MAWA EVENTS

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

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

CONCRETE DETERIORATION AND METHODS OF STRENGTHENING تدعيم المنشآت الخرسانية واصلاحها

"Strengthen Structures, Restore Confidence."

Schedule

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

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

Introduction

This specialized course provides practical knowledge and modern techniques for identifying the causes of concrete deterioration and applying effective strengthening and repair solutions. Participants will gain a deep understanding of structural failures, protection systems, repair technologies, and retrofitting strategies for reinforced concrete structures. Real-world case studies and hands-on exercises will ensure readiness for field application.

Objectives

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

- Understand mechanisms of concrete degradation and structural failure
- Conduct thorough damage assessment using modern tools and techniques
- Select appropriate materials and methods for repair and strengthening
- Apply strengthening techniques such as FRP, steel jacketing, and section enlargement
- Design and supervise strengthening works in accordance with international standard

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Why Attend

- Learn from real-life failures and how they were successfully addressed
- Improve the service life of existing concrete structures
- Gain the ability to manage strengthening works with confidence
- Keep up-to-date with modern materials and retrofitting solutions
- Ensure compliance with safety, performance, and sustainability standards

Target Audience

- Structural and civil engineers
- Construction and project managers
- Maintenance engineers
- Consultants and technical inspectors
- Government and infrastructure agency professionals

Individual Benefits

- Gain specialized knowledge in structural repair and strengthening
- Acquire hands-on experience with modern retrofitting tools and techniques
- Enhance your credentials in infrastructure rehabilitation projects

Organizational Benefits

- Reduce structural failure risks and associated liabilities
- Extend the service life of assets while minimizing downtime
- Improve cost-effectiveness of maintenance and rehabilitation programs
- Ensure safer, more sustainable infrastructure performance

Instructional Methodology

- Expert-led lectures and interactive discussions
- Case study analysis and visual inspection techniques
- Group exercises and repair design simulations
- On-site photos, videos, and before-after comparisons
- Templates, tools, and checklists for field implementation

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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 – Understanding Concrete Deterioration

- Module 1 (07:30–09:30): Properties of concrete and mechanisms of deterioration
- Module 2 (09:45–11:15): Common structural problems in reinforced concrete
- Module 3 (11:30–01:00): Inspection and assessment techniques

Day 2 – Diagnosis and Damage Evaluation

- Module 4 (07:30–09:30): Non-destructive testing methods
- Module 5 (09:45–11:15): Damage classification and severity rating
- Module 6 (11:30–01:00): Structural evaluation reports

Day 3 – Concrete Repair Techniques

- Module 7 (07:30–09:30): Surface repair methods and injection systems
- Module 8 (09:45–11:15): Crack repair and protection strategies
- Module 9 (11:30–01:00): Durability enhancement techniques

Day 4 – Strengthening and Retrofitting Systems

- Module 10 (07:30–09:30): Fiber-reinforced polymers (FRP)
- Module 11 (09:45–11:15): Steel plate bonding, jacketing, and section enlargement
- Module 12 (11:30–01:00): Structural strengthening design principles

Day 5 – Application & Case Studies

- Module 13 (07:30–09:30): Workshop: Designing a strengthening solution
- Module 14 (09:45–11:15): Local and international case studies
- Module 15 (11:30–01:00): Final presentations, lessons learned, and wrap-up

Certification

Upon successful completion, participants will be awarded a Certificate of Completion recognizing their expertise in diagnosing, repairing, and strengthening concrete structures.

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**