

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Concrete Structural Design for Industrial

Code	City	hotel	Start	End	price	Language - Hours
CV-137SA	Al Baha	Hotel Meeting	2027-07-11	2027-07-15	13950 SR	En - 25

The Course

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.

The Goals

- This short course is intended to overview modern and effective procedures for the design for reinforced concrete structures in oil and gas industry.
- The course will be containing 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.
- This course will increase the 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 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.

The Core Competencies

- In all the universities and civil engineering faculty presents the civil and structure design based on the main principal and usually the application on the normal housing.
- In the industrial projects the application is different so this course will fit the gap between the normal knowledge and the professionalism for industrial in general and specific for oil and gas projects.

The Programme Content

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

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

Our Success Partners

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