



**SCANDINAVIAN ACADEMY**  
For Training and Development

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

Code	City	Hotel	Start	End	Price	Language - Hours
CV-519	Frankfurt (Germany)	Hotel Meeting	2027-01-11	2027-01-15	5450 €	En - 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 recommendations to avoid steel corrosion so the course will highlight this issue and in addition to that the construction of concrete in hot climate.

ACI recently introduced its standards for evaluating the existing structure according to certain procedures 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 requirements 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 standards 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



The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

### **Program Timings:**

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

### **The program includes:**

- A daily Coffee Break provided during the sessions to ensure participants comfort.