MAWA EVENTS

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

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OPTIMIZING PERFORMANCE - RCM, ROOT CAUSE ANALYSIS, AND MAINTENANCE STRATEGY

""Integrating RCM and RCA into a Proactive Maintenance Strategy to Maximize Equipment Reliability and Performance""

Schedule

Date	Venue	Fees (Face-to-Face)
21 – 25 Sep 2026	Dubai, UAE	USD 3495 per delegate

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

Introduction

Unplanned downtime, recurring failures, and reactive maintenance lead to lost productivity and higher operational costs. To achieve high performance in asset-intensive industries, organizations must shift from reactive to proactive maintenance strategies. This involves applying Reliability-Centered Maintenance (RCM), Root Cause Analysis (RCA), and maintenance optimization techniques tailored to critical assets.

This intensive five-day course equips maintenance and reliability professionals with the tools and frameworks to analyze failure modes, prevent recurrence, and implement sustainable maintenance strategies. Participants will explore real-world case studies, use RCA and FMEA tools, and develop data-driven strategies for long-term reliability improvement.

Objectives

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

- Apply RCM principles to identify and prioritize critical maintenance tasks.
- Use Root Cause Analysis techniques to investigate and eliminate recurring failures.
- Develop and optimize maintenance strategies that align with asset risk and business goals.
- Conduct Failure Modes and Effects Analysis (FMEA) to improve reliability.
- Monitor maintenance performance using reliability and availability metrics.
- Integrate RCM and RCA into continuous improvement and asset management programs.

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Why Attend

- Minimize downtime and extend equipment life with smarter maintenance planning.
- Improve decision-making using structured failure analysis and asset risk frameworks.
- Align maintenance tasks with asset criticality, function, and consequence of failure.
- Empower cross-functional teams to collaborate on reliability improvements.
- Enhance compliance with international reliability and asset management standards.

Target Audience

This program is designed for:

- Maintenance and reliability engineers
- Plant managers and technical supervisors
- Operations and production professionals
- Maintenance planners and continuous improvement leaders
- Professionals responsible for asset performance and risk management

Individual Benefits

Key competencies that will be developed include:

- Reliability-Centered Maintenance planning
- Root Cause and failure mode analysis
- Maintenance optimization and strategy development
- Risk-based asset prioritization
- KPI monitoring for reliability improvement

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved equipment reliability and reduced unplanned downtime
- Better asset utilization and lower total cost of ownership
- Effective maintenance task planning and prioritization
- Cross-functional engagement in continuous improvement
- Reliable and efficient operations aligned with business goals

Instructional Methodology

The course blends strategic frameworks with hands-on tools and simulations:

- Technical Briefings – RCM, RCA, and maintenance planning
- Templates – FMEA worksheets, RCA forms, strategy maps
- Case Studies – Real-world failure investigations and recovery
- Workshops – Task optimization, RCM planning, and failure reviews
- Group Exercises – RCA facilitation, criticality analysis, and team-based scenarios
- Tools – Maintenance matrix templates, RCFA flowcharts, asset registers

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Course Outline

Training Hours: 7:30 AM – 3:30 PM

Daily Format : 3–4 Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Maintenance Strategy and RCM Fundamentals

Module 1: Modern Maintenance Strategies (07:30 – 09:30)

- Reactive, preventive, predictive, and proactive models
- Moving toward reliability-based maintenance
- Strategic alignment of maintenance objectives

Module 2: Principles of Reliability-Centered Maintenance (09:45 – 11:15)

- RCM process steps and definitions
- Functional failures and consequence analysis
- RCM vs. traditional PM approaches

Module 3: Asset Criticality and Function Analysis (11:30 – 01:00)

- Defining functions and functional failures
- Criticality ranking models
- Applying RCM to critical assets

Module 4: Workshop – RCM Planning for a Sample Asset (02:00 – 03:30)

- Teams select a sample asset and define initial RCM scope

Day 2: Failure Analysis and Maintenance Optimization

Module 5: Failure Modes and Effects Analysis (FMEA) (07:30 – 09:30)

- Purpose and structure of FMEA
- Severity, occurrence, and detection scoring
- Prioritizing maintenance actions

Module 6: Task Selection and Maintenance Logic (09:45 – 11:15)

- Determining applicable and effective tasks
- Time-based, condition-based, and default strategies
- Task cost vs. failure cost analysis

Module 7: Building an Optimized Maintenance Plan (11:30 – 01:00)

- PM templates and job plan refinement
- Resource planning and task frequency
- KPI-based improvement cycles

Module 8: Group Exercise – FMEA and Maintenance Strategy Matrix (02:00 – 03:30)

- Teams apply FMEA and build a strategy matrix for selected equipment

Day 3: Root Cause Analysis (RCA) and Problem Elimination

Module 9: Introduction to RCA and Failure Investigation (07:30 – 09:30)

- RCA objectives and roles
- Reactive vs. proactive RCA
- Conditions for triggering formal RCA

Module 10: RCA Tools and Techniques (09:45 – 11:15)

- 5 Whys, Fishbone (Ishikawa), and fault tree analysis
- Data collection and incident reconstruction
- Using evidence to drive conclusions

Module 11: Conducting and Documenting RCA (11:30 – 01:00)

- RCA facilitation and team roles
- Root cause categorization
- Writing clear and effective RCA reports

Module 12: Simulation – RCA of a Realistic Equipment Failure (02:00 – 03:30)

- Teams conduct and present RCA of a past plant incident

Day 4: Integrating Reliability into Operations

Module 13: Reliability Performance Indicators (07:30 – 09:30)

- MTBF, MTTR, availability, reliability
- Tracking improvements over time
- OEE and its linkage with reliability

Module 14: Managing Maintenance Knowledge and Lessons Learned (09:45 – 11:15)

- Creating and maintaining a failure database
- Feedback loops into planning and design
- Knowledge sharing across sites and shifts

Module 15: Cross-Functional Collaboration and RCA Culture (11:30 – 01:00)

- Engaging operations and engineering in reliability
- RCA facilitation best practices
- Building a continuous improvement culture

Module 16: Workshop – Building a Reliability Dashboard (02:00 – 03:30)

- Participants design a KPI dashboard and reporting plan

Day 5: Implementation, Review, and Continuous Improvement

Module 17: Developing a Maintenance Strategy Roadmap (07:30 – 09:30)

- Gap analysis and prioritizing changes
- Creating an implementation roadmap
- Integrating RCM, RCA, and performance tracking

Module 18: Auditing and Reviewing Maintenance Programs (09:45 – 11:15)

- Internal audits and performance reviews
- Audit checklists and maturity models
- Reporting to leadership

Module 19: Final Project and Strategy Presentation (11:30 – 01:00)

- Teams finalize a reliability improvement initiative
- Peer and instructor feedback

Module 20: Certification and Action Planning (02:00 – 03:30)

- Course wrap-up, reflections, and certificate awarding

Certification

Participants who complete the program will receive a **Certificate of Completion in Optimizing Performance – RCM, Root Cause Analysis, and Maintenance Strategy** , recognizing their ability to drive reliability and performance through structured maintenance planning and failure prevention strategies.

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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