

COURSE OVERVIEW TE0252
Water Treatment and Reverse Osmosis Units

Course Title

Water Treatment and Reverse Osmosis Units

Course Date/Venue

September 29-October 03, 2024/The Regent Meeting Room, The H Dubai Hotel, Sheikh Zayed Road - Trade Centre, Dubai, UAE

Course Reference

TE0252

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 Water Treatment and Reverse Osmosis Units. It covers the importance of water treatment in the industry including the fundamental concepts and processes of water treatment; the fundamentals, basic principles and role of reverse osmosis in water treatment; the types of water used in the petroleum industry and the common contaminants; the global and regional standards for water quality and safety and environmental considerations to ensure safety in water treatment processes; the types, selection criteria and maintenance of reverse osmosis membranes; the system components and design principles of RO systems; and the necessity and methods for pre-treatment processes.



During this interactive course, participants will learn the operating RO systems; the common operational problems and advanced oxidation processes; the comparison of ultrafiltration and nanofiltration with RO systems; the ion exchange techniques in water softening and purification; the emerging technologies in water treatment and water reuse and recycling; the system maintenance and longevity for maintaining RO system; the energy efficiency in water treatment and quality control and monitoring; the cost management, sustainability practices and integrating RO system in process operation; and the wastewater management and the latest industry regulations and compliance strategies.



Course Objectives

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

- Apply and gain a good working knowledge on water treatment and reverse osmosis units
- Discuss the importance of water treatment in the industry including the fundamental concepts and processes of water treatment
- Explain the fundamentals, basic principles and role of reverse osmosis in water treatment
- Identify the types of water used in the petroleum industry and common contaminants
- Discuss global and regional standards for water quality as well as safety and environmental considerations to ensure safety in water treatment processes
- Identify the types, selection criteria and maintenance of reverse osmosis membranes
- Recognize the system components and design principles of RO systems as well as the necessity and methods for pre-treatment processes
- Determine operating RO systems covering parameters, monitoring and control
- Identify and resolve common operational problems and apply proper techniques and application of advanced oxidation processes
- Compare ultrafiltration and nanofiltration with no systems and carryout ion exchange techniques in water softening and purification
- Discuss the emerging technologies in water treatment and apply water reuse and recycling
- Implement system maintenance and longevity for maintaining RO System, energy efficiency in water treatment and quality control and monitoring
- Employ cost management, sustainability practices and integrating RO systems in process operation
- Carryout wastewater management in industry and discuss the latest industry regulations and compliance strategies

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, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

Who Should Attend


This course provides an overview for all significant aspects and considerations of water treatment and reverse osmosis units for managers, chemical or process engineers, environmental and public health officials, maintenance and service providers.

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: -


- 

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.

- 

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.

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 **Oilfield Water Treatment, Reverse Osmosis, 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, 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 and workshops internationally.

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.

Accommodation

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

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 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: Sunday, 29th of September 2024

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0900	Overview of Water Treatment: Understanding its Importance in the Industry
0900 – 0930	Basic Principles of Water Treatment: Covering Fundamental Concepts & Processes
0930 – 0945	<i>Break</i>
0945 – 1100	Fundamentals of Reverse Osmosis: Basic Principles & Its Role in Water Treatment
1100 – 1230	Water Sources & Contaminants: Types of Water Used in the Petroleum Industry & Common Contaminants
1230 – 1245	<i>Break</i>
1245 – 1320	Regulatory Standards for Water Quality: Discussing Global & Regional Standards
1320 – 1420	Safety & Environmental Considerations: Ensuring Safety in Water Treatment Processes
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2: Monday, 30th of September 2024

0730 – 0830	<i>Reverse Osmosis Membranes: Types, Selection Criteria & Maintenance</i>
0830 - 0930	<i>Design of RO Systems: Understanding System Components & Design Principles</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Pre-Treatment Processes: Necessity & Methods for Pre-Treating Water</i>
1100 – 1230	<i>Operating RO Systems: Parameters, Monitoring & Control</i>
1230 – 1245	<i>Break</i>
1245 – 1320	<i>Troubleshooting Common Issues: Identifying & Resolving Common Operational Problems</i>
1320 - 1420	<i>Case Studies: Reviewing Real-World Applications in the Petroleum Industry</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 01st of October 2024

0730 – 0830	<i>Advanced Oxidation Processes: Techniques & Applications</i>
0830 - 0930	<i>Ultrafiltration & Nanofiltration: Comparing with RO Systems</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Ion Exchange Techniques: Application in Water Softening & Purification</i>
1100 – 1230	<i>Emerging Technologies in Water Treatment: Innovations & Future Trends</i>
1230 – 1245	<i>Break</i>
1245 – 1320	<i>Water Reuse & Recycling: Methods & Benefits in the Process Sector</i>
1320 - 1420	<i>Interactive Workshop: Practical Exercises & Problem-Solving Scenarios</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4: Wednesday, 02nd of October 2024

0730 – 0930	<i>System Maintenance & Longevity: Best Practices for Maintaining RO Systems</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Energy Efficiency in Water Treatment: Strategies to Reduce Energy Consumption</i>
1100 – 1230	<i>Quality Control & Monitoring: Advanced Methods for Ensuring Water Quality</i>
1230 – 1245	<i>Break</i>
1245 – 1320	<i>Cost Management: Balancing Cost-Effectiveness with Efficiency</i>
1320 - 1420	<i>Sustainability Practices: Environmental Sustainability in Water Treatment</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 03rd of October 2024

0730 – 0830	<i>Group Discussion: Sharing Experiences & Strategies Among Participants</i>
0830 - 0930	<i>Integrating RO Systems in Process Operations: Best Practices & Challenges</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Wastewater Management in Industry: Techniques & Importance</i>
1100 – 1230	<i>Compliance & Regulation Update: Latest Industry Regulations & Compliance Strategies</i>

1230 - 1245	Break
1245 - 1345	Future of Water Treatment: Emerging Trends & Future Outlook
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

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org