MAWA EVENTS

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

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

CONCRETE STRUCTURAL DESIGN, MAINTENANCE & RELIABILITY ANALYSIS FOR INDUSTRIAL PROJECTS & PROCESS FACILITIES

"Design Stronger. Maintain Longer. Perform Better."

Schedule

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

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

Introduction

This intensive program focuses on the structural design, preventive maintenance, and reliability analysis of concrete structures used in industrial projects and process facilities. It equips engineers with critical tools to design robust structures, identify deterioration early, and apply effective maintenance and reliability strategies that minimize failure and extend operational life.

Objectives

Participants will:

- Understand structural behavior of concrete under industrial conditions
- Design for strength, durability, and long-term performance
- Apply risk-based maintenance planning and life-cycle assessment
- Use reliability engineering methods to reduce unplanned failures
- Integrate condition assessment with maintenance and asset strategies

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Why Attend

- Industrial concrete structures face harsh conditions — this course helps you design and maintain them better
- Save costs by avoiding premature structural failures through strategic planning
- Gain practical tools to assess risk, reliability, and performance of concrete assets

Target Audience

- Civil and structural engineers
- Maintenance and asset integrity engineers
- Reliability engineers and plant managers
- Project engineers in industrial or energy sectors
- Engineering consultants and QA/QC specialists

Individual Benefits

- Improve your confidence in designing for extreme loads and aggressive environments
- Enhance your decision-making with proven maintenance and reliability frameworks
- Strengthen your professional credibility with advanced industrial knowledge

Organizational Benefits

- Reduce asset downtime and optimize structural reliability
- Implement cost-effective and predictive maintenance practices
- Ensure safe, reliable performance in critical process infrastructure

Instructional Methodology

- Instructor-led technical presentations
- Hands-on problem-solving sessions
- Reliability modeling case studies
- Real-life project examples and design evaluation
- Design templates and maintenance plan frameworks

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (Customizable) Training Hours: 07:30 AM – 03:30 PM Daily Format: 3–4 Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1 – Concrete Design Fundamentals for Industrial Settings

- Module 1 (07:30–09:30): Properties of industrial-grade concrete and deterioration factors
- Module 2 (09:45–11:15): Structural loads in process and plant facilities
- Module 3 (11:30–01:00): Design principles for heavy-duty concrete infrastructure

Day 2 – Durability, Environmental Exposure & Corrosion

- Module 4 (07:30–09:30): Durability design under chemical, thermal, and mechanical stress
- Module 5 (09:45–11:15): Corrosion mechanisms in industrial environments
- Module 6 (11:30–01:00): Protective design strategies and material selection

Day 3 – Maintenance Strategies & Condition Assessment

- Module 7 (07:30–09:30): Inspection methods and structural health monitoring
- Module 8 (09:45–11:15): Developing maintenance plans and repair criteria
- Module 9 (11:30–01:00): Maintenance budgeting and resource planning

Day 4 – Reliability Engineering for Concrete Structures

- Module 10 (07:30–09:30): Introduction to reliability-centered maintenance (RCM)
- Module 11 (09:45–11:15): Failure Mode and Effect Analysis (FMEA) for concrete assets
- Module 12 (11:30–01:00): Quantitative reliability metrics and risk models

Day 5 – Case Studies and Practical Implementation

- Module 13 (07:30–09:30): Industry-specific case studies and best practices
- Module 14 (09:45–11:15): Group work: Maintenance & reliability plan development
- Module 15 (11:30–01:00): Final review, open Q&A, and certification briefing

Certification

Participants will receive a Certificate of Completion demonstrating advanced skills in the design, maintenance, and reliability of concrete structures for industrial and process environments.

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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