

COURSE OVERVIEW TE0274
Water Technology

Course Title

Water Technology

Course Date/Venue

December 09-13, 2024/Ajman Meeting Room,
 Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference

TE0274

Course Duration/Credits

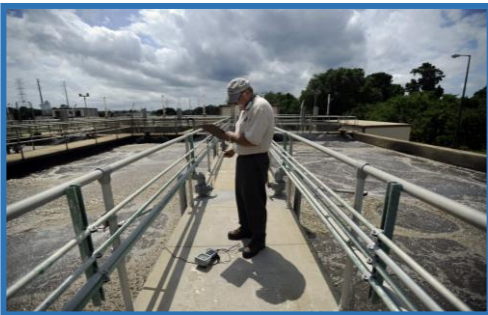
Five days/3.0 CEUs/30 PDHs



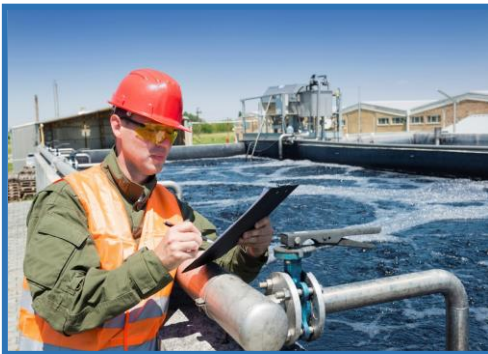
Course Description



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 Technology. It covers the water resources management, hydrological cycle and water budgeting; the principles of water quality, basic water chemistry and water and wastewater treatment; the water distribution systems, membrane technologies and advanced oxidation processes (AOPs); and the biological treatment processes, desalination technologies, emerging contaminants and treatment solutions.



Further, the course will also discuss the reuse and recycling of wastewater, water quality guidelines and standards and monitoring water quality; the remote sensing and GIS in water management and point-of-use and point-of-entry treatment systems; protecting water sources from pollution and addressing the link between water quality and public health issues; the integrated water resources management (IWRM); and the principles and practices for managing water resources in a sustainable and equitable manner.

During this interactive course, participants will learn the climate change, water resources and water footprint and conservation; the reduction of energy use in water and wastewater treatment facilities and managing water in urban environments including stormwater management and green infrastructure; the water policy and



governance, smart water networks and nanotechnology in water treatment; the emerging technologies in water treatment including decentralized water systems; and the interdependence between water and energy systems including hydropower.

Course Objectives

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

- Apply and gain an in-depth knowledge on water technology
- Carryout water resources management, hydrological cycle and water budgeting
- Discuss the principles of water quality, basic water chemistry and water and wastewater treatment
- Recognize water distribution systems, membrane technologies and advanced oxidation processes (AOPs)
- Employ biological treatment processes, desalination technologies, emerging contaminants and treatment solutions
- Apply reuse and recycling of wastewater, water quality guidelines and standards and monitoring water quality
- Carryout remote sensing and GIS in water management and discuss point-of-use and point-of-entry treatment systems
- Protect water sources from pollution and address the link between water quality and public health issues
- Explain integrated water resources management (IWRM) including the principles and practices for managing water resources in a sustainable and equitable manner
- Identify climate change and water resources and apply water footprint and conservation
- Reduce energy use in water and wastewater treatment facilities as well as manage water in urban environments, including stormwater management and green infrastructure
- Discuss water policy and governance, smart water networks and nanotechnology in water treatment
- Explore emerging technologies in water treatment including decentralized water systems and the interdependence between water and energy systems including hydropower

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, 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 of all significant aspects and considerations of water technology for industrial waste water compliance managers, supervisors, water engineers, inspectors, plant managers and HSE staff.



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 **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.

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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.

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 and workshops internationally.

Course Fee

US\$ 5,500 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.

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, 09th of December 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Water Resources Management: An Introduction to Global Water Resources, including Surface and Groundwater Management
0930 – 0945	Break
0945 – 1030	Hydrological Cycle & Water Budgeting: The Movement of Water Through the Earth's Hydrosphere
1030 – 1115	Principles of Water Quality: Key Parameters Defining Water Quality, Including Physical, Chemical, and Biological Indicators
1115 – 1200	Basic Water Chemistry: The Chemical Properties of Water Relevant to Treatment Processes and Water Quality Management
1200 – 1215	Break
1215 – 1315	Water & Wastewater Treatment: Conventional and Modern Treatment Processes
1315 – 1420	Water Distribution Systems: The Principles of Designing, Operating, and Maintaining Water Distribution Networks
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2: Tuesday, 10th of December 2024

0730 – 0830	Membrane Technologies: Detailed Exploration of Membrane Filtration Processes such as Reverse Osmosis, Ultrafiltration, and Nanofiltration
0830 – 0930	Advanced Oxidation Processes (AOPs): Technologies for Removing Organic Compounds and Pathogens from Water





0930 – 0945	Break
0945 – 1100	Biological Treatment Processes: Aerobic and Anaerobic Processes for Wastewater Treatment and Nutrient Removal
1100 – 1200	Desalination Technologies: Methods and Challenges of Turning Seawater into Potable Water.
1200 – 1215	Break
1215 – 1315	Emerging Contaminants & Treatment Solutions: Addressing Pharmaceuticals, Personal Care Products, and Microplastics
1315 – 1420	Reuse & Recycling of Wastewater: Technologies and Strategies for Water Reuse, including Greywater Systems
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3: Wednesday, 11th of December 2024

0730 – 0830	Water Quality Guidelines & Standards: Review of National and International Standards for Drinking Water and Effluent
0830 – 0930	Monitoring Water Quality: Modern Techniques and Technologies for Water Quality Assessment
0930 – 0945	Break
0945 – 1100	Remote Sensing & GIS in Water Management: Applications of Satellite Imagery and GIS in Water Resource Management
1100 – 1200	Point-of-Use & Point-of-Entry Treatment Systems: Technologies for At-Home or At-Building Water Treatment
1200 – 1215	Break
1215 – 1315	Source Water Protection: Strategies for Protecting Water Sources from Pollution
1315 – 1420	Public Health & Water Quality: The Link Between Water Quality and Public Health Issues
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday, 12th of December 2024

0730 – 0830	Integrated Water Resources Management (IWRM): Principles and Practices for Managing Water Resources in a Sustainable and Equitable Manner
0830 – 0930	Climate Change & Water Resources: Impact of Climate Change on Water Availability and Quality
0930 – 0945	Break
0945 – 1100	Water Footprint & Conservation: Methods for Calculating Water Footprint and Strategies for Water Conservation in Industries
1100 – 1200	Energy Efficiency in Water Treatment: Reducing Energy Use in Water and Wastewater Treatment Facilities
1200 – 1215	Break
1215 – 1315	Sustainable Urban Water Management: Approaches for Managing Water in Urban Environments, including Stormwater Management and Green Infrastructure
1315 – 1420	Water Policy & Governance: The Regulatory and Policy Framework Governing Water Management
1420 – 1430	Recap
1430	Lunch & End of Day Four

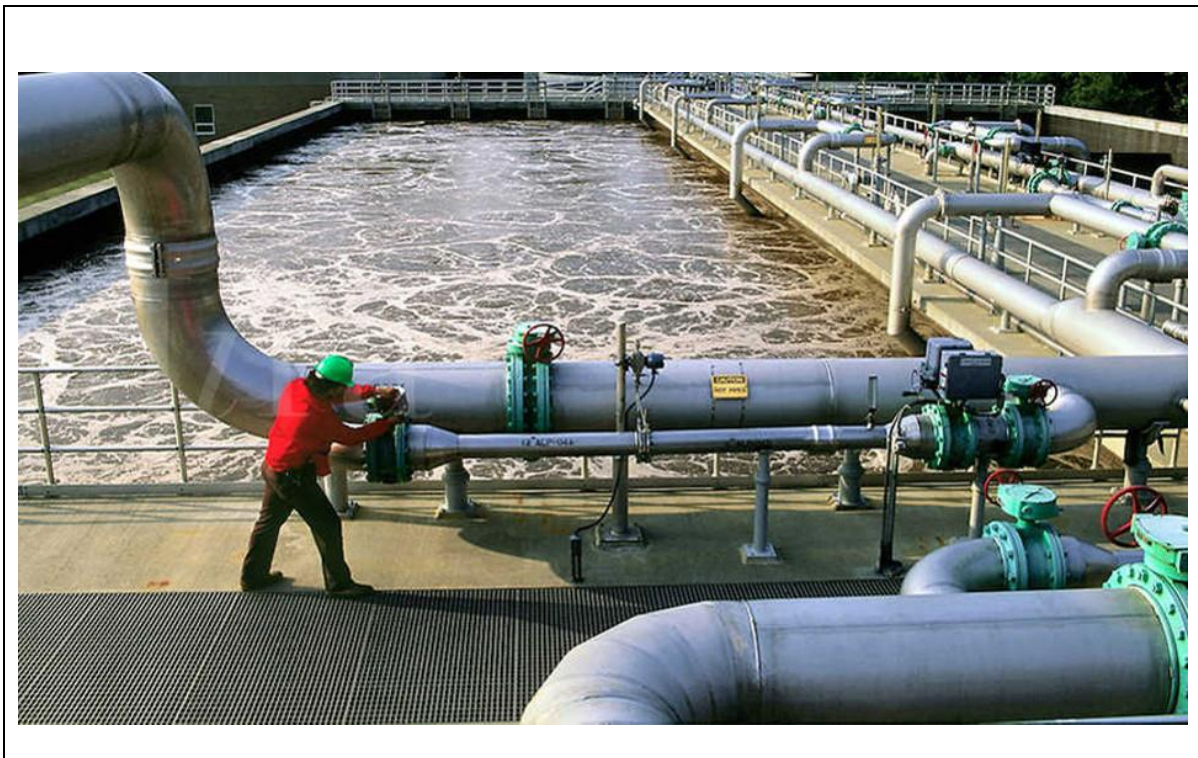


Day 5: Friday, 13th of December 2024

0730 – 0830	<i>Smart Water Networks: Implementation of AI, and Smart Sensors in Water Distribution and Monitoring</i>
0830 – 0930	<i>Nanotechnology in Water Treatment: The Potential of Nanomaterials and Nano-Enabled Devices for Improving Water Treatment</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Emerging Technologies in Water Treatment: Exploration of Cutting-Edge Technologies and their Potential Impact</i>
1100 – 1200	<i>Decentralized Water Systems: Benefits and Challenges of Decentralized Water Treatment and Supply Systems</i>
1200 – 1215	<i>Break</i>
1215 – 1300	<i>Water-Energy Nexus: The Interdependence Between Water and Energy Systems, Including Hydropower</i>
1300 – 1345	<i>Course Summary & Future Outlook: The Future of Water Technology and strategic Planning for Water and Electricity Companies</i>
1345 – 1400	<i>Course Conclusion</i>
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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