MAWA EVENTS

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

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

ROOT CAUSE FAILURE ANALYSIS

""Mastering Advanced Techniques in Diagnosing and Preventing Failures Across Systems and Equipment""

Schedule

Date	Venue	Fees (Face-to-Face)
26 – 30 Jan 2026	Dubai, UAE	USD 3495 per delegate

► **Available delivery methods:** In-House Training

Introduction

Root Cause Failure Analysis (RCFA) is a critical tool in industrial reliability management. By identifying the underlying causes of system failures, RCFA enables organizations to implement corrective actions that reduce downtime, prevent recurrence, and improve asset reliability.

This 5-day advanced course provides participants with a deep dive into the principles and practices of RCFA. The training will explore a variety of diagnostic tools, methodologies, and case studies, with a focus on industrial applications and machinery failure prevention. Participants will gain practical experience in applying RCFA techniques to complex failure scenarios, improving their diagnostic and problem-solving skills.

Objectives

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

- Understand the key principles of Root Cause Failure Analysis (RCFA)
- Apply structured RCA methodologies and techniques (e.g., 5 Whys, Fishbone Diagram, FMEA, Fault Tree Analysis)
- Conduct detailed failure investigations across different systems and machinery
- Identify failure modes and prevent recurrence through corrective and preventive actions
- Communicate findings and recommendations effectively to stakeholders
- Build a culture of continuous improvement through proactive failure analysis

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Why Attend

- Learn how to effectively diagnose failures in machinery and complex systems
- Reduce operational downtime and avoid costly repairs by addressing root causes
- Gain a structured approach to problem-solving and failure prevention
- Apply advanced tools and techniques for analyzing critical machinery in industrial settings
- Build reliability across systems and processes, improving both efficiency and safety

Target Audience

This program is designed for:

- Maintenance and reliability engineers
- Equipment failure investigation teams
- Quality assurance and quality control professionals
- Operations managers and plant supervisors
- Asset and performance management teams
- Anyone involved in the maintenance or analysis of industrial systems and machinery

Individual Benefits

Key competencies that will be developed include:

- Failure analysis methodologies and diagnostic tools
- Identifying root causes and implementing corrective actions
- Use of quantitative and qualitative failure data
- Developing maintenance strategies to reduce downtime
- Continuous improvement principles and best practices

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced downtime, maintenance costs, and equipment failures
- Improved reliability and performance of critical machinery
- Enhanced operational efficiency and safety
- Stronger root cause investigation capabilities across departments
- Better decision-making and resource allocation based on data-driven findings

Instructional Methodology

- Strategy Briefings – RCFA principles, methodologies, and case studies
- Hands-On Exercises – Failure analysis and RCA tool application
- Case Studies – Real-world machinery and system failure investigations
- Workshops – Group exercises on root cause identification, solution development, and reporting
- Peer Exchange – Sharing of experiences, challenges, and solutions from various industries
- Tools – Fault tree analysis, failure logs, RCA templates, investigation forms

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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 ROOT CAUSE FAILURE ANALYSIS

- **Module 1: What is RCFA? (07:30 – 09:30)**
- Definition and key concepts of RCFA
- The importance of identifying and addressing root causes
- Benefits of RCFA in asset management and reliability
- **Module 2: RCFA Methodologies and Tools (09:45 – 11:15)**
- 5 Whys, Fishbone Diagram, FMEA, Fault Tree Analysis (FTA)
- How to select and apply different methods for different failures
- Data collection and analysis for failure investigation
- **Module 3: Key Steps in Conducting RCFA (11:30 – 01:00)**
- Problem definition and failure investigation scope
- Identifying contributing factors and failure modes
- Corrective and preventive action plans
- **Module 4: Workshop – Identifying the Root Cause Using Fishbone Diagram (02:00 – 03:30)**
- Participants work on a failure scenario, applying the Fishbone technique

