



London TDM

# Civil and Construction Engineering Training Courses

**Course Venue:** United Arab Emirates - Dubai

**Course Date:** From 12 April 2026 To 16 April 2026

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

This 5-day professional course, "Advanced Reinforced Concrete Design," aims to deepen the understanding and expertise of civil engineering professionals in the principles and practices of advanced reinforced concrete. Participants will explore complex design scenarios, advanced material properties, and the latest building code requirements, equipping them with the knowledge to tackle challenging design projects.

## Objectives

- Enhance understanding of complex reinforced concrete design concepts.
- Introduce advanced material properties and their applications.
- Explore the latest building codes and standards.
- Develop practical skills in analyzing and designing reinforced concrete structures.
- Facilitate the application of innovative technologies in concrete design.

## Course Outlines

### Day 1: Introduction to Advanced Reinforced Concrete Design

- Overview of advanced reinforced concrete concepts
- Historical development and modern advancements
- Review of fundamental design principles
- Introduction to state-of-the-art materials in concrete
- Understanding load path and distribution

### Day 2: Advanced Material Properties and Durability

- Properties of advanced concrete materials
- Durability and sustainability considerations
- Creep and shrinkage in reinforced concrete
- Special concretes: high-strength, lightweight, and fiber-reinforced
- Innovations in aggregate and cement composition

### Day 3: Structural Design and Analysis Techniques

- Advanced analysis methods for reinforced concrete
- Nonlinear design and its applications
- Designing for dynamic and seismic loads
- Finite element modeling of concrete structures
- Case studies on complex structure designs

### Day 4: Compliance with Building Codes and Standards

- Review of international and local building codes
- Application of code provisions to complex designs
- Code updates and amendments: impact on design
- Performance-based design principles
- Legal and safety considerations in design

## **Day 5: Innovative Technologies and Future Trends**

- Emerging technologies in concrete construction
- Use of software and AI in concrete design
- 3D printing and its applications in concrete structures
- Sustainable construction practices
- Future challenges and opportunities in reinforced concrete design