Concrete Structural Design Training program

Introduction

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

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

The objective of this course is to 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 and foundation under steel tanks, separator, KOD. Moreover, the key steps in design and review design will be illustrated.

Objectives

- Overview modern and effective procedures for the design for reinforced concrete structures in oil and gas industry.
- Extensive workshop as a hand calculation for reinforced concrete elements which use in oil and gas industry as pipe rack and ring beam under steel tanks in plant process.
- Knowledge and assist 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.

Who Should Attend?

The structure engineers, architects, contractors, developers, and inspectors in both private and public practice will benefit.

Methodology

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

Contents

Day One

- 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 Two

- 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 Three

- 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 Four

- Pipe rack configuration
- Pipe rack design
- Retaining walls design principals
- Load and forced in retaining walls
- Retaining walls design checks

Day Five

- Design for reinforced concrete liquid tanks
- Structure system for concrete tanks
- Circular and rectangular tank
- Principal Design for ring beam for steel tanks
- Integrity and maintenance management system principal