

International Well Control Forum



Well Intervention Pressure Control Level 3 and 4 Syllabus

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Guidance Notes

1. OVERVIEW

1.1. Introduction

This course syllabus aims to meet the recommendations for enhancements to well control training, examination and certification produced by the International Association of Oil and Gas Producers (OGP) in report number 476 in October 2012.

1.2. Who takes the Well Intervention Pressure Control course?

We recommend personnel in the following positions should attend the appropriate level of training and assessment:

Level 2	:	Assistant Operator (Wireline, Coiled Tubing, Snubbing).
Level 3	:	Equipment Operator (Wireline, Coiled Tubing, Snubbing).
Level 3-4	:	Single Discipline Supervisor/Engineer (on successful completion of Level 3 should progress to Level 4).
Level 4	:	Well Services Supervisor.
Level 4	:	Completion Supervisor/Service Leader.

See Appendix 2 in the OGP Report 476 for specific job categories.

1.3. How long is the course?

The Level 2 training course must be a minimum of 20 hours.

The Level 3 and Level 4 training courses must be a minimum of 28 hours – based on all options taken - not including examination time.

1.4. How many candidates can a Centre have on a course?

IWCF recommends a maximum of fifteen candidates per course (depending on room size/ facilities) for maximum interaction.



1.5. When can a candidate move on from Level 2 to Level 3 and then to Level 4?

Level 2 Well Intervention courses should be run as a separate course.

Level 3 Well Intervention courses may be partly combined with the Level 4 Supervisor Pressure Control Training for common modules of this course.

If Level 4 Supervisor and Level 3 Operator training courses are partially combined, whilst advanced well pressure control operations are being taught to the Level 4 Supervisory personnel, Level 3 Operator participants should spend this time on training to improve detection and immediate-response skills". (Page 11, OGP Report 476).

IWCF recommends a minimum three month period to build further industry experience and competence before the candidate moves onto the next level. It is unacceptable for a Level 3 candidate to be enrolled on a Level 4 course at the same time.

Please refer to the IWCF website for guidance on progression: <http://www.iwcf.org/news-events/news/52-guidance-for-progression-through-levels-2-4>



2. The Level 2, 3 and 4 syllabi explained

2.1. Testing understanding

IWCF expects candidates' knowledge and understanding of basic drilling well control to be developed so that they can "competently perform their assigned well control duties" (OGP Report 476). It is insufficient for candidates on any level of course to be simply coached to pass an exam.

"The quality of teaching must evolve to ensure learning objectives are met. Training must be taught in line with the stipulated syllabus and it will not be sufficient to base training in "test-similar" or "test-identical" exam questions to help personnel pass the written exam". (OGP Report 476).

2.2. Structure of the written test syllabus

2.2.1. Learning objectives (formerly "standards")

The learning objectives in the syllabus are based on the content (subject matter) the instructor has to teach to meet the requirements of this level. The use of the wording "learning objective" is in line with the OGP Report 476. It is a broad overview statement of what the student will be taught during the course.

Example:

During the course students will gain an understanding ofhow to drive a car.

2.2.2. Learning outcomes (formerly "performance criteria")

Learning outcomes have been developed for each of the learning objectives contained in the syllabus. The outcome indicates how each learning objective will be fulfilled with a detailed description of the skills a student must have at the end of the course. These learning outcomes are the basis for assessment questions.

Example:

By the end of the course students will be able todrive a car including:

- Reversing round a corner
- Parking.



2.2.3. Learning outcomes for Level 3 and 4

It should be noted that the outcomes for Level 3 and Level 4 may have generic information at the beginning of the outcome (which should be taught to all), followed by specific information specific for either Level 3 or Level 4.

For example:

Explain the use and limitations of coiled tubing BOPs including:

- quad-type
- combi-type
- shear/seal
- triple combi BOP.

For accumulators:

L3 specific - Identify them from a given diagram and explain their use.

L4 specific - Explain their operating principles and calculate the volume of accumulator fluid using given data.

2.2.4. Syllabus division

The written test syllabus is divided into two sections:

Compulsory Modules:

- Completion Operations
- Completion Equipment.

Optional Modules:

- Coiled Tubing Operations
- Snubbing Operations
- Wireline Operations.

Please note: at least one optional module must be taken.



2.2.5. Coding

Well Intervention Pressure Control

Completion Operations

Overview
Introduction to well control
Introduction to barriers
Risk management
Circulating system
Testing
Well integrity testing
Influx characteristics and behaviour
Shut-in procedures
Well control methods
Contingency planning

WA
WB
WC
WD
WG
WP
WH
WI
WJ
WK
WN

Completion Equipment

Blow Out preventers
Completion equipment
Annulus pressure monitoring

WEQA
WEQG
WEQJ



Well Intervention Pressure Control

Coiled Tubing Operations

Coiled Tubing Equipment	WCA
Rigging up	WCD
Testing	WCE
Barrier principles	WCF
Contingency procedures	WCG
Shut-in procedures	WCH

Snubbing Operations

Pressure Control Equipment	WSA
Rigging-up procedure	WSD
Testing	WSE
Barrier principles	WSF
Contingency procedures	WSG
Shut-in procedures	WSH
Operating procedures	WSI

Wireline Operations

Pressure Control Equipment	WWA
Rigging up	WWD
Testing	WWE
Barrier principles	WWF
Managing a leak or malfunction on surface	WWG
Contingency Procedures	WWL
Critical Operating Procedures	WWK



2.2.6. Levels

All learning outcomes have been given an “importance”, in other words, a number of points. This is shown in the right hand column on the syllabus. The importance is based on their level of “criticality” in the syllabus.

