

Condition-Based Monitoring and Asset Integrity Management

COURSE OVERVIEW

This course provides an in-depth exploration of modern maintenance and reliability strategies that use real-time data and analytics to ensure the long-term safety, reliability, and performance of critical assets. The curriculum elaborates on the integration of CBM within a holistic Asset Integrity Management System (AIMS) to ensure that all physical assets perform efficiently throughout their lifecycle. Through real-world case studies, participants will learn how digitalization, AI, and IoT technologies are transforming CBM into a proactive, data-driven discipline.

WHO SHOULD ATTEND?

This program is designed for maintenance and reliability engineers, asset integrity specialists, plant managers, operations supervisors, inspection engineers, and maintenance planners working in industries such as oil and gas, power generation, petrochemicals, manufacturing, and heavy industries. It is equally valuable for safety professionals, project engineers, and decision-makers responsible for asset health strategies, risk management, and digital transformation in asset-intensive environments.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Identify and assess key degradation mechanisms that affect asset performance and reliability.
- Apply advanced diagnostic techniques for monitoring equipment condition and predicting failures.
- Develop and implement a structured condition monitoring program aligned with industry best practices.
- Analyze data from vibration, temperature, lubrication, and acoustic monitoring systems for decision-making.
- Establish asset integrity frameworks in compliance with international standards (ISO 55000, API 580).
- Optimize maintenance strategies to reduce unplanned downtime and extend asset life cycles.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- How to integrate CBM within an Asset Integrity Management framework for sustainable performance.
- The roles of sensors, IoT devices, and AI-driven analytics in real-time asset health tracking.
- How to interpret condition monitoring data to identify early warning signs of equipment failure.
- The application of vibration, thermography, and ultrasonic testing in predictive maintenance.
- Methods for assessing risk and prioritizing maintenance actions using reliability-centered tools.
- The relationship between CBM, reliability engineering, and operational excellence.
- The role of digital twins and data visualization platforms in enhancing integrity management.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate.
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded.