

# COURSE OVERVIEW DE0844 Advanced Cementing and Completion Design & Operations

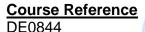
#### **Course Title**

Advanced Cementing and Completion Design & Operations

#### **Course Date/Venue**

Session 1: February 04-08, 2024/The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE

Session 2: March 03-07, 2024/Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

#### **Course Description**

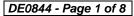






This course is designed to provide participants with a detailed and up-to-date overview of advanced cementing and completion design and operations. It covers the firm foundation in planning, designing, execution and evaluation for a successful cementation; the planning and design consideration covering the essential requirement for a successful primary and secondary cementation; the slurry design and rheology and well parameters to be considered for cementation; the preparation and execution of well successfully; the design and factors to be considered for cementing under loss situation and cementing of well with gas migration; the potential complication and remedies during cementation; and the critical cementation during planning and designing of linear, stage and horizontal well cementing.

Further, this course will also discuss the techniques of cement job and cement bond tool; the high performance light weight slurries, advancement and H.P.H.T cementing technology and equipment; the thermal cementing; the types and objective of completion operations according to reservoir and production data; the natural flow and artificial lift including single, dual gas lift and ESP well completion; the completion equipment, completion fluid and pressure test function; the main factors influencing completion design as well as well head valves types and applications; the overall approach to a well's flow capacity; and the major types of completion configurations.













During this interactive course, participants will learn the main phases in completion and considerations, completion equipment, completion fluid, pressure test function, drilling and casing the pay zone; the perforating, treating the pay zone, the special case of horizontal wells, production wellhead and production string or tubing; the tubing specification as well as thread, grade, weight and material; the packers, downhole equipment, subsurface safety valves, running procedure, artificial lift and gas lift; the artificial lift process, completion management and artificial lift operations in open and cased holes; the designing and material selection for sweet and sour gas; the equipment and tender document evaluation; the main types of well servicing and workover, light well servicing, heavy servicing and workover operations on live wells; the servicing and workover operations on killed wells; the deviated, multiple zone, subsea, horizontal, multilateral and HPHT completion; and the well stimulation, hydraulic fracturing and acid stimulation.

#### **Course Objectives**

Upon the successful completion of this course, each participant will be able to:-

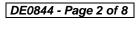
- Apply and gain an advanced knowledge on cementing and completion design and operations
- Build a firm foundation in planning, designing, execution and evaluation for a successful cementation
- Determine planning and design consideration covering the essential requirement for a successful primary and secondary cementation
- Discuss slurry design and rheology and well parameters to be considered for cementation
- Prepare and execute well successfully
- Recognize the design and factors to be considered for cementing under loss situation and cementing of well with gas migration
- Identify the potential complication and remedies during cementation
- Explain critical cementation during planning and designing of linear, stage and horizontal well cementing
- Evaluate and interpret the techniques of cement job and cement bond tool
- Describe the high performance light weight slurries, advancement and H.P.H.T cementing technology and equipment
- Employ thermal cementing in a professional manner
- Discuss the types and objective of completion operations according to reservoir and production data
- Interpret natural flow and artificial lift including single, dual gas lift and ESP well completion
- Identify completion equipment and completion fluid, pressure test function
- Identify main factors influencing completion design as well as well head valves types and applications















- Apply overall approach to a well's flow capacity and recognize the major types of completion configurations
- Determine main phases in completion and considerations, completion equipment, completion fluid, pressure test function, drilling and casing the pay zone
- Discuss perforating, treating the pay zone, the special case of horizontal wells, production wellhead and production string or tubing
- Explain tubing specification as well as thread, grade, weight and material
- Discuss packers, downhole equipment, subsurface safety valves, running procedure, artificial lift and gas lift
- · Choose an artificial lift process and apply completion management and artificial lift operations in open and cased holes
- Use API designing and material selection for sweet and sour gas
- Order the equipment and evaluate tender document as well as design, plan, execute open hole and cased hole completion and prepare well program
- Coordinate with logistic and service companies, run completion string on site according to sequence of well procedure and HSE and optimize operational steps in the completion program
- Identify the main types of well servicing and workover, light well servicing, heavy servicing and workover operations on live wells and servicing and workover operations on killed wells
- Discuss deviated, multiple zone, subsea, horizontal, multilateral and HPHT completion
- Illustrate well stimulation, hydraulic fracturing and acid stimulation