The levels shown below are based on the potential risk of the candidate not having the knowledge:

Importance	Level of risk	Explanation
10	Critical	Could lead to catastrophic damage to life, limb, environment, industry.
5	Major	Major risk factor
4	Serious	Key knowledge – could lead to risk to life, limb, and environment.
3	Moderate	Necessary knowledge
2	Minor	Underpinning knowledge
1	Foundation	Foundation knowledge

2.2.7. Assessment method

The Level 3 and Level 4 course is based on:

- Written assessment

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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COMPLETION OPERATIONS

OVERVIEW

Well Control Incidents			Level 3	Level 4
WA01.01	The negative impact and effects of a well control incident.	Explain the impact of a well control incident on: <ul style="list-style-type: none"> - personal wellbeing - personal injury - employment - the environment - company reputation - society. Explain the effects of a well control incident such as: <ul style="list-style-type: none"> - capital loss - over-regulation - the suspension of drilling - limiting areas of operations, for example, the Arctic. 	10	10
WA01.02	Well integrity requirements throughout the well life cycle from construction to abandonment and the importance of well integrity in preventing well control incidents.	Explain well integrity management.	10	10

Well control training and assessment

WA02.01	The need for well control training and assessment.	Explain "why are we here?" including: <ul style="list-style-type: none"> - the trust of stakeholders - avoiding over-regulation - the recruitment of new personnel - responsibility to colleagues - competence. 	10	10
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New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Pre-operation planning				
WA03.01	The responsibilities of everyone involved in the pre-operation planning.	Explain the responsibilities of everyone involved in pre-operation planning.	5	10
WA03.02	The need for a plan outlining the well control responsibilities of those people involved in the task.	Explain the lines of communication and the roles of responsible parties, including the importance of pre-job on-site planning meetings and daily toolbox talks.	10	10
WA03.03	The importance of pre-job meetings.	Explain the benefits of holding meetings before any well operation.	10	10

Handover				
WA04.01	The reasons for confirming the well integrity status of the well.	Explain the importance of well barrier integrity status at the point of handover/takeover of the well.	5	10

INTRODUCTION TO WELL CONTROL				
Hydrostatic Pressure				
WB01.01	Hydrostatic pressure.	Explain hydrostatic pressure.	10	10
WB01.02	The parameters that affect hydrostatic pressure and how to calculate it.	Identify the parameters that affect hydrostatic pressure and calculate it using given data.	10	10
WB01.03	The difference between string and annuli pressures.	Calculate the differential at any point between the tubing and annulus above and below any barrier using given data.	10	10

Formation Pressure				
WB02.01	Formation pressure.	Explain formation pressure.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
Fracture Pressure				
WB03.01	Fracture pressure.	Explain fracture pressure.	5	5
Primary Well Control				
WB04.01	Primary well control.	Explain primary well control.	5	5
Secondary Well Control				
WB05.01	Secondary well control.	Explain secondary well control.	5	5
Pressure Control Equipment				
WB06.01	The uses of the Blow Out Preventer (BOP) and pressure control equipment.	Explain the uses of BOP and pressure control equipment.	5	5
Calculations				
WB08.01	Basic oilfield calculations.	Calculate volumes, pressure, and differential force using given data.	5	5
WB08.02	How to calculate the internal and annular volumes from industry standard displacement and capacity tables.	Calculate internal and annular volumes from industry standard displacement and capacity tables.	5	5
INTRODUCTION TO BARRIERS				
WC01.01	Well barrier philosophy in intervention operation.	Identify primary and secondary well barrier envelopes in given well situations.	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Barrier Management				
WC02.03	When well barrier elements become active.	Identify active well barrier elements in a given well situation.	5	5
WC02.04	The need to test barrier elements.	Explain why barriers must be tested. Explain the reference sources for barrier test criteria including: - the well programme - operations manuals - industry standards - technical specifications from equipment manufacturers - integrity testing - low and high pressure tests.	5	5
WC02.05	Documentation for barrier tests.	Explain the criteria for a well barrier test document.	5	5
WC02.06	The correct action to take when a well barrier/element test fails.	Explain the correct action to take if there is a test failure of a well barrier/element.	5	10
WC02.07	The principles of different barrier types: - mechanical barriers - fluid barriers.	Compare and contrast mechanical and fluid barriers.	5	5
WC02.09	The principle of primary and secondary well barrier envelopes.	Identify primary and secondary well barrier envelopes from a given well system diagram.	10	10

RISK MANAGEMENT				
WD01.01	The main principles of systematic risk management.	Explain the principles of risk management - identify, analyse (impact, probability), mitigate and control.	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WD01.02	The requirements of a Management of Change (MOC) process.	Explain the essential requirements for an MOC process.	10	10
WD02.01	The importance of well control and emergency drills and how to do them.	Explain the criteria for well control and emergency drills.	5	10

CIRCULATING SYSTEM				
Definition and Principles				
WG01.01	The purpose of a kill system.	Explain the main items required for a kill system such as equipment and fluids.	5	5

TESTING				
Inflow Testing				
WP01.01	An inflow test.	Explain an inflow test.	5	5
WP01.02	The importance of an inflow test.	Explain why an inflow test is done.	5	5
WP01.03	How to interpret the volume and pressure changes that take place during the test.	Interpret test results including volumetric and temperature effects.	5	10
WP01.04	The correct action to take to reduce the pressure increase if the test should fail.	Analyse a given test result and identify if a negative pressure test has failed. L4 specific - Explain the immediate action to take.	5	10
WP01.05	The procedures required to do an effective inflow test.	Explain the correct steps to take an inflow test. L4 specific - Explain the correct line-up required for an inflow test.	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WP01.06	How the different fluid densities in the well will affect the results of an inflow test.	Assess the effect of different densities of fluids in the well and their impact.	4	5
WP01.07	The specific roles and responsibilities of everyone during inflow tests.	Explain “who does what” during inflow tests.	3	5
WP01.08	The potential leak path during an inflow test.	Assess potential leak paths, using given data, and explain the correct action to take.	5	5