Day 2: FAILURE ANALYSIS AND INVESTIGATION TECHNIQUES

- **Module 5: Fault Tree Analysis and Its Applications (07:30 – 09:30)**
- Basic principles and structure of Fault Tree Analysis (FTA)
- How to build and analyze fault trees
- Practical applications of FTA in reliability engineering
- **Module 6: Failure Modes and Effects Analysis (FMEA) (09:45 – 11:15)**
- Defining failure modes and identifying effects
- Prioritizing failure modes based on risk
- Integrating FMEA into maintenance planning
- **Module 7: Root Cause Verification and Data Validation (11:30 – 01:00)**
- Verifying root causes through data analysis
- Root cause data validation techniques
- Reviewing and refining conclusions
- **Module 8: Hands-On Exercise – Fault Tree Development (02:00 – 03:30)**
- Group exercise to develop a Fault Tree for a failure scenario

Day 3: IMPLEMENTING CORRECTIVE ACTIONS AND PREVENTIVE MEASURES

- **Module 9: Corrective Actions and Solution Development (07:30 – 09:30)**
- How to develop and implement corrective actions
- Evaluating effectiveness and impact
- Common corrective action pitfalls and solutions
- **Module 10: Preventive Maintenance and Reliability-Centered Maintenance (RCM) (09:45 – 11:15)**
- Integrating RCFA findings into preventive maintenance strategies
- Developing an RCM approach for long-term reliability
- Optimizing asset management with RCM
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Module 11: Evaluating and Measuring the Success of Corrective Actions (11:30 – 01:00)

- Metrics for measuring the effectiveness of corrective actions
- Post-implementation audits and reviews
- Continuous improvement and feedback loops
- **Module 12: Group Workshop – Developing Corrective and Preventive Actions (02:00 – 03:30)**
- Participants create a corrective action plan for a machinery failure scenario

Day 4: COMMUNICATING RESULTS AND CONTINUOUS IMPROVEMENT

- **Module 13: Reporting and Communicating RCFA Findings (07:30 – 09:30)**
- Best practices for presenting RCFA findings to stakeholders
- Creating actionable reports and improvement plans
- Communicating risk, costs, and proposed solutions
- **Module 14: Organizational Culture and RCFA (09:45 – 11:15)**
- Building a culture of reliability and continuous improvement
- Integrating RCFA into organizational processes
- Aligning RCFA with organizational goals and strategic initiatives
- **Module 15: Performance Metrics and KPIs for Reliability (11:30 – 01:00)**
- Measuring the success of RCFA implementation through KPIs
- Key metrics for plant reliability, uptime, and maintenance performance
- Benchmarking and monitoring long-term improvements
- **Module 16: Group Discussion and Case Study Review (02:00 – 03:30)**
- Participants review and discuss real-world RCFA case studies
- Peer feedback and lessons learned

Day 5: Innovation, Execution, and Post-Launch Evaluation

- **Module 17: Driving Innovation in Your Business** (07:30 – 09:30)
- Strategies for fostering a culture of innovation and creativity
- Innovating products and services based on customer feedback
- Using technology to create a competitive advantage
- Adapting to changing market conditions and customer demands
- **Module 18: Execution and Operational Excellence** (09:45 – 11:15)
- Turning strategy into action: Project management basics for entrepreneurs
- Monitoring performance, tracking milestones, and adjusting tactics
- Building systems for productivity, quality, and operational efficiency
- Data-driven decision making for entrepreneurs
- **Module 19: Post-Launch: Evaluating Performance and Pivoting** (11:30 – 01:00)
- Key performance indicators (KPIs) and success metrics for startups
- Customer feedback loops, product-market fit, and business model adjustments
- Scaling operations and maintaining quality control as the business grows
- **Module 20: Final Workshop – Presentation of Business Plans & Next Steps** (02:00 – 03:30)
- Teams present their business plans, funding strategies, and scaling approaches
- Peer and instructor feedback on presentation and execution strategies
- Closing discussion on key takeaways and next steps for success

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Certification

Participants will receive a **Certificate of Completion in Root Cause Failure Analysis** , validating their ability to apply RCFA methodologies, diagnose failures, and implement corrective actions across mechanical, electrical, and systems-based assets.

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**