

Summary

Well completion design is one of the most critical steps for oil and gas wells. An optimal design leads to a well being capable of delivering its full potential. Completion design is a complex process, as it includes input from many disciplines and considers the whole life cycle of the well not just a single point in time, without compromising on safety or reliability. Well performance changes over time due to a variety of factors, at surface and in the reservoir, and a properly designed well allows for easy modification (workovers) to correct or enhance performance. Completion design is a complex process as it includes input from many disciplines and considers the whole life cycle of the well, not just a single point in time.

Learning Outcomes

Participants will:

1. Understand key considerations and workflow of completion design.
2. Optimise tubing based on flow requirements and well performance analysis.
3. Calculate stresses and loads on tubing and connections.
4. Select proper tubing material for the well environment and fluid type.
5. Differentiate between open hole, cased and perforated completions.
6. Select well stimulation techniques based on reservoir and fluid type.
7. Describe the purpose and generic operating principles for major completion components.

Training Method

This is a self-paced e-learning course. Learning materials are structured into short sections, each including interactive text and image content, animations, video, and audio. An end of course quiz is scored to provide the learner with their learning progress. Approximately 4 hours learning time.

Who Should Attend

This course is designed primarily for engineers and geoscientists involved in well completions.

Prerequisites and Linking Courses

There are no prerequisites.

Course Content

Well Completion Design Process

The 1st module of this course will define well completion, introduce the range of completion options available and the processes required to reach a final basis of design. The learner will develop an understanding of completion components and options for both horizontal and multi-lateral wells.

Well Completion Tubing Design

This module teaches the learner about the purpose and importance of tubing within the context of well completion. It covers how to estimate stress and loading on tubing and connections and how to select

EC027: Well Completion Technology

Format and Duration
Self-Paced - 4 Hours

tubing to optimise flow and performance.

Overview of Key Well Completion Technologies

This module looks at the difference between open hole, cased and perforated completions. The learner will understand how to select well stimulation techniques based on reservoir and fluid types, how to control sand production and how to design for high pressure and temperature environments. Finally heavy oil production techniques will be considered.

Completion Components

In the final module of this course the learner will increase their understanding of major completion equipment components and develop further understanding of sand and inflow control equipment.