



WE097: Special Topics in Water Treatment (Advanced Level)





Training Objectives:

By the end of the training, participants will be able to:

- ✓ Develop their deal with water purification used in plants generally to a topic (principles, practice, operation, and steam generation troubleshooting) for industrial water treatment on boiler water, RO, oil field water, cooling water, EDR and flash evaporation

Training Designed for:

This course is intended for Engineers, Operators and Lab Chemists who deals with water treatment in industry.

Training Program:

DAY ONE:

- ❖ Pre-test
- ❖ Overview of Water Treatment
 - Sources and properties of water available
 - Impurities in water and associated problem
 - Water quality requirements for primary uses in industrial facilities and treatments used
- ❖ Boiler Water Treatment
 - Fundamentals of industrial boilers and impacts of water quality on operation
 - Documented criteria for boiler water quality
 - Causes of scale in boilers and preventive processes
 - Causes of corrosion in steam-generating systems and preventive processes
 - Types and causes of carryover in boilers and preventive processes
 - Causes of oil contamination of boiler feed water and preventive processes
 - Steam generation troubleshooting

DAY TWO:

- ❖ Reverse Osmosis
 - Reverse osmosis system design parameters
 - Major treatment components in a reverse osmosis system
 - Monitoring and control of a reverse osmosis system
 - Operating problems in a reverse osmosis system and corrective actions
- ❖ Oil Field Water Treatment
 - Oil field waters, associated problems, and disposal methods
 - Factors affecting formation, prevention, and removal of mineral scales in oil field waters
 - Factors influencing prevention of microbiological fouling and corrosion
 - Oil field water corrosion, influential impurities and factors, and monitoring and control
 - Equipment for removal of gases, solids, and dispersed oil

DAY THREE:

- ❖ Cooling Water Treatment
 - Types of cooling water systems and parts of cooling towers and heat exchangers
 - Control of corrosion in cooling water
 - Prevention of scale formation in cooling water



- Prevention of the harmful effects of microbiological growth in cooling water
- Control of general fouling in cooling water
- Monitoring and control required to operate cooling water systems

DAY FOUR:

❖ **Electrodialysis Reversal Process**

- Design parameters for electrodialysis reversal systems
- Major treatment components in an electrodialysis reversal system
- Monitoring and control in electrodialysis reversal system
- Common operating problems and corrective actions for an electrodialysis reversal system

DAY FIVE:

❖ **Flash Evaporation Systems**

- Design parameters for a flash evaporation system
- Major treatment components in a flash evaporation system
- Monitoring and control of a flash evaporation system
- Comparison of the three desalination systems: reverse osmosis, electrodialysis reversal and flash evaporation

❖ **Course Conclusion**

❖ **Post-test and Evaluation**

Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.





Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

