

**TRAINING TITLE**

**UNDERSTANDING FUNDAMENTALS OF CIVIL AND STRUCTURAL ENGINEERING FOR PROJECT MANAGEMENT**

**Training Duration**

5 day

**Training Venue and Dates**

<b>Ref. No.</b> CE221	Understanding Fundamentals of Civil and Structural Engineering for Project Management	5	13-17 Oct 2025	\$5,500	DUBAI, UAE
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

**Training Certificate**

**Define** Management Consultants Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

The oil and gas industry is characterized by large-scale, complex projects requiring seamless collaboration across multiple disciplines. This course is designed to provide project managers with a solid foundation in civil and structural engineering principles, enabling them to better plan, coordinate, and execute projects. By understanding the fundamentals, participants will enhance their ability to communicate effectively with technical teams, assess engineering decisions, and mitigate risks during the project lifecycle.

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**TRAINING OBJECTIVES**

**By the end of the course, participants will be able to understand**

- Gain a working knowledge of civil and structural engineering concepts relevant to oil and gas projects.
- Understand the key considerations in site preparation, foundation design, and material selection.
- Learn the basics of infrastructure design, including pipelines, storage facilities, and offshore structures.

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- Enhance their ability to identify, analyze, and mitigate risks related to civil and structural engineering.
- Build confidence in managing interdisciplinary interfaces and technical challenges.

### WHO SHOULD ATTEND?

This course is specifically designed for:

- Project managers and coordinators in the oil and gas industry.
- Engineers transitioning to project management roles.
- Construction and operations managers seeking insights into civil and structural engineering principles.
- Professionals involved in project planning, budgeting, or risk management.

### TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

### COURSE PROGRAM:

#### **Day 1: Introduction to Civil and Structural Engineering in the Oil and Gas Sector**

- **Objective:** Understand the role of civil and structural engineering in oil and gas projects.
- **Topics Covered:**
  - Overview of civil and structural engineering disciplines.
  - Key differences between onshore and offshore projects.
  - Types of oil and gas facilities: refineries, pipelines, platforms, storage tanks, and terminals.
  - Importance of civil and structural considerations in project management.
  - Industry standards and codes (e.g., API, AISC, ISO, ASCE).

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## Day 2: Site Preparation and Foundation Design

- **Objective:** Gain insights into site assessment, preparation, and foundation systems.
- **Topics Covered:**
  - Geotechnical investigations and soil analysis.
  - Types of foundations: shallow vs. deep (e.g., spread footings, piles, caissons).
  - Challenges in site preparation (e.g., remote locations, soil quality, environmental conditions).
  - Key considerations for seismic, wind, and other environmental loads.

## Day 3: Structural Design Basics and Materials

- **Objective:** Learn the fundamentals of structural design and materials used in oil and gas projects.
- **Topics Covered:**
  - Principles of load calculation and structural analysis.
  - Common structural materials: steel, reinforced concrete, composites.
  - Corrosion protection and material durability in harsh environments.
  - Modular design for oil and gas facilities.

## Day 4: Infrastructure and Civil Works

- **Objective:** Explore key infrastructure components and civil works involved in projects.
- **Topics Covered:**
  - Roads, drainage, and site utilities.
  - Pipeline corridors: routing, trenching, and crossing techniques.
  - Storage tanks and secondary containment systems.
  - Coastal and offshore structures (jetties, berthing facilities, breakwaters).

## Day 5: Risk Management, Interfaces, and Project Integration

- **Objective:** Understand the integration of engineering disciplines and manage project risks effectively.
- **Topics Covered:**
  - Common risks in civil and structural works (e.g., delays, cost overruns, failures).
  - Interfaces with other disciplines (mechanical, electrical, and piping).
  - Project management tools for tracking progress and resolving engineering challenges.
  - Sustainability and environmental considerations.
- **Wrap-up:**
  - Q&A session, course feedback, and certificate distribution.

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**NOTE:**

**Pre-& Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.**

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