



Programme Specification

SQA Higher National Certificate/Diploma (HNC/HND) in Petroleum Engineering

Contents

Unit Information	2
Programme Structure	2
Scheme of Work.....	14

Template – Unit Action Plan	18
Template – Unit Personal and Professional Development Plan.....	18
Template – Critical Reflections Sheet	21
Template – Progress Review & Tracking Sheet	22
Template – Observation Record	23
Template – Professional Discussion Record	23
Template – Feedback Form	25
Assignment Information	26
Template – Assignment Brief.....	26
Template – Assignment Assessment Sheet	29
Template – Assignment Progress & Tracking Sheet	30
Template – Individual Assessment Plan	31
Template – Individual SMART targets	32



International Business College Manchester

Unit Information

Programme Structure

The HNC in Petroleum Engineering is a national qualification at an intermediate undergraduate level that combines theoretical knowledge with practical and management concepts.

The *HND in Petroleum Engineering* will further develop essential transferable skills required by employers and higher educational institutions.

Both courses are suitable for those who intend to pursue a career in the oil and gas industry. Candidates who successfully achieved the HNC award may work as trainee production, process or field operators in areas of exploration, drilling, production, reservoir management and oil and gas project design. Candidates who successfully achieved the HND award may work as well site engineer, services technicians, process engineering technicians in areas of exploration, drilling, production, reservoir management and oil and gas project design. Students may also go on to study at the final year of BEng Petroleum, Mechanical and other Engineering programmes.

The HNC and HND awards are specially designed to provide candidates with the knowledge and skills required in performing a range of roles within the petroleum and gas engineering industry.

Candidates who successfully achieved the HNC award may gain employment as:

- trainee production engineer assistants
- trainee process engineer operators in production area

Candidates who successfully achieved the HND award may gain employment as:

- (oil)well engineering services technicians
- process engineering technicians in production area
- the HND holders will also have the opportunity to progress to the final year of BEng (Hons) degree courses or to level 7 in some cases in Petroleum Engineering

General aims of the HNC Petroleum Engineering

- 1 To develop candidate knowledge and skills in planning, analysis and evaluation within petroleum engineering.
- 2 To develop employment skills related to the petroleum engineering industries.
- 3 To enable progression within the SCQF.
- 4 To develop study and research skills within the petroleum engineering environment.
- 5 To facilitate access to Higher Education Institutions (HEIs).
- 6 To develop transferable skills, including Core Skills, to levels demanded by employers and for progression to further and/or higher education.
- 7 To develop effective team working skills.
- 8 To develop a range of contemporary vocational skills relating to the use, support and development of systems appropriate to employment at technician or professional level.

Specific aims of the HNC Petroleum Engineering

- 9 To prepare candidates for an appropriate level of employment in petroleum engineering.

- 10 To develop an understanding of exploration and production operations involved in hydrocarbon resource exploitation.
- 11 To develop an understanding of drilling engineering, petroleum production technologies and design requirements.
- 12 To develop a basic understanding of petroleum geology and reservoir engineering.
- 13 To develop an understanding of the key issues within petroleum engineering.
- 14 To introduce the physical and chemical principles utilised within petroleum engineering.

General aims of the HND Petroleum Engineering

(in addition to aims 1–8 above)

- 15 To further develop transferable skills to levels demanded by employers, and for progression to higher education.
- 16 To enhance employability by developing skills and competencies relevant to the petroleum industry.
- 17 To develop cultural empathy, flexibility and change assimilation skills.

Specific aims of the HND Petroleum Engineering

(in addition to aims 9–14 above)

- 18 To develop skills and knowledge in petroleum production systems and data logging.
- 19 To develop an understanding of downhole and topside production techniques and operations.
- 20 To advance existing understanding of drilling techniques, equipment, operations and equipment used to prepare a well for completion.
- 21 To develop an understanding of techniques and equipment used to complete a well for production operations.
- 22 To further develop Core Skills in Communication, Numeracy and Information Technology.
- 23 To develop skills in mathematics.
- 24 To develop competences in line with the regulations and conditions of the UK industry training organisation (OPITO) and the internationally recognised professional institute – the Society of Petroleum Engineers (SPE).
- 25 To develop awareness of stakeholder and societal involvement in environmental issues related to the petroleum industry.

