



London TDM

# Civil and Construction Engineering Training Courses

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

**Course Date:** From 08 February 2026 To 12 February 2026

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

Concrete Technology and Mix Design is an essential course for engineers, architects, and construction professionals who aim to enhance their skills in understanding and working with concrete materials. This 5-day course gives participants a comprehensive understanding of concrete properties, mix design principles, and industry best practices for achieving high-quality and durable concrete structures.

## Objectives

- Understand the fundamental properties of concrete and its components.
- Learn the principles of concrete mix design and optimization techniques.
- Familiarize with the latest technologies and advancements in concrete technology.
- Explore problem-solving strategies for common concrete-related issues.
- Gain insights into sustainable practices and innovations in concrete production.

## Course Outlines

### Day 1: Fundamentals of Concrete Technology

- Introduction to Concrete and its Applications
- Properties of Fresh and Hardened Concrete
- Role and Characteristics of Cement
- Aggregates in Concrete: Types and Properties
- Admixtures and their Effects on Concrete Performance

### Day 2: Principles of Concrete Mix Design

- Objectives and Concepts of Mix Design
- Factors Influencing Mix Design
- Introduction to Mix Design Methods
- Workability and Durability Considerations
- Lab Session: Basic Mix Design Practice

### Day 3: Advances in Concrete Technology

- High-Performance Concrete: Features and Uses
- Innovations in Concrete Materials and Techniques
- Introduction to Self-Consolidating Concrete
- Fiber-Reinforced Concrete and its Applications
- Sustainability in Concrete Production and Use

### Day 4: Practical Challenges and Solutions

- Common Concrete Problems and Remedies
- Cracking in Concrete: Causes and Prevention
- Durability Challenges in Different Environments
- Formwork and Its Impact on Concrete Quality
- Case Studies: Analysis of Real-world Concrete Challenges

## **Day 5: Lab Sessions and Project Work**

- Advanced Mix Design Techniques
- Hands-on Lab Work: Custom Mix Design Process
- Project: Developing a Concrete Mix for Specific Requirements
- Group Presentations on Project Findings
- Course Review and Feedback Session