shock test fixture design; shock measurement, shock response spectrum (SRS) and shock testing. Review of modal testing.

COURSE GOAL

To enhance the participants' knowledge, skills, and ability necessary to measure vibration and shock, calibrate vibration and shock measurement systems, convert measured data into a test program, interpret vibration and shock test requirements, conduct vibration and shock tests, design suitable vibration and shock test fixtures.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Understand of basic analysis of machinery vibrations.
- Understand of principles of vibration measurement.
- Select a measuring system for predictive maintenance.
- Understand of basic frequency analysis.
- Detect faults from vibration spectral data.
- Identify the importance of predictive maintenance as a part of comprehensive maintenance program.
- Set up a predictive maintenance program.

WHO SHOULD ATTEND

Engineers and highly qualified Technicians working in the operation, maintenance, trouble shooting and repair of rotating machinery.

COURSE DURATION

5 Working Days

COURSE OUTLINES

- Basic Analysis of Machinery Vibrations.
- Principles of Vibration Measurement.
- Selecting a Measuring System for Predictive Maintenance.
- Basic Frequency Analysis.
- Detection of Faults from Vibration Spectral Data.
- Introduction to Machinery Diagnostics.
- Predictive Maintenance as a Part of Comprehensive Maintenance Program.
- Setting up a Predictive Maintenance Program.
- Case Studies from Selected Industries.
- Practical Training Using Stored Vibration Spectral Data on a PC.
- Hands-On-Training (this part is optional depending on the availability of instruments).

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