Alliance Training & Conferencing
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This event has been validated with 3ECSA CPD (SAAMA2018330) 3hrs site visit and 1hr Laboratory visit

Advanced Wastewater Treatment & Water Quality Management Workshop

"Modern to Future Cost–Effective Methods of Wastewater Treatment"

First Event: 4th – 6th December 2024
Second Event: 12th – 14th March 2025
Virtual: On Microsoft Teams
Venue: Protea by Marriott Hotel Johannesburg Wanderers

Workshop Overview.

The course is designed to provide a critical problem-solving approach for application to pollution solutions and to extend attendee's knowledge of water quality concepts and issues, trends in water quality remediation and wastewater management practices. It will present a comprehensive overview of the water management, water allocation, and water pollution prevention legislation and modern for parameter analysis and water quality monitoring.

Our course focuses on cause and effects of water pollution and water quality degradation from a range of sources. This **Alliance Training and Conferencing** workshop presents information on the required prototype shift from wastewater treatment and resource recover including strategies for integration of ecological systems during wastewater and effluent treatment. On the last day, a site visit will be conducted, and this will equip all our attendees with relevant physical skills required in water sector for management, technological and operation decision making individuals to protect water resources in South Africa and Africa as a continent. On completion of the course all the attended professional will received a 3CPD accredited certificate and training manuals.

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Our experienced facilitators

Dewald Van Staden

Dewald van Staden's involvement in the water sector stretches over the last 24 years and centres around the management, operation and maintenance of water services works. He is registered as Professional Process Controller and actively serves as the Lead for the Process Controller Division of WISA. He is furthermore registered as a Professional Natural Scientist with SACNASP and serves as the Chair of their Professional Advisory Committee for Water Resources Science.

In addition to his involvement in the operations of water and wastewater works, he is actively involved in assisting municipalities and other Water Services Institutions in preparing for their Blue and Green Drop audits. He is currently also involved in this programme as one of the Lead Assessors. Dewald also conducts training, both CPD and SETA-aligned and is registered as Facilitator, Assessor and Moderator with both EWSETA and LGSETA. He also recently assisted the EWSETA as the Subject Matter Expert for Water.

Karabo Nthethe

Karabo Nthethe, a seasoned **professional (chemical) engineer (PrEng)** with over 20 years of expertise in water resources and wastewater management, is a subject matter expert in his field. His background and qualification in **chemical engineering, a specialization post-graduate qualification in water utilization engineering,** and his extensive knowledge and expertise fuel his passion for creating solutions that drive positive ecological impact.

As a process engineer and senior manager at **ERWAT**, a prominent City Municipality-Owned Wastewater Management Utility, Karabo Nthethe spearheaded several impactful initiatives. These include the development of Infrastructure Development Plans and budgets, the introduction of new innovative technologies to upgrade treatment capacity and improve process efficiency, and the establishment and leadership of a division of process engineering and environmental services. His mentorship of highly competent process engineers and environmentalists, development and implementation of wastewater sludge management strategy and operational plans, and leadership in infrastructure process designs significantly improved the planning and delivery of infrastructure projects and operational efficiency at ERWAT, setting a benchmark for the industry.

The demand for water will continue to expand as the country's population increases as well as social and economic conditions improve in South Africa and Africa as a continent, therefore this will accumulate constraint on the country's scarce water resources and concurrently, increasing potential threats to water quality. Water quality management, must be undertaken within these realities of increased socio-economic development and meeting the water user requirements for specific circumstances and matching them with appropriate measures to ensure on-going beneficial and sustainable water use.

South Africa policies and strategies for water quality management are advanced with reference to international practice, however there are still lessons to be learnt from emerging and innovative approaches. To adequately inform the policy and strategies, the current and potential future water quality challenges needs to be understood.

Advanced water treatment is now a necessity as society mitigates the impacts of increased population, urbanization, industrialization, and the depletion of potable water. Wastewater treatment can not always treat wastewater efficiently, which can generate several concerns including odor issues and health problems.

To keep up with these challenges, new techniques are implemented to treat wastewater. With the application of these treatment technologies, it is possible to further improve the quality of wastewater beyond the limitations of conventional technologies to achieve the goal of resource recovery or resource conservation. Advanced wastewater treatment plant effluents may be recycled directly or indirectly to increase the available water supply.

New treatment technologies can remove a wide range of challenging contaminants from wastewater successfully. As South Africa and the world grapples with shrinking water resources, advanced treatment will become critical to recovering water resources for both potable and non-potable uses.

Course Objectives:

Upon successful completion of this course, the delegates will be able to;

- Describe the purpose of a water quality management systems.
- Understand the key fundamentals and processes of a water quality management systems
- Understand and apply the requirements water quality management systems in the context of an audit.
- Manage audit communication, interviews, report and follow up on a water quality management systems.
- Design and apply principles of advanced treatment technology.
- Undertake socio-technical analysis for the selection of suitable wastewater treatment technologies.
- Perform calculations related to the activated sludge and clarification.
- Interpret the results from those calculations.
- Understand to application of the green drop.
- Design a detailed analysis for an advanced water and wastewater treatment system, for treating process problems and selecting appropriate processes methods that target emerging pollutants, as to meet specified water quality requirements.
- Provide recommendations of appropriate treatment processes for upgrading water and wastewater treatment efficiency.
- Determine appropriate disposal options to mitigate risk of downstream re contamination from treatment technologies by-products.
- Identify and categorize different types of wastewater.

