

**COURSE OVERVIEW RE0260-3D**  
**FMEA Risk Management**

**Course Title**

FMEA Risk Management

**Course Date/Venue**

July 26-28, 2026/TBA Meeting Room, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE or, TBA Meeting Room, Dinamo Hotel Baku, Baku, Azerbaijan

**Course Reference**

RE0260-3D

**Course Duration/Credits**

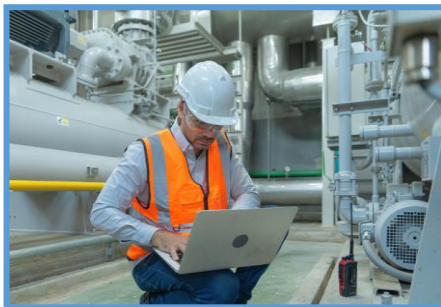
Three days/1.8 CEUs/18 PDHs



**Course Description**



***This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.***



This course is designed to provide participants with a detailed and up-to-date overview of FMEA Risk Management. It covers the importance of risk management, types of organizational risks and risk management frameworks and standards; the FMEA methodology, risk identification techniques and structure and components of FMEA; the risk assessment parameters, roles and responsibilities in FMEA, FMEA standards and industry applications; the process mapping and functional analysis; identifying failure modes and analyzing failure effects and causes; and the risk evaluation and prioritization and developing risk control measures.



During this interactive course, participants will learn the FMEA worksheets, standard documentation formats, recording assumptions and decisions and reporting findings to management; the advanced FMEA techniques, root cause analysis integration and corrective and preventive actions (CAPA); the risk monitoring and continuous improvement covering risk review cycles, updating FMEA documents and performance metrics and KPIs; and the auditing and compliance in risk management comprising of internal audit requirements, compliance with ISO standards, regulatory and customer expectations, audit findings and improvement actions.

### **Course Objectives/Outcomes & Benefits for the Participants**

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on FMEA risk management
- Discuss the importance of risk management, types of organizational risks and risk management frameworks and standards
- Recognize FMEA methodology, risk identification techniques and structure and components of FMEA
- Identify risk assessment parameters, roles and responsibilities in FMEA and FMEA standards and industry applications
- Apply process mapping and functional analysis, identifying failure modes and analyzing failure effects and causes
- Employ risk evaluation and prioritization and develop risk control measures
- Prepare FMEA worksheets and apply standard documentation formats, recording assumptions and decisions and reporting findings to management
- Apply advanced FMEA techniques, root cause analysis integration and corrective and preventive actions (CAPA)
- Implement risk monitoring and continuous improvement covering risk review cycles, updating FMEA documents and performance metrics and KPIs
- Carryout auditing and compliance in risk management comprising of internal audit requirements, compliance with ISO standards, regulatory and customer expectations, audit findings and improvement actions

### **Who Should Attend**

This course provides an overview of all significant aspects and considerations of FMEA risk management for risk management professionals, reliability and maintenance engineers, quality assurance and quality control professionals, process and manufacturing engineers, HSE and safety personnel, continuous improvement and operational excellence teams, project managers and project engineers, asset integrity and inspection engineers, product design and development professionals, anyone involved in identifying, analyzing and mitigating operational or process risks using FMEA methodologies

### **Training Methodology**

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

### **Learning Design & Customization**

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

### Course Certificate(s)


Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours

### Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations:

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **1.8 CEUs** (Continuing Education Units) or **18 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

### Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

### Course Fee

**US\$ 3,750** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



**Mr. Andrew Ladwig** is a **Senior Mechanical & Maintenance Engineer** with over **25 years** of extensive experience within the **Oil & Gas, Refinery, Petrochemical & Power** industries. His expertise widely covers in the areas of **FMEA Structure, Components, Standards & Industry Applications, FMEA Risk Management, Maintenance Optimization & Best Practices, Process Plant Shutdown & Turnaround, Maintenance Auditing & Benchmarking, Reliability Management, Reliability Centered Maintenance Principles & Application, Efficient Shutdowns, Machinery Lubrication, Maintenance Planning & Scheduling, Coupling & Shaft Alignment Techniques, Maintenance Auditing & Benchmarking, Reliability Management, Reliability Centered Maintenance Principles & Application, Efficient Shutdowns, Machinery Lubrication, Maintenance Planning & Scheduling, Coupling & Shaft Alignment Techniques, Reliability, Availability & Maintainability (RAM), Root Cause Analysis, Maintenance Process, Reliability-Centered Maintenance (RCM), Reliability Engineering Analysis (RE), Root Cause Analysis (RCA), Asset Integrity Management (AIM), Reactive & Proactive Maintenance, Pressure Safety Relief Valve Repair & Recalibration, PSV/PRV Troubleshooting, PRV Testing & Repair, Valve Testing & Inspection, Valve Sealing, Valve Calibration, Control Valves & Actuators, Boiler Inspection & Maintenance, Boiler Systems, Boiler instrumentation & Controls, Boiler Start-up & Shutdown, Boiler Operation & Steam System Management, Boiler Water Chemistry & Treatment, Boiler Efficiency & Waste Heat Recovery, Boiler Inspection & Testing, Boiler Maintenance, Boiler Troubleshooting & Safety, Boiler Emissions & Pollution Control, Combustion Analysis & Tuning Procedures, Water Treatment Technology, Heat Recovery Steam Generating (HRSG), Impulse Tube Installation & Inspection, Parker Compression Fittings, Pipes & Fittings, PSV Inspection, Root Cause Failure Analysis, Tank Design & Engineering, Tank Shell, Tanks & Tank Farms, Vacuum Tanks, Gas Turbine Operating & Maintenance, Reciprocating & Centrifugal Compressors, Screw Compressor, Compressor Control & Protection, Gas & Steam Turbines, Turbine Operations, Gas Turbine Technology, Valves, Process Control Valves, Bearings & Lubrication and Advanced Machinery Dynamics.**

During his career life, Mr. Ladwig has gained his practical experience through his various significant positions and dedication as the **Mechanical Engineer, Project Engineer, Reliability & Maintenance Engineer, Maintenance Support Engineer, Process Engineer, HSE Supervisor, Warehouse Manager, Quality Manager, Business Analyst, Senior Process Controller, Process Controller, Safety Officer, Mechanical Technician, Senior Lecturer** and **Senior Consultant/Trainer** for various companies such as the Sasol Ltd., Sasol Wax, Sasol Synfuels, just to name a few.

Mr. Ladwig has a **Bachelor's degree in Chemical Engineering** and a **Diploma in Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and has delivered various trainings, workshops, seminars, courses and conferences internationally.

## Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

### **Day 1: Sunday, 26<sup>th</sup> of July 2026**

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	<b>PRE-TEST</b>
0830 – 0930	<b>Introduction to Risk Management</b> Definition and Importance of Risk Management • Types of Organizational Risks • Risk Management Frameworks and Standards • Relationship Between Quality and Risk
0930 – 0945	Break
0945 – 1030	<b>Understanding FMEA Methodology</b> History and Evolution of FMEA • Objectives and Benefits of FMEA • Types of FMEA (Design, Process, System, Service) • FMEA Terminology and Concepts
1030 – 1100	<b>Risk Identification Techniques</b> Sources of Failures and Defects • Brainstorming and Process Mapping • Failure Identification Tools • Collecting and Analyzing Historical Failure Data
1100 – 1130	<b>Structure &amp; Components of FMEA</b> Functions and Process Steps • Failure Modes and Failure Effects • Causes and Controls • Documentation Structure of FMEA Worksheets
1130 – 1215	<b>Risk Assessment Parameters</b> Severity Ranking Criteria • Occurrence Ranking Criteria • Detection Ranking Criteria • Calculating Risk Priority Number (RPN)
1215 – 1230	Break
1230 – 1330	<b>Roles &amp; Responsibilities in FMEA</b> Formation of Cross-Functional Teams • Responsibilities of Team Members • Leadership and Facilitation Skills • Communication and Reporting Practices
1330 – 1420	<b>FMEA Standards &amp; Industry Applications</b> AIAG & VDA FMEA Standards • ISO Risk-Based Thinking Requirements • FMEA Applications in Manufacturing • FMEA Applications in Services and Projects
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

### **Day 2: Monday, 27<sup>th</sup> of July 2026**

0730 – 0830	<b>Process Mapping &amp; Functional Analysis</b> Defining Process Boundaries • Developing Process Flow Diagrams • Functional Decomposition Techniques • Identifying Critical Process Functions
0830 – 0930	<b>Identifying Failure Modes</b> Common Process Failure Modes • Design-Related Failures • Human Error and Operational Failures • Environmental and System Failures
0930 – 0945	Break
0945 – 1045	<b>Analyzing Failure Effects and Causes</b> Immediate and Downstream Effects • Root Cause Identification Methods • Cause-and-Effect Relationships • Impact on Customer and Operations