WELL INTEGRITY TESTING				
WH01.01	Why integrity testing is done.	Explain why integrity testing is done and what is measured. Identify from given data if test results are acceptable or not.	10	10
WH01.02	How to perform integrity tests.	Explain the correct rig-up/line-up and procedures for testing: <ul style="list-style-type: none"> - plugs - sliding sleeves - downhole safety valves (Christmas Trees) - gate valves - completion components - the wellhead - the annulus. 	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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INFLUX CHARACTERISTICS AND BEHAVIOUR				
Principles				
WI01.01	The different types of surface leak and their related hazards.	Explain the different types of influx or leak fluids and their related hazards: - gas (hydrocarbon, H ₂ S, CO ₂) - stimulation fluids - oil - water.	5	5
WI01.02	How an influx may change as it is circulated up a well.	Explain the changes that can happen as different types of influx are circulated.	3	5
WI01.03	Basic gas law and why it is important.	Calculate pressure and volume at surface from given data, using simple gas law $P_1V_1 = P_2V_2$.	3	10
WI01.04	Influx migration.	Explain what may happen when the well is shut in if an influx migrates: - in an open well - in a shut-in well.	3	10

SHUT-IN PROCEDURES				
General principles				
WJ01.01	The importance of a shut-in procedure.	Explain the importance of having a shut-in procedure and the steps of the procedure.	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Procedure				
WJ02.01	How to shut in the well according to the selected procedure and situation.	Analyse a given example and explain the procedures to shut in the well at the Christmas Tree, for example, the number of turns to close and which master valve to use, including: - no tools in the hole - tools in the hole.	10	10
WJ02.02	How to verify that the well is shut in.	Explain the correct action to take to ensure the well is shut in and the correct action to take if not, including: - monitor fluid volumes - verify line-up - monitor flow meter - monitor pressures.	5	10
WJ02.03	The possible causes for an increase in pressure over time in a shut-in well and the correct steps to take.	Explain the causes of pressure changes in a shut-in well such as: - pressure build up - thermal expansion - gas migration.	5	10
WJ02.05	The possible consequences of opening and closing valves under differential pressure.	Explain the precautions to take when opening a valve under differential pressure.	10	10

Interpretation				
WJ04.01	Why pressures must be recorded once the well is shut in.	Explain why pressures are recorded after the well has been shut in.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WJ04.02	The possible reasons for differences between shut-in tubing (or string) pressure and shut-in casing (or annulus) pressure.	Analyse the difference between tubing pressure and shut-in casing pressure using given well data covering: - a blockage in the annulus - inaccuracy of the gauges - well deviation - wellbore fluid properties.	5	5
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Observations				
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WJ05.01	The limitations of a pressure gauge and how to correctly read the gauge.	Analyse the limitation of pressure gauges using a given example and explain the importance of accurate calibration.	5	10
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Gas Migration				
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WJ06.01	Gas migration.	Explain gas migration.	5	10
WJ06.02	The importance of monitoring surface pressures immediately after shut-in.	Explain the importance of monitoring for trends.	5	5
WJ06.03	How gas migration causes surface pressures to increase with time in a shut-in well and the possible effects on well bore pressures.	Analyse the causes of pressure changes in a shut-in well using a given example.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WELL CONTROL METHODS				
Kill Method principles				
WK02.01	The principles of the different well control methods.	Explain the principles of each well control method: - bullheading - lubricate and bleed - forward and reverse circulation - volumetric.	3	5
WK02.02	The advantages and disadvantages of the different well control methods.	Compare and contrast the different well control methods: - bullheading - lubricate and bleed - forward and reverse circulation - volumetric.	3	5
WK02.03	How to select the most appropriate well control method.	Analyse a given set of well bore conditions and well data and explain the most appropriate kill method.	3	5
WK02.04	How to select kill pump rate and the consequences of incorrect selection.	Explain the effects of different kill pump rates covering factors such as formation strength, annular friction loss, well-bore conditions, fluid-handling capacity of the surface disposal system and pump pressure limitations.	3	5

Normal and Reverse Circulation				
WK03.01	Normal and reverse circulating well control operation.	Explain these circulating methods and create a kill sheet.	N/A	5

Perform Calculations				
WK04.01	How to calculate the tubing/string volume.	Calculate the tubing/string volume using given data.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WK04.02	How to calculate the annulus volume.	Calculate the annulus volume using given data.	5	5
WK04.03	How to calculate the pump volume to displace tubing.	Calculate the pump volume to displace tubing using given data.	N/A	5
WK04.04	How to calculate the pump volume to displace the annulus.	Calculate the pump volume to displace the annulus using given data.	N/A	5
WK04.05	How to calculate the total circulating volume.	Calculate the total circulating volume using given data.	5	5
WK04.07	How to calculate the formation pressure.	Calculate the formation pressure using given data.	5	5
WK04.08	How to calculate the fracture and leak-off pressure.	Calculate the fracture and leak-off pressure using given data.	5	5
WK04.09	How to calculate the kill fluid density.	Calculate the kill fluid density using given data.	N/A	5
WK04.10	How to calculate initial circulating pressure.	Calculate the initial circulating pressure using given data.	N/A	5
WK04.11	How to calculate the final circulating pressure.	Calculate the final circulating pressure using given data.	N/A	5
WK04.12	How to calculate the pressure change per volume pumped.	Calculate the pressure change per volume pumped using given data.	N/A	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Bullheading				
WK05.01	How to assess if bullheading is the correct solution in a kill situation.	Analyse whether or not bullheading should be used using given shut-in well conditions together with well and equipment data. L4 specific: - Prepare a pumping schedule for bullheading a given well scenario. - Calculate the necessary pumping rate for bullheading a gas well for a given well configuration. - Calculate the maximum allowable surface pressure using given well data.	5	5

