Title: Machinery Engineering Fundamentals

Potential PDH: 24 **Code:** BTT087

Description:

This 3-day course focuses on the comprehension of engineering activities for common production facility machinery. Gain practical knowledge on how to fit reliability, operability, and maintainability into a right-sized solution on facility strategic improvements and run-and-maintain activities. Learn ways to troubleshoot common machinery issues and strengthen proactive activities. This course focuses on process machinery such as centrifugal compressors, reciprocating compressors, and centrifugal pumps.

Outline:

DAY 1: RELIABILITY IN STRATEGIC IMPROVEMENTS

A. Right-sizing machine reliability with service availability
B. Using codes, standards, specifications, and datasheets
C. Evaluating and conditioning machinery retrofit and procurement proposals
D. Executing inspection, witnessing, and applicable hold point activities
E. Overseeing machinery installation activities
F. Executing commissioning, pre-startup, and post startup activities

DAY 2: RUN & MAINTAIN RELIABILITY EXCELLENCE

A. Prevention activities
    a. Strategies
    b. Operator basic care
    c. Lubrication
    d. Shaft alignment
    e. Condition based maintenance
    f. Preventive maintenance checks and services
B. Bad actors and LPO failures
    a. Failure investigation
    b. Seal failure modes
C. Predicting reliability and condition monitoring
    a. Performance degradation
    b. Bearing health
    c. Valve & rider band health
D. Mitigating risks in actions and engineering
    a. Maintenance oversight, inspection, and discovery
    b. Pump seals in hazardous service
    c. Troubleshoot and testing
    d. Computational analysis

DAY 3: CASE STUDIES

A. Apply what you've learned to real Machinery situations.

B. Share your current pain points and dive into effective methodology and solutions.