Mapping of aims to mandatory Units

Group Award title: HNC Petroleum Engineering

Unit code	Unit title	Aim														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
DP9M 34	Science Industry: Key Issues		✓	✓	✓		✓	✓	✓	✓					✓	
F52Y 34	Petroleum Engineering: Physics, Mathematics and Chemistry			✓			✓									✓
F530 34	Petroleum Geology and			✓	✓	✓	✓		✓					✓		

	Geophysics: An Introduction														
F533 34	Petroleum Reservoir Engineering: An Introduction	✓	✓	✓	✓	✓	✓			✓	✓		✓		
F52X 34	Oilfield Drilling Techniques and Operations: An Introduction	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			
D77G 34	Communication: Practical Skills		✓	✓	✓		✓	✓							
F546 34	Petroleum Engineering: Graded Unit 1	✓	✓	✓	✓	✓	✓	✓	✓	⊗	⊗	⊗	⊗	⊗	⊗

⊗ = depends on the case study used for the Graded Unit

Group Award title: HND Petroleum Engineering (Aims 1–14)

Unit code	Unit title	Aim													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
D77G 34	Communication: Practical Skills		✓	✓	✓		✓	✓							
DV7J 35	Project Management: Managing the Implementation of a Project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DP9 M 34	Science Industry: Key Issues		✓	✓	✓		✓	✓	✓	✓				✓	
DG4L 34	Mathematics for Engineering 2	✓	✓	✓		✓	✓		✓	✓					
F52Y 34	Petroleum Engineering: Physics, Mathematics and Chemistry			✓			✓								✓
F530 34	Petroleum Geology and Geophysics: An Introduction			✓	✓	✓	✓		✓				✓		
F533 34	Petroleum Reservoir Engineering: An Introduction	✓	✓	✓	✓	✓	✓			✓	✓		✓		
F52X 34	Oilfield Drilling Techniques and Operations: An Introduction	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓
F52W 35	Oilfield Drilling Techniques and Operations		✓	✓	✓		✓		✓	✓	✓	✓			✓
F52T 35	Oil Well Management	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		
F532 35	Petroleum Recovery Techniques		✓	✓	✓	✓	✓		✓	✓	✓		✓		
F531 35	Petroleum Production Processes		✓	✓	✓	✓	✓		✓	✓	✓		✓		
F546 34	Petroleum Engineering:	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	⊗	⊗	⊗	⊗

	Graded Unit 1														
F547 35	Petroleum Engineering: Graded Unit 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

HND Petroleum Engineering (Aims 15 – 25)

Unit code	Unit title	Aim													
		15	16	17	18	19	20	21	22	23	24	25			
D77G 34	Communication: Practical Skills	✓							✓						
DV7J 35	Project Management: Managing the Implementation of a Project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DP9 M 34	Science Industry: Key Issues		✓	✓								✓	✓		
DG4L 34	Mathematics for Engineering 2	✓	✓						✓	✓					
F52Y 34	Petroleum Engineering: Physics, Mathematics and Chemistry	✓	✓	✓	✓										
F530 34	Petroleum Geology and Geophysics: An Introduction	✓													
F533 34	Petroleum Reservoir Engineering: An Introduction		✓	✓	✓	✓									
F52X 34	Oilfield Drilling Techniques and Operations: An Introduction	✓	✓				✓	✓				✓	✓		
F52W 35	Oilfield Drilling Techniques and Operations		✓				✓	✓				✓	✓		
F52T 35	Oil Well Management	✓	✓	✓				✓				✓	✓		
F532 35	Petroleum Recovery Techniques	✓	✓					✓				✓	✓		
F531 35	Petroleum Production Processes	✓		✓			✓	✓							
F546 34	Petroleum Engineering: Graded Unit 1	✓	✓	✓	✓	✓	✓	✓	✓	✓					
F547 35	Petroleum Engineering: Graded Unit 2	✓	✓	✓	✓	✓	✓	✓	✓	✓					

Unit code	Unit title	Communication		Numeracy		IT	Problem solving			Working with others
		Written	Oral	Using graphical info.	Using number		Critical thinking	Planning and Organising	Reviewing and Evaluating	
DP9M 34	Science Industry: Key Issues	✓	✓	✓	✓	✓	✓	✓	✓	
F52Y 34	Petroleum Engineering: Physics, Mathematics and Chemistry	✓		✓	✓	✓	✓	✓	✓	
F530 34	Petroleum Geology and Geophysics: An Introduction	✓		✓	✓	✓	✓	✓		
F533 34	Petroleum Reservoir Engineering: An Introduction	✓	✓	✓		✓	✓	✓	✓	
F52X 34	Oilfield Drilling Techniques and Operations: An Introduction	✓		✓	✓	✓	✓	✓		
D77G 34	Communication : Practical Skills	✓	✓	✓			✓	✓		✓
F546 34	Petroleum Engineering: Graded Unit 1	✓	✓	✓	✓	✓	✓	✓	✓	✓

