COURSE OVERVIEW LE1009-3D
Advanced Oil & Gas Sampling & Preservation

Course Title
Advanced Oil & Gas Sampling & Preservation

Course Date/Venue
Please see page 3

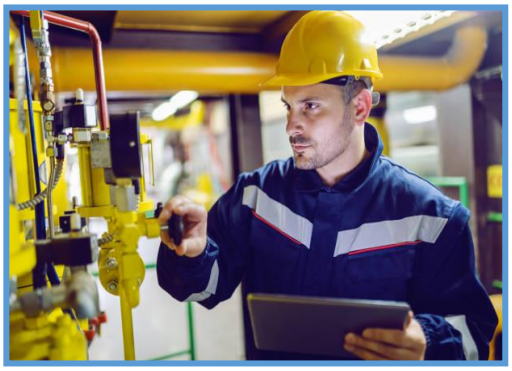
Course Reference
LE1009-3D

Course Duration
Three days/1.8 CEUs/18 PDHs

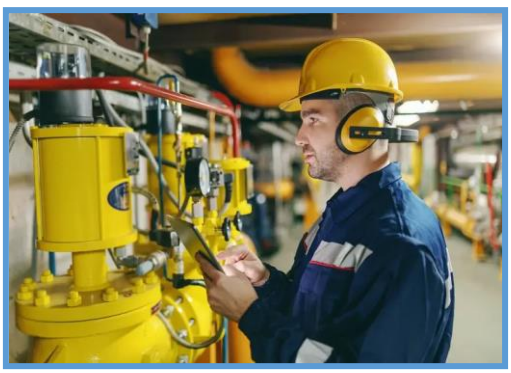
Course Description

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 Advanced Oil & Gas Sampling & Preservation. It covers the principles of sampling and preservation, methods of oil and gas sampling and sampling in oilfield environments; the regulatory and standards for sampling and techniques for preventing contamination; the proper preservation of liquid and gas samples and discuss the impact of storage conditions on sample quality; and the quality control in sample preservation, guidelines for transporting samples to testing laboratories as well as packing, sealing and labeling techniques.



During this interactive course, participants will learn to deal with high-salinity or high-pH samples, manage complex contamination issues and use advanced equipment for sampling; identify common sampling errors and their causes and apply techniques for resolving preservation failures; handle equipment malfunctions during sampling and rectify contamination or degradation problems; the innovations in real-time sampling systems, remote sensing and autonomous sampling technologies; the IoT and sensor integration for sample preservation; and the future trends in automated sample preservation techniques.



Course Objectives

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

- Apply and gain an advanced knowledge on oil & gas sampling and preservation
- Discuss the principles of sampling and preservation, methods of oil and gas sampling and sampling in oilfield environments
- Review regulatory and standards for sampling and techniques for preventing contamination
- Carryout proper preservation of liquid and gas samples and discuss the impact of storage conditions on sample quality
- Employ quality control in sample preservation, guidelines for transporting samples to testing laboratories as well as packing, sealing and labeling techniques
- Deal with high-salinity or high-pH samples, manage complex contamination issues and use advanced equipment for sampling
- Identify common sampling errors and their causes and apply techniques for resolving preservation failures
- Handle equipment malfunctions during sampling and rectify contamination or degradation problems
- Discuss the innovations in real-time sampling systems, remote sensing and autonomous sampling technologies
- Apply IoT and sensor integration for sample preservation and discuss the future trends in automated sample preservation 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 provides an overview of all significant aspects and considerations of advanced oil and gas sampling and preservation for process engineers, laboratory technicians and analysts, quality control/assurance personnel, production engineers, reservoir engineers, HSE (health, safety and environment) officers, field operators and supervisors, oil and gas field chemists, environmental compliance officers, technical auditors and inspectors, pipeline and terminal operators, R&D personnel in oil and gas sector and other technical staff.

