



Offshore Structures Design, Construction, Inspection, Maintenance & Repair

COURSE DESCRIPTION

This course will illustrate all information about fixed offshore structure platform. There are a lot of offshore structures worldwide, therefore, in this course will describe all the types of the platforms and their basic of design.

The basic design and loads that affect the offshore structure platform will be discussed in detail with the up to date method of structure analysis as the pushover structure analysis.

The selection of the proper configuration and layout of the platform will be illustrated. Now a days, there are a platforms has a life time over 30 years so there is usually required evaluating the existing platform to know its expected lifetime or if it can increase the load due to increase the number of wells. Therefore the ROV inspection methodology will be presented and the method of under water inspection.

The construction and repair of the mature structure will be discussed in this course. The risk based under water inspection with up to date methodology will be presented in this course.

Instructor Profile Dr. Mohamed El-Reedy



Dr. Mohamed A. El-Reedy's background in structural engineering. His main area of researches is reliability of concrete and steel structure. He

has provided consulting to different engineering companies and oil and gas industries in Egypt and to international companies as the International Egyptian Oil Company (IEOC) and British Petroleum (BP).

He has participated in Liquefied 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 offshore steel structure platforms in GoS. He has performed these tasks for hundred structures in Gulf of Suez in the red sea.

Dr. El-Reedy has written numerous publications and presented many papers at local and international conferences sponsored by the ASCE, ASME, API, CSCE and ACI. He is a chairman session for offshore conference OMAE sponsored by ASME.

He has published many research papers in international technical journals and has authored four books about total quality management, quality management and quality assurance, economic management for engineering projects, and repair and protection of reinforced concrete structures. He received his bachelor's degree from Cairo University in 1990, his master's degree in 1995, and his Ph.D from Cairo University in 2000.

WHO SHOULD ATTEND

- Senior Engineer
- Projects Engineer
- Design Engineer
- Construction Engineer

COURSE OUTLINE

DAY 1 :

- Principal of project management for fixed offshore structure platform.
- Different types of fixed offshore structure
- Loads effects on Fixed offshore structure
- Design Parameters Specifications

DAY 2 :

- General Design Considerations;
- Basics design of fixed offshore platforms
- Offshore Site Investigation
- Wave Theories; Spectral Analysis Application
- Wind and Wave Forces, Computational Hydrodynamics
- Buoyancy and Stability
- Geotechnical Engineering for offshore structure

DAY 3 :

- Offshore Piles design philosophy
- Basics of Earthquake and Seismic Analysis with API approach
- Fundamental Concepts and Case Studies for Laterally Loaded Piles
- Design of Pile Foundations for Axial Loading
- Concept of design steps by computer software as (SACS, SESAM,...)

DAY 4 :

- Pushover analysis
- Design of Tubular Members
- Welding & Fatigue
- Topsides and jacket design
- Different types of jacket
- Basic concepts of dynamic analysis
- Platform optimum configuration
- Platform construction (Case study)

DAY 5 :

- Structural Reliability
- Load Out Transportation & Installation
- Repair procedure for damage members(practical cases)
- Structure integrity principal
- Risk based maintenance and ROV inspection technique



Transferring Global Knowledge for Competency Excellence

COURSE OBJECTIVES

This course offering will review the fundamentals behind all types of fixed offshore structures and, in the case of fixed platforms, will cover applications of these principles.

The overall objective is to provide participants with an understanding of the design, construction and risk based maintenance for offshore platforms, specifically, the theory and process of such design. The use of current, applicable engineering methods in the design of fixed offshore platforms will be based on API RP2A.

In addition to the traditional lecture delivery, the course delivery emphasizes the use of group discussions and actual design problems in order to ensure participants can put the newly learned concepts to use.



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