Enter SCQF level, and ✓ for signposted or E for embedded

Unit code	Unit title	Communication		Numeracy		IT	Problem solving			Working with others
		Written	Oral	Using graphical info.	Using number		Critical thinking	Planning and Organising	Reviewing and Evaluating	
D77G 34	Communication: Practical Skills	✓	✓	✓						
DV7J 35	Project Management: Managing the Implementation of a Project	✓		✓	✓	✓	✓	✓	✓	✓
DP9 M 34	Science Industry: Key Issues			✓			✓	✓	✓	
DG4L 34	Mathematics for Engineering 2			✓	✓	✓	✓	✓	✓	
F52Y 34	Petroleum Engineering: Physics,	✓		✓	✓	✓	✓	✓	✓	

	Mathematics and Chemistry									
F530 34	Petroleum Geology and Geophysics: An Introduction	✓		✓	✓	✓				
F533 34	Petroleum Reservoir Engineering: An Introduction	✓	✓	✓			✓	✓	✓	
F52X 34	Oilfield Drilling Techniques and Operations: An Introduction	✓		✓	✓	✓	✓	✓		
F52 W 35	Oilfield Drilling Techniques and Operations	✓		✓	✓	✓	✓	✓	✓	
F52T 35	Oil Well Management	✓		✓	✓	✓	✓	✓	✓	
F532 35	Petroleum Recovery Techniques	✓	✓		✓	✓	✓	✓	✓	
F531 35	Petroleum Production Processes	✓		✓	✓	✓	✓	✓	✓	
F546 34	Petroleum Engineering: Graded Unit 1	✓	✓	✓	✓	✓	✓	✓	✓	✓
F547 35	Petroleum Engineering: Graded Unit 2	✓	✓	✓	✓	✓	✓	✓	✓	✓

The Programme Structure: Year 1

HNC Petroleum Engineering

Delivery schedule (Please note – the schedule units may be subject to change dependant on local requirements)

2 year 2 semester delivery schedule

COURSE CONTENT

Mandatory Units Group A — 7 HN credits (56 SCQF credit points) required

To attain the Group Award of HNC Petroleum Engineering candidates must achieve 12 HN credits consisting of:

- a) all mandatory Units in *Group A* totalling 7 HN credits
- b) optional Units totalling 5 HN credits selected from *Group B*

Group A

Year 1 Semester 1

	Code	Unit
Science Industry: Key Issues	DP9M 34	1

Oilfield Drilling Techniques and Operations: An Introduction	F52X 34	1
Petroleum Engineering: Graded Unit 1	F546 34	1
Petroleum Geology and Geophysics: An Introduction	F530 34	1
		4/7

Group B

Year 1 Semester 1

Year 1 (HNC) Semester 1	Code	Unit
Mathematics for Science 1	DN8D 33	1
Oil Well Management	F52T 34	1
Process Safety Engineering	F43J 34	1
Petroleum Geology and Geophysics: An Introduction	F530 34	1
		3/5

Year 1 Semester 2

	Code	Unit
Communication: Practical Skills	H7MB 34	1
Petroleum Reservoir Engineering: An Introduction	F533 34	1
Petroleum Engineering: Physics, Mathematics and Chemistry	F52Y 34	1
		3/7

Year 1 Semester 2

	Code	Unit
Environmental Awareness	F2G8 34	1
Computer Aided Draughting for Engineers	DR1X 34	1
Petroleum Production Processes	F531 35	1
Engineering Mathematics 2	H7K1 34	1
		2/5

HND Petroleum Engineering

To attain the Group Award of HND Petroleum Engineering candidates must achieve 30 HN credits consisting of:

- a) all mandatory Units in *Group A* totalling 16 HN credits
- b) optional Units totalling 14 HN credits selected from *Group B*

