



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



CC030

Assessment and Rehabilitation of Concrete Structure



ACTVET
Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
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Course Introduction:

This course will provide tools to assess the serviceability and the life span of concrete structures, to evaluate the actual capacity of the structure versus life span and life cost, and define the best strategy for assessment and rehabilitation of concrete structures as well as the maintenance or repair through practical applications. The structural dysfunction and failure is the result of human error originating from oversight, negligence, ignorance or the lack of knowledge.

Structural malfunction may be characterized as the unacceptable difference between intended and actual structural performance. A better knowledge and a deeper consciousness of our professional, human and social responsibilities can lead to the construction of safer and better performance buildings.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Identify the critical characteristics of a given structure, types and causes of common deficiencies (even failures) of structures
- Explain the methods of observation, instrumentation and testing
- Apply preventive measures to counteract deterioration of structures
- Comprehend workable temporary and permanent repairs for any particular structure
- Use a comprehensive practical guide on the practice and business of assessment of site conditions and evaluation and repair strategies and techniques of concrete structures, or others structures
- Understand the nature of innovative technology and provide an overview for the role of effective management
- Recognize the important role of the designer, the contractor and the supervision in producing sound structures

Who Should Attend?

This course is intended for design structural engineers, supervision engineers, construction engineers, material engineers, maintenance engineers and technicians and inspectors responsible for the integrity of reinforced concrete structures.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Outline:

Day 1:

- Types of Damage Affecting Concrete and Reinforced Concrete Structures Systematic Material Take-Off and Measurement
- Effects in the Assessment and Rehabilitation of the Structures
- Codes and Standards used in the Assessment and Rehabilitation of Concrete Structures
- Precautions for Carbonation and Chloride Ingress

Day 2:

- Method of Damage Assessment
- Identification of Service and Exposure Conditions of Concrete Structures
- Visual and Exploratory Investigation of Damaged Concrete Structures
- Delaminated Concrete, Voids, Cracks, Honeycombs, etc.

Day 3:

- Principles of Rehabilitation
- Methods to Prevent Defects in Concrete, Rehabilitation Methods against Corrosion and Damage
- Properties of Repair Materials and Systems in Concrete Structure
- Surface Repair of Concrete Structures, Material Requirements, Reinforcing Steel Cleaning, Repair & Protection

Day 4:

- Placement Methods applied to the Concrete Structures
- Procedure for Strengthening and Stabilization of Concrete Structures:
 - Techniques/Design Considerations
 - Shear Transfer Strengthening between Members
 - Stress Reduction Techniques
 - Crack Stabilization
- Strategies of Protection of Concrete Structures

Day 5:

- Risk-based Maintenance Strategy
- Repair time, Start of Corrosion, Start of Deterioration
- Cost Analysis for different Protection Methods

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session