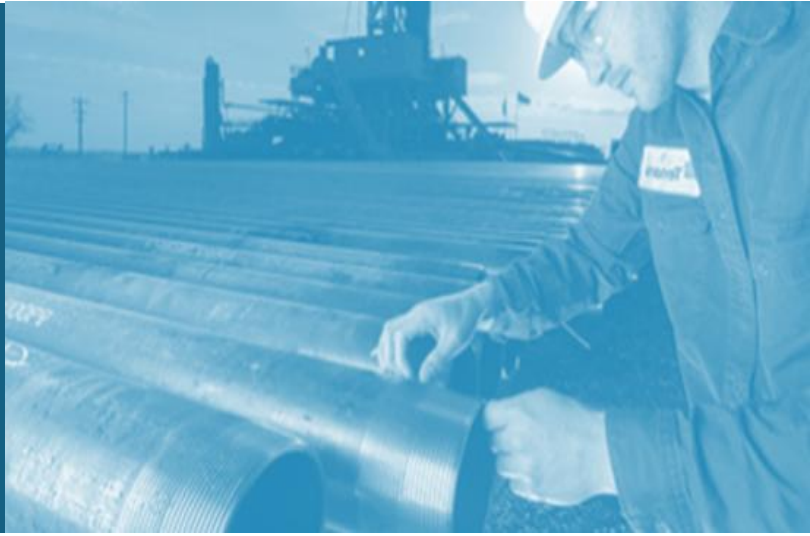




CASING DESIGN: ENGINEERING PRINCIPLES, LOAD ANALYSIS, AND PRACTICAL APPLICATIONS



COURSE OVERVIEW

Casing design is a foundational component of well construction, influencing the safety, functionality, and economics of drilling operations. This intensive 5-day training course provides petroleum and drilling professionals with a structured approach to casing design, focusing on industry standards, load analysis, material selection, and wellbore integrity. Participants will learn to evaluate well conditions, calculate various load scenarios, and select optimal casing strings for both conventional and challenging environments. The course includes hands-on exercises, design simulations, and real-world case studies to reinforce learning.

DATES, VENUES AND FEES



07 – 11 December 2025 - Dubai
(5 Days)

Fees

US\$ 5000

Note: Fee is per participant + 5% VAT (if applicable).

Groups from the same company can enjoy a **discounted** price.

WHO SHOULD ATTEND?

This course is appropriate for a wide range of professionals but not limited to:

- Drilling Engineers
- Well Planning Engineers
- Petroleum Engineers
- Completion Engineers
- Field Engineers involved in casing and cementing
- Technical professionals from service companies
- Engineering graduates entering the drilling domain

CONTACT US NOW

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Block 2B, 1st Floor, Office 134, Knowledge Park, Dubai, UAE

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ACCREDITATION



This training course is certified by CPD.

The CPD Certification Service is the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice, and recognised independent CPD accreditation compatible with global CPD principles. CPD is the term used to describe the learning activities professionals engage in to develop and enhance their abilities and keep skills and knowledge up to date. CPD Units are only awarded to programmes after each programme is scrutinised to ensure integrity and quality according to CPD standards and benchmarks.

COURSE CERTIFICATE

MSTC certificate will be issued to all attendees completing a minimum of 80% of the total tuition hours of the course.

CPD internationally recognized certificate will be issued for all participants who will meet the course requirements. CPD certificates will be issued within a month of the successful completion of the course.

TRAINING METHODOLOGY

- Expert-led sessions with dynamic visual aids
- Comprehensive course manual to support practical application and reinforcement
- Interactive discussions addressing participants' real-world projects and challenges
- Insightful case studies and proven best practices to enhance learning

LEARNING OBJECTIVES

By the end of this course, participants should be able to:

- Understand the functions and types of casing strings in various wellbore conditions.
- Perform load calculations including burst, collapse, tension, and triaxial stress analysis.
- Select appropriate casing materials, weights, grades, and connections.
- Apply safety factors based on API and ISO standards.
- Integrate cementing and centralization considerations into casing design.
- Address design challenges in high-pressure, high-temperature (HPHT), and unconventional wells.
- Develop and present complete casing design solutions using real-world well scenarios.

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COURSE OUTLINE

DAY 1

Introduction to Casing and Design Fundamentals

- Pre test
- Overview of casing string types: conductor, surface, intermediate, production, liners
- Functions of casing in well construction and integrity
- Casing setting depth determination
- API casing specifications and standards (API 5CT, TR 5C3)
- Introduction to design methodology and data requirements
- Exercise

DAY 2

Load Analysis – Burst, Collapse, and Tension

- Burst pressure scenarios and calculation methods
- Collapse pressure under external loads
- Tension loads during casing running and production
- Minimum design factors and safety margins
- Influence of temperature and pressure changes
- Exercise

DAY 3

Triaxial and Thermal Design Considerations

- Combined stress (triaxial) analysis
- Temperature effects on casing loads and material behavior
- Design in salt formations and unstable formations
- Wellbore stability and casing stress management
- Selection of casing grades and connections
- Exercise

DAY 4

Cementing and Centralization Considerations

- Role of cement in casing support and zonal isolation
- Cement design basics: slurry types, volumes, and placement
- Centralization requirements and calculations
- Annular clearance, standoff, and cement bond integrity
- Casing wear and corrosion considerations
- Exercise

DAY 5

Integrated Design and Special Applications

- Casing design for HPHT, deepwater, sour service, and ERD wells
- Cost and risk trade-offs in casing design
- Use of design software and spreadsheets
- Case study presentation: Complete casing design for a specified well profile
- Group presentations and peer review
- Final Q&A and course wrap-up
- Post test

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