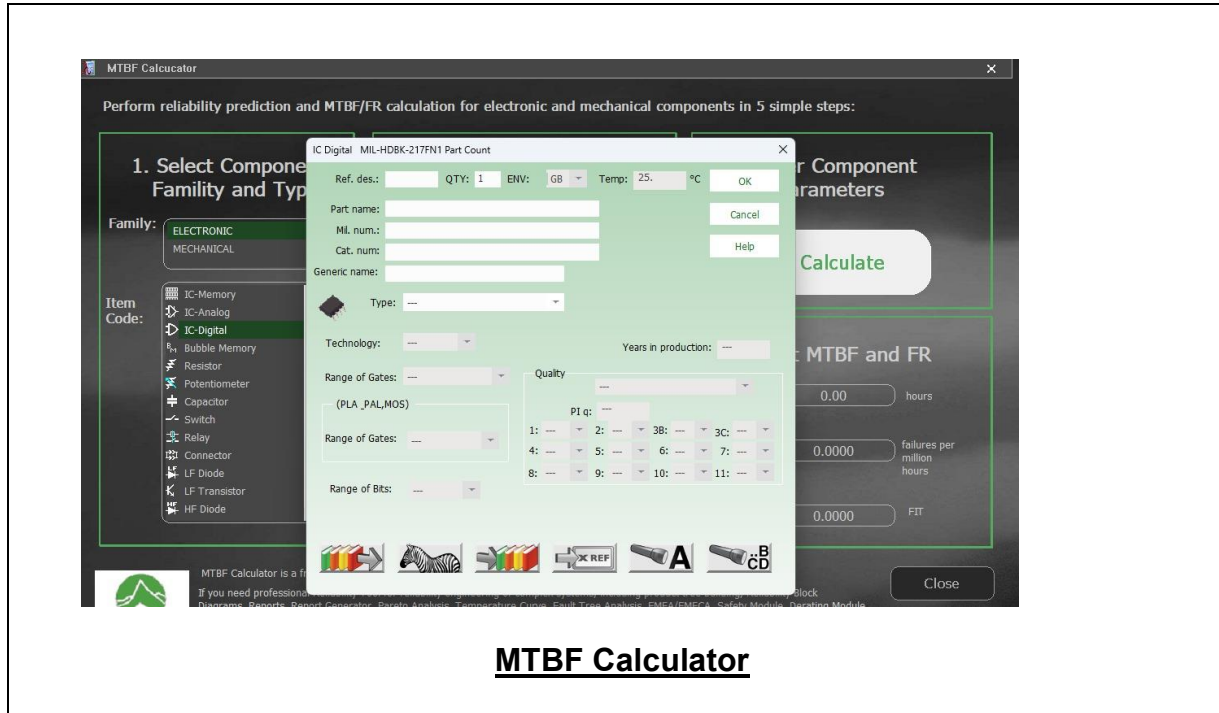
1045 – 1130	<b>Risk Evaluation &amp; Prioritization</b> Assigning Severity Ratings • Assigning Occurrence Ratings • Assigning Detection Ratings • Prioritizing High-Risk Issues
1130 – 1215	<b>Developing Risk Control Measures</b> Preventive Controls • Detective Controls • Corrective Action Planning • Verification of Control Effectiveness
1215 – 1230	Break
1230 – 1330	<b>FMEA Documentation &amp; Reporting</b> Preparing FMEA Worksheets • Standard Documentation Formats • Recording Assumptions and Decisions • Reporting Findings to Management
1330 – 1420	<b>Practical Workshop – Conducting an FMEA</b> Selecting a Sample Process/System • Team-Based FMEA Exercise • Identifying Risks and Controls • Presenting and Reviewing Results
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

