



## Structural Steel Design

Date	Venues	(\$)Fees	Book your seat
14 Dec -18 Dec 2025	Bahrain	2900	<a href="#">Register Now</a>

## Introduction

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 much favorable characteristics including strength, stiffness, ductility and toughness, erection rapidity, competitive cost and more. In the Middle East region, steel is mostly use in industrial plants, offshore structures and warehouses. The speed for construction and its use for building temporary structure make it competitive than concrete.

We will be discussing the design of steel structures that has been widely based on the Allowable Stress Design (ASD), AISC, BS and EC3. The course will be presented with ASD and LRFD approach.

The petroleum industry's interest to modify the structure in the on-shore facilities to carry more load or add more machines so the integrity management of change must be considered important. The composite section design and FRP will be presented in the course. The pushover analysis will be discussed to define the probability of failure for industrial structure. All example will be specifically related to oil and gas projects for most oil and gas companies worldwide.

### This training course will feature:

- Case studies on petroleum industry
- The codes and standard with technical practice in this field
- The new trend of integrity management system will be presented
- The design of steel structure under reciprocating and centrifugal machines
- The capability of review The engineering and pitfalls in construction
- The pushover structure analysis technique

## Objectives

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

- Be familiar with The "Steel Structure" design
- Understand the loads applied on the steel structure in oil, gas and petrochemical plant
- Know the modern technique on the risk based inspection for maintenance plan
- Be familiar with the pipe rack design
- Know the design of the steel structure on machines
- Identify the use of composite section in strength and repair

## Training Methodology

This training course will utilise a variety of proven adult learning techniques to ensure maximum understanding,

comprehension and retention of the information presented. The daily workshops will be highly interactive and participative. The presentation will be aided with videos and photos.

## **Organizational Impact**

- Improve the organization project by enhance the quality of engineering review for steel structure design
- Reduce the opex for maintenance by New idea for maintenance scheme
- Reduce cost and have extreme benefit of maintenance by applying up-to-date technology to define RBI technique
- Improve organization investment by better design for durable structure along its lifetime

## **Personal Impact**

- Enhance the steel design capability of the trainee
- Increase knowledge of up to date of execution phase
- Increase the skill for maintenance approach
- Increase the skill to enhance quality of all phases of the steel structure projects in oil and gas

## **Who Should Attend?**

**This training course is suitable to a wide range of professionals who are interested in learning about steel design such as:**

- Civil Engineers
- Design Structural Engineers
- Supervision Engineer
- Planners
- Steel Fabricator
- Construction Engineers

## **SEMINAR OUTLINE**

### **DAY 1**

#### **Introduction**

- Pre-assessment
- The case for steel use in construction
- Structure system
- The comparison between different structure system
- 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
- The loads effect on the industrial structures
- Preparing SOR and BOD
- Codes and standards

### **DAY 2**

#### **Steel Member Design**

- Selection of structural systems

- Rigidly connected frames
- Plane trusses
- Space trusses
- Design of tension members
- Design of compression members
- Design of beams
- Design of beam-columns

## DAY 3

### Connection Design

- Applied load on the pipe rack
- Design of the crane track girder
- Design of steel deck under vibrating machine
- Bolted connection designs
- Example of bolted connections
- Welded connection designs
- Example of welded connection

## DAY 4


### Steel Construction and Maintenance

- Fabrication and erection of steel connection
- New methods for connecting steel to concrete
- Wind bracing design
- Anchor bolt design
- Dynamic analysis calculation for steel skid
- Using FRP in Steel Structure
- Fabrication and erection of FRP

## DAY 5

### Architectural Work Inspection Guidelines

- Design of composite beams
- Design of composite columns
- Design of composite slabs
- Preparation of fabrication and erection shop-drawings
- Specifying structural steel
- Maintenance plan by risk based inspection technique

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