

QUANTITATIVE & QUALITATIVE RISK ASSESSMENTS INCLUDING HAZOP STUDIES, FEMA & FAULT TREE ANALYSIS.

"Master Risk Assessment Techniques for Effective Safety and Reliability Management"

Schedule

Date	Venue	Fees (Face-to-Face)
14 - 18 Sep 2026	Dubai, UAE	USD 3495 per delegate

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

Introduction

The Quantitative & Qualitative Risk Assessments course offers an in-depth understanding of various risk assessment techniques such as HAZOP (Hazard and Operability Study), FEMA (Failure Modes and Effects Analysis), and Fault Tree Analysis (FTA). This training is designed to help professionals in identifying, evaluating, and managing risks to enhance safety and operational reliability in complex systems.

By incorporating both qualitative and quantitative methodologies, the course aims to equip participants with the skills needed to conduct thorough risk assessments, improve decision-making, and ensure effective risk mitigation strategies. Participants will gain practical experience using industry-standard tools and techniques to evaluate and manage risks in real-world environments

Objectives

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

- Understand and apply the principles of HAZOP, FEMA, and Fault Tree Analysis to assess risks.
- Perform both qualitative and quantitative risk assessments.
- Identify and prioritize potential hazards and failures within systems.
- Develop risk mitigation strategies and recommendations based on analysis results.
- Use software tools and techniques to facilitate risk analysis and decision-making.

Why Attend

- Gain hands-on experience with risk assessment tools used in industries such as oil and gas, manufacturing, and chemical engineering.
- Understand the importance of both qualitative and quantitative approaches to risk management.
- Learn to use advanced risk assessment techniques like HAZOP, FEMA, and Fault Tree Analysis effectively in your organization.
- Improve your ability to analyze complex systems and identify potential hazards before they occur.
- Enhance your capability to develop practical solutions to mitigate identified risks and improve overall safety.

Target Audience

This program is designed for:

- Risk management professionals and safety engineers.
- Engineers and technical professionals responsible for conducting risk assessments in industries like oil, gas, chemicals, and manufacturing.
- Project managers involved in hazard identification and risk analysis.
- Health, safety, and environmental (HSE) managers and specialists.
- Professionals aiming to enhance their skills in safety assessments and risk mitigation strategies.

Individual Benefits

Key competencies that will be developed include:

- Proficiency in qualitative and quantitative risk assessment techniques.
- Enhanced skills in conducting HAZOP, FEMA, and Fault Tree Analysis.
- Ability to effectively identify, evaluate, and mitigate risks within complex systems.
- Increased competence in using risk assessment tools and software.
- Stronger decision-making skills when addressing safety and reliability issues.

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved capability in conducting thorough and accurate risk assessments.
- The ability to develop actionable risk mitigation plans to prevent operational disruptions.
- A structured approach to risk management that enhances safety and operational efficiency.
- Enhanced skills in managing and reducing risks, leading to safer working environments and more reliable operations.
- A more proactive risk management culture within the organization.

Instructional Methodology

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

- Strategy Briefings - Introduction to the key principles of risk assessments, including HAZOP, FEMA, and Fault Tree Analysis.
- Case Studies - Real-world case studies highlighting successful risk assessments and mitigation strategies.
- Workshops - Practical exercises for performing risk assessments and using risk analysis tools.
- Peer Exchange - Group discussions on risk management challenges, experiences, and lessons learned.
- Tools - Access to risk analysis templates and software for conducting HAZOP, FEMA, and Fault Tree Analysis.

MAWA EVENTS

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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 Risk Assessment Techniques

- Module 1: Overview of Risk Assessment (07:30 – 09:30)
- The importance of risk assessment in safety and reliability management.
- Types of risk assessments: qualitative vs. quantitative.
- Introduction to key risk assessment techniques: HAZOP, FEMA, Fault Tree Analysis.
- Module 2: HAZOP Studies (09:30 – 11:30)
- Detailed explanation of HAZOP methodology.
- Identifying hazards and operability issues.
- Conducting HAZOP studies in practice.

Day 2: Advanced Risk Assessment Techniques

- Module 3: FEMA (Failure Modes and Effects Analysis) (07:30 – 09:30)
- Understanding FEMA methodology.
- Steps in conducting a FEMA analysis.
- Identifying potential failure modes and assessing their impacts.
- Module 4: Fault Tree Analysis (09:30 – 11:30)
- Introduction to Fault Tree Analysis (FTA).
- Constructing fault trees and analyzing failure events.
- Combining FTA with other risk analysis methods.

Day 3: Quantitative Risk Assessment

- Module 5: Quantitative Techniques for Risk Assessment (07:30 – 09:30)
- The role of quantitative risk assessment in decision-making.
- Quantifying risk using probabilities and impacts.
- Practical exercises in quantitative risk analysis.
- Module 6: Risk Modeling and Simulation (09:30 – 11:30)
- Introduction to risk modeling techniques.
- Using software tools for risk simulations.
- Interpreting risk assessment results.

Day 4: Qualitative Risk Assessment and Mitigation Strategies

- Module 7: Qualitative Risk Assessment Techniques (07:30 – 09:30)
- Key principles of qualitative risk assessment.
- Conducting risk assessments based on experience and expert judgment.
- Mitigating risks identified through qualitative analysis.
- Module 8: Risk Mitigation and Control Measures (09:30 – 11:30)
- Developing and implementing mitigation strategies.
- Best practices for risk control and prevention.
- Establishing a risk mitigation plan.

Day 5: Final Project and Review

- Module 9: Risk Assessment Project (07:30 – 09:30)
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Group project: Conducting a complete risk assessment using the techniques learned.

- Presenting findings and mitigation strategies.
- Module 10: Certification and Closing Remarks (09:30 – 11:30)
- Review of the key learning points.
- Certification exam and feedback.
- Awarding certificates of completion.

Certification

Participants will receive a Certificate of Completion in Quantitative & Qualitative Risk Assessment upon successful completion of the course, demonstrating their expertise in performing risk assessments, including HAZOP studies, FEMA, and Fault Tree Analysis, and their ability to apply these techniques to enhance safety and reliability management.

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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Interested in running this course for your team?

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