**Day 3: Tuesday, 28<sup>th</sup> of July 2026**

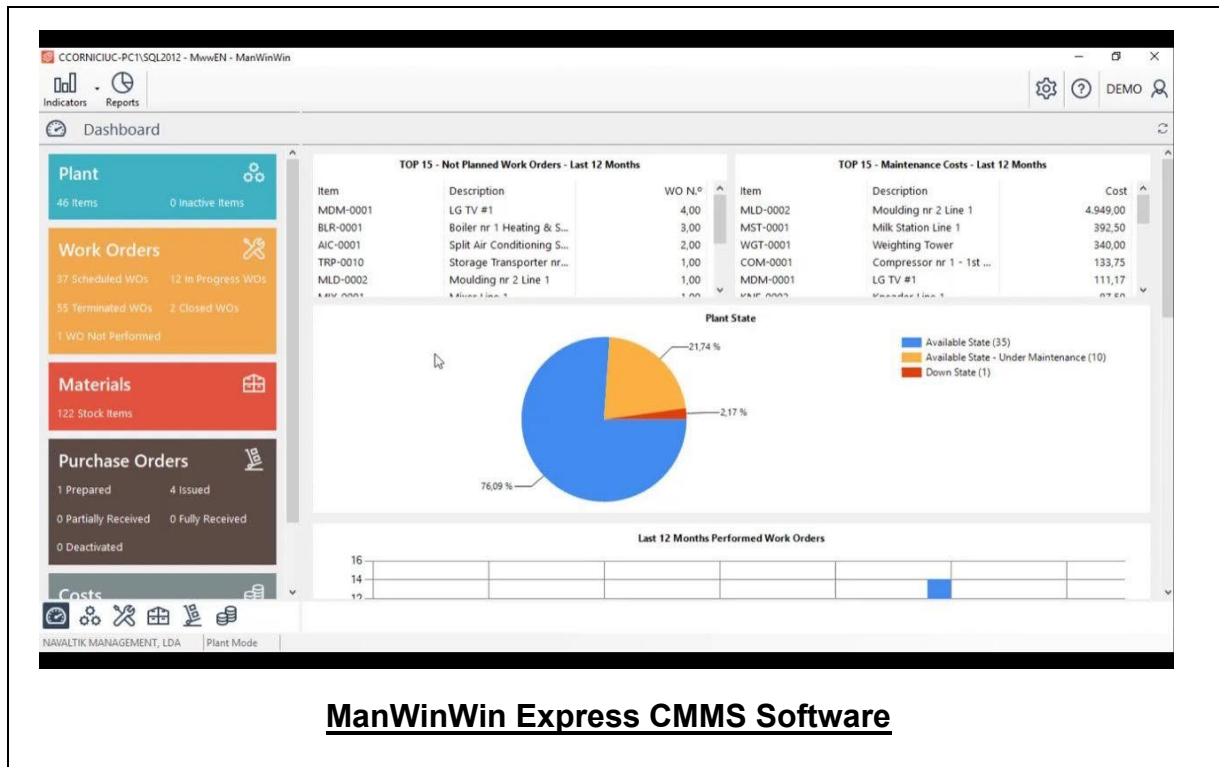
0730 – 0830	<b>Advanced FMEA Techniques</b> AIAG-VDA Harmonized Approach • Boundary and Parameter Diagrams • Interface and Interaction Analysis • Special Characteristics Identification
0830 – 0930	<b>Root Cause Analysis Integration</b> 5 Whys Methodology • Fishbone (Ishikawa) Diagrams • Fault Tree Analysis (FTA) Basics • Linking RCA with FMEA Updates
0930 – 0945	Break
0945 – 1045	<b>Corrective &amp; Preventive Actions (CAPA)</b> CAPA Process Overview • Action Prioritization Methods • Monitoring Action Effectiveness • Preventing Recurrence of Failures
1045 – 1130	<b>Risk Monitoring &amp; Continuous Improvement</b> Risk Review Cycles • Updating FMEA Documents • Performance Metrics and KPIs • Lessons Learned and Knowledge Sharing
1130 – 1215	<b>Software &amp; Digital Tools for FMEA</b> Introduction to FMEA Software Solutions • Digital Risk Registers and Databases • Automation and Reporting Tools • Data Analysis and Dashboard Monitoring
1215 – 1230	Break
1230 – 1300	<b>Auditing &amp; Compliance in Risk Management</b> Internal Audit Requirements • Compliance with ISO Standards • Regulatory and Customer Expectations • Audit Findings and Improvement Actions
1300 – 1345	<b>Final Case Study</b> Comprehensive FMEA Case Study • Group Presentations and Discussions • Common Implementation Challenges
1345– 1400	<b>Course Conclusion</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1400 – 1415	<b>POST-TEST</b>
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

**Simulator (Hands-on Practical Sessions)**

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the state-of-the-art simulator “MTBF Calculator” and “ManWinWin Express CMMS Software”.



**MTBF Calculator**



**ManWinWin Express CMMS Software**

**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)