

COURSE OVERVIEW DE0100
Workovers & Completion

Course Title

Workovers & Completion

Course Date/Venue

Please refer to page 3

Course Reference

DE0100

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is primarily designed for drilling, production and completion engineers and supervisors needing a practical understanding and an appreciation of well completion design and operations, well stimulation and work over planning. It explains how completion configurations are varied to meet well objectives and to maximize well productivity. Design concepts and methods are presented together with downhole tools and their selection criteria.



Completion types and design for vertical, horizontal and multilateral wells, design and optimization of tubing based on tubing performance analysis (Inflow performance analysis, liquid and gas hold up during fluid flow and forces on tubing), downhole equipment, tubing accessories, wellhead equipment including sub sea completion. Also, fluid flow through perforations and perforation techniques; communication tests; wireline operations; reservoir stimulation; and hydraulic fracture treatment design and optimization are extensively reviewed. Local case studies are also provided.

Course Objectives

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

- Apply systematic techniques in well testing, completion and operations, well stimulation and workover
- Optimize tubing dimensions for maximum production and estimate the pressure losses in tubing for different rock & fluid properties
- Use different subsurface completion equipments and accessories and select packers and packer settings
- Operate the well head equipments properly and calculate geometries and dimensions casing and tubing hangers
- Identify the different special consideration for horizontal and multilateral completions on wellbore, tubing and casing configuration
- Recognize the components of perforation of oil and gas wells such as completion fishing operations, well stimulation and fracturing, well testing, and well integrity
- Carryout the various procedures of communication tests
- Practice the process of wireline operations
- Discuss the elements of reservoir stimulation and increase the knowledge in understanding of stress and rock properties involved in the simulation techniques

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 conveniently saved in a **Tablet PC**.

Who Should Attend

This course covers systematic techniques and methodologies on well testing, completion and operation, well stimulation and workover for well and senior petroleum engineers, drilling and senior drilling supervisors, reservoir and senior reservoir engineers, geologists, production and completion engineers and supervisors needing a practical understanding and an appreciation of well completion design and operation, well stimulation and work over planning.

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

Course Date/Venue

Session(s)	Date	Venue
1	March 03-07, 2024	The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE
2	April 21-25, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar
3	June 10-14, 2024	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
4	September 01-05, 2024	Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA
5	November 03-07, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar
6	December 08-12, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar

Accommodation

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

Course Fee


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

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: -


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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.

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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. Sigve Hamilton, MSc, BSc, is a Senior Reservoir Engineer & Geologist with over 20 years of onshore & offshore experience within the Oil & Gas, Refinery and Petroleum industries. His specialization widely covers in the areas of Sedimentology & Sequence Stratigraphy Analysis, Seismic Sequence Stratigraphy, Depositional Environments, Stratigraphic Modeling, High-resolution Sequence Stratigraphy, Geophysical Characterization of Sedimentary Rocks, Sedimentary & Reservoir Rocks, Petrophysical Reservoir Rocks, Rock Mechanics, Rock Properties, Reservoir Distribution & Geometry, Quantitative Prediction of Source Rocks & Reservoir, Carbonate Rocks & Siliciclastic Rocks, Applied Rock Mechanics, Rock Physics, Petroleum Geology, Play Assessment & Prospect Evaluation, Enhanced Oil Recovery, Reservoir Engineering & Management, Reservoir Simulation, Reservoir Geophysics, Naturally Fractured Reservoir, Special Core Analysis, Integrated Production System, Drilling Fluids Technology, Fluid Flow, Fluid Mechanics, Drilling Fluids Technology, Fluid Separation & Processing Techniques, Network Design, Network Optimization, Advanced Drilling Operation Management, Drilling Fluid Technology, Directional & Horizontal Drilling, Drilling Optimization & Well Planning, Drilling Operation Management, Drilling Control & Operation, Drilling & Completion Design, Drilling & Stuck Pipe Prevention, Gas Lift Operations, Gas Lift Design & Technology, Production Technology, Production Logging, Well Logging, Well Test Analysis, Well Testing Procedures & Evaluation, Well Performance & Control, Wellhead Operations, Wellhead Design, Tubing Design & Casing, Well Production Optimization, Well Control & Blowout Prevention, Coiled Tubing Technology, Coring & Core Analysis, Core & Log Integration, Core Logging, Carbonate & Seismic Sequence Stratigraphy, Completion & Casing Design, CO₂ & Injection System, Fracture Characterization & Modelling, PVT Analysis, Fluid Mechanics, Fluid Dynamics, Water Shutoff, Water Injection Technology, Water Flooding, Petroleum Engineering, Petroleum Physics, Petroleum Data Management, Petroleum Exploration, Streamline Simulation, Artificial Lift Design, Subsurface Production Operation, Rig Inspection, Logging, Hydraulic & Pneumatic, Heterogeneity Modelling for Reservoir Characterization, Prosper, 2D & 3D Geological Modelling, Property & Heterogeneity Modelling, IRAP RMS Streamlines, Grid Design & Upscaling for Reservoir Simulation and MBAL, Prosper and GAP Software,

During his career life, Mr. Hamilton held significant positions and dedication as the **Petroleum Engineer, Drilling Engineer, Petroleum/QHSE Engineer, Reservoir Engineer, Field Manager, Laboratory Engineer, Mudlogging Geologist, Geoscientist, Geologist, Petrophysicist, Petroleum/Production Engineer & Consultant, Project Engineer/Risk Advisor, Petroleum Consultant/Advisor, Inspector/Study Leader and Senior Instructor/Lecturer** from various companies and universities such as the University of Akureyri (UNAK), Stavanger Offshore Technical School, Akademiet, Peteka, FMC Technologies, Gerson Lehrman Group, Ocean Rig, Oilfield Technology Group, Talisman, IOR Chemco, Geoservices, ResLab and Roxar.

