



DRILLING

(Mechanical and Non-Mechanical Aspects)

INSTITUTE FOR PROFESSIONAL AND EXECUTIVE DEVELOPMENT

United Kingdom

UNIT SPECIFICATION

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Unit Title

Drilling (Mechanical and Non-Mechanical Aspects)

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:
1.0 Understand the nature of contracts and agreements used in drilling operations and petroleum production	1.1 Examine the nature of surface right ownership and mineral right ownership <ul style="list-style-type: none"> 1.1.1 Differentiate between the United States and Canada’s surface and mineral ownership and that of the rest of the world 1.1.2 Explain who lessees/working interest owners and lessors/royalty interest owners are 1.1.3 Explain what is meant by the primary term and secondary term of a lease 1.1.4 Describe the use of division orders 1.1.5 Explain the nature of damages payable to surface right owners 1.1.6 Examine how access to production is gained in countries other than the US where the mineral rights are solely owned by the government 1.2 Examine the following: <ul style="list-style-type: none"> ○ Authority for Expenditure (AFE) ○ Pooling ○ Non-participation ○ Non-consent ○ Unitization ○ Perpetuation and termination of a lease 1.3 Describe the typical contents of a drilling contract <ul style="list-style-type: none"> 1.3.1 Examine the types of drilling contracts (e.g. footage drilling contract, daywork contract, turnkey contract, combination contract) 1.4 Explore the types of agreements that may exist between a multinational oil company and the government of a host country (e.g. concession agreement, production sharing agreement, service

<p>2.0 Understand how drilling operations were done prior to rotary drilling</p> <p>3.0 Understand the nature of rotary drilling</p>	<p>contract, production contract, joint operating agreements, support agreements)</p> <p>1.5 Examine the significance of drilling and spacing unit (DSU)</p> <p>2.1 Examine the nature of spring pole operations</p> <p>2.2 Explore the nature of cable tool rig operations</p> <p>3.1 Examine the parts of the hoisting system and their functions (derrick, crown block, travelling block, hook, swivel, draw work)</p> <p>3.2 Examine the parts of the rotating system and their functions (drillstring, swivel, kelly and kelly bushing, rotary table, master bushing)</p> <p>3.2.1 Describe the process of making a connection</p> <p>3.2.2 Describe how a worn out bit is changed in the process called "making a trip"</p> <p>3.3 Examine the features and functions of the powering system of a rotary rig</p> <p>3.4 Examine the features and functions of the circulating system</p> <p>3.4.1 Differentiate between the various drilling muds used in a circulating system</p> <p>3.4.2 Examine the various additives added to drilling mud and their functions</p> <p>3.4.3 Analyse the purpose served by the circulating mud</p> <p>3.4.4 Examine safe methods of disposal of drilling mud</p> <p>3.5 Examine the features and purpose of blowout preventers (BOP)</p> <p>3.6 Describe the location of BOP stack onshore and offshore</p> <p>3.7 Evaluate the roles of the drilling contractor, tool pusher, operator,</p>
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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.