COURSE OVERVIEW DE0379
Fracturing of Vertical & Horizontal Wells

Course Title
Fracturing of Vertical & Horizontal Wells

Course Date/Venue
Please see page 3

Course Reference
DE0379

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 a detailed and up-to-date overview of Fracturing of Vertical & Horizontal Wells. It covers the principles of hydraulic fracturing and the basic concepts of rock mechanics and fracture mechanics; the types, properties and selection criteria of fracturing fluids and proppants; the fracture geometry and propagation; the design consideration for vertical wells and environmental and safety considerations; the fracture design and the treatment optimization; and the modeling tools and methodologies of numerical simulation of fractures.

Further, the course will also discuss the interpretation of pressure and rate transient analysis in fractured wells; the data acquisition and monitoring techniques; the unique aspects of fracturing horizontal wells including multi-stage fracturing in horizontal wells; and the completion techniques for horizontal wells, well spacing and fracture interference and production analysis post-fracturing.

During this interactive course, participants will learn the high-volume fracturing and zipper fractures; the re-fracturing techniques and integration of fracturing with reservoir simulation; the new developments in fracturing fluids and proppant technology; managing flowback and produced water; the challenges in deep and tight formations and best practices in fracturing operations; the economic evaluation of fracturing projects; the hydraulic fracturing regulations and public perception; and the future trends in hydraulic fracturing.

Course Objectives

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

- Apply and gain an in-depth knowledge on fracturing of vertical and horizontal wells
- Discuss the principles of hydraulic fracturing and the basic concepts of rock mechanics and fracture mechanics
- Identify the types, properties and selection criteria of fracturing fluids and proppants
- Determine fracture geometry and propagation, design considerations for vertical wells and environmental and safety considerations
- Apply fracture design and treatment optimization and recognize the modeling tools and methodologies of numerical simulation of fractures
- Interpret pressure and rate transient analysis in fractured wells and carryout data acquisition and monitoring techniques
- Describe the unique aspects of fracturing horizontal wells including multi-stage fracturing in horizontal wells
- Illustrate completion techniques for horizontal wells, well spacing and fracture interference and production analysis post-fracturing
- Discuss high-volume fracturing and zipper fractures and apply re-fracturing techniques and integration of fracturing with reservoir simulation
- Recognize the new developments in fracturing fluids and proppant technology and manage flowback and produced water
- Discuss challenges in deep and tight formations and apply best practices in fracturing operations
- Carryout economic evaluation of fracturing projects as well as explain hydraulic fracturing regulations and public perception including the future trends in hydraulic fracturing

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 provides an overview of all significant aspects and considerations of fracturing of vertical and horizontal wells for petroleum engineers, geologist, reservoir engineers, drilling engineers, geoscientists, oil and gas industry professionals, drillers, environmental and safety experts and those who have a background or involved in the planning, execution and monitoring of fracturing of wells and want to advance their skills and knowledge in fracturing of vertical horizontal wells.

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

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

- 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.

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	May 03-07, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
2	July 27-31, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
3	August 30-September 03, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
4	September 20-24, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
5	December 06-10, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
6	January 03-07, 2027	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom

Course Fee

Cairo	**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.
Seville	**US$ 8,800** 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.
Istanbul	**US$ 8,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
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.
London	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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. Samer Shukri, BSc, IWCF, is a **Senior Drilling & Petroleum Engineer** with over **25 years** of **offshore** and **onshore** experience in the **Oil** & **Gas**, **Refinery** & **Petrochemical** industries. His wide expertise includes **Workovers & Completions**, **Well Completion** Design & Operations, **Well Intervention**, **Well Life Cyle**, **Well Stimulation** & **Workover** Planning, **Workover** Practices, **Workover** Operations, **Well Integrity** System, **Well Control**, **Oil & Water Wells**, **Workover/Remedial** Operations & **Heavy Oil** Technology, Plug & Abandonment of **Oil & Gas Wells**, **Petroleum** Engineering, **Open Hole & Cased Hole Logs**, **Petroleum Risk & Decision** Analysis, **Well Testing** Analysis, **Stimulation** Operations, **Coiled Tubing** Operations, **Coiled Tubing Equipment**, **Rigless** Operations, **Reserves Evaluation**, **Reservoir Fluid** Properties, **Reservoir** Engineering & Simulation Studies, **Reservoir** Monitoring, **Geology & Reservoir** Engineering, **Artificial Lift Design**, **Gas** Operations, **Applied Water** Technology, **Oil & Gas Production**, **X-mas Tree** & **Wellhead** Operations & **Testing**, **Wellbore Design & Construction**, **Drilling Fluids & Solids Control**, **Drilling Fluids & Cementing** Operations, **Drilling Practices & Techniques**, **Well Control & Blow Out Prevention**, **Stuck Piping & Fishing** Operations, **Rig Equipment** Maintenance & Inspection, **Rigging & Lifting** Operations, **WellCAP** Driller, **WellCAP** Supervisor, **Artificial Lift** Systems (**Gas Lift**, **ESP** and **Rod Pumping**), **Well Cementing**, **Oil Field Cementing**, **Production Optimization**, **PLT** Correlation, **Slickline** Operations, **Well Testing**, **Production Logging**, **Wireline Logging**, **Wireline** Technology, **Wireline Fishing** Operations, **Project Evaluation** & **Economic Analysis**. Further, he is also well-versed in Marine Environment Protection, Maritime Professional Training, Operational Audit, Improvement, Planning & Management, Climate Change & Emissions Trading Services, International Trade & Shipping, **Fitness for Service-API 579**, **Refining Process & Petroleum** Products, **OSHA** (General Industry & Construction), **IOSH** (Managing Safely, Working Safely), **HSE** Standards & Procedures in the Oilfield, HSE Principles, Incident Prevention & Incidents, Working at Height, **First Aid**, **H2S** Awareness, Defensive Driving, Risk Assessment, Authorized Gas Tester (**AGT**), Confined Space Entry (**CSE**), Root Cause Analysis (**RCA**), Negotiation & Persuasion Skills, **ISO-9001** Quality Management System (**QMS**), ISO-14001 Environmental Management System (**EMS**), **ISO-45001** Occupational Health and Safety Management System (**OHSMS**), **ISO-17020** Conformity Assessment, ISO/TS-29001 Quality Management System, **IOS-50001**-Energy Management System (**EnM**S) and Basic Offshore Safety Induction & Emergency. Currently, he is actively involved in **Project Management** with special emphasis in **commissioning of new wells**, **completion design**, **well integrity** management, **production technology** and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning.

