# REINFORCED CONCRETE STRUCTURES FOR OIL & GAS PROJECTS

19 - 23 April 2015 / Dubai, UAE



## WHO SHOULD ATTEND?

Civil and structure engineers with junior and senior level or another discipline need to know deeply about the structure engineering activities and how can cooperate with them in design phase. Design engineers, projects engineer, construction engineer, maintenance engineer and project management.



### INSTRUCTOR : MOHAMED A. EL-REEDY,

Mohamed A. El-Reedy's background is in structural engineering. His main area of research is the reliability of concrete and steel structures. He has provided consulting to different engineering companies and oil and

gas industries in Egypt and to international companies such as the International Egyptian Oil Company (IEOC) and British Petroleum (BP). He has participated in Liquified Natural Gas (LNG) and Natural Gas Liquid (NGL) projects with international engineering firms. Currently, Dr. El-Reedy is responsible for reliability, inspection, and maintenance strategy for onshore concrete structures and offshore steel structure platforms.

Dr. El-Reedy has consulted with and trained executives at many organizations, including the Arabian American Oil Company (ARAMCO), BP, Apachi, Abu Dhabi Marine Operating Company (ADMA), the Abu Dhabi National Oil Company, King Saudi's Interior Ministry, Qatar Telecom, the Egyptian General Petroleum Corporation, SABIC, Kuwait Petroleum Corporation, and Qatar Petrochemical Company (QAPCO). He has taught technical courses about repair and maintenance for reinforced concrete structures and the advanced materials in concrete industry worldwide, especially in the Middle East.

Dr. El-Reedy has written numerous publications and has presented many papers at local and international conferences sponsored by the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Concrete Institute, the American Society for Testing and Materials, and the American Petroleum Institute. He has published many research papers in international technical journals and has authored many books published worldwide about advanced materials in concrete construction and corrosion of reinforced concrete structure, construction management and design of industrial concrete and steel structures and Project management for industrial projects.

## **ABOUT EVENT**

Reinforced concrete structures are widely used in industrial sector special in oil and gas field for onshore.

Therefore, the basis of design for concrete structures for strength , serviceability and robustness will be discussed in the scope of codes concept. So ACI, BS, UBC and ASCE will be discussed in to ensure the use of suitable design method to serve our business safety and operability.

This course will train engineers to be familiar with using American Concrete Institute Standard (ACI) and British standard (BS). The concept and basics of codes and standard will be introduced concerning the probability of failure specifically in ACI and BS.

The course will cover the basis of design for retaining wall, liquid tanks, foundation under machines. The integrity management system and risk based inspection with tools of structure evaluation will be discussed in this course.

## **COURSE OBJECTIVES**

This short course is intended to overview modern and effective procedures for the design for reinforced concrete structures in the oil and gas industry.

The course will include extensive workshops as a hands-on calculation for reinforced concrete elements which are used in the oil and gas industry as pipe rack and ring beam under steel tanks in plant process, foundation under pressure vessels.

This course will equip you with the knowledge in using new tools for designing and reviewing the design for new project or modify the existing one.

Moreover, the design of foundation under all types of vibrating equipment will cover in this course to enable the attendees design or review design the foundation.

For those engineers with limited practical experience the course will illustration of real design issues that may assist the designer to provide concrete structure that is safe, economical and constructible. The rule of thumb to check the concrete design with associated check list will deliver.

The course will be started from the basics to ensure the full participation of all attendees.

FEE	1 PAX	3 PAX OR MORE
Per Person	USD 4795.00	USD 4495.00

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## **COURSE AGENDA**

## DAY 1

- Introduction
- The fundamental of concrete technology.
- Basic concept of concrete design.
- Main features for ACI and BS for concrete design
- Effect of different loads on the building.
- Earthquake , wind load effect
- Loads affect pipe rack, static equipment and tanks foundations.
- Principal, limitations for different codes in concrete (ACI, BS codes).
- Codes and standards Philosophy

## DAY 2

- Principal of concrete design and precaution
- Different structure systems
- Different slab types
- The way to use the suitable structure system
- Design of slab, beam and columns
- Pipeline support design
- Checklist to review the design

## DAY 3

- Soil investigation
- Shallow foundation design philosophy
- Pile foundation design philosophy
- Foundation under machines design
- Checklist to review foundation under rotating equipment
- Precaution in design foundation under vibrating machines

## DAY 4

- Foundation design under pressure vessels
- Foundations design under towers
- Retaining walls design principals
- Load and forced in retaining walls
- Retaining walls design checks
- Design for reinforced concrete liquid tanks
- Structure system for concrete tanks
- Circular and rectangular tank
- Principal Design for ring beam for steel tanks

## DAY 5

- Maintenance strategy for oil and gas field
- Concrete structure repair
- Concrete structure evaluation
- Causes of steel bars corrosion
- Integrity management system
- Risk based inspection



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