MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

REVOLUTIONIZING RELIABILITY ENGINEERING FOR INDUSTRIAL OPERATIONS

"Integrating Innovation, Analytics, and Predictive Technologies to Maximize Asset Performance"

Schedule

Date	Venue	Fees (Face-to-Face)
05 – 09 Oct 2026	London, UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

In today's industrial landscape, organizations must rethink traditional reliability engineering practices to meet rising demands for uptime, cost efficiency, and operational excellence. Modern reliability engineering combines classical failure analysis with data-driven tools, advanced diagnostics, and smart asset strategies.

This forward-looking course equips professionals with practical frameworks to transform reliability approaches across the asset lifecycle. Participants will learn how to apply predictive analytics, reliability-centered maintenance (RCM), digital twins, and root cause analysis (RCA) to reduce downtime, improve safety, and extend asset longevity.

Objectives

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

- Develop and lead advanced reliability strategies in industrial operations
- Apply modern tools including predictive analytics and digital diagnostics
- Design and implement reliability-centered maintenance programs
- Perform root cause and failure mode analysis using industry standards
- Align reliability efforts with production, safety, and cost objectives

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Why Attend

- Modernize your reliability program with digital, data-driven approaches
- Move from reactive to predictive and proactive maintenance models
- Identify failure risks before they disrupt operations or safety
- Boost overall asset performance, uptime, and OEE
- Strengthen collaboration between engineering, maintenance, and operations

Target Audience

This program is designed for:

- Reliability and maintenance engineers
- Plant and operations managers
- Asset integrity, inspection, and condition monitoring specialists
- Industrial analysts and process engineers
- Engineering managers and technical leads in manufacturing, energy, or utilities

Individual Benefits

Key competencies that will be developed include:

- Reliability-centered and risk-based maintenance strategy design
- Condition monitoring, FMEA, and predictive analytics application
- Use of failure data to improve planning and decision-making
- Integration of reliability into capital project and lifecycle planning
- Improved problem-solving and technical reporting techniques

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced downtime and maintenance-related losses
- Improved reliability, availability, and performance of critical assets
- Enhanced safety and compliance through proactive risk mitigation
- Cost-effective allocation of maintenance resources
- Data-informed reliability strategies that support long-term asset value

Instructional Methodology

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

- Strategy Briefings – Reliability frameworks, asset strategies, and emerging trends
- Case Studies – Real-world applications in oil & gas, utilities, manufacturing
- Workshops – FMEA, RCA, condition monitoring planning, and KPI development
- Peer Exchange – Cross-industry challenges and collaborative solutioning
- Tools – Templates for RCM, failure reporting, and predictive maintenance models

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Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Foundations of Modern Reliability Engineering

- Module 1: Principles of Reliability Engineering (07:30 – 09:30) • Definitions, KPIs (MTBF, MTTR, OEE), and core concepts
- Module 2: Failure Patterns and Risk Profiling (09:45 – 11:15) • Failure modes, bathtub curve, asset criticality ranking
- Module 3: Introduction to RCM and Risk-Based Maintenance (11:30 – 01:00) • RCM logic, failure consequence classification
- Module 4: Workshop – Failure Mode and Effects Analysis (FMEA) (02:00 – 03:30) • Perform FMEA for a selected industrial component

Day 2: Predictive Maintenance and Condition Monitoring

- Module 1: Condition Monitoring Techniques (07:30 – 09:30) • Vibration, thermography, oil analysis, ultrasound
- Module 2: Predictive Maintenance Technologies (09:45 – 11:15) • Sensors, SCADA, CMMS integration, remote diagnostics
- Module 3: Data Analytics for Reliability (11:30 – 01:00) • Trend analysis, forecasting, machine learning introduction
- Module 4: Workshop – Designing a Predictive Maintenance Plan (02:00 – 03:30) • Match condition monitoring methods to asset classes

Day 3: Root Cause Analysis and Problem Solving

- Module 1: RCA Tools and Techniques (07:30 – 09:30) • Fishbone, 5 Whys, fault tree, cause mapping
- Module 2: Human and System Factors in Failures (09:45 – 11:15) • Error types, latent conditions, operational risk
- Module 3: Documenting and Reporting RCA (11:30 – 01:00) • Corrective actions, verification, and tracking
- Module 4: Workshop – RCA Case Study Simulation (02:00 – 03:30) • Team-based RCA on a plant failure incident

Day 4: Asset Strategy Development and Lifecycle Reliability

- Module 1: Asset Strategy Development Framework (07:30 – 09:30) • Strategy optimization, maintenance mix decisions
- Module 2: Reliability in Capital Projects (09:45 – 11:15) • Design for reliability, commissioning, asset handover
- Module 3: Reliability KPIs and Performance Management (11:30 – 01:00) • Dashboards, reporting, and continuous improvement
- Module 4: Workshop – Asset Reliability Strategy Planning (02:00 – 03:30) • Develop a multi-year reliability improvement plan

Day 5: Digital Transformation and Reliability 4.0

- Module 1: Digital Twins, AI, and IIoT in Reliability (07:30 – 09:30) • Enabling real-time simulation and predictive insights
- Module 2: Final Project – Reliability Audit and Roadmap (09:45 – 11:15) • Assess maturity and define transformation opportunities
- Module 3: Team Presentations and Peer Feedback (11:30 – 01:00) • Showcase audit findings and improvement strategy
- Module 4: Wrap-Up and Certification (02:00 – 03:30) • Reflection, key takeaways, and certificate distribution

Certification

Participants will receive a Certificate of Completion in Revolutionizing Reliability Engineering for Industrial Operations, validating their expertise in transforming reliability practices through modern tools, data, and strategic frameworks.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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