ACI Code Requirements and Specifications For Concrete Design, Construction and Repair

Venue Information

Venue: London UK

Place:

Start Date: 2026-04-28

End Date: 2026-05-02

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: CACETC

Course Code: CACETC-2

Syllabus

Advanced Concrete Design, Construction, and Repair: ACI Code Requirements

Course Description

Skilllinkx presents a comprehensive training course on Advanced Concrete Design, Construction, and Repair, aligned with the latest ACI code requirements. This course is designed to deepen your understanding of concrete design, construction, and evaluation, providing critical insights into the strong and weak points of ACI standards. The primary focus is to enhance the skills of engineers working in concrete construction, ensuring they are well-versed in the acceptance, evaluation, and protection of concrete structures. Key areas include steel corrosion prevention, concrete construction in hot climates, and earthquake-resistant design.

- Understand the fundamentals and concepts of ACI codes and standards.
- Gain expertise in concrete properties, load effects, and strength requirements.
- Learn to design formwork and steel detailing according to ACI specifications.
- Develop skills in evaluating existing structures and implementing repair procedures.
- Acquire knowledge of earthquake-resistant design and construction practices.

Course Outline and 5-Day Plan

Day One: Fundamentals of ACI Design Codes

- **Concept of ACI Design Codes**: Introduction to ACI standards and their applications.
- **Concrete Properties**: Understanding the material properties and behavior of concrete.
- **Load Effects on Structures**: Analysis of different loads affecting structures based on ACI.
- **Strength and Serviceability Requirements**: Ensuring structural integrity and durability.
- **Probability of Failure**: Evaluating risks and safety factors.
- **Concrete Mix Design**: Best practices for mix design to achieve desired strength and durability.
- **Specifications and Standards**: Overview of relevant ACI specifications and standards.

Day Two: Standards and Material Specifications

- **Testing Standards and Materials**: Understanding ACI standards for testing and material specifications.
- **Main Element Design**: Designing beams, slabs, and columns.
- **Concrete Quality**: Ensuring high-quality concrete mixing and curing practices.
- **Hot Climate Requirements**: Special considerations for concrete construction in hot climates.
- **Concrete Evaluation and Acceptance**: Criteria for evaluating and accepting concrete structures.
- **Corrosion Protection**: Techniques for protecting steel reinforcement from corrosion.
- **Coated Steel Bars**: Standards for using coated steel bars in concrete structures.

Day Three: Concrete Construction and Earthquake Precautions

- **Concrete Construction Requirements**: Best practices for concrete construction.
- **Formwork Design**: Techniques for designing effective formwork.
- **Reinforcement Detailing**: Proper detailing and surface condition of reinforcement.
- **Structural Element Design**: Design principles for different structural elements.
- **Earthquake Precautions**: Designing structures to withstand seismic loads.
- **Earthquake-Resistant Design Systems**: Specifications and requirements for earthquake-resistant structures.

Day Four: Strength Evaluation of Existing Structures

Day Five: Repair Procedures Based on ACI

- **Repair Procedures**: ACI guidelines for repairing concrete structures.
- **Crack Preparation**: Techniques for preparing cracks for repair.
- **Polymers and Additives**: Using polymers and additives in concrete repair.
- **Epoxy for Repair**: Application of epoxy in structural repairs.
- **Designing Temporary Supports**: Ensuring stability during the repair process.

Enhance your expertise in concrete design, construction, and repair with Skilllinkx's advanced training course, ensuring you stay at the forefront of industry standards and practices.