COURSE OVERVIEW DE0542
Chemical Treatment (Well Bore, Well and Lines)

Course Title
Chemical Treatment (Well Bore, Well and Lines)

Course Date/Venue

Session 1: February 24-28, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: June 22-26, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
DE0542

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and 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 Chemical Treatment (Well Bore, Well and Lines). It covers the importance of chemical treatment in wellbore and pipelines; the types of chemicals used in the industry; the basics of wellbore and pipeline corrosion and the role of inhibitors in corrosion prevention; the types of scales, causes of scaling in oilfield operations and the impacts on flow assurance and equipment; and the scale inhibitors, safety and environmental considerations in chemical treatment and formation damage.

Further, the course will also discuss the acidizing as a chemical treatment and clay stabilization in wellbore operations; the paraffin and asphaltene deposition and solvent-based treatments; the importance of flow assurance, common flow issues, impacts of flow assurance problems on production and the role of chemical treatment in mitigating flow assurance issues; the mechanism of wax formation in pipelines, chemical treatments for wax prevention and monitoring techniques for wax deposits; and the hydrate formation and prevention, emulsion formation and demulsifiers and chemical treatments for pipeline cleaning.

During this interactive course, participants will learn the microbial induced corrosion (MIC) and chemical treatments for H2S and CO2 management; the water treatment for injection and disposal; the compatibility of chemicals in multiphase systems; the remedial treatments for failed wells and lines; the smart chemical systems, chemical treatment design and planning; the proper monitoring and optimization of treatments; troubleshooting common issues in chemical treatment; and the economic and environmental considerations.

Course Objectives

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

- Apply and gain an in-depth knowledge on chemical treatment (well bore, well and lines)
- Discuss the importance of chemical treatment in wellbore and pipelines and the types of chemicals used in the industry
- Explain the basics of wellbore and pipeline corrosion and the role of inhibitors in corrosion prevention
- Identify the types of scales, causes of scaling in oilfield operations and the impacts on flow assurance and equipment
- Discuss scale inhibitors, safety and environmental considerations in chemical treatment and formation damage
- Apply acidizing as a chemical treatment and clay stabilization in wellbore operations
- Discuss paraffin and asphaltene deposition and solvent-based treatments
- Explain the importance of flow assurance, common flow issues, impacts of flow assurance problems on production and the role of chemical treatment in mitigating flow assurance issues
- Recognize the mechanism of wax formation in pipelines and apply chemical treatments for wax prevention and monitoring techniques for wax deposits
- Employ hydrate formation and prevention, emulsion formation and demulsifiers and chemical treatments for pipeline cleaning
- Identify microbial induced corrosion (MIC) and apply chemical treatments for H2S and CO2 management
- Carryout water treatment for injection and disposal and recognize the compatibility of chemicals in multiphase systems
- Apply remedial treatments for failed wells and lines and discuss smart chemical systems
- Illustrate chemical treatment design and planning including monitoring and optimization of treatments
- Troubleshoot common issues in chemical treatment and discuss economic and environmental considerations

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 chemical treatment (well bore, well and lines) for production engineers and technologists, drilling engineers and technicians, reservoir engineers, pipeline and flowline engineers, well services and workover engineers, chemical and process engineers, corrosion and integrity engineers, field operators and supervisors and other technical staff.

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

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: -

- 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.

- 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.

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. Shady Al-Rammah, MSc, BSc, is a **Senior Petroleum Consultant** with extensive experience in **Production** and **Petroleum Engineering** within **Offshore** & **Onshore Oil/Gas** industry. His specialization widely covers **Production**, **Rigless**, **Completion**, **Reservoir**, **Production Technology**, **Hydraulic Fracturing**, **Surface Production Operations**, **Oil** and **Reservoir Engineering**, **Reservoir Management**, **Natural Gas Engineering**, **Enhanced Oil Recovery**, **Well Completion** and **Workover**, **Well Control**, **Waterflooding**, **Drill String Design**, **Casing Design**, **Wireline Operations**, **Reservoir Simulation**, **Artificial Lift**, **Nodal Analysis** and **Mud Technology**. He is further an expert in **ECLIPCE** (**100-300**), **PETREL**, **FRACCADE**, petroleum expert package (**MBAL**, **PROSPER**, **GAP**), **KAPPA Software** (**SAHIR**, T**OPAZE** and **DIAMANT**), landmark package (**CASING SEAT**, **STRESSCHECK** and **WELLCAT**) and **PVTSIM**.

