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## EC028: Well Production Operations

Format and Duration

Self-Paced - 3 Hours

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### Summary

In this course you will learn about Oilfield Production Operations from the wellhead to the point of sale. The learner will be introduced to equipment selection, function and modification and how these decisions relate to the wider E&P lifecycle, the broader production system and the regulatory environment in which they are operating. The course discusses function and malfunction, routine operations and common day to day activities as well as introducing the unique language used in Production Operations. This course is designed to familiarise learners with the basic aspects of crude oil and natural gas production and the common processes and equipment used in gathering and processing for operations.

### Learning Outcomes

Participants will

1. Learn how the petroleum system and global economics can affect field production and development decisions.
2. Recognize the characteristics of crude oil and natural gas that impact flow and processing.
3. Illustrate the range of surface facilities available, including oil and gas separators, injection systems and water disposal systems.
4. Discuss uncertainty around production and development design.
5. Develop an understanding of production optimisation and how to successfully model production outcomes.

### 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 3 hours learning time.

### Who Should Attend

This course is designed primarily for geoscientists to provide them with an understanding of well production operations

### Course Content

#### Overview of Oil and Gas Production Systems

This module will introduce the concept of Production Systems. The learner will consider the different influences of the petroleum system and the wider economic climate when designing a suitable production system. Risk and uncertainty relating to the production system design will be discussed as well as the range of different production system designs that may be suitable at upstream, midstream and downstream phases of a field lifecycle.



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### Oil and Gas Treatment Systems

This module introduces the learner to the characteristics of crude oil and natural gas that impact flow and processing and therefore must be understood when producing and treating hydrocarbons. The module will demonstrate that production of hydrocarbons is accompanied by production of water and the separation, storage, treatment and disposal of the produced water will be discussed alongside typical oil and gas treatment processes. Finally drains, flares and vent systems will be introduced alongside best practice with respect to local regulations and the environment.

### Injection Systems and Production System Optimisation

The final module in this course teaches about injection systems, including waterflooding, gas, steam and CO<sub>2</sub> injection. The learner will develop an understanding of where and when these are used and the factors to consider when designing an injection system. The module will also cover gas storage and the relationship between storage and demand. Finally, production optimisation will be discussed alongside how to successfully model production outcomes to meet a desired objective.