



COURSE OVERVIEW TE0194 Water, Gas & Oil Treatment Process Design

Course Title

Water, Gas & Oil Treatment Process Design

Course Date/Venue

Session 1: February 10-14, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: September 07-11, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

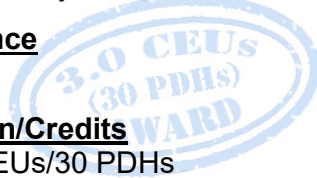


Course Reference

TE0194

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.

The course is designed to provide professionals working in the oil and gas sector with a comprehensive understanding of water treatment processes, quality control measures, and troubleshooting techniques. Participants will learn about the importance of water management in the industry, gain knowledge of various water treatment technologies, including RO packages and media filters, and develop the skills necessary to ensure efficient and reliable water treatment operations. This course combines theoretical knowledge with practical case studies and hands-on exercises to equip participants with the tools they need to optimize water treatment processes, implement effective control strategies, and address common challenges and issues.



Further, the course will discuss the importance of water management in oil and gas operations including water sources and their characteristics; the regulatory requirements and industry standards, water chemistry and water treatment processes and technologies; the coagulation and flocculation processes, sedimentation and clarification methods, filtration techniques and reverse osmosis (RO) systems; the water quality assessment and monitoring; and the key parameters for water quality evaluation.



During this interactive course, participants will learn the sampling and analysis techniques and interpretation of water quality test results; designing, operating and controlling of water treatment systems; the system design considerations and equipment selection; the process optimization, performance evaluation and automation and control strategies for water treatment processes; maintaining and troubleshooting water treatment systems, including RO packages and media filters; the water management, conservation and troubleshooting including water reuse and recycling strategies; the energy efficiency in water treatment processes and integrated water management plans; and troubleshooting common challenges and issues in water treatment processes, focusing on RO packages and media filters.

Course Objectives

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

- Apply systematic techniques on water treatment and quality control for the oil and gas industry
- Discuss the importance of water management in oil and gas operations including water sources and their characteristics
- Recognize regulatory requirements and industry standards, water chemistry and water treatment processes and technologies
- Carryout coagulation and flocculation processes, sedimentation and clarification methods, filtration techniques and reverse osmosis (RO) systems
- Employ water quality assessment and monitoring and identify the key parameters for water quality evaluation
- Apply sampling and analysis techniques and interpretation of water quality test results
- Design, operate and control water treatment systems as well as apply system design considerations and equipment selection
- Carryout process optimization, performance evaluation and automation and control strategies for water treatment processes
- Maintain and troubleshoot water treatment systems, including RO packages and media filters
- Apply water management, conservation and troubleshooting including water reuse and recycling strategies
- Employ energy efficiency in water treatment processes and integrated water management plans
- Troubleshoot common challenges and issues in water treatment processes, focusing on RO packages and media filters

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Howard 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 on water treatment and quality control for supervisors, engineers, operators, production and analytical chemists, technicians, scientists and analysts.

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\$ 5,500 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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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.
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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 **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:



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 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 Chemistry for Power Plant, 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, workshops internationally.



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 – 0900	Introduction to Water Treatment in the Oil & Gas Industry
0900 – 0930	Importance of Water Management in Oil & Gas Operations
0930 – 0945	Break
0945 – 1100	Water Sources & their Characteristics
1100 – 1215	Overview of Regulatory Requirements & Industry Standards
1215 – 1230	Break
1230 – 1330	Water Chemistry
1330 – 1420	Introduction to Water Treatment Processes & Technologies
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0830	Water Treatment Technologies & RO Packages
0830 – 0930	Coagulation & Flocculation Processes
0930 – 0945	Break
0945 – 1100	Sedimentation & Clarification Methods
1100 – 1215	Filtration Techniques (Media Filters, Sand Filters, Activated Carbon Filters)
1215 – 1230	Break
1230 – 1420	Reverse Osmosis (RO) Systems: Principles, Applications, & Troubleshooting
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0830	Water Quality Assessment & Monitoring
0830 – 0930	Key Parameters for Water Quality Evaluation
0930 – 0945	Break
0945 – 1100	Sampling & Analysis Techniques
1100 – 1215	Interpretation of Water Quality Test Results
1215 – 1230	Break
1230 – 1420	Case Studies & Practical Exercises
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0830	Design, Operation & Control of Water Treatment Systems
0830 – 0930	System Design Considerations & Equipment Selection
0930 – 0945	Break
0945 – 1030	Process Optimization & Performance Evaluation
1030 – 1230	Automation & Control Strategies for Water Treatment Processes



1230 – 1245	Break
1245 – 1420	Maintenance & Troubleshooting of Water Treatment Systems, Including RO Packages & Media Filters
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0900	Water Management, Conservation & Troubleshooting
0900 – 0930	Water Reuse & Recycling Strategies
0930 – 0945	Break
0945 – 1130	Energy Efficiency in Water Treatment Processes
1130 – 1215	Integrated Water Management Plans
1215 – 1230	Break
1230 – 1300	Troubleshooting Common Challenges & Issues in Water Treatment Processes, Focusing on RO Packages & Media Filters
1300 – 1345	Review of Best Practices & Future Trends
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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