

COURSE OVERVIEW DE0250-4D
Subsurface Production Operations

Course Title

Subsurface Production Operations

Course Reference

DE0250-4D

Course Duration/Credits

Four days/2.4 CEUs/2.4 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	January 15-18, 2024	Cheops Meeting Room, Radisson Blu Hotel, Istanbul Sisli, Turkey
2	February 12-15, 2024	Jubail Hall, Signature Al Khobar Hotel, Al Khobar, KSA
3	February 19-22, 2024	Business Center, Concorde Hotel Doha, Doha Qatar
4	March 04-07, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
5	May 27-30, 2024	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi,
6	August 12-15, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
7	November 18-21, 2024	Cheops Meeting Room, Radisson Blu Hotel, Istanbul Sisli, Turkey

Course Description



This practical, highly-interactive course includes real-life case studies 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 subsurface production operations. It covers the inflow and outflow performances, completion systems, tubing selection, design and installation; the perforation methods, formation damage, matrix acidizing and hydraulic fracturing; and the well production problems such as toxic material production, inorganic –scale formation, corrosion, etc.



During this interactive course, participants will learn the artificial lift selection, ESP system selections and performance calculations; the gas lift systems; the latest principles of hydraulic pumping in oil wells, progressing cavity pumping design systems; and the evaluation and installation of downhole plunger equipment, wellhead and plunger surface equipment.

Course Objectives

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

- Apply and gain an in-depth knowledge on subsurface production operations
- Discuss the inflow and outflow performances, completion systems and carryout tubing selection, design and installation
- Describe perforation methods, formation damage, matrix acidizing and hydraulic fracturing
- List well production problems such as toxic material production, inorganic –scale formation, corrosion, etc.
- Perform artificial lift selection, ESP system selections and performance calculations and design gas lift systems
- Employ the latest principles of hydraulic pumping in oil wells, progressing cavity pumping design systems as well as the evaluation and installation of downhole plunger equipment, wellhead and plunger surface equipment

Who Should Attend

This course provides an overview of all significant aspects and considerations of surface production operations for production engineers, drilling engineers, process engineers, petroleum engineers and field operations engineers, superintendents, supervisors and foremen. Technical and operations staff from other disciplines, who require a cross-training to or a basic understanding of the subsurface production operations will find this course very useful.

Course Fee


Istanbul	US\$ 7,250 per Delegate + VAT . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Al Khobar	US\$ 6,750 per Delegate + VAT . This rate includes H-STK® (Howard Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	US\$ 7,250 per Delegate. This rate includes H-STK® (Howard Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	US\$ 6,750 per Delegate + VAT . This rate includes H-STK® (Howard Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Abu Dhabi	US\$ 6,750 per Delegate + VAT . This rate includes H-STK® (Howard 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 **2.4 CEUs** (Continuing Education Units) or **24 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.

Accommodation

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

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:



Dr. Chris Kapetan, PhD, MSc, is a Senior Petroleum Engineer with over 30 years of international experience within the onshore and offshore oil & gas industry. His wide experience covers Decision Analytic Modelling Methods for Economic Evaluation, Probabilistic Risk Analysis (Monte Carlo Simulator) Risk Analysis Foundations, Global Oil Demand, Crude Oil Market, Global Oil Reserves, Oil Supply & Demand, Governmental Legislation, Contractual Agreements, Financial Modeling, Oil Contracts, Project Risk Analysis, Feasibility Analysis Techniques, Capital Operational Costs, Oil & Gas Exploration Methods, Reservoir Evaluation, Extraction of Oil & Gas, Crude Oil

