MAWA EVENTS

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

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RCM (3RD GENERATION) & RBI PROGRAM DEVELOPMENT AND IMPLEMENTATION

“Optimizing Asset Reliability Through RCM and RBI Excellence\""

Schedule

Date	Venue	Fees (Face-to-Face)
15 – 19 Jun 2026	Singapore	USD 3495 per delegate

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

Introduction

Reliability-Centered Maintenance (RCM) and Risk-Based Inspection (RBI) are essential strategies for ensuring the optimal performance, safety, and longevity of critical assets in industries such as oil & gas, manufacturing, and energy. This course covers the development and implementation of RCM (3rd Generation) and RBI programs, offering a comprehensive framework to assess risk, improve asset reliability, and minimize downtime.

Participants will learn how to integrate RCM and RBI into a cohesive maintenance strategy that optimizes resources, improves asset health, and enhances operational efficiency. With a combination of theoretical learning, case studies, and practical exercises, this training equips professionals with the tools and knowledge required to lead RCM and RBI initiatives within their organizations.

Objectives

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

- Understand the principles and components of RCM (3rd Generation) and RBI programs.
- Develop and implement effective RCM and RBI strategies tailored to their organization’s needs.
- Analyze risk and failure modes in critical assets and recommend optimal inspection and maintenance practices.
- Integrate RCM and RBI with other reliability improvement initiatives and asset management systems.
- Apply best practices to improve asset reliability, reduce unplanned downtime, and extend equipment life.

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Why Attend

- Learn how to implement cutting-edge RCM (3rd Generation) and RBI strategies for asset reliability.
- Improve your understanding of risk analysis and failure modes for critical assets.
- Develop actionable skills to enhance asset performance and reduce maintenance costs.
- Gain practical knowledge on integrating RCM and RBI with existing systems for maximum effectiveness.
- Enhance your ability to lead reliability and maintenance programs within your organization.

Target Audience

This program is designed for:

- Reliability engineers and maintenance managers
- Asset managers and engineers responsible for equipment reliability
- Maintenance planners and technicians involved in RCM and RBI programs
- Risk and safety professionals focused on asset management and maintenance strategies
- Senior executives and decision-makers overseeing maintenance and reliability initiatives

Individual Benefits

Key competencies that will be developed include:

- Advanced knowledge of RCM (3rd Generation) and RBI methodologies
- Ability to lead RCM and RBI implementation across multiple asset classes
- Expertise in risk analysis, failure modes, and maintenance strategy optimization
- Skills in integrating RCM and RBI into existing maintenance management frameworks
- Practical problem-solving and decision-making capabilities for asset reliability

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Enhanced asset reliability and performance through effective RCM and RBI implementation
- Reduced maintenance costs and downtime through optimized maintenance strategies
- A systematic approach to risk assessment and inspection management
- Improved integration of RCM and RBI within broader asset management practices
- A stronger maintenance and reliability culture that drives organizational efficiency

Instructional Methodology

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

- Strategy Briefings – In-depth exploration of RCM (3rd Generation) and RBI concepts and methodologies.
- Case Studies – Real-world examples of RCM and RBI program development and success stories.
- Workshops – Hands-on exercises focused on applying RCM and RBI principles to real-world scenarios.
- Peer Exchange – Group discussions to share experiences, challenges, and best practices in reliability and maintenance.
- Tools – Templates for risk assessments, failure mode analysis, and program implementation

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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: Introduction to RCM (3rd Generation) and RBI

- Module 1: Overview of RCM and RBI (07:30 – 09:30)
- Introduction to Reliability-Centered Maintenance (RCM) and Risk-Based Inspection (RBI)
- Key principles and objectives of RCM (3rd Generation)
- Understanding the relationship between RCM, RBI, and overall asset management
- Module 2: Key Concepts in Asset Reliability (09:45 – 11:15)
- Asset lifecycle and reliability strategies
- Understanding failure modes and failure mode effects analysis (FMEA)
- Risk-based decision making in asset management
- Module 3: RCM (3rd Generation) Process (11:30 – 01:00)
- RCM analysis process and steps
- Identifying functions and functional failures
- Failure modes, consequences, and criticality analysis
- Module 4: Introduction to Risk-Based Inspection (RBI) (02:00 – 03:30)
- Basics of RBI methodology
- The role of risk analysis in inspection planning
- Integrating RBI with RCM to optimize asset management