Organizational Impact:

- Enable competence in new and revamped wastewater process projects.
- Ensure that the right effluent treatment technology is selected.
- Improve awareness when communicating with vendors and consultants.

Personal Impact:

- Improve skills and impact on the development of effluent treatment projects.
- Promote creativity in the selection and specification of new wastewater treatment plant
- Enhance ability to troubleshoot and improve existing wastewater installations

- Familiarize with the latest developments in effluent treatment technology.
- Manage audit communication, interviews, report and follow up on a water quality management systems.
- Describe the purpose of a water quality management systems
- Perform calculations related to the Activated Sludge & Clarification Processes

Who Should Attend:

- Water Engineers.
- Process Engineers
- Process Controllers
- Water Quality Specialists
- Water Boards.
- Plant Technicians
- Plant Managers
- Officials involved in wastewater treatment
- Environmental Health Practitioners
- Chief Executive Officers
- Civil Engineers
- Project & Investment Managers
- Heads of Development & Sustainability
- Finance Directors Corporate Affairs Directors
- Municipality Water Heads, Department of Water Affairs, Water Boards
- Product Innovation and Development Managers
- Consulting Engineers , Chemical Engineers
- Water Scientists, Technologists /Technicians
- Water Management Advisors, Planning Managers/Engineers/ Project Managers

Course Outline:

Day One Morning Session:
Water Management and Assessment Aspects:

- Global and Regional water sources allocation
- Water sources use, hydrology and geohydrology
- Water allocations principles
- National Water Act and other regulatory requirements
- Water use during pandemics
- Water quality standards in-stream and end of the pipe
- Physical water quality parameters
- Chemical water quality parameters
- Biological water quality parameters
- Introduction to standard lab analysis: total suspended solids, fecal Coliform, dissolved oxygen, biochemical oxygen demand (BDO5), COD, Fl-, Cl-, toxic metals, organic pollutants.

- Introduction to advanced lab analysis: IC-LC/QTOF, HPLC, GCMS, AAS, TOC, COD Analyzer, UV/Vis Spectrophotometer
- Introduction to electronic monitoring and telemetry use in Integrated Water Resources Management
- The importance of field data collection
- The visualization of water quality monitoring results.

Day One Afternoon Session:

- Overview of conventional wastewater treatment processes
- Microbiology in Wastewater Treatment
- Energy and resource recovery from the wastewater treatment processes

Day Two Morning Session:

- Wastewater Reclamation and Treatment of Impaired Waters – Membrane Systems and Ion Exchange
- Water Reclamation and Reuse – EPs, EDCs and the Three-Barrier philosophy – uncoupling the Water-Energy nexus
- Advanced wetland applications
- Attached Growth Systems
- Biological Nutrient Removal
- Activated Sludge – Operational Calculations including F:M –ratio, Solids Retention Time, Oxygen Requirements, COD:TKN –ratio and SVI(Part 1)

Day Two Afternoon Session:

- Activated Sludge – Operational Calculations including F:M –ratio, Solids Retention Time, Oxygen Requirements, COD:TKN –ratio and SVI(Continue)
- Secondary Sedimentation – Up flow Rates & Solids Loading Rates
- Effluent disposal – impact on aquatic systems
- Wastewater Reclamation and Treatment of Impaired Waters – Membrane Systems and Ion Exchange
- Solids treatment and disposal – impact on groundwater systems
- Monitoring Protocols for Large Water Works

Delegate Short Note For Day Three:

1) On completion 3ECSA CPD/ SACNASP approved certificate.
2) Wastewater plant site visit and laboratory in Pretoria.
3) A copy of South African ID/Valid passport is required for CPD certificate.
4) Transport will be provided by Alliance Training and Conferencing to the site and coming back to the hotel.(In-person delegates)
5) Virtual delegates must have stable internet and a device that's compatible for MS Teams.
6) Kindly tick on the boxes provided on the registration form to reserve your seat/spot on time and should require early bird booking, please be advised that it will be book and pay.

Advanced Wastewater Treatment and Water Quality Management Workshop (3ECSA CPD) points SAAMA2018330

Registration Form

Please write in BLOCK CAPITALS

Company & Delegates Details

Company name: _____

Business Address: _____

_____

Vat: _____

City:_____ Postal Code:_____

_____ Fax:_____

Delegate Details:

1.First Names_____
Position:_____
Email:_____

2.First Names:_____
Position:_____
Email:_____

3.First Names:_____
Position:_____
Email:_____

4.First Names:_____
Position:_____
Email:_____

5.First Names:_____
Position:_____
Email:_____

Book 5 and get 6th Seat for free

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Att: Lethu info@alliancetc.co.za

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Protea Fire and Ice! Durban Umhlanga Ridge

☐ *Transportation to the site @R499.99*

☐ *Secure Parking @R49.99(Durban Only)*

Price per Delegate:R8 999.99(USD490)
Virtual Price:R6 999.99(USD345)
PayPal Available

PayPal available for all international delegates, but pricing excl bank charges

Authorization

Signatory must be authorized to sign on behalf of the contracting Organization:

First Name:_____
Position:_____
Email Address:_____
Signature:_____
Date:_____

THIS BOOKING FORM IS INVALID WITHOUT SIGNATURE

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10. This signed registration form becomes a legal contract with Alliance Training and Conferencing(Pty)Ltd.