Reverse Osmosis Desalination

Focus on: The Manager ☑ The Specialist ☐ Spotlight Programme ☑ Hands-on Skills ☑

Course Overview

Water-stressed areas on our planet are increasing at a fast pace. Every single drop of water needs to be carefully managed, and this poses additional stress on water regulators and users alike.
Water conservation policies and consumption habits need to undergo drastic changes in order to satisfy the water sustainability requirements.
Water treatment becomes an indispensable tool in these efforts and Reverse Osmosis (RO) water treatment plays a critical role. This course will provide attendees with the opportunity to acquire good understanding of the Reverse Osmosis treatment technique. It will, at the same time, stress the importance of monitoring key product water parameters and managing the storage and distribution of RO-produced water.

Course Objectives		This Course is Ideal For:	
1	Realize the global water scarcity problem	✓	Water quality regulators
2	Understand the basic process steps in RO plants	✓	RO plant operators
3	Learn how to monitor RO water quality	✓	Water boards and local water authorities
4	Apply decision making rules in blending regimes	✓	Water quality consultants

Course Content

Day	Theme	Coverage
1	Global data on water availability	• Global information on water demand and supply • The water cycle concept • Water conservation strategies • Water reuse and recycling • The role of water treatment
2	Basic water quality considerations	• Water composition and classifications • Basic water properties and their interpretation • The concept of water ionic balance • Water microbiology and its implications • International regulations on water quality
3	Introduction to Reverse Osmosis desalination	• Membrane processes in water treatment • The evolution of water desalination – a global perspective • RO applications in drinking water production (brackish water and seawater RO) • Wastewater/Industrial/Healthcare applications • Plant design considerations
4	Reverse Osmosis plant layout	• Intake and discharge infrastructure • Pretreatment section • Reverse Osmosis section

		• Front and back permeates • Post-treatment requirements including disinfection
5	Product water from RO plants and its management	• RO water main characteristics • Scale depositing properties • The LSI and CCPP indices • RO water interaction with storage and distribution systems • Environmental considerations

Course Assessment	Certification
Participants will be assessed on: Participation in sessions Completion of exercises & case studies Performance in assessments	Upon successful completion of the course, participants will receive a **Certificate of Successful Completion**, along with a **Transcript of Marks** showing the performance by grade in each element of assessment and overall.

Course Instructor

This speaker holds a B.Eng. (Hons) degree in Chemical with Biochemical Engineering and an MBA degree, both from the UK.
He has a 35-year experience as director of an ISO17025 accredited laboratory, and he is a water quality consultant to various organizations, including Water Boards, Healthcare facilities, the Hospitality industry, water treatment companies and desalination plants, food manufacturing premises and petrochemical storage terminals. He is one of the leading experts on the control and prevention of Legionnaires' disease.