Tel No:+97126654546 | Fax No:+97126654182 | Email: aisha@cmc-me.com | www.cmc-me.com

SC025:
Structural Steel Design (Pipe Rack, Shelters, Pipe Supports, Platforms and Ladders)

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Training Description:

Steel is the most used construction material in the USA for industrial buildings, high-rise towers, bridges and other structures. It competes with reinforced concrete in the world because of its many favorable characteristics including high strength, high stiffness, ductility and toughness, speed of erection, competitive cost, etc. Its use in the Middle East region has been mostly confined to industrial plants, offshore structures and warehouses. The lower construction time and it can be used as a temporary structure make it competitive than the concrete structure.

Design of steel structures has widely been based on the Allowable Stress Design based on the AISC. Many designers and fabricators still use the old allowable stress techniques.

The petroleum industry is interesting in modify the structure in case of offshore structures topsides or in the on-shore facilities to carry more load or add more machine so the management of change must be considered and important.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Identify modern procedures for the design and erection of structural steel buildings especially for oil and gas industry
- ✓ Apply the knowledge and assist in using new tools for designing and construction the steel structure for new project or modify the existing one
- ✓ Define the interaction between concrete and steel
- ✓ Explain the theoretical and practical application of anchor bolts, machine skid design, construction and installation
- ✓ Illustrate real designs and construction issues to conceive a structural steel system that is safe, economical and constructible
- ✓ Apply the rules of thumb to check the steel structure and modify the deck in case of offshore and onshore structures

Training Designed for:

This course is intended for all Civil Engineers who are interested in learning about steel design, Design Structural Engineers, Construction Engineers, Supervision Engineers, Steel Fabricator and Planners.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ The Case for Steel Use in Construction
- ❖ Structure System
- ❖ The Comparison between Different Structure System
- ❖ Define the Appraise, Select and Define Step in Steel Structure Projects
- ❖ Available Steel Grades and Sections

- Codes of Practice for Design, Evolution from Allowable Stress to LRFD and Limit State Design
- Preparing SOR and BOD
- Codes and Standards Philosophy

DAY TWO:

- Selection of Structural Systems
- Rigidly Connected Frames
- Plane Trusses
- Space Trusses
- Design of Tension Members
- Design of Compression Members
- Design of ¾AMS
- Design of Beam-Columns

DAY THREE:

- Different Types of Temporary Support
- Bolted Connections Design
- Welded Connections Design
- Fabrication and Erection of Steel Connection
- New Methods for Connecting Steel to Concrete
- Anchor Bolt Design

DAY FOUR:

- Types of Different Soil
- Choose Suitable Foundation Based on Soil Type
- The Required Simple Test to Identify the Soil
- Foundation under Reciprocating and Centrifugal Machine
- Dynamic Analysis Calculation for Steel Skid
- Using CFRP in Steel Structure
- Fabrication and Erection of CFRP

DAY FIVE:

- Design of Composite Beams
- Design of Composite Columns
- Design of Composite Slabs
- Preparation of Fabrication and Erection Shop-Drawings
- Specifying Structural Steel
- Course Conclusion
- POST-TEST and EVALUATION

Training Requirements:

"**Hands-on practical sessions, equipment** and **software** will be applied during the course if required and as per the client's request".

Please note that the above topics can be amended as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

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Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:
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