Lubricate and Bleed Method				
WK06.04	The "lubricate and bleed" procedure.	Explain the "lubricate and bleed" procedure.	5	5
WK06.05	The step-by-step procedure required for controlling a well according to the lubricate and bleed principle.	Explain how the lubricate and bleed method can be applied.	5	5
WK06.06	When to use the lubricate and bleed method.	Give examples of situations when the lubricate and bleed method should be used.	3	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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CONTINGENCY PLANNING				
Recognition of Problems and First Actions				
WN01.01	How to analyse the downhole or surface problems that can happen in well operations.	Analyse a well kill using given well data with pressure and instrument readings and explain the correct action to take.	N/A	5

Pressure Gauge Failure				
WN02.01	How to detect when pressure gauges are not working correctly and the correct action to take.	Identify gauge malfunctions from given examples and explain the correct action to take.	3	3

Surface Failures				
WN04.01	How to identify and respond to surface failures such as fluid or gas leakage.	Analyse possible failures using given equipment and well data and explain the correct action to take. Possible leakages may include flange connections, O-ring connections, and seals and weep holes.	10	10

Hydrate Formation				
WN05.01	Hydrates.	Explain what hydrates are.	5	5
WN05.02	Hydrate formation prevention and removal.	Explain the conditions that can lead to the formation of hydrates, how to prevent them and methods of removal.	10	10

The Effects of Bottom Hole Pressure				
WN09.01	The impact of well bore pressures when failing to follow the correct procedure and/or anticipate equipment failure.	Analyse the effects on people, environment and equipment when failing to follow procedures and/or faulty equipment is used.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Blockage in the Well				
WN10.01	How to detect a possible blockage anywhere in the well.	Identify a possible blockage in the well from given well data.	3	5
WN10.02	The possible consequences for a well intervention operation if there is a blockage in the well.	Identify possible well blockages whilst circulating from given well data.	5	5
WN10.03	The possible consequences for a well intervention operation if there is a blockage in the well.	Identify possible well blockages whilst intervening from given well data.	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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COMPLETION EQUIPMENT				
BLOWOUT PREVENTERS (BOP)				
Connections				
WEQA05.01	The importance of choosing the correct flange gasket and make-up procedures.	Analyse the correct and incorrect make-up of gaskets for specific types of connections using given diagrams and descriptions.	5	5

COMPLETION EQUIPMENT				
WEQG01.01	The purpose and function of the Christmas Tree and wellheads in relation to pressure control.	<p>Explain the primary function of the Christmas Tree and wellheads and how they work with particular emphasis on:</p> <ul style="list-style-type: none"> - master, swab and flow line valves - hanger nipple sealing mechanisms - wireline cutting ability - the Surface Safety Valve (SSV) - control line pressure versus tubing pressure. <p>L4 specific - Analyse a given well situation and explain what specific equipment to use, why it is being used and what to do if equipment fails.</p>	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WEQG01.02	The function of tubing hangers.	<p>Explain the primary functions of tubing hangers such as:</p> <ul style="list-style-type: none"> - to seal off the annulus - to support tubing weight and tubing loading - to provide locking or threaded profile for hanger plug profile. <p>Explain how each works.</p> <p>L4 specific - Analyse a given well situation and explain what specific equipment to use, why it is being used and what to do if equipment fails.</p>	5	5
WEQG01.03	The function of sub-surface safety valves.	<p>Explain the primary function, applications and positioning of sub-surface safety valves. Explain the procedure for equalising and opening non-equalising (API method), equalising and self-equalising downhole safety valves.</p>	5	5
WEQG01.04	The function, limitations and position of landing nipples.	<p>Explain the primary function, positioning and working of landing nipples.</p> <p>L4 specific - Analyse given well situations and explain what specific equipment to use and why, and what to do if equipment fails.</p>	3	4
WEQG01.05	Tubing movement during production, testing and stimulation.	<p>Explain why tubing moves and the ways to reduce this.</p>	4	5
WEQG01.06	The function and position of a Polished Bore Receptacle (PBR) and Extra Long Tubing Seal Receptacle (ELTSR).	<p>Explain the primary function and positioning of a PBR.</p> <p>L4 specific - Explain the correct situation for setting the PBR/ELSTR in the open or closed position.</p>	4	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WEQG01.07	The function, application and position of side pocket mandrels.	<p>Explain the primary function of side pocket mandrels, either with a working valve (gas lift, circulation, and chemical injection) or with a dummy valve installed, and how they work.</p> <p>L4 specific - Analyse a given well situation and explain what specific equipment to use and why, and what to do if equipment fails.</p>	4	5
WEQG01.08	The choices of and the operations needed to establish circulation through all down-hole circulation and communication devices.	Explain how to operate all circulation and communication devices related to pressure control.	3	5
WEQG01.09	The choice between jar-up to open and jar-down to open circulation devices and their correct positioning in the completion string.	Compare and contrast jar-up to open and jar-down to open circulation devices and explain their correct position in the completion string.	3	5
WEQG01.10	The most common types of production packers.	<p>Explain the types and use of production packers, for example, retrievable or permanent, and how they work.</p> <p>L4 specific - Analyse a given well situation and explain what specific equipment to use and why, and what to do if equipment fails.</p>	4	4
WEQG01.11	The process to set hydraulic set packers.	Explain how to choose the plug and/or process to set hydraulic set packers.	4	5
WEQG01.12	The use of the Wireline Entry Guide (WEG).	Compare and contrast the use of a Mule Shoe Guide and a Bell Guide, and the potential effects on the incorrect choice for future well intervention.	4	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Rig Up/Rig Down				
WEQG03.01	How to check equipment.	<p>Explain how items of a specified rig-up need to be properly checked and prepared before installation, particularly critical sealing surfaces.</p> <p>Explain the adaptors and connectors needed to ensure compatibility between the equipment in use such as pressure rating, dimensions and torque.</p> <p>Give examples of the potential impact of failure during intervention.</p>	5	5
WEQG03.02	The correct make-up procedures and checking of hydraulic hoses and fittings.	Explain the correct procedures to make-up different types of hydraulic hoses and fittings and explain how to check them for deterioration.	3	5
WEQG03.03	The procedure when non-shearable equipment is across the BOP.	<p>Explain what can happen when non-shearable equipment is across the BOP such as:</p> <ul style="list-style-type: none"> - sand screens - cables - control lines - Bottom Hole Assembly (BHA). 	3	5

