

SpectraQuest Introduces:

Maintenance 4.0 Solution for Manufacturing Workforce Skills Enhancement

Spectra Quest, Inc., Virginia based manufacturing company, is pleased to introduce a turnkey program for Maintenance and Reliability Engineering (M&RE) essential for Manufacturing 4.0. This all-inclusive program is designed for implementation at community colleges, manufacturing institutes, and vocational training centers. This complete package includes the course syllabus, text, laboratory exercises, laboratory devices/simulators, and instructor lecture plans to initiate a comprehensive program for a solid foundation.

This material provides a unique program specializing in machine condition monitoring and diagnostics using vibration analysis and associated technologies to provide the essential training for the proper maintenance and monitoring of assets (machines). The objective is to extend asset life at the minimum possible cost. This program teaches an aspect of Reliability Centered Maintenance (RCM) that is critical but is often not addressed in detail due to the very technical knowledge and understanding required.

The following courses are included:

1. **Introduction to Industrial & Machinery Maintenance:** This course provides students with the basic material to enter the field of industrial and machinery maintenance.
2. **Introduction to Machine Vibration Analysis (ISO CAT I):** This course provides an introductory overview of the asset health monitoring concept with an emphasis on application of vibration monitoring and analysis.
3. **Machine Vibration Analysis (ISO CAT II):** This course provides sufficient knowledge to collect vibration information and perform limited analysis.
4. **Introduction to Shaft and Sheave (pulley) Alignment:** This course provides hands-on training in the use of dial indicators and laser alignment tooling to perform adequate alignment for smooth operation of the asset (machines).
5. **Rotating machine balancing:** This course teaches how to balance the most common machinery using single and multiple plane balancing techniques.
6. **Introduction to IIOT PDM:** This course provides introduction to industrial internet of things and the use of predictive maintenance in the era of Industry 4.0 smart (connected) manufacturing.
7. **Machine Vibration Analysis (ISO CAT III):** This course provides the required knowledge to set up and implement a condition monitoring program in a plant. It also prepares the student to perform more extensive analysis.
8. **Machinery trouble shooting (diagnostics) and Root Cause Failure Analysis (RCFA):** This course prepares the student to be able collect required information to isolate the cause of machine malfunction and determine the root cause so corrective action can be taken to minimize future occurrences.
9. **Introduction to Reciprocating Mechanism Dynamics:** This course teaches the mechanical workings of a reciprocating mechanism as used in production machinery and transportation.