MAWA EVENTS

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

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

REINFORCED CONCRETE (DESIGN BASIS AND CONSTRUCTION LIMITATIONS)

"Build Smarter, Stronger, and Safer – From Theory to On-Site Reality"

Schedule

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

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

Introduction

This comprehensive course provides participants with essential knowledge of reinforced concrete structures, combining design theory with real-world construction constraints. It bridges the gap between design intent and execution on-site, empowering engineers, supervisors, and construction professionals to optimize design performance and overcome practical limitations during implementation.

Objectives

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

- Understand fundamental design concepts of reinforced concrete in compliance with international codes.
- Analyze and design basic structural elements (beams, slabs, columns, and foundations).
- Identify key construction limitations affecting reinforced concrete performance.
- Apply best practices in detailing, supervision, and quality control of concrete works.
- Evaluate common field problems and propose effective technical solutions.

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Why Attend

- Gain hands-on insight into both the design and construction aspects of concrete structures.
- Avoid costly design errors and construction reworks.
- Strengthen collaboration between designers, site engineers, and project managers.
- Improve quality assurance and safety compliance at all project stages.

Target Audience

This course is designed for:

- Civil and structural engineers
- Site and construction engineers
- Project managers
- Architects involved in structural coordination
- QA/QC and technical office personnel

Individual Benefits

- Practical understanding of reinforced concrete behavior and detailing
- Tools to ensure design constructability and safety on-site
- Enhanced confidence in making informed technical decisions
- Improved communication with design offices and construction teams

Organizational Benefits

- Increased structural safety and performance of projects
- Reduction in construction delays due to design/execution mismatches
- Improved project delivery and cost efficiency
- Enhanced engineering capability and technical credibility

Instructional Methodology

- Instructor-led lectures with visual presentations
- Case studies of real-life design and construction issues
- Hands-on calculation examples
- Interactive Q&A and group discussions
- Final-day workshop and planning session

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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: Fundamentals of Reinforced Concrete Design

- Module 1 (07:30 – 09:30) – Principles of Structural Concrete Behavior
- Module 2 (09:45 – 11:15) – Materials: Concrete, Steel, and Interaction
- Module 3 (11:30 – 01:00) – Design Codes and Limit State Concepts (ACI, BS, Eurocode)
- Module 4 (02:00 – 03:30) – Loads and Structural System Selection

Day 2: Structural Design Elements – Flexure & Shear

- Module 5 (07:30 – 09:30) – Design of Beams for Bending
- Module 6 (09:45 – 11:15) – Shear Design Principles and Reinforcement Detailing
- Module 7 (11:30 – 01:00) – Slab Design: One-way and Two-way Slabs
- Module 8 (02:00 – 03:30) – Common Design Mistakes and Misinterpretations

Day 3: Columns, Foundations, and Detailing

- Module 9 (07:30 – 09:30) – Axial Load Design in Columns (Short and Slender Columns)
- Module 10 (09:45 – 11:15) – Interaction Diagrams and Eccentric Loading
- Module 11 (11:30 – 01:00) – Footing and Raft Design Overview
- Module 12 (02:00 – 03:30) – Rebar Placement and Construction Drawings Review

Day 4: Construction Limitations & Site Execution

- Module 13 (07:30 – 09:30) – Concrete Pouring, Compaction & Curing Challenges
- Module 14 (09:45 – 11:15) – Dealing with Construction Tolerances and Deviations
- Module 15 (11:30 – 01:00) – Formwork Design and Failures
- Module 16 (02:00 – 03:30) – Inspection, Quality Control, and Supervision

Day 5: Advanced Topics and Practical Applications

- Module 17 (07:30 – 09:30) – Cracking: Causes, Control, and Acceptability
- Module 18 (09:45 – 11:15) – Design for Durability and Harsh Environments
- Module 19 (11:30 – 01:00) – Construction Case Studies and Lessons Learned
- Module 20 (02:00 – 03:30) – Final Workshop & Certificate Ceremony

Certification

Participants who complete the training will receive a Certificate of Completion.

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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