Mr. Hamilton has a **Master's degree in Petroleum Engineering** and a **Bachelor's degree in Reservoir Engineering** from **The University of Stavanger, Norway**. Further, he is a **Certified Instructor/Trainer, a Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)** and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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 & Introductions
0815 – 0830	PRE-TEST
0830 – 0930	Well Completion Design Single & Dual Completion Design (Packers, Nipples, Tubing, DHSV's, Blast Joints Flow Couplings, Seal Assemblies, Expansion Joints, WLEG, Sliding Sleeves, Ported Nipples) • Planning Essentials Prior to Drilling (Safety, Economics)
0930 – 0945	Break
0945 – 1100	Well Completion Design (cont'd) Wellbore Tubing-Casing Configuration • Completion Procedures (Well Completion Fluids, Well Control & Damage Prevention)
1100 – 1230	Well Completion Design (cont'd) Work Over Considerations • Artificial Lift Requirements on Completion Design
1230 – 1245	Break
1245 – 1420	Well Completion Design (cont'd) Inflow Performance • Completion Variations (Primary Completion - Oil & Gas Wells, Multiple Completion, Secondary Recovery Production Well Completion & Injection Well Completion)
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production Production Mechanism for Different Reservoir Types • Completion Efficiency Consideration • Inflow Performance Relationship (IPR) & Effect of Partial Penetration on IPR
0930 – 0945	Break
0945 – 1100	Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd) Typical IPR Case Studies for Both Oil & Gas Reservoirs • Bottom Hole Flowing Pressure Requirements
1100 – 1230	Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd) Estimation of Pressure Losses in Tubing for Different Rock & Fluid Properties • Development of Tubing Performance Curve & Optimization of Tubing Dimensions for Maximum Production
1230 – 1245	Break



1245 – 1420	Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd) Prediction Rate & Selection of Material Properties Based on Analysis of Forces on Tubing of Tubing • Specialized Software's are Used for Case Studies & Analysis
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Subsurface Completion Equipment & Accessories Forces on Packers & Tubing Movements • Completion Material Selection • Completion of Running & Retrieving • Selection Consideration of Packers & Packer Settings
0930 – 0945	Break
0945 – 1100	Subsurface Completion Equipment & Accessories (cont'd) Tubing Accessories & Subsurface Safety and Flow Control Valves • Typical Case Studies
1100 – 1230	Well Head Equipment Geometries & Dimensions Casing & Tubing Hanger • Well Heads for Topside & Subsea Completions • Christmas & Subsea Trees
1230 – 1245	Break
1245 – 1420	Well Head Equipment (cont'd) Flow Line, Cokes & Other Control • Valves & Flow Regulating Valves
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Special Consideration for Horizontal & Multilateral Completions Wellbore, Tubing & Casing Configuration • Well Killing • Tubing Size Selection • Special Equipment for Horizontal & Multilateral Completions • Running & Operational Procedure of Subsurface Equipment
0930 – 0945	Break
0945 – 1100	Perforation of Oil & Gas Wells Completion Fishing Operations • Perforation Methods & Equipment • Well Perforating & Cased Hole Logs • Well Stimulation & Fracturing • Well Testing • Well Integrity
1100 – 1230	Perforation of Oil & Gas Wells (cont'd) Basics of Shape Charge & its Penetration Mechanism • Selection & Evaluation of Shape Charge • API Testing Procedure of Shape Charge Penetration • Shape Charge Gun Categories & Their Application
1230 – 1245	Break
1245 – 1420	Perforation of Oil & Gas Wells (cont'd) Special Tools & Operations • Calculation of Flow Through Perforation Tunnels & Estimation Production from the Perforation Interval • Nitrogen Lifting • Coiled Tubing Operations
1420 – 1430	Recap
1430	Lunch & End of Day Four



Day 5

0730 – 0930	Communication Tests
0930 – 0945	Break
0945 – 1100	Wireline Operations
1100 – 1230	Reservoir Stimulation <i>Introduction to Different Stimulation Techniques • Understanding of Stress & Rock Properties Involved in the Selection of Stimulation Techniques • Design Procedure of Hydraulic Fracture Treatment</i>
1230 – 1245	Break
1245 – 1345	Reservoir Stimulation (cont'd) <i>Economic Evaluation of Stimulation Treatment Coupled with a Production • Model Based on NPV • Specialized Softwares Used for Local Case Studies and Analysis</i>
1345 – 1400	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
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

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