Course Date/Venue

Session(s)	Date	Venue
1	June 29-July 01, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
2	September 01-03, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	October 26-28, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
4	December 15-17, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

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 **1.8 CEUs** (Continuing Education Units) or **18 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:

Mr. Kyle Bester is a **Senior Water Engineer** with extensive years of practical experience within the **Oil & Gas**, **Power & Water Utilities** and other **Energy** sectors. His expertise includes **Water Sampling Techniques**, **Water Chemistry** for **Power Plant**, **Water Sampling** and **Chemical Portable Water Analysis**, **Water Reservoir**, **Water Tanks**, **Water Pumping** Station, **Water Distribution** System, **Water Network** System, **Water Pipes & Fittings**, **Water Hydraulic** Modelling, **Water Storage Reservoir**, **Reservoirs & Pumping** Stations Design & Operation, **Pumping** Systems, Interconnecting **Pipelines**, **Water Network Hydraulic** Simulation Modelling, **Water Supply** Design, **Water Balance Modelling**, **Water Distribution Network**, **Water Network** System Analysis, **Water Forecasts** Demand, **Water Pipelines** Materials & Fittings, **Water Network** System Design, Pump Houses & Booster Pumping Stations, **Potable Water Transmission**, **Water Distribution Network**, Districts Meters Areas (DMAs), **Water Supply & Desalination Plants** Rehabilitation, **Water Reservoirs & Pumping Stations**, **Water Network System** Extension, Water Network System Replacement & Upgrade, **Water Networks** Optimization, **Water Supply & Distribution** Systems Efficiency & Effectiveness, **Pipe** Materials & Fittings, **Service Reservoir** Design & Operation, **Pipes & Fittings**, **Water Network** System Design & Operation, **Supply Water Network** Rehabilitation, **Water Loss** Reduction, **Main Water** System Construction, **Main Water Line** Construction, Transmission & Distribution **Pipelines**, **Water Distribution** Design & Modelling, **Water Supply** System, Oilfield **Water Treatment**, Best Practice in **Sewage** & Industrial **Wastewater Treatment** & Environmental Protection, **Water Distribution** Design & Modelling, **Desilting**, Treating & Handling Oily **Water**, **Water** Sector Orientation, Environmental Impact Assessment (**EIA**), **Potable Water**, **Reverse Osmosis** Treatment Technology and **Chlorination** System, **Well** Inventory, Monitoring & Conservation, **Qualitative Analysis** of Soil & Ground Water, **Water** Networking, **Hydraulic Modelling** Systems, **Pumping** Stations, **Centrifugal Pumps**, **Pipelines & Pumping**, **Water Reservoirs**, **Water Storage Tanks**, Extended Activated **Sludge** Treatment, **Sewage & Industrial Wastewater** Treatment & Environmental Protection, Supervising & Monitoring **Sewage Works**, **Water Desalination** Technologies, **Water Distribution & Pump** Station, Best **Water Equipment** Selection & Inspection, **Hydraulic Modelling** for Water Network Design, **Water Utility** Industry, **Water Desalination** Technologies & New Development, **Water Hydrology**, **Water Conveyors**, **Water Networks** Rehabilitation. He is currently the **Part Owner & Manager** of Extreme Water SA wherein he manages, re-designed and commissioned a water and wastewater treatment plants.

During his career life, Mr. Bester has gained his practical and field experience through his various significant positions and dedication as the **Project Manager**, **Asset Manager**, **Manager**, **Water Engineer**, **Supervisor**, **Team Leader**, **Analyst**, **Process Technician**, **Landscape Designer** and **Senior Instructor/Trainer** for various international companies, infrastructures, water and wastewater treatment plants from New Zealand, UK, Samoa, Zimbabwe and South Africa, just to name a few.

Mr. Bester holds a **Diploma** in **Wastewater Treatment** and a **National Certificate** in **Wastewater & Water Treatment**. Further, he is a **Certified Instructor/Trainer**, an **Approved Chemical Handler** and has delivered numerous courses, trainings, conferences, seminars and workshops internationally.