Group A

Year 1 Semester 1

	Code	Unit
Science Industry: Key Issues	DP9M 34	1
Engineering Mathematics 2	H7K1 34	1
Petroleum Geology and Geophysics: An Introduction	F530 34	1
Oilfield Drilling Techniques and Operations: An Introduction	F52X 34	1
Oil Well Management	F52T 35	1
Project Management: Managing the Implementation of a Project	DV7J 35	2
Petroleum Engineering: Graded Unit 1	F546 34	1
		8/16

Group B

Year 1 Semester 1

	Code	Unit
Process Safety Engineering	F43J 34	1
Engineering Measurement and System Monitoring	DV9P 34	1
Principles of Safe Engineering Systems	F1BY 35	1
Engineering Drawing	DR1W 34	1
Engineering Systems Analysis: System Modelling and Control	F1BV 35	1
Business Awareness and Continuing Professional Development	DG3D 35	1
Work Experience	DV0M 34	1
		7/14

Year 1 Semester 2

	Code	Unit
Communication: Practical Skills	D77G 34	1
Petroleum Engineering: Physics, Mathematics and Chemistry	F52Y 34	1
Petroleum Reservoir Engineering: An Introduction	F533 34	1
Oilfield Drilling Techniques and Operations	F52W 35	1
Petroleum Production Processes	F531 35	1
Petroleum Recovery Techniques	F532 35	1
Petroleum Engineering: Graded Unit 2	F547 35	2
		8/16

Group B

Year 1 Semester 2

	Code	Unit
Environmental Awareness	F2G8 34	1
Computer Aided Draughting for Engineers	DR1X 34	1
Electrical Systems in Potentially Explosive and Gas Hazardous Environments	DN3T 34	1
Fundamental Chemistry: Theory and Practice	DH2K 34	2
Fundamental Concepts of Organic Chemistry	DP2P 34	1
Workplace Communication in English	DE1K 33	1
Working within a Project Team	DH21 34	1
		7/14

The Next intake for this programme will be in September 2014

Entry Criteria

Formal qualifications

To gain entry to HNC Petroleum Engineering, or to the first year of HND Petroleum Engineering, candidate should have:

- a) One National Course at SCQF level 6 in a relevant subject preferably Mathematics or Physics or Chemistry plus four Standard Grades at Credit Level or National Courses at Intermediate 2 at grade C or above

or

- b) A programme of National Units in a suitable subject area eg Engineering or Science at SCQF level 5 and 6

or

- c) Awards from other awarding bodies, provided that the competencies can be identified and matched to the above, including SVQ/NVQs in an appropriate occupational area.

In addition, any appropriate combination of the above qualifications may be acceptable.

Assessment

The purpose of assessment at HND level is to ensure that effective learning of the content of each unit has taken place. Evidence of this learning, or the application of the learning, is required for each unit. A combination of assignment, presentation and exam will be used.

The assessment of the evidence relates directly to the assessment criteria for each unit, supported by the generic grade descriptors. Progress reviews will take place with a designated personal tutor on a regular basis to monitor achievement and development. Intervention strategies will be implemented if a student falls behind the assessment schedule or is failing. In some circumstances non achievement may result in withdrawal from the programme.

The process of assessment can aid effective learning by seeking and interpreting evidence to decide the stage that learners have reached in their learning, what further learning needs to take place and how best to do this. Therefore, the process of assessment should be part of the effective planning of teaching and learning by providing opportunities for both the learner and assessor to obtain information about progress towards learning goals.

International Business College Manchester

Scheme of Work

SVQ BTEC Higher National Certificate/Diploma (HNC/HND) in PETROLEUM ENGINEERING

Oilfield Drilling Techniques and Operations: An Introduction (code: F52X 34) (1 unit)

This unit provides the students with necessary operational skills required in the selection of tools and equipment used in the drilling, well completion, wireline services and maintenance of oil and gas wells.

Learning outcomes

On successful completion of this unit a learner will:

1. recognise different types of drilling contracts
2. be able to identify drilling personnel and describe their responsibilities
3. be able to identify rig types and appreciate the consideration, ***including health and safety***, for rig selection

Oilfield Drilling Techniques and Operations: An Introduction (code: F52W 35) (1 unit)

This unit provides the students with further operational skills required in well control, completion techniques, services and maintenance of oil and gas wells.

