Course Title
Water Network Optimization Strategy

Course Date/Venue
September 16-19, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
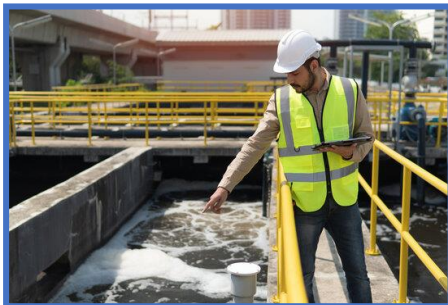
Course Reference
TE0053-4D

Course Duration/Credits
Four days/2.4 CEUs/24 PDHs

2.4 CEUs (24 PDHs) AWARD

H-STK© INCLUDED

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 network optimization strategy. It covers the fundamentals of water network performance and optimization; the structure and dynamics of water networks; the applied optimization modeling and decision making; the optimization modeling concepts and processes; the data and analysis techniques and dynamic programing; and the water network components and solutions.

During this interactive course, participants will learn the identification and modeling of water network components; analyzing and planning for network improvements; developing solutions for water network optimization; the applications of water network optimization strategies; the methodologies for design and optimization of water networks; and selecting strategies for optimizing network performance.

Course Objectives

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

- Apply and gain an in-depth knowledge on water network optimization strategy

- Discuss water network optimization strategies and the fundamentals of water network performance and optimization

- Describe the structure and dynamics of water networks and carryout applied optimization modeling and decision making

- Apply optimization modeling concepts and processes and data and analysis techniques

- Illustrate dynamic programing and recognize water network components and solutions

- Identify and model water network components as well as analyze and plan for network improvements

- Develop solutions for water network optimization and employ applications of water network optimization strategies

- Carryout methodologies for design and optimization of water networks and select strategies for optimizing network performance

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 network optimization strategy for project managers, asset managers, water engineers and superintendents.

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 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: -

- <u>The International Accreditors for Continuing Education and Training (IACET - USA)</u>

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 **2.4 CEUs** (Continuing Education Units) or **24 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.

- <u>British Accreditation Council (BAC)</u>

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 Fee

US$ 4,500 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.

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 course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: **Monday, 16ᵗʰ of September 2024**

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	**PRE-TEST**
0830 – 0930	**Introduction to Water Network Optimization Strategies**
0930 – 0945	Break
0945 – 1100	**Overview of Optimization Strategies**
1100 – 1215	**Fundamentals of Water Network Performance & Optimization**
1215 – 1230	Break
1230 – 1420	**Structure & Dynamics of Water Networks**
1420 – 1430	**Recap**
1430	Lunch & End of Day One

Day 2: **Tuesday, 17ᵗʰ of September 2024**

0730 – 0830	**Applied Optimization Modeling & Decision Making**
0830 – 0930	**Optimization Modeling Concepts & Processes**
0930 – 0945	Break
0945 – 1100	**Data & Analysis Techniques**
1100 – 1215	**Dynamic Programing**
1215 – 1230	Break
1230 – 1420	**Water Network Components & Solutions**
1420 – 1430	**Recap**
1430	Lunch & End of Day Two

Day 3: **Wednesday, 18ᵗʰ of September 2024**

0730 – 0830	**Identifying & Modeling Water Network Components**
0830 – 0930	**Analysis & Planning for Network Improvements**
0930 – 0945	Break
0945 – 1100	**Developing Solutions for Water Network Optimization**
1100 – 1215	**Applications of Water Network Optimization Strategies**
1215 – 1230	Break
1230 – 1420	**Case Studies in Water Network Optimization**
1420 – 1430	**Recap**
1430	Lunch & End of Day Three

Day 4: **Thursday, 19ᵗʰ of September 2024**

0730 – 0830	**Methodologies for Design & Optimization of Water Networks**
0830 – 0930	**Selecting Strategies for Optimizing Network Performance**
0930 – 0945	Break
0945 – 1100	**Summary & Wrap-Up**
1100 – 1215	**Presentations of Water Network Optimization Strategies**
1215 – 1230	Break

1230 – 1345	*Discussion & Critique*
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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