MAWA EVENTS

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

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

STRUCTURAL INTEGRITY MANAGEMENT

"Ensure Longevity and Reliability of Structures through Proactive Integrity Strategies."

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

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

Introduction

Structural Integrity Management (SIM) is a critical discipline aimed at maintaining the fitness-for-purpose and safe operation of structures in sectors such as oil & gas, marine, offshore, civil, and industrial infrastructure. This intensive 5-day course provides professionals with the knowledge and practical tools to implement, audit, and improve structural integrity programs across the full lifecycle of assets.

Objectives

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

- Understand the principles and lifecycle of structural integrity
- Identify key threats and failure modes of various structures
- Apply inspection, monitoring, and maintenance strategies
- Interpret relevant codes, standards, and risk assessments
- Develop and optimize a Structural Integrity Management System (SIMS)

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Why Attend

- Gain a comprehensive understanding of structural integrity threats and mitigations
- Build competence in developing integrity programs for critical assets
- Learn industry best practices aligned with API, ISO, and NORSOK standards
- Enhance asset performance, reduce downtime, and ensure safety compliance

Target Audience

- Structural, civil, or mechanical engineers
- Asset integrity and maintenance professionals
- Inspection and risk management personnel
- Offshore platform or plant managers
- Technical auditors and regulators

Individual Benefits

- Build technical and strategic understanding of SIM
- Enhance your credibility as an integrity engineer or manager
- Prepare for roles in structural audit and integrity planning
- Learn to use SIM software, tools, and templates effectively

Organizational Benefits

- Minimize risk of structural failure and catastrophic loss
- Extend the useful life of critical assets and infrastructure
- Achieve regulatory compliance and audit readiness
- Optimize inspection resources through risk-based approaches

Instructional Methodology

- Instructor-led lectures with case studies
- Interactive workshops using real-world failure scenarios
- Group activities on developing structural integrity plans
- Videos, standards interpretation, and design vs. inspection exercises
- Final day assessment and project presentations

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

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 Structural Integrity

- Module 1: Overview of Structural Integrity Management (07:30 – 09:30)
- Definition, objectives, and value of SIM
- Lifecycle phases: design, construction, operation, decommissioning
- Module 2: Structural Failures – Causes and Lessons Learned (09:45 – 11:15)
- Historical case studies (e.g., Piper Alpha, Ronan Point, etc.)
- Module 3: Materials Behavior and Failure Mechanisms (11:30 – 01:00)
- Fatigue, corrosion, fracture, creep
- Module 4: Codes and Standards (ISO, API, ASME, NORSOK) (02:00 – 03:30)

Day 2: Structural Threats & Risk Assessment

- Module 1: Key Integrity Threats and Structural Loadings (07:30 – 09:30)
- Static and dynamic loads, wind, seismic, wave action
- Module 2: Risk-Based Inspection and Prioritization (09:45 – 11:15)
- RBI methodology for structures
- Module 3: Risk Matrix & FMECA for Structures (11:30 – 01:00)
- Probability vs. consequence for structural failures
- Module 4: Workshop – Structural Risk Scenario Planning (02:00 – 03:30)

Day 3: Inspection and Monitoring

- Module 1: Non-Destructive Testing (NDT) Methods (07:30 – 09:30)
- UT, MPI, RT, AE, visual inspections
- Module 2: Inspection Planning and Frequency Optimization (09:45 – 11:15)
- Module 3: Structural Health Monitoring Systems (SHMS) (11:30 – 01:00)
- Sensors, data analytics, threshold setting
- Module 4: Workshop – Review of Inspection Reports (02:00 – 03:30)

Day 4: Integrity Program Implementation

- Module 1: Creating a Structural Integrity Management Plan (SIMP) (07:30 – 09:30)
- SIMP elements: data management, responsibilities, KPIs
- Module 2: Repair Strategies and Fitness-for-Service (09:45 – 11:15)
- ASME/API fitness-for-service (FFS) concepts
- Module 3: Lifecycle Integrity – From Design to Decommissioning (11:30 – 01:00)
- Module 4: Group Exercise – SIMP Development (02:00 – 03:30)

Day 5: Performance Management & Certification

- Module 1: Integrity Audits and Continuous Improvement (07:30 – 09:30)
- Module 2: Performance Indicators and Reporting (09:45 – 11:15)
- Module 3: Final Project – Integrity Review of a Case Asset (11:30 – 01:00)
- Module 4: Presentations, Feedback, and Course Wrap-up (02:00 – 03:30)

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Certification

Certificate of Completion – Structural Integrity Management Includes templates for SIM Plan, Risk Matrix, Inspection Forms, and Repair Records

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**

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