



Training Course :

**Assessment Of Defects In Concrete
Structures And Evaluation Of
Safety Of Concrete Infrastructure**

Training Course For One Week In

UAE, Dubai, Cityseason Suites Hotel

Which Be Held As Under Details :



Abar Solutions Petroleum Consultancy Invite Your Employee To Participate With Us In Special Training Course As Under Details :

Course Name		Assessment Of Defects In Concrete Structures And Evaluation Of Safety Of Concrete Infrastructure			
Code	Period	Language	Start	End	Location
CE 061	5 Days	Bilingual (Arabic & English)	13/08/2017	17/08/2017	UAE , Dubai , Cityseason Suites Hotel
			03/09/2017	07/09/2017	
			08/10/2017	12/10/2017	
			12/11/2017	16/11/2017	
			10/12/2017	14/12/2017	
			14/01/2018	18/01/2018	
			11/02/2018	15/02/2018	
			11/03/2018	15/03/2018	
			15/04/2018	19/04/2018	
			20/05/2018	24/05/2018	
			10/06/2018	14/06/2018	
			22/07/2018	26/07/2018	

**** The Fees Includes : Lecturer , Training Material , Training Room With One Coffee Break Daily , Certificate Of Attendance In Last Day Training Course ****

Course Description

⇒ This course aims at providing participants with the knowledge, skills and expertise to identify durability problems of concrete structures, understand their causes, assess the associated short and long-term risks, and develop cost-effective and technically efficient rehabilitation and repair strategies to upgrade the performance of such structures, with special focus on hot and humid environments.

Course Objectives

⇒ **Specifically, participants will learn how to:**

- Identify performance and durability problems of concrete materials and structures
- conduct field monitoring and non-destructive evaluation of concrete structures
- carry out forensic assessment of deteriorated concrete structures
- design repair strategies for deteriorated concrete structures including repairing with composites
- design stabilizing and strengthening techniques of reinforced concrete structural elements.

Course Content & Outlines

⇒ **Introduction:**

⇒ **Properties of cement and concrete:**

- Cement manufacturing
- Cement hydration
- Cement and concrete microstructure
- Blended cements
- Chemical admixtures
- Special concretes

⇒ **Causes and mechanisms of degradation of concrete structures:**

- Corrosion of reinforcing steel
- Sulphate attack
- Marine environments
- Alkali-silica reaction
- Cavitations and abrasion
- Moisture effects (drying shrinkage, creep, etc.)
- Thermal effects

- Load effects
- Faulty workmanship: designer, detailer, contractor

⇒ **Monitoring and evaluation of concrete structures**

- Condition assessment
- Visual inspection
- Non-destructive testing
- Locating defects
- In-situ tests
- Monitoring movement
- Evaluating safety

⇒ **Surface repair of concrete structures**

- Strategy and design
- Materials requirements and selection
- Surface preparation
- Bond of repair materials to existing concrete
- Implementation methods

⇒ **Stabilization and strengthening of concrete structures**

- Flexural strengthening of beams
- Shear strengthening of beams
- Strengthening of columns
- Seismic retrofit of columns
- Strengthening with composite materials

⇒ **Litigation and forensic engineering of Concrete infrastructure**

- Litigation
- Forensic Engineering
- Case studies