He is currently the **Operations Manager** of a prestigious consultancy company in Egypt overseeing all major operations within the **Oil Production**. He is responsible for making projects and consultancy required from his company. During his career life, Dr. Al-Rammah held various positions such as a **Consultant Engineer**, **Head of Petroleum Software Department** and **Software Developer**. He has been active in the academe as well as the **Lecturer** of the **Suez Canal University.**

Dr. Al-Rammah has **Master** and **Bachelor** degrees in **Petroleum Engineering** from the **Suez Canal University** and is currently completing his **Doctorate** degree in **Petroleum Engineering**. Further, he is a **Certified Instructor/Trainer** and an active member of the Society of Petroleum Engineers (**SPE**).

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	***Overview of Chemical Treatment in Oil & Gas Operations*** *Importance of Chemical Treatment in Wellbore and Pipelines • Key Challenges in Production and Transportation • Types of Chemicals Used in the Industry • Case Studies Highlighting Success Stories*

0930 – 0945	*Break*
0945 – 1030	***Basics of Wellbore & Pipeline Corrosion*** *Mechanisms of Corrosion in Wellbores and Lines • Types of Corrosion (Uniform, Pitting, Galvanic, etc.) • Detection Methods for Corrosion • Impacts of Corrosion on Operational Efficiency*
1030 – 1130	***Role of Inhibitors in Corrosion Prevention*** *Types of Corrosion Inhibitors (Film-Forming, Volatile, etc.) • Application Methods for Inhibitors • Selection Criteria for Corrosion Inhibitors • Monitoring and Optimization of Inhibitor Performance*
1130 – 1215	***Scaling & its Impacts on Wells & Lines*** *Types of Scales (Carbonate, Sulfate, Silicate) • Causes of Scaling in Oilfield Operations • Detection and Analysis Techniques • Impacts on Flow Assurance and Equipment*
1215 – 1230	*Break*
1230 – 1330	***Basics of Scale Inhibitors*** *Principles of Scale Prevention • Types of Scale Inhibitors and Their Chemistries • Field Application Techniques for Scale Inhibitors • Case Studies of Scale Management*
1330 – 1420	***Safety & Environmental Considerations in Chemical Treatment*** *Handling and Storage of Chemicals • Environmental Impact of Chemical Spills • Regulatory Compliance and Reporting • Safety Protocols During Chemical Application*
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 – 0830	***Formation Damage*** *Causes of Formation Damage • Types of Formation Damage (Physical, Chemical, Biological) • Impact of Formation Damage on Well Productivity • Diagnostic Techniques*
0830 – 0930	***Acidizing as a Chemical Treatment*** *Overview of Acidizing Techniques (Matrix Acidizing, Fracture Acidizing) • Acid Types Used (HCl, HF, Organic Acids) • Additives Used in Acidizing Treatments • Pre- and Post-Treatment Evaluation*
0930 – 0945	*Break*
0945 – 1100	***Clay Stabilization in Wellbore Operations*** *Role of Clays in Formation Damage • Mechanisms of Clay Swelling and Migration • Types of Clay Stabilizers and Their Applications • Monitoring the Effectiveness of Treatments*
1100 – 1215	***Paraffin & Asphaltene Deposition*** *Formation Mechanisms of Paraffin and Asphaltene • Impacts of Deposits on Production and Flow • Detection and Monitoring Methods • Chemical Treatment Strategies*