#### **Exclusive Smart Training Kit - H-STK®**



Participants of this course will receive the exclusive "Haward Smart Training Kit" (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes electronic version of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a Tablet PC

#### **Who Should Attend**

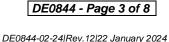
This course provides an overview of all significant aspects and considerations of advanced cementing and completion design and operations for supervisors, senior engineers, cementing engineers, drilling engineers, drilling engineers, mud representatives, workover and completions personnel, drilling contractors, cement company personnel and for those who are responsible for the design, planning, implementation and evaluation of a well cementing program



















#### Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

#### **Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations:-



The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the ANSI/IACET 2018-1 Standard which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET 2018-1 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award 3.0 CEUs (Continuing Education Units) or 30 PDHs (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.



#### British Accreditation Council (BAC)

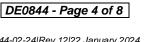
Haward Technology is accredited by the British Accreditation Council for Independent Further and Higher Education as an International Centre. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.















## **Course Instructor(s)**

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Konstantin Zorbalas, MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with over 25 years of offshore and onshore experience in the Oil & Gas, Refinery & Petrochemical industries. His wide expertise includes Workovers & Completions, Petroleum Risk & Decision Analysis, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Stimulation Operations, Reserves Evaluation,

Reservoir Fluid Properties, Reservoir Engineering & Simulation Studies, Reservoir Monitoring, Artificial Lift Design, Gas Operations, Workover/Remedial Operations & Heavy Oil Technology, Applied Water Technology, Oil & Gas Production, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Production Optimization, Well Completion Design, Sand Control, PLT Correlation, Slickline Operations, Acid Stimulation, Well testing, **Production Logging, Project Evaluation & Economic Analysis.** Further, he is actively involved in **Project Management** with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the Senior Petroleum Engineer & Consultant of National Oil Company wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a Senior Production Engineer, Well Completion Specialist, Production Manager, Project Manager, Technical Manager, Technical Supervisor & Contracts Manager, Production Engineer, Production Supervisor, Production Technologist, Technical Specialist, Business Development Analyst, Field Production Engineer and Field Engineer. He worked for many world-class oil/gas companies such as ZADCO, ADMA-OPCO, Oilfield International Ltd, Burlington Resources (later acquired by Conoco Phillips), MOBIL E&P, Saudi Aramco, Pluspetrol E&P SA, Wintershall, Taylor Energy, Schlumberger, Rowan Drilling and Yukos EP where he was in-charge of the design and technical analysis of a gas plant with capacity 1.8 billion m3/yr gas. His achievements include boosting oil production 17.2% per year since 1999 using ESP and Gas Lift systems.

Mr. Zorbalas has Master and Bachelor degrees in Petroleum Engineering from the Mississippi State University, USA. Further, he is an SPE Certified Petroleum Engineer, Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer by the Institute of Leadership & Management (ILM), an active member of the Society of Petroleum Engineers (SPE) and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.



















#### **Training Methodology**

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures

20% Practical Workshops & Work Presentations

30% Hands-on Practical Exercises & Case Studies

20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

#### **Accommodation**

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

#### **Course Fee**

Dubai	<b>US\$ 8,000</b> per Delegate + <b>VAT</b> . This rate includes H-STK <sup>®</sup> (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	<b>US\$ 8,500</b> per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

#### **Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

#### Day 1

0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0930	Essential Requirement for a Successful Cementation - Primary & Secondary
0930 - 0945	Break
0945 - 1100	Slurry Design & Rheology
1100 - 1200	Well Parameters to be Considered for Cementation
1200 - 1230	Preparation of Well & Successful Execution
1230 - 1245	Break
1245 - 1330	Well Parameters to be Considered for Cementing Under Loss Situation
1330 – 1420	Design & Factors to be Considered for Cementing of Well With Gas
	Migration
1420 - 1430	Recap
1430	Lunch & End of Day One



















