



**Construction, Civil Engineering  
& Asset Management**



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# Course: ACI Code Requirements & Specifications for Concrete Design, Construction & Repair

Code	City	hotel	Start	End	price	Hours
519	Doha (Qatar)	Hotel Meeting Room	2024-09-08	2024-09-12	3450 €	25

## Course Description

The concrete design and construction precaution in ACI will be discussed deeply to assist the trainer be familiar with this code and know about its strong and weak point. The acceptance and evaluation of concrete is the main aim for engineers working in concrete construction so it will be clarified in this course.

The design of form work and steel detailing will be introduced in this course in scope of ACI requirements. To protect steel bars from corrosion the ACI provides many specifications and recommendation to avoid steel corrosion so the course will highlight this issue and addition to that the construction of concrete in hot climate.

ACI recently introduced its standards for evaluating the existing structure according to certain procedure so in this course will present it and provide the code procedure for repair. Moreover, the ACI defines the structure system in case of earthquake load so this course will introduce it with specification requirement to design the structure, which are affected by earthquake.

## Course Objective

The objective of this seminar is to train people who are interested in using American Concrete Institute Standard ACI to be familiar with using this standard. The concept and basics of codes and standard will be introduced concerning the probability of failure specifically in ACI. The recent ACI code will be presented for design and construction for concrete structure.

## Course Outline

### Day One

- Concept of ACI design codes
- Concrete properties
- Load affecting structure based on ACI
- Strength requirement
- Probability of failure based on ACI
- Serviceability requirement
- Concrete mix design



- Specifications requirement
- Standards and codes

### **Day Two**

- Standards for tests and materials
- Main element design as beam, slab and column
- Material specifications
- Concrete quality for mixing
- Concrete curing
- Hot concrete requirement
- Evaluation and acceptance of concrete
- Corrosion protection of concrete
- Standard of coated steel bars

### **Day Three**

- Concrete construction requirements
- Design of Formwork
- Detailed of reinforcement
- Surface condition of reinforcement
- Design of different structure element
- Earthquake precaution
- Design system for earthquake

### **Day Four**

- Strength evaluation of existing structure
- Structure evaluation
- Visual inspection technique
- Non destructive testing
- Pullout test
- Ultrasonic test

### **Day Five**

- Define repair procedure based on ACI
- Prepare cracks to repair
- Using polymers and additives
- Using epoxy for repair
- Design temporary support



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- **Theoretical Lectures:**
  - We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.
- **Scientific Assessment:**
  - We evaluate trainees skills before and after the course to ensure their progress.
- **Brainstorming and Interaction:**
  - We encourage active participation through brainstorming sessions and applying concepts through role play.
- **Practical Cases:**
  - We provide practical cases that align with the scientific content and the participants specific needs.
- **Examinations:**
  - Tests are conducted at the end of the program to assess knowledge retention.
- **Educational Materials:**
  - We provide both printed and digital scientific and practical materials to participants.
- **Attendance and Final Result Reports:**
  - We prepare detailed attendance reports for participants and offer a comprehensive program evaluation.
- **Professionals and Experts:**
  - The programs scientific content is prepared by the best professors and trainers in various fields.
- **Professional Completion Certificate:**
  - Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.
- **Program Timings:**
  - Training programs are held from 10:00 AM to 2:00 PM and include buffet sessions for light meals during lectures.