MAWA EVENTS

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

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

MACHINERY ROOT CAUSE FAILURE ANALYSIS

"Diagnose, Analyze, and Prevent Machinery Failures to Maximize Plant Reliability"

Schedule

Date	Venue	Fees (Face-to-Face)
21 – 23 Jul 2026	Manama, Bahrain	USD 2495 per delegate
01 – 03 Sep 2026	Doha, Qatar	USD 2495 per delegate
03 – 05 Nov 2026	Doha, Qatar	USD 2495 per delegate

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

Introduction

Machinery failures are one of the leading causes of downtime, production loss, and increased maintenance costs in industrial operations. Understanding the root causes of these failures is essential for improving plant reliability and reducing costly unscheduled outages.

This intensive 3-day training will equip participants with advanced tools, techniques, and strategies for conducting root cause failure analysis (RCFA) on machinery and mechanical systems. Through case studies, hands-on exercises, and practical examples, participants will learn how to systematically investigate failures, identify contributing factors, and implement effective corrective actions.

Objectives

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

- Understand the principles and methodologies of root cause failure analysis (RCFA)
- Apply systematic failure analysis tools to investigate machinery problems
- Identify mechanical, operational, and human factors contributing to failures
- Develop effective corrective and preventive actions to avoid recurrence
- Improve overall plant performance through enhanced reliability practices

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Why Attend

- Gain practical skills to investigate and solve machinery failures
- Learn industry best practices and failure analysis techniques
- Reduce downtime, maintenance costs, and production losses
- Strengthen your organization’s reliability and maintenance strategies
- Receive a recognized certificate to demonstrate your expertise

Target Audience

This program is designed for:

- Maintenance and reliability engineers
- Plant and operations managers
- Mechanical engineers and technicians
- Maintenance supervisors and planners
- Anyone involved in failure investigation and improvement initiatives

Individual Benefits

Key competencies that will be developed include:

- Expertise in failure modes and analysis techniques
- Problem-solving and critical thinking skills for troubleshooting
- Ability to perform data-driven root cause investigations
- Improved decision-making for corrective and preventive actions
- Enhanced knowledge of machinery performance and reliability

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved machinery uptime and reduced failure rates
- More effective maintenance planning and execution
- Strengthened root cause investigation processes
- Enhanced organizational learning from past failures
- Long-term cost savings through preventive actions and improved reliability

Instructional Methodology

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

- Strategy Briefings – Deep dive into RCFA principles, tools, and failure mechanisms
- Case Studies – Real-world examples of machinery failures and how they were solved
- Workshops – Hands-on exercises to apply analysis techniques on sample cases
- Peer Exchange – Group discussions on shared challenges and solutions
- Tools – Checklists, templates, and investigation frameworks for RCFA

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Course Outline

Detailed 3-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 Machinery Failure Analysis Module 1: Introduction to Root Cause Failure Analysis (07:30 – 09:30)

- Importance of RCFA in maintenance and reliability
- Types of machinery failures and common failure mechanisms
- Overview of failure investigation methodologies

Module 2: Understanding Failure Modes and Mechanisms (09:45 – 11:15)

- Mechanical wear, fatigue, corrosion, and material defects
- Operational and process-related failure causes
- Human and organizational factors in machinery failures

Module 3: Tools and Techniques for RCFA (11:30 – 01:00)

- Cause-and-effect diagrams (Ishikawa)
- Five Whys and fault tree analysis
- Failure Mode and Effects Analysis (FMEA)

Day 2: Conducting a Root Cause Investigation Module 4: Data Collection and Analysis (07:30 – 09:30)

- Gathering operational, maintenance, and failure data
- Interviewing personnel and inspecting failed equipment
- Analyzing failure patterns and trends

Module 5: Identifying Root Causes (09:45 – 11:15)

- Separating symptoms from true root causes
- Using analytical tools to trace cause chains
- Prioritizing root causes for corrective action

Module 6: Developing Corrective and Preventive Actions (11:30 – 01:00)

- Designing effective solutions to address root causes
- Implementing process, design, or maintenance changes
- Communicating findings and solutions to stakeholders

Day 3: Improving Reliability and Preventing Recurrence Module 7: Monitoring and Measuring Effectiveness (07:30 – 09:30)

- Setting up key performance indicators (KPIs)
- Tracking the impact of corrective actions
- Ensuring continuous improvement through feedback loops

Module 8: Building a Reliability Culture (09:45 – 11:15)

- Integrating RCFA into organizational processes
- Engaging leadership and frontline teams
- Sharing lessons learned across departments

Module 9: Final Review and Group Exercise (11:30 – 01:00)

- Group case study: solving a machinery failure scenario
- Presenting findings and recommendations
- Wrap-up discussion and course takeaways

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Certification

Participants will receive a Certificate of Completion in Machinery Root Cause Failure Analysis, validating their expertise in investigating machinery failures, applying RCFA methodologies, and implementing reliability improvements to enhance plant performance.

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.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**