# Day 2

0730 - 0830	Planning & Design of Linear Cementation
0830 - 0930	Planning & Design of Stage Cementation
0930 - 0945	Break
0945 - 1100	Planning& Design of Horizontal Well Cementing
1100 - 1230	Cement Bond Tool & Techniques
1230 - 1245	Break
1245 - 1330	Cement Bond Interpretation
1330 - 1420	High Performance Light Weight Slurries
1420 - 1430	Recap
1430	Lunch & End of Day Two

#### Day 3

Day 3	
0730 - 0800	H.P.H.T Cementing Technology
0800 - 0830	Thermal Cementing
0830 - 0900	Types & Objective of Completion Operations According to Reservoir &
	Production Data
0900 - 0930	Natural Flow & Artificial Lift Including Single, Dual Gas Lift, ESP Well
	Completion
0930 - 0945	Break
0945 - 1030	Main Factors Influencing Completion Design
1030 - 1100	Well Head Valves Types & Applications
1100 - 1130	Overall Approach to a Well's Flow Capacity
1130 - 1230	Major Types of Completion Configurations
1230 – 1245	Break
1245 - 1330	Main Phases in Completion & Considerations
1330 - 1420	Completion Equipment & Completion Fluid, Pressure Test Function
1420 - 1430	Recap
1430	Lunch & End of Day Three

### Day 4

Day 4	
0730 - 0800	Drilling & Casing the Pay Zone
0800 - 0815	Perforating
0815 - 0830	Treating the Pay Zone
0830 - 0900	The Special Case of Horizontal Wells
0900 - 0915	The Production Wellhead
0915 - 0930	The Production String or Tubing
0930 - 0945	Break
0945 - 1000	Tubing Specification as Thread, Grade, Weight & Material
1000 - 1015	Packers
1015 - 1030	Downhole Equipment
1030 - 1045	Subsurface Safety Valves
1045 - 1100	Running Procedure
1100 – 1130	Artificial Lift: Pumping
1130 – 1200	Gas Lift
1200 - 1230	Choosing an Artificial Lift Process
1230 – 1245	Break
1245 - 1330	Completion Management Artificial Lift Operations in Open & Cased Holes
1330 - 1420	Use API in Designing & Material Selection for Sweet & Sour Gas
1420 - 1430	Recap
1430	Lunch & End of Day Four



















#### Day 5

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0730 - 0800	Order the Equipment & Evaluate Tender Document
0800 - 0900	Design, Plan, Execute Open Hole & Cased Hole Completion
0900 - 0930	Prepare Well Program
0930 - 0945	Break
0945 - 1000	Coordinate with Logistic & Service Companies
1000 - 1015	Run Completion String on Site According to Sequence of Well Procedure & HSE
1015 - 1030	Optimize Operational Steps in the Completion Program
1030 - 1045	Main Types of Well Servicing & Workover
1045 - 1100	Light Well Servicing & Workover Operations on Live Wells
1100 – 1115	Heavy Servicing & Workover Operations on Live Wells
1115 – 1130	Servicing & Workover Operations on Killed Wells
1130 - 1145	Servicing & Workover Special Cases
1145 – 1200	Deviated, Multiple Zone, Subsea, Horizontal, Multilateral & HPHT Completion
1200 - 1230	Well Stimulation
1230 - 1245	Break
1245 - 1300	Hydraulic Fracturing
1300 - 1345	Acid Stimulation
1345 – 1400	Course Conclusion
1400 – 1415	POST TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

# **Practical Sessions**

This practical and highly-interactive course includes real-life case studies and exercises:-



# **Course Coordinator**

Kamel Ghanem, Tel: +971 2 30 91 714, Email: kamel@haward.org