ANNULUS PRESSURE MONITORING				
WEQJ01.01	The reasons for monitoring annulus pressure.	Explain when annulus pressure should be monitored.	3	5
WEQJ01.02	The procedure for dealing with abnormal annulus pressures.	Analyse given well data and how to bring the pressure back to normal, justifying the reasoning.	N/A	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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COILED TUBING OPERATIONS				
COILED TUBING EQUIPMENT				
Pressure Control Equipment				
WCA01.01	The function and installation of a pressurised 'deployment' system.	Explain the function and installation of the pressurised deployment system, including a deployment of guns and pump-through tools.	5	5
WCA01.02	The requirements for, and the use of, check valves in coiled tubing operations.	Explain the advantages, disadvantages, positioning and testing of check valves.	5	10
WCA01.03	The requirements for, and the use of, alternative and additional internal well control devices in coiled tubing.	Compare and contrast various coiled tubing alternatives and additional internal well control devices, for example, pump-out devices.	5	5
WCA01.04	The operating principles of coiled tubing strippers.	<p>Explain the operating principles and limitations of coiled tubing strippers including:</p> <ul style="list-style-type: none"> - side door - radial. <p>Explain how to strip and repair, including maximum pressure and differential pressure.</p> <p>L4 specific - Explain as above within high pressure systems.</p>	5	10
WCA01.05	The minimum barriers requirements and shear capability for any given run configuration.	Analyse given well data and explain the stack-up needed to fit in with the two barrier philosophy.	10	10
WCA01.07	The cycles on a coil and the material specifications with respect to fatigue and whether or not they are suitable for the job.	Explain the limits associated with running coil tubing in different operations, for example, rig versus semi-submersible.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Blow Out Preventers				
WCA02.01	The operating principles of coiled tubing BOPs.	<p>Explain the use and limitations of coiled tubing BOPs including:</p> <ul style="list-style-type: none"> - quad type - combi-type - shear/seal - triple combi BOP. <p>For accumulators: Identify them from a given diagram and explain their use.</p> <p>L4 specific - Explain their operating principles and calculate the volume of accumulator fluid using given data.</p>	10	10
WCA02.02	The importance of installing a shear/seal BOP and its' positioning.	Give examples of where to install a shear/seal BOP and explain positioning.	5	10

Ram Type Preventers				
WCA04.01	The BOP equipment, its pressure rating and correct installation procedure and use.	<p>Explain the operating principles such as closing and operating sequences, well pressure assistance on the closure, operating pressures, lining up and hydraulic connections.</p> <p>Compare and contrast the different ram types in use for various operations such as shear, blind, pipe, pipe-slip, shear/seal and slip rams.</p>	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WCA04.03	The defects within the BOP that could affect the function of the part(s).	Identify critical seals and parts that may have failed through wear from given examples and explain the importance of replacing them. Solve the problems. L4 specific - Assess the underlying issues.	5	10
WCA04.04	How to assess the extent of any damage to the equipment and take the correct action.	Identify damage to the equipment from given examples including lubricators, risers and ram blocks. L4 specific - Explain the correct action to take.	5	10
WCA04.05	Non-shearable components in the string.	Identify the non-shearable components from given examples. L4 specific - Explain the consequences of non-shearable components in the string.	5	5

RIGGING UP				
WCD01.01	The items of a specified rig-up which need to be properly checked and prepared before installation, particularly critical sealing surfaces.	Analyse a given specification for a rig-up and explain the proper preparation procedure for the equipment. L4 specific - Write/prepare the procedure.	5	10
WCD01.02	The adapters, connectors and flanged connectors needed to ensure compatibility between the equipment in use.	Analyse given information of the installation, assess which equipment is needed to complete a competent hook-up and explain why.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WCD01.03	Coiled tubing stripper sealing elements and how to install and operate them correctly.	Explain the operating principles of a coiled tubing stripper, for example, well pressure assistance on closing, operating pressures, hydraulic connections and contamination/chemical issues.	3	5
WCD01.04	Defects during a packing element change that can affect the function of the part(s).	Identify critical seals that may have failed and explain the importance of replacing them.	5	5
WCD01.05	The function, positioning and use of valves in relation to pressure control.	<p>Explain the correct operation and use of primary pressure control valves, their location, operating mechanisms and number.</p> <p>L4 specific - Analyse which valve to use in a given situation.</p>	5	5
WCD01.06	The principles of adjustable and fixed chokes, when they should be used and their function.	<p>Compare and contrast the different choke types, their use and their positioning.</p> <p>Explain how to install them.</p> <p>L4 specific - Explain their positioning.</p>	5	5
WCD01.07	The need to maintain a double barrier when changing stripper rubber during intervention.	Explain the criteria for maintaining a double barrier when changing stripper rubber during intervention.	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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TESTING				
WCE01.01	The requirements for pressure testing.	<p>Analyse given details of a specific operation including surface or sub-surface equipment and explain correct pressure testing procedure including low and high pressure testing.</p> <p>Explain how to pressure test, including dangers and limitations.</p> <p>L4 specific - Explain the test sequence.</p>	5	5
WCE01.02	The correct test procedures.	<p>Analyse a given diagram of a specific equipment arrangement and explain test procedures. Include how to pressure test a BOP consistent with the direction of the well bore flow.</p> <p>Explain how to test.</p> <p>L4 specific - Explain the full test procedure.</p>	5	10
WCE01.03	How pressure control equipment can be pressure tested with coil tubing in place.	<p>Explain the pressure testing procedure for pressure control equipment with coil tubing in place.</p> <p>Explain how to test.</p> <p>L4 specific - Explain the full test procedure.</p>	5	5