Day 2: RCM Methodology and RBI Implementation Strategies

- Module 1: Developing RCM Strategies (07:30 – 09:30)
- Detailed steps for implementing RCM strategies across asset types
- Functional analysis and failure modes identification
- Prioritizing critical assets and developing maintenance tasks
- Module 2: Risk Analysis for RBI (09:45 – 11:15)
- Conducting risk assessments for asset management
- Techniques for identifying and evaluating risk factors
- Integrating risk analysis into inspection and maintenance strategies
- Module 3: RBI Program Design and Development (11:30 – 01:00)
- Designing and implementing RBI programs for different asset classes
- Developing inspection schedules and risk-based priorities
- Tools and templates for effective RBI program design
- Module 4: Workshop: Implementing RCM and RBI (02:00 – 03:30)
- Group exercises on designing RCM and RBI strategies for real-life scenarios
- Case study analysis and peer feedback
- Application of tools to create actionable maintenance plans

Day 3: Advanced RCM and RBI Tools and Techniques

- Module 1: Failure Mode Analysis and Impact Assessment (07:30 – 09:30)
- Advanced failure mode analysis techniques
- Assessing the impact of failures on operations and safety
- Developing detailed maintenance and inspection plans based on FMEA
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Module 2: Quantitative Risk Assessment for RBI (09:45 – 11:15)

- Quantifying risk and prioritizing inspection activities
- Risk assessment tools and models for asset management
- Case studies on effective risk-based inspection strategies
- Module 3: Software and Tools for RCM and RBI Implementation (11:30 – 01:00)
- Overview of RCM and RBI software tools
- How to integrate RCM and RBI tools into existing asset management systems
- Practical applications of software in developing and managing programs
- Module 4: Hands-on Workshop: Risk Assessment and RCM Development (02:00 – 03:30)
- Practical exercises in risk analysis and RCM development
- Peer-to-peer collaboration on developing actionable plans
- Review and feedback on case studies

Day 4: Integrating RCM, RBI, and Asset Management Systems

- Module 1: Combining RCM and RBI with Maintenance Strategies (07:30 – 09:30)
- How to integrate RCM and RBI into existing maintenance programs
- Building an asset management framework using RCM and RBI principles
- Case studies on successful integrations and challenges faced
- Module 2: Continuous Improvement and Feedback Loops (09:45 – 11:15)
- Creating a culture of continuous improvement in asset reliability
- Monitoring and reviewing RCM and RBI program performance
- Using data analytics for ongoing program evaluation
- Module 3: Risk-Based Decision Making (11:30 – 01:00)
- Leveraging risk analysis to make informed asset management decisions
- Strategies for balancing risk and cost in maintenance planning
- Key performance indicators (KPIs) for measuring program success
- Module 4: Group Discussion and Peer Exchange (02:00 – 03:30)
- Group discussion on RCM and RBI challenges
- Sharing best practices and lessons learned from different industries
- Final preparation for Day 5 certification

Day 5: Final Review and Program Evaluation

- Module 1: Reviewing Key Learnings from RCM and RBI (07:30 – 09:30)
- Review of all key concepts covered during the course
- Q&A session and final clarifications
- Module 2: Program Implementation and Sustainability (09:45 – 11:15)
- Developing long-term strategies for sustaining RCM and RBI programs
- Ensuring program scalability and adaptability to changing needs
- Module 3: Final Workshop and Action Plan Development (11:30 – 01:00)
- Hands-on final workshop to develop personal action plans
- Peer review of action plans and feedback
- Module 4: Certification and Closing Remarks (02:00 – 03:30)
- Certification ceremony and review of course takeaways
- Final closing remarks and networking

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Certification

Participants will receive a Certificate of Completion in RCM (3rd Generation) & RBI Program Development and Implementation, validating their expertise in implementing Reliability-Centered Maintenance and Risk-Based Inspection strategies. This certificate confirms their capability to develop, integrate, and optimize RCM and RBI programs, ensuring the highest standards in asset reliability and management practices.

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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