COURSE OVERVIEW DE0072
Advanced Completion Design and Operation

Course Title
Advanced Completion Design and Operation

Course Date/Venue
Session 1: May 25-29, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: October 19-23, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Course Reference
DE0072

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 designed to provide participants with an advanced and up-to-date overview of advanced completion technology. It covers the well completion design, practices and strategies; the main factors influencing completion design that include parameters related to the well's purpose, environment, drilling, reservoir, production and completion techniques; the overall approach to a well's flow capacity; the major types of completion configurations; the main phases in completion including drilling and casing the pay zone; and the evaluation and restoration of cement job including remedial cementing.

During this interactive course, participants will learn the perforation, treating the pay-zone and sand control; the special case of horizontal wells and the general configuration of flowing well equipment; the wellheads/chokes/subsurface safety valves and flow control equipment; the production well-head, production string or tubing and packers; and the material selection, downhole equipment and subsurface safety valves.

Course Objectives

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

- Apply and gain an advanced knowledge on advanced completion technology
- Employ well completion design, practices and strategies
- Identify the main factors influencing completion design that include parameters related to the well's purpose, environment, drilling, reservoir, production and completion techniques
- Describe the overall approach to a well's flow capacity and identify the major types of completion configurations
- Recognize the main phases in completion including drilling and casing the pay zone
- Evaluate and restore cement job including remedial cementing
- Illustrate perforating, treating the pay zone and sand control
- Explain the special case of horizontal wells and apply the general configuration of flowing well equipment
- Recognize wellheads/chokes/subsurface safety valves and flow control equipment
- Discuss the production well-head, production string or tubing and packers
- Identify material selection, downhole equipment and subsurface safety valves

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 advanced completion technology for senior engineers, drilling engineers, reservoir engineers, well, production, completion and petroleum engineers, supervisors and geologists.

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 Certificate(s)

Internationally recognized certificates will be issued to all participants of the course.

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

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. Brendon Billings, MSc, BSc, is a **Senior Petroleum Engineer** and **Well Service Consultant** with over **30 years** of international experience in **Drilling/Reservoir/Petroleum Engineering** and **Well Service Operations**. He is a **recognized authority** in "**Hands On**" **Service** and **Drilling Operations**, **Well Completions** (**Riggless Operations**), **Product Optimization**, **Wellhead Operations**, **Wellbore Interventions**, **High Volume Lift Project Management**, **Reservoir Optimization**, **Well Testing**, **Wire/Slickilne Equipment** and **Operations**, **Coil Tubing**, **Water Flooding**, **Electric Submersible Pumps** (**ESPs**), **Gas Lifts & Steam Assist Gravity Drain** (**SAGD**) **Applications**, **Facility Inspection**, **Root Cause Failure Management** and **Power Factor Management.** Currently, he is the **President** of a large specialized engineering services provider to the **North-American Sedimentary Basin Production** and other international clients. Moreover, he occupies a **consultant position** and remains to offer his expertise in many areas of the **drilling discipline** and is well **recognized & respected** for his process, procedural expertise, modus operandi as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Mr. Billings has worked for many international companies and has spent several years **managing** technically **complex wellbore interventions** in both **drilling** & **servicing**. He is a **well regarded** for his **process, procedural expertise** and **modus operandi**. Further, he was the **Projects Manager** at **Sherrit Petreola** where he was fully responsible for all **Reservoir Development** activities. He has spent **more** than **2000 days** total on **Rig Floors** for **Drilling** (**onshore/offshore**) and **Well Servicing Operations** jobs. Mr. Billings was the Senior **Applications Expert** for **Schlumberger Canada** (**REDA Services**) where he was greatly involved in high volume lift and reservoir optimization projects including specialty endeavours like **SAGD and Gas Lift**. He lead special projects for alternative technology applications and was referred to as the '**technical specialist**' for severe services on ESP applications and had provided in-house & client instruction for ESP application schooling. Previously, he was the **Artificial Lift Services Developer** for **Weatherford**, a leading provider of oilfield services equipment for drilling, evaluation, completion, production and intervention areas. Herein, he was tasked to introduce new ESP technology and lead a project team for ESP facility development & design. Much earlier in his career, he has held positions such as **Operations Supervisor**, **Rig Consultant**, **Project Manager**, **Regional Manager**, **Engineering Representative**, **International Engineering Support Technician**, **Facility Services Manager** and **Power Plant Engineer**.