Learning outcomes

On successful completion of this unit a learner will:

1. appreciate well control concepts and procedure
2. be able to carry out simple rig math calculations
3. understand rig safety requirements and environmental concerns
4. be able to use software packages in drilling operation design and well control

Week	Details	Assessment
1	<p>Induction</p> <ul style="list-style-type: none"> • An outline of the qualification and the related learner support available (including the Study Guides and essential reading which can be purchased) • The aims of the HND for management development • Expectations of, and benefits to, the individual and where relevant, their employer • Format of the programme – content, hours, attendance, delivery methods, • The assessment requirements, including assessment criteria • Roles and responsibilities of centre staff, learners and BTEC • Learning and study skills, including reference to use of library, internet and any open or on-line learning to be used • Information on tutorial support, advice and guidance, equal opportunities, appeals procedures, authenticity and plagiarism 	Induction Activity
2 3 4	<p>Learning Outcome 1: Recognise different types of drilling contracts</p> <p>Drilling contracts will cover:</p> <ul style="list-style-type: none"> • financial aspects • legal aspects • environmental issues • health and safety issues and • inherent uncertainties associated with the drilling operations 	<p>2 Units, in 1 Workbook, and an Introductory Booklet Study time needed - 10 hours 2 end of session assessment</p> <p>The assessment will test students' communication (oral and written), Numeracy and Problem solving skills</p>
5&6	<p>Learning Outcome 2: Be able to identify drilling personnel and describe their responsibilities</p> <p>The operator drilling personnel: the drilling superintendent; the company man; drilling engineer; geologist</p> <p>Contractor Personnel: the tool pusher; the rig manager; the driller; the drilling crew - a derrick man, rough necks, roustabouts.</p>	<p>3 Units, in 1 Workbook Study time needed - 10 hours 3 end of session assessment</p> <p>The assessment will test students' communication (oral and written), Numeracy and</p>

7&8	Service company personnel – logging, cementing, directional drilling, transportation services	Problem solving skills
9	Learning Outcome 3: Be able to identify rig types and appreciate the consideration, <i>including health and safety</i> , for the selection of	
10	Land rigs (small basic rigs to large rigs) Offshore rigs	

Oilfield Drilling Techniques and Operations: An Introduction (**code: F52W 35**) (1 unit)

2	Learning Outcome 1: appreciate basic well control concepts and procedure	3 Units, in 1 Workbook Study time needed - 10 hours 3 end of session assessment
3	The U-tube concept, gas laws, math basics, Kill Sheet, Driller's Method and Wait & Weight Method of Well Control	
4		The assessment will test students' communication (oral and written) Numeracy and Problem solving skills
5	Learning Outcome 2: be able to carry out simple rig math calculations and use software packages in well design and control	3 Units, in 1 Workbook Study time needed - 30 hours 3 end of session assessment
6	Areas; volume and capacity; units of capacity; hole capacity; pump output calculations; bottoms up or bit to surface time; time for complete circulation;	
		The assessment will test students' communication (oral and written),

7	annular velocity; spotting pills; cementing calculations; single and two stage cementing; liner cementing; balanced cement plugs	Numeracy and Problem solving skills
8	Learning Outcome 3: understand rig safety requirements and environmental concerns	
9		
10		
11-12	Learning Outcome 4: be able to use software packages in drilling operation design and well control Software application	The assessment will test students' communication (oral and written), Numeracy IT and Problem solving skills
	Assessment Review	

Assessment:

- Assessment method: 5 x written assignment (unless otherwise stated).
- All learning outcomes will be assessed.

International Business College Manchester

Template – Unit Action Plan

Oilfield Drilling Techniques and Operations: An Introduction (code: F52X 34) (1 unit): **Unit Action Plan:**

Unit/Assignment Title:

Date	Assignment Task:	Tutor/Assessor	Date Issued:	My Actions <i>What I need to do</i>	Date <i>When do I need to do it by</i>	Notes <i>Did I complete the actions on time? Were there any issues? What do I need to do in future/learn from this?</i>

International Business College Manchester

Template – Unit Personal and Professional Development Plan

PERSONAL AND PROFESSIONAL DEVELOPMENT PLAN

Name

Covering the period fromTo

Planned Outcome: What do I want to achieve at the end of this period? What are my goals? What do I want to be doing?