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 Fee

US$ 3,750 per Delegate + **VAT.** 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	***Overview of Oil & Gas Sampling*** *Importance of Accurate Sampling • Sampling Techniques in Upstream & Downstream Sectors • Differences Between Liquid & Gas Sampling • Challenges in Oil & Gas Sampling*
0930 – 0945	*Break*
0945 – 1030	***Principles of Sampling & Preservation*** *Definitions & Principles of Representative Sampling • Importance of Sample Integrity • Preservation Techniques for Oil & Gas Samples • Ensuring Compliance with Industry Standards*
1030 – 1130	***Methods of Oil Sampling*** *Grab Sampling versus Composite Sampling • Automated Sampling Techniques • Manual Sampling Methods • Sampling Equipment & their Uses*
1130 – 1215	***Methods of Gas Sampling*** *Continuous versus Batch Gas Sampling • Techniques for Gas Composition Analysis • Use of Gas Chromatographs in Sampling • Sample Conditioning & Preservation for Gases*
1215 – 1230	*Break*
1230 – 1330	***Sampling in Oilfield Environments*** *Sampling Challenges in High-Temperature & High-Pressure Environments • Sampling from Production Wells & Pipelines • Impact of Environmental Factors on Sample Quality • Regulatory & Safety Concerns During Sampling*

1330 – 1420	***Regulatory & Standards for Sampling*** *International & Local Standards (e.g., ASTM, ISO) • Ensuring Compliance with Industry Regulations • Best Practices for Maintaining Sampling Equipment • Documentation & Traceability of Samples*
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	***Basics of Sample Preservation*** *Importance of Sample Preservation in Ensuring Accurate Results • Types of Preservatives Used in Oil & Gas Samples • Techniques for Preventing Contamination • Preservation for Short-Term versus Long-Term Storage*
0830 – 0930	***Preservation of Liquid Samples*** *Chemical Preservatives for Oil & Water Samples • Methods for Freezing & Cooling Samples • The Role of Inert Gases in Sample Preservation • Handling Volatile Organic Compounds in Samples*
0930 – 0945	*Break*
0945 – 1100	***Preservation of Gas Samples*** *Techniques for Preserving Gas Samples in Pressurized Containers • Use of Refrigerants & Cryogenic Methods • Preventing Loss of Volatile Components • Storage & Transportation of Gas Samples*
1100 – 1215	***Impact of Storage Conditions on Sample Quality*** *Effects of Temperature & Pressure on Oil & Gas Samples • Chemical Reactions & Degradation During Storage • Proper Labeling & Handling for Long-Term Preservation • Identifying & Mitigating Sample Contamination*
1215 – 1230	*Break*
1230 – 1330	***Quality Control in Sample Preservation*** *Routine Checks on Preservatives & Storage Conditions • The Role of Preservatives in Maintaining Sample Integrity • Calibration of Preservation Equipment • Best Practices for Sample Validation & Traceability*
1330 – 1420	***Handling & Transport of Preserved Samples*** *Guidelines for Transporting Samples to Testing Laboratories • Packing, Sealing & Labeling Techniques • Chain of Custody Procedures • Maintaining Integrity During Field-To-Laboratory Transition*
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	***Handling Complex Samples*** *Sampling from Multiphase Flow Systems • Dealing with High-Salinity or High-pH Samples • Sampling from Unconventional Reservoirs • Managing Complex Contamination Issues*
0830 – 0930	***Use of Advanced Equipment for Sampling*** *High-Performance Automatic Samplers • Advanced Equipment for Preserving Volatile Components • In-Line Sampling & its Advantages • Automation in Oil & Gas Sampling Processes*

0930 – 0945	*Break*
0945 – 1115	***Case Studies on Sampling & Preservation*** *Successful Case Studies from Oil Fields • Failure Scenarios & Lessons Learned • Addressing Challenges in Remote & Offshore Locations • Case Studies on Contamination & Preservation Failure*
1115 – 1230	***Troubleshooting Common Sampling Issues*** *Identifying Common Sampling Errors & their Causes • Techniques for Resolving Preservation Failures • Handling Equipment Malfunctions During Sampling • Rectifying Contamination or Degradation Problems*
1230 – 1245	*Break*
1245 – 1345	***Emerging Technologies in Oil & Gas Sampling*** *Innovations in Real-Time Sampling Systems • Remote Sensing & Autonomous Sampling Technologies • IoT & Sensor Integration for Sample Preservation • Future Trends in Automated Sample Preservation Techniques*
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

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