During his career life, Mr. Samer has gained his field experience through his various significant positions and dedication as the **Senior Production Engineer**, **Well Services Department Head**, **Senior Well Services Supervisor**, **Senior Well Integrity Engineer**, **Senior HSE Engineer**, **Well Services Supervisor**, **Drilling/Workover Supervisor**, **International oil & Gas Trainer**, **Leadership & Management Instructor** and **Senior Instructor/Trainer** from the various international companies such as the ADCO, Al Furat Petroleum Company (AFPC), Syrian Petroleum Company (SPC), Petrotech, Global Horizon-UK, HDTC, Petroleum Engineers Association, STC, Basra University and Velesto Drilling Academy, just to name a few.

Mr. Samer has **Bachelor's** degree in **Petroleum Engineering**. Further, he is an **Accredited IWCF Drilling & Well Intervention Instructor**, a **Certified Instructor/Trainer**, a **Certified Train-the-Trainer** and further delivered innumerable training courses, seminars, conferences and workshops worldwide.

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 workshop 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	***Introduction to Hydraulic Fracturing:*** *Principles & Historical Development*
0930 – 0945	*Break*
0945 – 1030	***Rock Mechanics & Fracture Mechanics:*** *Basic Concepts Crucial for Understanding Fracturing*
1030 – 1130	***Fracturing Fluids & Proppants:*** *Types, Properties & Selection Criteria*
1130 – 1215	***Fracture Geometry & Propagation:*** *How Fractures Initiate & Propagate in Subsurface Formations*
1215 – 1230	*Break*
1230 – 1330	***Design Considerations for Vertical Wells:*** *Specific Challenges & Strategies*
1330 – 1420	***Environmental & Safety Considerations:*** *Addressing Concerns & Regulatory Compliance*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Fracture Design & Treatment Optimization:*** *Techniques for Designing Effective Fracturing Treatments*
0830 – 0930	***Numerical Simulation of Fractures:*** *Modeling Tools & Methodologies*
0930 – 0945	*Break*
0945 – 1100	***Pressure & Rate Transient Analysis in Fractured Wells****: Interpretation & Applications*
1100 – 1215	***Data Acquisition & Monitoring Techniques:*** *Importance of Data in Designing & Modifying Fracture Treatments*
1215 – 1230	*Break*
1230 – 1420	***Case Studies of Fracturing in Vertical Wells:*** *Analysis & Learnings*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Unique Aspects of Fracturing Horizontal Wells:*** *Differences from Vertical Well Fracturing*
0830 – 0930	***Multi-Stage Fracturing in Horizontal Wells****: Design & Execution*
0930 – 0945	*Break*
0945 – 1100	***Completion Techniques for Horizontal Wells:*** *Strategies & Technologies*
1100 – 1215	***Well Spacing & Fracture Interference:*** *Managing Well Interactions in Field Development*
1215 – 1230	*Break*

1230 – 1330	***Production Analysis Post-Fracturing:*** *Assessing the Effectiveness of Fracturing*
1330 – 1420	***Group Activity:*** *Planning a Multi-Stage Fracture Treatment for a Horizontal Well*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***High-Volume Fracturing & Zipper Fracs:*** *Large-Scale Fracturing Operations*
0830 – 0930	***Re-Fracturing Techniques:*** *Criteria, Challenges & Benefits*
0930 – 0945	*Break*
0945 – 1100	***Integration of Fracturing with Reservoir Simulation:*** *Enhancing Reservoir Models with Fracturing Data*
1100 – 1215	***New Developments in Fracturing Fluids & Proppant Technology:*** *Latest Advancements & Their Implications*
1215 – 1230	*Break*
1230 – 1330	***Managing Flowback & Produced Water:*** *Strategies & Environmental Considerations*
1330 – 1420	***Case Study Review:*** *Analyzing Advanced Fracturing Operations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Challenges in Deep & Tight Formations:*** *Special Considerations for Difficult Environments*
0830 – 0930	***Best Practices in Fracturing Operations:*** *Ensuring Efficiency & Minimizing Environmental Impact*
0930 – 0945	*Break*
0945 – 1100	***Economic Evaluation of Fracturing Projects:*** *Cost-Benefit Analysis & Optimization*
1100 – 1230	***Hydraulic Fracturing Regulations & Public Perception:*** *Navigating Regulatory & Social Landscapes*
1230 – 1245	*Break*
1245 – 1345	***Future Trends in Hydraulic Fracturing:*** *Innovations & Emerging Technologies*
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

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