



PETROLEUM EXPLORATION AND PRODUCTION

INSTITUTE FOR PROFESSIONAL AND EXECUTIVE DEVELOPMENT

United Kingdom

UNIT SPECIFICATION

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Unit Title

Petroleum Exploration and Production

Credit value

The credit value for this unit is 30

30 credits equivalent to 300 hours of teaching and learning
(10 hours is equivalent to 1 credit)

Guided learning hours (GLH) = 50 hours

GLH includes lectures, tutorials and supervised study. This may vary to suit the needs and requirements of the learner and/or the approved centre of study.

Directed learning = 50 hours: This includes advance reading and preparation, group study, and undertaking research tasks.

Self-managed learning = 200 hours: This includes completing assignments and working through the core and additional reading texts. It also includes personal research reading via other physical and/or electronic resources.

Learning outcome Learner will:	Assessment criteria Learner can:
1. Understand the contribution of geological surveys to petroleum prospecting	1.1 Examine the forms of remote sensing: <ul style="list-style-type: none"> - Satellite imagery and - Aerial photography 1.1.1 Describe how satellite imagery and aerial photography have been used in petroleum prospecting 1.2 Examine the useful information geological surveys present to petroleum prospectors
2.0 Understand how geochemistry is applied to petroleum prospecting	2.1 Explain what is meant by geochemistry 2.2 Analyse the application of geochemistry to the petroleum prospecting 2.2.1 Examine the use of the vitrinite reflectance methods in petroleum exploration
3.0 Understand the geophysical techniques used in petroleum exploration	3.1 Examine how gravity surveys are conducted 3.1.1 Examine the equipment used in gravity surveys and the relevant unit(s) of measurement 3.2 Examine the use of magnetic surveys in petroleum exploration 3.2.1 Examine the equipment used in magnetic surveys and the relevant unit(s) of measurement 3.3 Describe how seismic exploration is conducted both on sea and on land 3.3.1 Describe the acquisition, processing, display and interpretation of data from a seismic reflection survey
4.0 Gain introductory knowledge in petroleum production	4.1 Examine the main systems of a rotary drilling rig (i.e. hoisting system, rotating system, circulating system, power system) 4.2 Give an account on how a well is completed as a producer

<p>5.0 Understand the nature of the oil and gas industry</p>	<p>4.3 Describe the features and uses of separators</p> <p>4.4 Examine the techniques used in well stimulation (i.e. acid job, hydraulic fracturing)</p> <p>4.5 Describe the improved oil recovery techniques:</p> <ul style="list-style-type: none"> - Waterflood - Enhanced oil recovery (miscible gas drive, chemical flood, thermal recovery) <p>4.6 Examine the types of offshore production platforms (i.e. fixed production platform, gravity base platform, steel jacket platform, tension leg platform, compliant tower, semisubmersible platform, spar platform)</p> <p>4.7 Describe the features and functions of the Floating Production, Storage and Offloading (FPSO) system</p> <p>5.1 Examine the difference between the U.S oil and gas industry and other oil producing countries</p> <p>5.2 Examine the various business models that exist within the smaller companies in the oil and gas industry</p> <p>5.3 Analyse the duties of the people in the oil and gas industry:</p> <ul style="list-style-type: none"> - Geologists (including stratigraphers and paleontologists) - Engineers (including reservoir engineers, drilling engineers, production engineers and structural engineers) - Geophysicists - Operations staff - Drilling staff (including rig managers, drillers, derrick man, roughnecks, roustabouts) - Production staff (including production foreman, pumpers/gaugers, roustabouts) - Supporting staff (including the landman, lawyer, accountants) - Suppliers
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6.0 Understand the nature of oil rig decommissioning

6.1 Explain what is meant by decommissioning of oil rigs

6.2 Discuss the need for safe practices in decommissioning oil rigs

6.3 Evaluate the significance of comparative assessment studies in an oil rig decommissioning programme

Recommended learning resources

Indicative reading	Hydrocarbon exploration and production by Graham et al (2008). ISBN: 978-0444532367 <ul style="list-style-type: none">• For a full list of textbooks and publications relevant to this unit, please contact IPED - UK.
Learning Aid	<ul style="list-style-type: none">• A comprehensive IPED study material is available to aid in learning and research of this unit.• We supply IPED course materials free of charge. Our study materials, which offer quick learning start, are comprehensive, use simple English, and are easy to read and understand. The contents are so sufficient and self-explanatory; that in majority of cases readers do not require further support; although support is always available when you need it.