
EC025: Well Planning and Drilling Operations

Format and Duration
Self-Paced - 6 Hours

Summary

This course provides an overview of the phases, operations, and terminology used in the design and drilling of a well. No prior experience or knowledge of drilling operations is required and as such this course is ideal for early career professionals or non-technical staff involved in the drilling industries. Through the extensive use of visual examples and interactive content the course will provide participants with a better understanding of well design, planning and drilling operations. Consideration will also be given to Health, Safety and Environmental considerations necessary when drilling a well.

Learning Outcomes

Participants will:

1. Learn about the different types of well, the key aspects of the well design and planning process and the importance of health and safety when planning and drilling a well.
2. Become aware of the key components of a drilling programme, including drilling fluids, casing and cementing.
3. Develop an understanding of surface and subsurface geohazards, planning a site survey and drilling a relief well.
4. Learn about the systems and components on a drilling rig, their purpose and function.
5. Become familiar with the different personnel on a rig, their roles and responsibilities alongside the monitoring and reporting activities that happen during drilling operations.
6. Understand the social implications surrounding drilling operations in conjunction with the major waste and emissions streams and how these can be managed.

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 6 hours learning time

Who Should Attend

This course is designed primarily for geoscientists involved in drilling and well operations. This course is designed to be an alternative to EC036 and focuses on the technical aspects of designing and drilling a successful well.

Course Content

Well Planning & Design

This module provides an overview of the different aspects of well planning and design. It will cover types of well commonly drilled in the energy industry and the data required to develop a well plan prior to the commencement of drilling operations. Participants will also learn the basic components of a drilling programme, consider the importance of environment, health and safety when planning a well and be introduced to some of the terminology commonly used in the energy industry.

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Geohazards

This module will examine the various geohazards associated with delivering exploration wells safely. This will include seabed and sub-surface hazards, fault identification and avoidance, and depositional architecture from seismic and fluid identification (DHIs). We will also explore shallow gas hazards, and geomechanical hazards before concluding with risk and mitigation strategies.

Drilling & Equipment Function

This module introduces rotary drilling and explains the different types of rigs used in the drilling industry. The module will cover common operations employed while drilling before focusing on the 6 primary systems found on drilling rigs, their purpose and function.

Drilling Operations

This module explores the roles and responsibilities of different personnel on a rig and the data that is acquired and used to monitor drilling and report back to the subsurface team. Aspects of operations such as waste disposal, wider social implications and operational health and safety are also reviewed.