BARRIER PRINCIPLES				
WCF01.01	The mechanical barriers used in coiled tubing operations.	Compare and contrast the different types of mechanical barriers.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WCF01.03	Primary, secondary and shearing devices.	Explain how the barriers operate using a given example.	5	10
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CONTINGENCY PROCEDURES				
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WCG01.01	The correct action to take when there is a failure in the power unit, injector head, tubing reel or control system.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well. Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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WCG01.02	The correct action to take when there is a failure in the pumping or circulation system.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well. Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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WCG01.03	The correct action to take when there is a leak in the tubing above the stripper.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well. Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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WCG01.04	The correct action to take if there is an external leak in the riser stack below the safety head while tubing is below the Downhole Safety Valve (DHSV).	<p>Explain the correct action to take to make the operation safe while maintaining control of the well with two barriers.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WCG01.05	The correct action to take if there is a leak in the coil tubing above the check valve.	<p>Explain the action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WCG01.06	The correct action to take if there is a leak in the tubing below the stripper.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WCG01.07	The correct action to take if there is a general muster alarm while coiled tubing is in the well.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WCG01.08	The correct action to take if the coil tubing parts.	<p>Explain the correct action to take to make the operation safe if the coil tubing parts.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WCG01.09	The correct action to take if there is a leak at the rotating joint.	<p>Explain the correct action to take to make the operations safe if there is a leak at the rotating joint.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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SHUT-IN PROCEDURES				
WCH01.01	How to shut in the well quickly and safely according to the selected procedure, with or without coiled tubing in the hole.	Explain the procedures to shut in the well safely during a coiled tubing intervention operation.	5	10
WCH01.02	How to calculate Shut in Coiled Tubing Pressure (SICTP).	Calculate SICTP and differential pressure using given well data.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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SNUBBING OPERATIONS				
PRESSURE CONTROL EQUIPMENT				
Snubbing Blowout Preventers				
WSA02.01	The operating principles of snubbing BOPs.	<p>Explain the operating principles and limitations of:</p> <ul style="list-style-type: none"> - annular BOPs - stripping BOPs - ram type (safety) BOPs - blind/shear BOPs - shear BOPs. <p>Explain when to use accumulators.</p> <p>L4 specific - Explain the operating principles and limitations of accumulators. Calculate the volume of accumulator fluid using given data.</p>	10	10
WSA02.02	The reasons for changing worn elastomers and temporary suspension of work.	<p>Explain the steps to take to make the well safe when hanging off including:</p> <ul style="list-style-type: none"> - changing the annular element - changing the stripper ram inserts - shutting down for the night. <p>Explain the importance of maintaining two barriers at all times.</p>	10	10
WSA02.03	When a blind shear BOP should be installed.	Explain when and where a blind shear BOP should be installed.	10	10
WSA02.04	The well intervention operations that can be carried out with a given equipment rig-up.	Analyse which operations can, or cannot, be carried out using a specific equipment rig-up. Include reference to wellhead pressure.	4	4

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Ram Type Preventers				
WSA04.02	The BOP ram equipment, its pressure rating and correct installation procedure and use.	<p>Explain the operating principles, for example, closing and operating sequences, well pressure assistance on the closure, operating pressures and lining up and hydraulic connections.</p> <p>Analyse the different ram types in given examples such as shear, blind, blind/shear, pipe, variable bore, and eccentric pipe and slip rams.</p>	5	5
WSA04.03	When the ram equipment must be changed for a specific operation.	Analyse which ram equipment has to be changed and explain why using it, given the pressure control configuration, a description of the on-going operations and a description of the next operation.	4	4
WSA04.04	Defects during a BOP element change that could affect the function of the part(s).	Identify critical seals and parts from a given example that may have failed through wear and explain why they need replacing.	5	5
WSA04.05	How to assess any damage to the equipment and the correct action to take.	Explain the effects of damage to the equipment, for example, lubricators, risers and ram blocks. Identify the correct action to take.	5	5
WSA04.06	Non-shearable components in the string.	<p>Identify the non-shearable components from the given examples.</p> <p>L4 specific - Explain the consequences of non-shearable components in the string.</p>	3	5

Seals and Sealing Elements				
WSA05.01	The operating principles of stripper rams and annular BOPs and other ram BOP sealing elements.	Explain the operating principles, shear ram volume and pressure limitations of stripper rams and annular BOPs - both single and dual.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WSA05.02	The installation and correct operation of sealing elements.	Analyse different types of sealing elements using schematic drawings and explain their correct installation and operation, including any lubrication.	5	5
WSA05.03	Defects, during a packing element change, that could affect the function of the part(s).	Identify critical seals that may have failed through wear using a given example and explain why they need to be replaced.	5	5
WSA05.04	The philosophy of maintaining a double barrier when changing the annular element during intervention.	Explain how to maintain a double barrier philosophy when changing the annular element during intervention and give examples of barriers.	10	10