My Aims: (SMART targets) <i>What do I want to achieve?</i>	How will I do this/what will I need to do?:	What do I need to learn or have training in? What activities can I undertake?	What resources or support will I need to achieve?	How will I know if I have achieved (criteria for success)	Target dates for review and/or completion

--	--	--	--	--	--

Looking at the above, describe the processes and activities to implement this plan and provide a list of your initial actions to take this forward:

Date:

International Business College Manchester

Template – Critical Reflections Sheet

SVQ BTEC Higher National Certificate/Diploma (HNC/HND) in PETROLEUM ENGINEERING

Oilfield Drilling Techniques and Operations: An Introduction (**code:**
F52X 34) (**1 unit**)

CRITICAL REFLECTIONS SHEET

Title of Learning & Development Activity:

Date of activity:

Description of activity:

(what the lesson involved, who the other participants were, what methods were used)

Your learning aims for this activity:

Your learning outcomes from this activity

How will this learning benefit you and improve your knowledge/skills:

(a) in respect of completing your HNC/HND in Petroleum Engineering

(b) in respect of your future career objectives

Is there anything which would have helped your learning?

(anything you could have done? anything your tutor could have done?)

International Business College Manchester

Template – Progress Review & Tracking Sheet

PROGRESS REVIEW AND TRACKING SHEET

Name

Date of Review:	My SMART target	Progress <i>(Where am I up to? Am I where I want to be?)</i>	Actions <i>(What do I need to do next? Is there anything I need to change?)</i>	Date of next review

International Business College Manchester

Template – Observation Record

OBSERVATION RECORD

Candidate Name:	
Unit Title & Number:	
Assessor Name:	
Learner Name:	
Date of Observation:	

Details of Activity Observed:	Learning Outcomes/ Assessment Criteria:

Candidate signatureAssessor signature

Internal Verifier signature (if used as part of the sampling procedure)

SignatureName.....Date.....

International Business College Manchester

Template – Professional Discussion Record

PROFESSIONAL DISCUSSION RECORD

Candidate Name:	
Unit Title & Number:	
Assessor Name:	
Learner Name:	
Date of Observation:	

Details of Discussion:	Learning Outcomes/ Assessment Criteria:

Candidate signatureAssessor signature

Internal Verifier signature (if used as part of the sampling procedure)		
Signature	Name.....	Date.....

International Business College Manchester

Template – Feedback Form

FEEDBACK FORM

Name of Learning & Development Activity:

Name of person conducting the activity/lesson:

Date of activity:

Description of activity:

(what the lesson involved, methods used etc)

Aims of the activity:

Feedback for student:

(Include Time Management, approach/interaction/participation; progress in subject so far and guidance for further progress/pointers to consider)

International Business College Manchester

Assignment Information

Template – Assignment Brief

SVQ BTEC Higher National Certificate/Diploma (HNC/HND) in PETROLEUM ENGINEERING

Oilfield Drilling Techniques and Operations: An Introduction (**code:** F52X 34) (1 unit) **ASSIGNMENT BRIEF**

Aims & Objectives

This assignment fulfils the assessment criteria of SVQ BTEC in respect of Unit for the HNC/HND in Petroleum Engineering.

This assignment aims to help you become confident in managing your own personal and professional skills to achieve personal and career goals.

The assignment will test students' communication (oral and written), Numeracy, IT and Problem solving skills

Assessment Methods

Reports, templates, critical reflections, observation of group activity and presentation

(Work product evidence in the form of your personal portfolio will also be assessed as part of this unit)

Drawing on your studies of this subject and using your own workplace experiences or the work role you have selected, please complete all of the tasks below:

1. Describe the major steps in a typical exploration programme and highlight different types of drilling contracts.

Your description needs to include an evaluation of the different consultation with the geologists to identify major sedimentary basins. You should also highlight different types of drilling contracts

2. Mention personnel in a typical drilling operation and describe their responsibilities
3. Highlight different rig types and describe the criteria for the selection of a rig
4. State the functions and components of a blow out preventer (BOP) system
5. *State how the following could be affected in a typical well control incident*

- Personal wellbeing
 - Personal injury
 - Employment
 - Environment
 - Reputation
 - Society.
6. Highlight the major effects of a well control incident on:
 - Capital loss
 - Over regulation
 - Suspension of drilling
 - Limiting areas of operations, for example, in the Arctic.
 7. What is formation pressure and abnormal formation pressure?
 Explain which parameters are important to monitor and why, including mud density, flow and pit levels.
 8. Explain fracture pressure in simple terms and describe the effect of putting too much pressure on a formation.
 9. What is primary well control?
 10. What is an influx?
 11. The following hole data are provided
 - Hole data
 - 95/8" casing (ID 8.681") set at 12,500'
 - 81/2" open hole drilled to 15,000'
 - Drill string data
 - 6" drill collar (ID 2.5") length 800'
 - 5" HWDP (ID 3") length 750'
 - 5" drill pipe (ID 4.276")