Types & Specifications, Sulphur, Sour Natural Gas, Natural Gas Sweetening, Petroleum Production, Field Layout, Production Techniques & Control, Surface Production Operations, Oil Processing, Oil Transportation-Methods, Flowmetering & Custody Transfer and Oil Refinery. Further, he is also well-versed in Enhanced Oil Recovery (EOR), Electrical Submersible Pumps (ESP), Oil Industries Orientation, Geophysics, Cased Hole Formation Evaluation, Cased Hole Applications, Cased Hole Logs, Production Operations, Production Management, Perforating Methods & Design, Perforating Operations, Fishing Operations, Well & Reservoir Testing, Reservoir Stimulation, Hydraulic Fracturing, Carbonate Acidizing, Sandstone Acidizing, Drilling Fluids Technology, Drilling Operations, Directional Drilling, Artificial Lift, Gas Lift Design, Gas Lift Operations, Petroleum Business, Petroleum Economics, Field Development Planning, Gas Lift Valve Changing & Installation, Well Completion Design & Operation, Well Surveillance, Well Testing, Well Stimulation & Control and Workover Planning, Completions & Workover, Rig Sizing, Hole Cleaning & Logging, Well Completion, Servicing and Work-Over Operations, Practical Reservoir Engineering, X-mas Tree & Wellhead Operations, Maintenance & Testing, Advanced Petrophysics/Interpretation of Well Composite, Construction Integrity & Completion, Coiled Tubing Technology, Corrosion Control, Slickline, Wireline & Coil Tubing, Pipeline Pigging, Corrosion Monitoring, Cathodic Protection as well as Root Cause Analysis (RCA), Root Cause Failure Analysis (RCFA), Gas Conditioning & Process Technology, Production Safety and Delusion of Asphalt. Currently, he is the Operations Consultant & the Technical Advisor at GEOTECH and an independent Drilling Operations Consultant of various engineering services providers to the international clients as he offers his expertise in many areas of the drilling & petroleum discipline and is well recognized & respected for his process and procedural expertise as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Dr. Chris 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 and procedural expertise**. Further, he was the **Operations Manager at ETP Crude Oil Pipeline Services** where he was fully responsible for optimum operations of crude oil pipeline, **workover and directional drilling, drilling rigs** and equipment, drilling of various geothermal deep wells and **exploration wells**. Dr. Chris was the **Drilling & Workover Manager & Superintendent for Kavala Oil** wherein he was responsible for supervision of **drilling operations and offshore exploration**, quality control of performance of **rigs, coiled tubing**, crude oil transportation via pipeline and abandonment of **well** as per the API requirements. He had occupied various key positions as the **Drilling Operations Consultant, Site Manager, Branch Manager, Senior Drilling & Workover Manager & Engineer and Drilling & Workover Engineer, Operations Consultant, Technical Advisor** in several petroleum companies responsible mainly on an **offshore sour oil field (under water flood and gas lift)** and a gas field. Further, Dr. Chris has been a **Professor of the Oil Technology College**.

Dr. Chris has **PhD in Reservoir Engineering** and a **Master degree in Drilling & Production Engineering** from the **Petrol-Gaze Din Ploiesti University**. Further, he is a **Certified Surfaced BOP Stack Supervisor of IWCF**, a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)** and has conducted **numerous short courses, seminars and workshops** and has published several technical books on **Production Logging, Safety Drilling Rigs and Oil Reservoir**.

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Workshops & Work Presentations
- 30% Case Studies & Practical Exercises
- 20% Software, Simulators & Videos