Valves				
WSA06.01	The function, positioning and use of valves in relation to pressure control.	Explain the correct operation and use of primary pressure control valves, their location, operating mechanisms, number, bleed-off equalising, choke and kill lines.	5	5
WSA06.02	The need for and the use of back pressure valves in snubbing operations.	Explain the advantages, and disadvantages of back pressure valves, what they are used for and why. L4 specific - Explain the positioning and testing of back pressure valves.	5	5
WSA06.03	The need for and the use of alternative and additional internal well control devices in snubbing operations.	Compare and contrast the use of various alternative and additional internal well control devices, for example, stabbing valves, BOPs, pump down plugs and pump out devices. L4 specific - Explain how to position the devices in the string and justify reasoning.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WSA06.04	The principles of adjustable and fixed chokes, when they should be used and their function.	Compare and contrast the use and operation of different choke types. L4 specific - Explain their position in the string and how to equalise and bleed-off.	3	5
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RIGGING-UP PROCEDURE				
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WSD01.01	The items of a specified rig-up that require to be properly checked and prepared before installation, particularly critical sealing surfaces.	Analyse a given specification for a rig-up and explain the correct preparation procedure for the equipment.	3	5
WSD01.02	The adapters, connectors and flanged connectors needed to ensure compatibility between the equipment in use.	Analyse given information of the installation, explain which equipment is needed to complete a competent hook-up and how to assemble it. L4 specific – Justify the choice of equipment.	5	5

TESTING				
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WSE01.01	The requirements for pressure testing.	Analyse given details of a specific operation, including surface or sub-surface equipment and explain the pressure testing procedure, including low and high pressure testing, hazards and limitations. L4 specific - Explain the test sequence.	10	10
WSE01.02	The correct test procedures for a given equipment rig-up.	Analyse given information on specific equipment rig-ups and explain the test procedures. L4 specific - Specify the full test procedure.	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WSE01.03	How pressure control equipment can be pressure tested with tubulars in place.	<p>Explain the pressure testing procedure for pressure control equipment with tubulars in place.</p> <p>L4 specific - Explain the full test procedure.</p>	5	5
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BARRIER PRINCIPLES				
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WSF01.01	The mechanical barriers used in snubbing operations.	Compare and contrast the different types of mechanical barriers used in snubbing operations.	5	5
WSF01.03	The principle of grouping barriers into primary, secondary and shearing devices.	Identify the primary, secondary and shearing devices from a given surface rig-up and well system diagram. Explain how the barriers operate, using the diagram.	5	5

CONTINGENCY PROCEDURES				
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WSG01.01	The correct action to take when there is a power unit or hydraulic circuit failure while downhole or tripping.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10
WSG01.02	The correct action to take when there is a slip bowl failure.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WSG01.03	The correct action to take when there is an annular element failure.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10
WSG01.04	The correct action to take when there is an external leak not controllable with the BOP stack.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10
WSG01.05	The correct action to take when pressure is seen at surface inside the work string.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10
WSG01.06	The correct action to take when there is a leak in the stripper BOP ram.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain preventative measures.</p> <p>L4 specific - Assess the impact on the overall operation.</p>	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WSG01.07	How to detect a string washout and the consequences.	Explain how to detect a washout, the steps that must be taken to isolate it and how to get out of the hole again.	10	10
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SHUT-IN PROCEDURES				
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WSH01.01	How to shut in the well quickly and safely according to the selected procedure, with or without tubing in the hole.	Explain the procedures to shut in the well safely during a given operation.	10	10
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OPERATING PROCEDURES				
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WSI01.01	How to calculate pipe forces.	Calculate: - balance point - pipe light and pipe heavy- transition from light to heavy. L4 specific - Validate the accuracy of the calculations.	5	5
WSI01.02	The advantages and disadvantages of forward and reverse circulation.	Compare and contrast forward and reverse circulation.	5	5

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WIRELINE OPERATIONS

PRESSURE CONTROL EQUIPMENT

Surface Equipment

WWA01.01	The specialised equipment related to pressure control during wireline operations.	Explain the function of surface pressure control equipment and tools specific for wireline operations including: - slick line - braided line - electric line.	5	5
WWA01.02	The correct function and method of installation of surface pressure control components required for the operation.	Identify surface pressure control components in a hook-up from a given stack configuration and explain the correct test procedures. L4 specific - Validate the test results.	5	5
WWA01.03	Potential problems with space-out and configuration when positioning wireline BOPs.	Analyse a given example of wireline BOP space-out and configuration and identify potential problems.	5	5
WWA01.06	The function of a grease control head.	Explain the function of a grease control head and the correct steps to take if it is not working.	10	10
WWA01.07	The function of a stuffing box.	Explain the function of a stuffing box and the correct steps to take if it is working.	10	10
WWA01.08	The function of a ball check valve.	Describe when and why a ball check valve would be installed in a pressure control system.	10	10