Calculate:

- a) Drill string capacity in barrels
 - b) Annular capacity in barrels
 - c) Total capacity in barrels
12. Simulation experiment exercise and presentation

Your group will be asked to work together in the design of a typical drilling program. You will be observed on this exercise, taking into account your team working, communication, time management, IT and problem solving skills. You will then need to give a presentation to the rest of the group in which you describe the problem, your role in the exercise and the problem solving techniques used.

To support your exercise and presentation, provide a copy of the presentation and any supporting notes. Include details of the problem solving techniques used and an evaluation of the time management strategies you looked at.

Grading System:

For a Pass

Sections need to be thorough and able to demonstrate a clear understanding of the concepts outlined in the specification. Information needs to be accurate and current and relevant in depth and breadth; there needs to be an ability to relate theory to practice (using some real work examples). Candidates need to communicate well and demonstrate good time management skills. They need to demonstrate an ability to analyse and evaluate concepts.

For a Merit

All sections need to be thorough and able to demonstrate a clear understanding of the concepts outlined in the specification. Information needs to be substantial in depth and breadth, current and relevant with a clear grasp of concepts and the ability to relate theory with practice (using real work examples). There needs to be evidence of the use of a range of sources of information. Candidates need to demonstrate an ability to communicate clearly, to construct and sustain an argument and demonstrate good time management skills. They need to demonstrate critical thought and perceptiveness and be capable of analysing and evaluating concepts.

For a Distinction

All sections must be thorough and able to demonstrate a clear understanding of the concepts outlined in the specification. Information needs to be comprehensive in depth and breadth, current and relevant with a clear grasp of concepts and an ability to interrelate theory and practice (with use of real work examples). Candidates need to demonstrate a high degree of communication and fluency of expression. Good communication and time management skills need to be evidenced along with an outstanding ability to analyse and evaluate concepts and consider contradictions. There should be evidence of a high order of originality, perceptiveness and critical thought.

For a Referral, *the information provided would be limited and inadequate or inaccurate. There would be a failure to comprehend relevant concepts and an inability to relate theory to practice. There would be simply a description rather than any type of analysis and work would demonstrate a lack of coherence and an inability to construct and sustain an argument.*

International Business College Manchester

Template – Assignment Assessment Sheet

SVQ BTEC Higher National Certificate/Diploma (HNC/HND) in PETROLEUM ENGINEERING

Oilfield Drilling Techniques and Operations: An Introduction (**code:**
F52X 34) (**1 unit**)

ASSIGNMENT ASSESSMENT SHEET

Student's Name _____

Unit/Assignment Title _____

Date Issued _____

Date to be returned _____

Formative assessment to take place _____

Plagiarism is the act of passing off someone else's ideas or work as your own. It is a serious disciplinary offence

"I confirm that the assignment which I have submitted is all my own work and the source of any information or material I have used (including the internet) has been fully identified and properly acknowledged"

Signed _____

Date _____

Date received _____

Name of assessing tutor _____

GRADE

Referred / Pass / Merit / Distinction

Date returned to student _____

COMMENTS FOR STUDENT

Signature of Tutor _____

Date for resubmission (if applicable) _____

International Business College Manchester

Template – Individual Assessment Plan

INDIVIDUAL ASSESSMENT PLAN

Participant/Student Name	
Programme/Group Title	
Unit Title	
Assignment Brief	
Task Brief (Assessment activity description)	
Date/time of Assessment Activity:	
Location of Assessment Activity	
Assessment methods to be used for	
Are other people involved in this assessment? Have they been involved in the arrangements? (<i>Give details</i>)	
Arrangements for feedback to student	

Assessment Plan agreed by:

Student signature

.....Date.....

Assessor Signature

.....Date.....

International Business College Manchester

Template – Individual SMART targets

NAME:

QUALIFICATION:

DATE:

MY SMART TARGETS FOR MY QUALIFICATION:

(SPECIFIC, MEASURABLE, ACHIEVABLE, REALISTIC, TIMELY)

MY PLANS FOR REVIEWING THESE TARGETS: