

COURSE OVERVIEW TE0253
Advanced Surface Storage Facilities
& Pipeline Networks

Course Title

Advanced Surface Storage Facilities & Pipeline Networks

Course Reference

TE0253

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	September 09-13, 2024	Midtown Board Room, Hampton Inn Houston Downtown by Hilton, London, United Kingdom
2	November 10-14, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.



This course is designed to provide participants with a detailed and advanced overview of Surface Storage Facilities and Pipeline Networks. It covers the types, purposes and importance of surface storage facilities in water management; the fundamentals of pipeline networks, its design principles, types and applications in water distribution; the factors affecting the choice, durability and compatibility with water quality of the material selected for storage and pipelines; the hydraulic principles in pipeline design, its flow dynamics, pressure management and energy considerations; and the safety regulations in compliance with local and international safety standards in construction and operation.



Further, the course will also discuss the storage facilities including capacity planning, site selection and environmental impact assessment; the pipeline network layout and optimization; the modern techniques, methods and machinery in construction and the common construction hurdles; the water treatment and quality control in storage and the project management essentials like budgeting, scheduling and stakeholder management in large-scale projects; the operational best practices for storage facilities; and the techniques for regular pipeline network inspection and maintenance planning.

During this interactive course, participants will learn the technologies and methodologies in leak detection and management; the energy-saving practices in operations; the risk management and emergency preparedness plan in responding to operational crisis; the renewable energy integration covering solar, wind and other renewable sources in water facilities; the materials for pipeline longevity and the water recycling techniques and benefits in storage systems; the future trends and emerging technologies, its potential impact and the environmental considerations in water storage and distribution; the best practices for sustainable water usage and conservation; the strategies for involving communities in water conservation efforts; and the climate change adaptation in water management.

Course Objectives

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

- Apply and gain an advanced knowledge on surface storage facilities and pipeline networks
- Discuss the types, purposes and importance of surface storage facilities in water management
- Explain the fundamentals of pipeline networks including its design principles, types and applications in water distribution
- Identify the factors affecting the choice, durability and compatibility with water quality of the material selected for storage and pipelines
- Carryout hydraulic principles in pipeline design covering its flow dynamics, pressure management and energy considerations
- Implement safety regulations in compliance with local and international safety standards in construction and operation
- Design storage facilities including capacity planning, site selection and environmental impact assessment
- Illustrate the pipeline network layout and optimization as well as employ modern techniques, methods and machinery in construction and address common construction hurdles
- Ensure water treatment and quality control in storage and identify project management essentials like budgeting, scheduling and stakeholder management in large-scale projects
- Carryout the operational best practices for storage facilities and techniques for regular pipeline network inspection and maintenance planning
- Recognize advanced technologies and methodologies in leak detection and management as well as implement energy-saving practices in operations
- Develop risk management and emergency preparedness plan in responding to operational crisis
- Determine renewable energy integration using solar, wind and other renewable sources in water facilities
- Identify advanced materials for pipeline longevity and apply water recycling techniques and benefits in storage systems
- Describe the future trends and emerging technologies covering its potential impact as well as the environmental considerations in water storage and distribution
- Implement best practices for sustainable water usage and conservation as well as strategies for involving communities in water conservation efforts

- Demonstrate climate change adaptation in water management like preparing for and mitigating the impacts of climate change

Who Should Attend

This course provides an overview of all significant aspects and considerations of advanced surface storage facilities and pipeline networks for general supervisor (water) and other technical 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: -

-  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.

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 Fee

London	US\$ 8,800 per Delegate + VAT . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day
Dubai	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.

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 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 Surface Storage Facilities: Types, Purposes & Importance in Water Management
0930 – 0945	Break
0945 – 1030	Fundamentals of Pipeline Networks: Design Principles, Types & Applications in Water Distribution
1030 – 1130	Material Selection for Storage & Pipelines: Factors Affecting Choice, Durability & Compatibility with Water Quality
1130 – 1215	Hydraulic Principles in Pipeline Design: Understanding Flow Dynamics, Pressure Management & Energy Considerations
1215 – 1230	Break
1230 – 1330	Safety Standards & Regulations: Compliance with Local & International Safety Standards in Construction & Operation
1330 – 1420	Case Study Analysis: Real-World Examples of Successful Surface Storage & Pipeline Network Implementations
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0830	Designing Storage Facilities: Capacity Planning, Site Selection & Environmental Impact Assessment
0830 – 0930	Pipeline Network Layout & Optimization: Efficient Design Strategies for Maximum Coverage & Reliability
0930 – 0945	Break
0945 – 1100	Construction Techniques & Challenges: Modern Methods, Machinery & Addressing Common Construction Hurdles
1100 – 1215	Water Treatment & Quality Control in Storage: Ensuring Water Quality Through Design & Treatment Processes
1215 – 1230	Break
1230 – 1330	Project Management Essentials: Budgeting, Scheduling & Stakeholder Management in Large-Scale Projects
1330 – 1420	Interactive Workshop: Practical Design Exercise on Storage Facility & Pipeline Network Planning
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0830	Operational Best Practices for Storage Facilities: Effective Management Strategies for Long-Term Operations
0830 – 0930	Pipeline Network Monitoring & Maintenance: Techniques for Regular Inspection & Maintenance Planning
0930 – 0945	Break



0945 – 1100	Leak Detection & Prevention: Advanced Technologies & Methodologies in Leak Management
1100 – 1215	Energy Efficiency in Storage & Distribution: Implementing Energy-Saving Practices in Operations
1215 – 1230	Break
1230 – 1330	Risk Management & Emergency Preparedness: Planning for & Responding to Operational Crises
1330 – 1420	Group Discussion: Sharing Experiences & Challenges in Operational Management
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

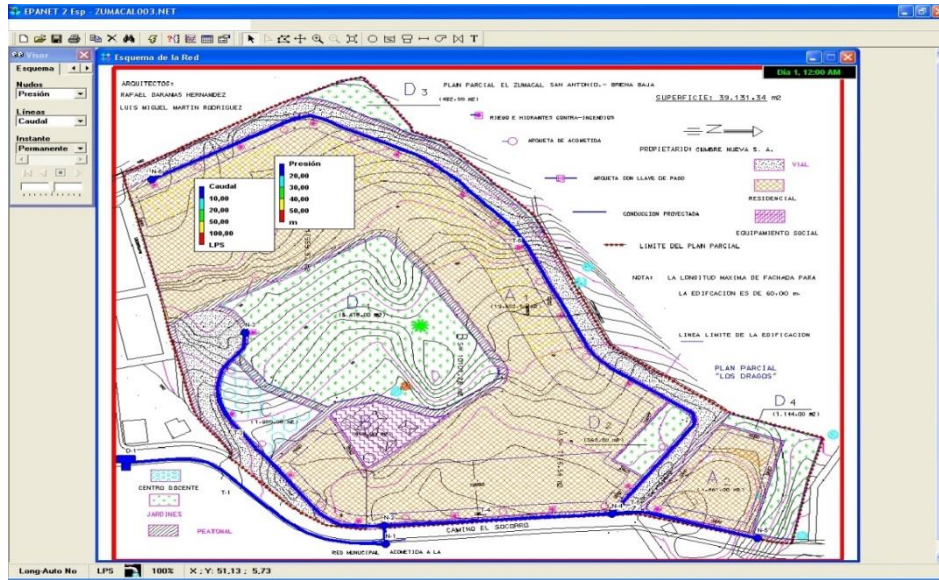
0730 – 0930	Renewable Energy Integration in Water Facilities: Utilizing Solar, Wind & Other Renewable Sources
0930 – 0945	Break
0945 – 1100	Advanced Materials for Pipeline Longevity: Innovations in Pipeline Materials for Enhanced Durability
1100 – 1215	Water Recycling & Reuse in Storage Systems: Techniques & Benefits of Water Recycling
1215 – 1230	Break
1230 – 1330	Future Trends in Water Storage & Distribution: Emerging Technologies & their Potential Impact
1330 – 1420	Guest Lecture: Expert Talk on Cutting-Edge Innovations in the Water Industry
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

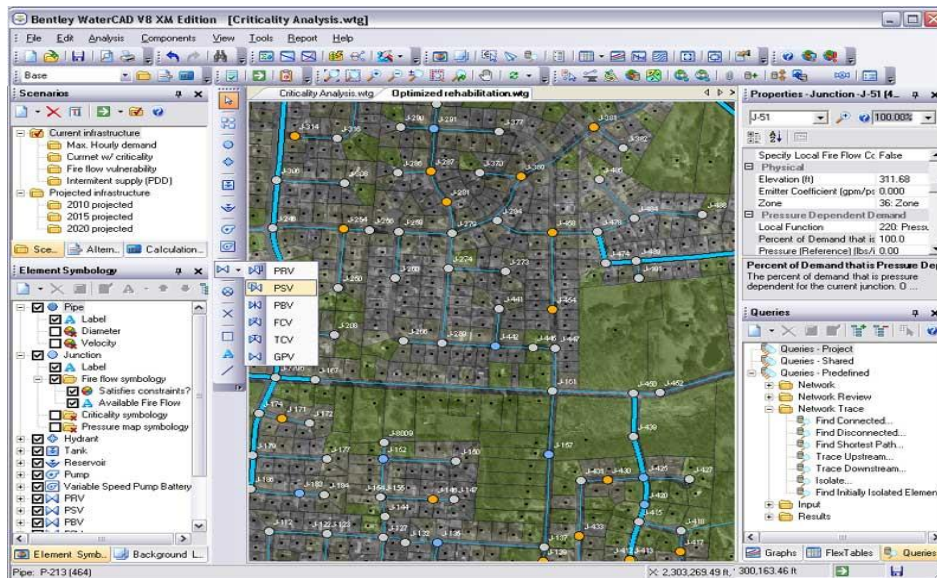
0730 – 0830	Environmental Considerations in Storage & Distribution: Minimizing Ecological Footprint
0830 – 0930	Sustainable Water Resource Management: Best Practices for Sustainable Water Usage & Conservation
0930 – 0945	Break
0945 – 1100	Community Engagement & Public Awareness: Strategies for Involving Communities in Water Conservation Efforts
1100 – 1230	Climate Change Adaptation in Water Management: Preparing for & Mitigating the Impacts of Climate Change
1230 – 1245	Break
1245 – 1345	Regulatory Compliance & Reporting: Navigating Legal Requirements & Environmental Reporting
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the latest revision of “EPANET” and “WATERCAD” Simulators.



EPANET Simulator



WATERCAD Simulator

Course Coordinator

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