Mr. Billings has **Master** and **Bachelor** degrees in **Petroleum Engineering** and **Power Engineering**. He is a **licensed Professional Engineer**, a **Certified Instructor/Trainer** and a well respected member of the **Society of Petroleum Engineers** (**SPE**). Further, he has conducted **numerous industry short courses** and **SPE workshops**.

Course Fee

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.

Accommodation

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

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	***Basic Well Completion Design, Practices & Strategies***
0930 – 0945	*Break*
0945 – 1030	***Main Factors Influencing Completion Design*** *Parameters Related to the Well's Purpose • Parameters Related to the Environment • Parameters Related to Drilling • Parameters Related to Reservoir • Parameters Related to Production • Parameters Related to Completion Techniques • Synthesis: How Completion is Designed?*
1030 – 1230	***Overall Approach to a Well's Flow Capacity*** *Base Equations • Analysis of the Different Terms and Resulting Conclusions • Performance Curves • Synthesis*
1230 – 1245	*Break*
1245 – 1420	***Major Types of Completion Configurations*** *Basic Requirements • Pay Zone-Borehole Connection: Basic Configurations • Main Configurations of Production String(s)*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Main Phases in Completion*** *Checking and Conditioning the Borehole • Remedial Cementing • Re-Establishing Pay Zone-Borehole Communication • Well Testing • Treating the Pay Zone • Equipment Installation • Putting the Well on Stream and Assessing Performance • Moving the Rig • Operations to Be Performed at a Later Date: Measurements, Maintenance, Workover and Abandonment*
0930 – 0945	*Break*
0945 – 1100	***Drilling & Casing the Pay Zone*** *Well Safety • Fluids Used to Drill in the Pay Zone • Drilling and Casing Diameters • Casing and Cementing*
1100 – 1230	***Evaluating & Restoring the Cement Job*** *Evaluating the Cement Job • Remedial Cementing*
1230 – 1245	*Break*

1245 – 1420	***Perforating*** *Shaped Charges • Main Parameters Affecting the Productivity of the Zone Produced By Perforating • Perforating Methods and Corresponding Types of Guns • Specific Points in the Operating Technique*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Treating the Pay Zone*** *Problems Encountered • Main Types of Remedial Action for Poor Consolidation: Sand Control • Main Types of Remedial Action for Insufficient Productivity: Well Stimulation*
0930 – 0945	*Break*
0945 – 1100	***Sand Control***
1100 – 1230	***The Special Case of Horizontal Wells*** *Advantages in Producing Reservoirs • Problems Specific to the Pay-Zone-Borehole Connection*
1230 – 1245	*Break*
1245 – 1420	***General Configuration of Flowing Well Equipment***
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Wellheads/Chokes/Subsurface Safety Valves & Flow Control Equipment***
0930 – 0945	*Break*
0945 – 1100	***The Production Wellhead*** *Hanging (and Securing) the Tubing • The Christmas Tree (Xmas Tree)*
1100 – 1230	***The Production String or Tubing*** *Tubing Characteristics • Choosing the Tubing • Corrosion & Erosion Inflow & Tubing Performance • Tubing Design & Packer Setting & Retrieval*
1230 – 1245	*Break*
1245 – 1420	***Packers*** *Packer Fluids (or Annular Fluids) • The Main Packer Type • Choosing the Packer • Permanent Production Packers • Retrievable Packers • Packer Selection & Tubing Forces*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Material Selection***
0930 – 0945	*Break*
0945 – 1100	***Downhole Equipment*** *Circulating Devices • Landing Nipples • Other Downhole Equipment*
1100 – 1230	***Subsurface Safety Valves*** *Subsurface Controlled Subsurface Safety Valves (SSCSV)*
1230 – 1245	*Break*
1245 – 1345	***Subsurface Safety Valves (cont'd)*** *Surface Controlled Subsurface Safety Valves (SCSSV)*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
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

Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org