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

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	Inflow & Outflow Performance The Production System • Reservoir Inflow Performance • Wellbore Flow Performance • Flow Through Chokes • System Analysis
0930 – 0945	Break
0945 – 1115	Completion Systems Packers • Methods of Conveyance • Metallurgy • Elastomers • ISO and API Standards • Packer Rating Envelopes • Flow Control Accessories • Subsurface Safety Systems • Cased-Hole Applications • Multilateral Completions • Operational Well Modes • Impact of Length and force Changes To The Tubing String • Combination Tubing/Packer Systems
1115 – 1215	Tubing Selection, Design & Installation Oilfield Tubing • API/ISO Tubing Requirements • Tubing Design Factors • Tubing Inspection • Tubing Handling • Coiled Tubing
1215 – 1230	Break
1230 – 1420	Perforating Perforating Methods • Basic Perforating Design-Variables of Flow Through A Perforation • Temperature Effect • Basic Perforating Design-What Is Necessary for The Optimum Flow Path • Improving Flow Capacity • Cement and Casing Damage • Perforating Multiple Strings and Thick Cement • Perforating for Different Simulations • Perforating in Highly Deviated Wells • Perforating Equipment • Limited Penetration Charges • Pipe Cutoff Methods
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	<p>Formation Damage <i>Quantify Formation Damage • Determination of Flow Efficiency and Skin • Formation Damage Vs. Pseudodamage • Drilling-Induced Formation Damage • Formation Damage Caused by Completion and Workover Fluids • Damage During Perforating and Cementing • Formation Damage Caused by Fines Mitigation • Formation Damage Caused by Swelling Clays • Formation Damage in Injection Wells • Formation Damage Resulting From Paraffins and Asphaltenes • Formation Damage Resulting Form Emulsion and Sludge Formation • Formation Damage Resulting From Condensate Banking • Formation Damage Resulting From Gas Breakout • Formation Damage Resulting From Water Blocks • Formation Damage Resulting for Wettability Alteration • Bacterial Plugging</i></p>
0930 – 0945	Break
0945 – 1100	<p>Matrix Acidizing <i>Two Basic Acidizing Treatments • Purpose/Applications • Effects of Acidizing: Undamaged Well • Selecting Successful Acidizing Candidates • Production History Plots • Offset Well Comparison • Pressure Buildup Tests • Well Flow Analysis • Formation Damage Diagnosis • Identify Extent/Type of Damage • Damage Removal by Chemical Solvents • Formation Response To Acid • Formation Properties • Formation Matrix Properties • Formation Mineralogy • Methods of Controlling Precipitates • Acid Treatment Design • Matrix Acidizing Deign Guidelines</i></p>
1100 – 1230	<p>Matrix Acidizing (cont'd) <i>Acid Type and Concentration • Retarded Hf Acids • Geochemical Models • Acid Placements and Coverage • Mechanical Techniques • Particulates • Viscous Acid • Advances in Acid Diversion • Horizontal Wells • Acid Additives • Job Supervision • Safety and Environment Protection • Well Preparation • Quality Control • Injection-Rate Control and Monitoring • Pressure Behavior During Acid Injection • On-Site Evaluation of Acid Treatment Effectiveness • Spent Acid Production Control • Produced Fluid Sampling • Evaluation of Acid Treatments</i></p>
1230 – 1245	Break
1245 – 1420	<p>Hydraulic Fracturing <i>Fracture Mechanics • Fracture Propagation Models • Fracturing Fluids and Additives • Propping Agents and Fracture Conductivity • Fracture Treatment Design • Acid Fracturing • Fracturing High -Permeability Formations • Fracture Diagnostics • Post-Fracture Well Behavior</i></p>
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	<p>Well Production Problems <i>Asphaltenes • Waxes • Toxic-Materials Production • Hydrates • Water Control • Inorganic -Scale formation • Corrosion</i></p>
0930 – 0945	Break
0945 – 1100	<p>Artificial Lift Selection <i>Reservoir Pressure and Well Productivity • Reservoir Fluids • Long-Term Reservoir Performance and Facility Constraints • Types of Artificial Lift • Selection Methods • Sample Run-Life Information</i></p>