1215 – 1230	*Break*
1230 – 1330	***Solvent-Based Treatments*** *Types of Solvents for Paraffin and Asphaltene Removal • Field Application Techniques for Solvents • Challenges in Solvent-Based Treatments • Integration with Other Chemical Treatments*
1330 – 1420	***Case Studies on Formation Damage Treatment*** *Real-World Examples of Formation Damage • Challenges Faced During Treatment • Lessons Learned and Best Practices • Group Discussion*
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 – 0830	***Overview of Flow Assurance Challenges*** *Definition and Importance of Flow Assurance • Common Flow Issues (Hydrates, Wax, Emulsions, etc.) • Impacts of Flow Assurance Problems on Production • Role of Chemical Treatment in Mitigating Flow Assurance Issues*
0830 – 0930	***Wax Deposition & Mitigation*** *Mechanism of Wax Formation in Pipelines • Chemical Treatments for Wax Prevention • Wax Inhibitors vs. Dispersants • Monitoring Techniques for Wax Deposits*
0930 – 0945	*Break*
0945 – 1100	***Hydrate Formation & Prevention*** *Mechanism of Hydrate Formation • Operating Conditions for Hydrate Formation • Types of Hydrate Inhibitors (Thermodynamic, Low-Dosage) • Field Applications and Monitoring*
1100 – 1215	***Emulsion Formation & Demulsifiers*** *Causes and Types of Emulsions • Impacts of Emulsions on Production and Processing • Demulsifier Selection and Application • Monitoring and Evaluation of Demulsifier Performance*
1215 – 1230	*Break*
1230 – 1330	***Chemical Treatments for Pipeline Cleaning*** *Types of Deposits in Pipelines • Pigging and Chemical Cleaning Synergy • Surfactants and Dispersants in Cleaning • Safety Protocols for Cleaning Operations*
1330 – 1420	***Flow Assurance Case Studies*** *Analysis of Flow Assurance Problems • Real-World Examples of Chemical Solutions • Discussion of Successes and Failures • Lessons Learned for Future Applications*
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 – 0830	***Microbial Induced Corrosion (MIC)*** *Role of Microbes in Corrosion • Identification of MIC-Related Issues • Biocide Selection and Application • Monitoring Microbial Activity in the Field*
0830 – 0930	***Chemical Treatments for H_2S & CO_2 Management*** *Sources and Impacts of H2S and CO2 in Production • Scavengers and Their Application • Challenges in Scavenger Efficiency • Safety Considerations When Dealing with Sour Production*
0930 – 0945	*Break*
0945 – 1100	***Water Treatment for Injection & Disposal*** *Quality Requirements for Injection Water • Types of Chemicals Used in Water Treatment • Filtration and Separation Aids • Monitoring Treated Water Quality*
1100 – 1215	***Compatibility of Chemicals in Multiphase Systems*** *Understanding Chemical Interactions • Effects of Temperature and Pressure on Chemical Performance • Testing Compatibility Before Field Application • Real-World Examples of Chemical Incompatibility*
1215 – 1230	*Break*
1230 – 1330	***Remedial Treatments for Failed Wells & Lines*** *Strategies for Addressing Severe Corrosion and Scaling • Advanced Acidizing Techniques • Chemical Treatments for Flowback and Cleanup • Economic Considerations for Remedial Actions*
1330 – 1420	***Smart Chemical Systems*** *Overview of Intelligent Chemical Systems • Real-Time Monitoring Technologies • Adaptive Chemical Treatment Strategies • Future Trends in Smart Chemical Systems*
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 – 0830	***Chemical Treatment Design & Planning*** *Steps for Designing a Treatment Plan • Risk Assessment in Chemical Applications • Field Validation of Treatment Plans • Optimization for Cost and Performance*
0830 – 0930	***Monitoring & Optimization of Treatments*** *Real-Time Monitoring Technologies (Sensors, Software) • Data Analysis for Treatment Performance • Adjusting Chemical Dosages in the Field • Case Studies on Treatment Optimization*
0930 – 0945	*Break*
0945 – 1100	***Troubleshooting Common Issues in Chemical Treatment*** *Identifying Root Causes of Failures • Solutions for Inhibitor Ineffectiveness • Dealing with Unexpected Chemical Interactions • Collaboration Between Field and Technical Teams*
1100 – 1215	***Economic & Environmental Considerations*** *Cost Analysis for Chemical Treatments • Balancing Performance with Environmental Impact • Regulatory Compliance for Chemical Usage • Sustainability Initiatives in the Oilfield*
1215 – 1230	*Break*

1230 – 1345	***Field Exercises & Demonstrations*** *Hands-On Application of Corrosion Inhibitors • Simulated Treatments for Scaling and Wax • Laboratory Demonstrations of Chemical Reactions • Interactive Q&A with Field Experts*
1330 – 1345	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t 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

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