Slick Line/Braided Line Shear Seal BOP

WWA02.01	The principles and operation of a slick line BOP.	Explain the operating principles for: - normal operations - weep hole.	5	5
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New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WWA02.02	The principles of pressure/inflow testing the slick line wireline BOP.	Explain the correct method to test the slick line BOP to comply with the principle of 'double barrier protection' including low and high pressure testing, hazards and limitations.	10	10
WWA02.03	The principles of operation of a braided line/e-line BOP.	Explain the operating principles for: - normal operations - weep hole. Explain why inverting is used.	5	5
WWA02.04	The principles of pressure/inflow testing the braided line/e-line wireline BOP.	Explain the correct method to test the braided line/e-line wireline BOP to comply with the principle of 'double barrier protection'. Explain low and high pressure testing, hazards and limitations.	10	10
WWA02.05	The well intervention operations can be carried out with a given stack configuration.	Analyse which operations can or cannot be carried out using a given specific equipment rig-up (surface equipment diagram) covering: - slick line - braided line - electric line.	5	5
WWA02.06	How double barriers must be maintained throughout wireline intervention operations.	Explain the minimum rig-up requirements to install and maintain a double barrier.	10	10
WWA02.08	The principles of operation of a shear/seal BOP.	Explain what the shear/seal BOP can and cannot cut and how to do it. L4 specific - Explain the consequences of fall-back of wire (below the Christmas Tree).	10	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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Wireline Pressure Control Equipment, Pressure Retention				
WWA07.01	Sealing elements and know how to operate them correctly.	<p>Explain how to correctly install and use sealing elements including using lubrication.</p> <p>L4 specific - Explain the operating principles, for example, well pressure assistance on closing, operating pressures, hydraulic connections and contamination/chemical issues.</p>	5	5
WWA07.03	When to change the ram equipment for a specific operation.	Analyse which ram equipment has to be changed and why.	4	4
WWA07.04	How to identify, during a BOP element inspection, defects that could affect the integrity.	Identify critical seals and parts that may have failed through wear from a given schematic drawing and explain why they need replacing.	3	5
WWA07.05	How to assess the extent of any damage to the equipment and the correct action to take.	Assess the effects of damage to equipment, for example, lubricators, risers and ram blocks and explain how to rectify this.	5	5
WWA07.06	The term "explosive decompression".	Explain "explosive decompression" and how to recognise it.	3	3
WWA07.07	The limitations of shear ram equipment.	Give examples of some of the limitations of shear ram equipment.	4	4

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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RIGGING-UP				
WWD01.01	The items of a specified rig-up that need to be properly checked and prepared before installation, particularly critical sealing surfaces.	Explain the correct preparation procedure for the equipment using a given specification for a rig-up checking: <ul style="list-style-type: none"> - equipment specific for service - compatibility - make-up - quality assurance/quality control. 	5	5
WWD01.02	The adapters, connectors and flange connectors needed to ensure compatibility between the equipment in use.	Analyse given information of the installation and explain which equipment is required to complete a competent hook-up. L4 specific - Validate the test results.	5	5
WWD01.03	Critical isolation requirements.	Explain the required isolation from plant and process <ul style="list-style-type: none"> - how to isolate, why and when. 	4	10

TESTING				
WWE01.01	Safe practice for bleeding-down pressure control equipment on land or offshore into the atmosphere or using temporary or fixed flare stacks.	Explain safe practice for bleeding-down pressure control equipment into the atmosphere or using temporary or fixed flare stacks.	5	10
WWE01.02	The need for certification and compatibility for the intended use.	Explain the need for equipment certification, what needs to be certified and how to ensure it is compatible with other equipment uses.	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
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WWE01.03	The requirements for pressure testing.	<p>Analyse given details of a specific operation, including wire in place, and explain correct testing procedure including low and high pressure testing, hazards and limitations.</p> <p>L4 specific - Explain the test sequence for high and low pressure testing using details of a given operation.</p>	5	5
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BARRIER PRINCIPLES				
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WWF01.01	The mechanical barriers used in wireline and braided line/e-line operations and how two barriers can be maintained at all times.	Compare and contrast the different types of mechanical barriers.	5	5
WWF01.03	Primary and secondary barriers and shearing devices.	Identify the barrier elements and the primary and secondary barriers and shearing devices from a given surface rig-up and well system diagram.	5	5

MANAGING A LEAK OR MALFUNCTION ON SURFACE				
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WWG01.01	The correct action to take when there is a leak in the stuffing box during a slick line operation.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
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New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WWG01.02	The correct action to take when there is a leak in pressure control equipment on a slick line operation.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WWG01.03	The correct action to take when there is a leak in the grease injection head on a braided line/e-line operation.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WWG01.04	The correct action to take when there is a cable rupture on a braided line/e-line operation.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WWG01.05	The correct action to take when there is a hydraulic control line leak on the hydraulic master valve.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10

New syllabus category	Learning objective. During this course the student will gain an understanding of:	Learning outcome. By the end of this course the student will be able to:	Importance	
WWG01.06	The correct action to take where there is a hydraulic control line leak on the surface-controlled sub-surface valve.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WWG01.07	The correct action to take when a BOP hydraulic control unit malfunctions.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the preventative measures to take.</p> <p>L4 specific - Assess a given situation and explain the impact on the overall operation.</p>	5	10
WWG01.08	The correct action to take when the slick line/braided line/e-line breaks and falls downhole.	<p>Explain the correct action to take to make the operation safe while maintaining control of the well.</p> <p>Explain the correct process to prepare for a fishing operation.</p>	10	10

CONTINGENCY PROCEDURES

WWL01.01	The correct action to take to test the BOP with test rods.	<p>Explain the correct action to take to test the BOP with test rods in the well.</p> <p>Explain why test rods are engineered and not 'home made'.</p>	3	3
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CRITICAL OPERATING PROCEDURES				
WWK01.01	The importance of drift runs before other downhole operations.	Explain the importance of, on first entering into the well, running a drift (gauge cutter) suitable for the following operations.	5	5
WWK01.02	The importance of ensuring the integrity of the safety valve.	Explain the importance of ensuring that the downhole safety valve is held open and monitored throughout the operation.	4	5