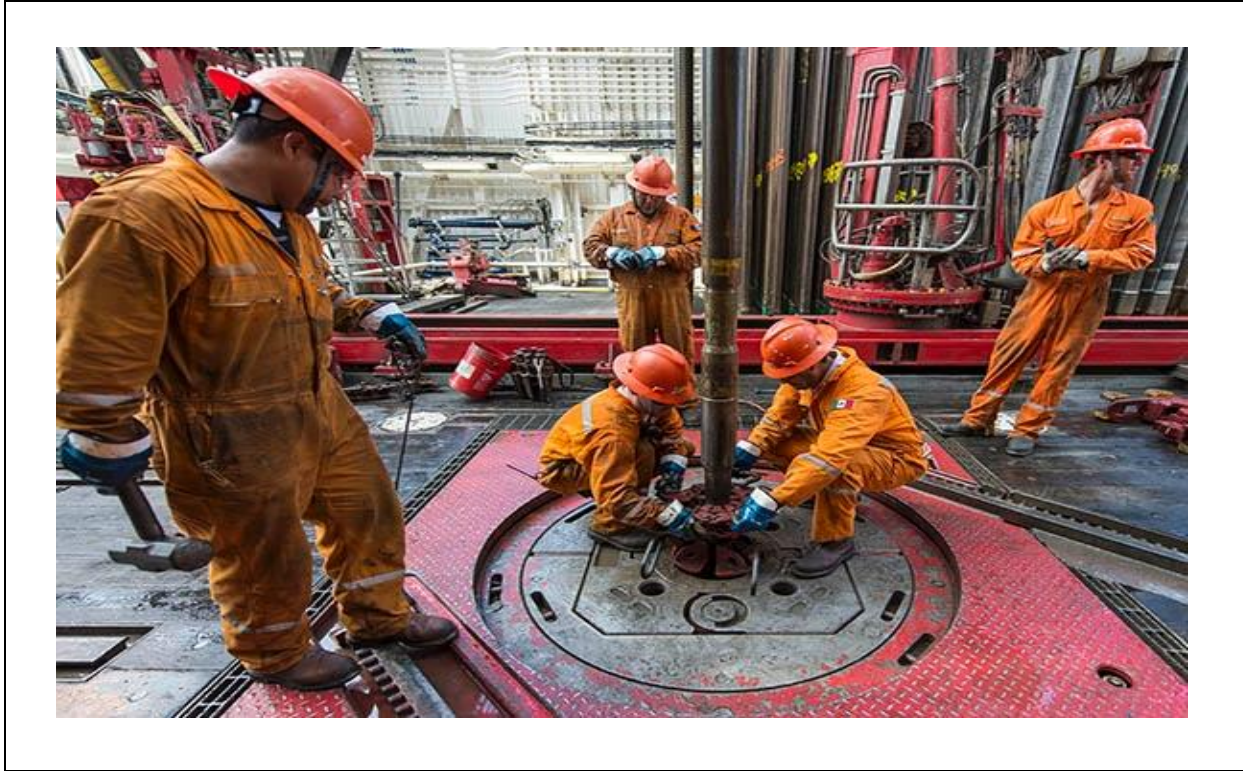
1100 – 1230	Gas Lift <i>Designing A Gas Lift System • Compressor Horsepower • Gas Fundamentals • Gas Lift Equipment • Gas Lift Valve Mechanics • Production-Pressure Factor and Valve Spread • Dynamic Gas Lift Valve Performance • Design of Gas Lift Installations • Installation Design Methods • Intermittent-Flow Gas Lift • Operation of Gas Lift Installations • Gas Lift for Unusual Environments</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Electrical Submersible Pumps (ESP) <i>ESP System • ESP System Selection • Performance Calculations • Problem Solving</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0930	Hydraulic Pumping in Oils Wells <i>Downhole Pumps • Principles of Operation • Downhole Pump Accessories • Surface Equipment</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Progressing Cavity Pumping Systems <i>PCP Lift System Equipment • PCP System Design • Specific Application Considerations • PCP System Installation, Automation, Troubleshooting, and Failure Diagnosis</i>
1100 – 1245	Plunger Lift <i>Applications • Design and Models • Basic Foss and Gaul Equations • Equipment Installation and Maintenance • Evaluation and Installation of Downhole Plunger Equipment • Evaluation and Installation of Wellhead and Plunger Surface Equipment • Design Considerations and Plunger Selection • Evaluation of Control Methods • Evaluation and Modification of Production Facilities</i>
1245 – 1300	<i>Break</i>
1300 – 1345	Open Forum & General Discussion
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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