

## RISK-BASED MAINTENANCE WORKSHOP

“Optimizing Maintenance Strategies by Prioritizing Risk and Asset Criticality”

### Schedule

Date	Venue	Fees (Face-to-Face)
04 - 05 Mar 2026	Kuala Lumpur, Malaysia	USD 1995 per delegate

### Introduction

Traditional maintenance approaches often treat all assets equally, leading to over-maintenance of low-risk components and under-maintenance of critical ones. Risk-Based Maintenance (RBM) provides a smarter alternative—focusing resources where failure would have the greatest operational, safety, or financial impact.

This practical 2-day workshop equips engineers, maintenance planners, and reliability professionals with a structured methodology for assessing asset risk, determining criticality, and applying the right maintenance strategy for each asset class. Using real-world examples and tools, participants will learn how to optimize maintenance plans while ensuring compliance, safety, and performance.

### Objectives

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

- Understand the principles and framework of risk-based maintenance
- Identify asset risks based on failure consequences and likelihood
- Use asset criticality analysis to prioritize maintenance activities
- Integrate RBM into maintenance planning, scheduling, and execution
- Apply continuous improvement techniques using reliability data

## Why Attend

- Reduce downtime and unnecessary maintenance through better risk targeting
- Ensure compliance and safety by focusing on high-risk equipment
- Learn to balance cost, risk, and performance in maintenance decisions
- Gain tools to assess asset health, failure modes, and criticality
- Improve collaboration between operations, maintenance, and engineering

## Target Audience

This program is designed for:

- Maintenance engineers and planners
- Reliability and asset integrity professionals
- Operations and plant managers
- Technical inspectors and maintenance supervisors
- Anyone involved in maintenance strategy, planning, or risk management

## Individual Benefits

Key competencies that will be developed include:

- Risk assessment and failure mode identification
- Maintenance strategy selection (PM, PdM, CBM, RTF, etc.)
- Criticality analysis and prioritization
- Decision-making using risk and reliability data
- Application of RBM in CMMS and maintenance workflows

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced equipment failure and maintenance-related downtime
- Lower total maintenance cost through better prioritization
- Improved asset reliability and safety compliance
- Increased alignment of maintenance with business risk
- Enhanced cross-functional decision-making and planning

## Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - RBM models, standards (ISO 31000, ISO 55000), and best practices
- Case Studies - Industry examples of RBM implementation and results
- Workshops - Failure Mode Effects Analysis (FMEA), criticality ranking, and maintenance strategy mapping
- Peer Exchange - Collaborative review of risk scenarios and mitigation plans
- Tools - RBM matrix templates, risk registers, and criticality assessment checklists

## Course Outline

**Training Hours: 07:30 AM - 03:30 PM** Daily Format: 3-4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Break: 01:00 - 02:00

### Day 1: Fundamentals of Risk-Based Maintenance

- Module 1: Introduction to RBM (07:30 - 09:30) • Definitions and benefits of risk-based maintenance • RBM vs traditional and preventive maintenance • Industry drivers for adopting RBM
- Module 2: Asset Criticality and Risk Assessment (09:45 - 11:15) • Risk matrices: consequence vs likelihood • Categorizing assets by operational impact • Data requirements and sources
- Module 3: Failure Modes and Consequence Analysis (11:30 - 01:00) • Identifying failure modes and failure effects • Linking failure modes to maintenance actions • Use of FMEA and RCA in RBM planning
- Module 4: Workshop - Asset Risk Profiling (02:00 - 03:30) • Group exercise on ranking asset risk and criticality

### Day 2: RBM Strategy Development and Execution

- Module 5: Selecting the Right Maintenance Strategy (07:30 - 09:30) • Preventive vs predictive vs condition-based vs run-to-failure • Strategy selection using asset risk profiles • Cost-benefit considerations in decision-making
- Module 6: Implementing RBM in Practice (09:45 - 11:15) • Integrating RBM into planning and scheduling • Communicating priorities across departments • Using CMMS/EAM systems for RBM execution
- Module 7: Monitoring and Continuous Improvement (11:30 - 01:00) • KPIs for RBM effectiveness (MTBF, MTTR, risk exposure) • Reviewing and updating risk profiles • Auditing and optimizing maintenance strategies
- Module 8: Final Workshop - RBM Action Planning (02:00 - 03:30) • Participants develop RBM plan for selected assets • Peer feedback and action planning

## Certification

Participants will receive a Certificate of Completion in Risk-Based Maintenance, confirming their ability to assess asset risk, prioritize maintenance activities, and implement a structured RBM program in their organization

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