MERCURY

Water Treatment Training Course

30 August – 3 September 2027
Casablanca (Morocco)



Dubai - UAE: +971 4 450 5697
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Amman - Jordan: +962 79 712 3347

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Ref: 9142_310739 **Date:** 30 August – 3 September 2027 **Location:** Casablanca (Morocco) **Fees:** 4900 Euro

Introduction:

Water treatment in our everyday lives and industry costs billions every year. This water treatment course will focus on the optimization of water treatment in different applications. Choosing the right water treatment technique or simply choosing no water treatment at all, requires good knowledge of the process and the ability to find the right balance between health and safety and financial considerations.

Only under these circumstances can the sustainability of any water treatment project be achieved. From a different perspective, water treatment is compulsory when regulatory compliance is required, whereas voluntary water treatment can result in process optimization with the ultimate reduction in costs and improvement in our quality of life.

What is Water Treatment?

Water treatment, within the context of water treatment engineering, encompasses the specialized processes and techniques employed to improve the quality of water for various purposes. Water treatment engineers play a pivotal role in water treatment and management, applying their expertise to ensure that water is safe and meets specific quality standards.

In essence, water treatment involves a series of processes designed to remove contaminants and impurities from water sources, making it suitable for consumption, industrial use, or environmental discharge. This field is fundamental to public health and environmental sustainability.

The water treatment process typically includes several stages such as coagulation, flocculation, sedimentation, filtration, disinfection, and sometimes advanced techniques like membrane filtration or reverse osmosis. Each step is carefully executed to achieve the desired water quality objectives.

For individuals seeking to enter this field or enhance their skills, pursuing a water treatment certificate or certification is essential. A certificate course in water treatment provides foundational knowledge and practical skills needed to become proficient in water treatment operations.

Water treatment training courses cover a range of topics including water chemistry, treatment technologies, regulatory compliance, and operational best practices. Industrial water treatment training specifically caters to professionals working in manufacturing or other industrial sectors, addressing the unique challenges of treating water for industrial processes.

By completing a water treatment operator course or training, individuals gain the expertise needed to operate and maintain water treatment systems effectively. This training ensures that water treatment professionals can contribute to safeguarding public health and protecting the environment through sustainable water management practices.

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Targeted Groups:

- Project managers
- Water treatment engineers/Plant engineers.
- Maintenance personnel in the process industries.
- Regulatory authorities hygiene and health and safety inspectors.
- Facility management company personnel.
- Maintenance personnel in the hotel and catering industry.

Course Objectives:

At the end of this water treatment course, the participants will be able to:

- Assess their needs and water resources available.
- Select appropriate water treatment techniques based on the above data.
- Develop relevant monitoring regimes to ensure the effectiveness of treatment.
- Apply selected water treatment techniques and optimize their application.
- Be aware of technical restrictions in the application of water treatment techniques.

Targeted Competencies:

- Basic definitions of water quality in the domestic and industrial sectors.
- Detailed explanation of key parameters in water chemistry and their interpretation.
- Water microbiology.
- Water treatment techniques for different processes.
- Combination of water treatment techniques.

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Course Content:

Unit 1: Water Quality - Water Chemistry and Microbiology and Physical Properties:

- Definition of chemical and microbiological indicators.
- Water chemistry - Basic parameters pH, Electrical conductivity, Total hardness.
- Main chemistry constituents of water and differentiation between cations and anions, heavy metals, and organic.
- Implications of water composition on proposed uses.
- Water microbiology - Indicator organisms and concept of water-borne bacteria - Classification into pathogens and non-pathogenic bacteria.
- Factors affecting bacterial growth in water systems - Biofilm formation and its significance.
- Physical properties of water.

Unit 2: Introduction to Water Treatment:

- Why treat water/Do nothing approach/What does water treatment attain?
- Effect of treatment techniques on chemical composition Water softening, Ion exchange, Nanofiltration, Reverse Osmosis.
- Effect of treatment techniques on microbiological quality Membrane filtration, chlorination/ bromination, Copper/Silver ions, Thermal treatment/disinfection, Chlorine dioxide, UV sterilization.
- Biochemical water treatment - Biological oxidation/Aeration, biofilters.
- Physical treatment techniques sedimentation and filtration.
- Hot and Cold water systems - Basic considerations for corrosion and scale inhibition.

Unit 3: Wastewater Treatment:

- Domestic wastewater/sewage/industrial wastewater treatment.
- Primary treatment - Settlement, flocculation/coagulation, filtration.
- Secondary treatment - Biological oxidation.
- Tertiary treatment - Disinfection.
- Applications of treated wastewater and sewage sludge - Restrictions and Regulations.
- Special types of wastewater e.g. landfill leachates requiring more complex treatment.

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Unit 4: Boiler Water Treatment and Steam Generation:

- Basic feedwater requirements - Chemistry.
- Need for pre-treatment or not.
- Boiler efficiency and Implications of water quality.
- Continuous monitoring of water quality and Process optimization.
- Typical treatment techniques applied in boiler feedwater.
- Examples of boiler failures.

Unit 5: Cooling Water Treatment and Evaporative Cooling Systems:

- Different forms of evaporative cooling systems.
- Feedwater treatment regimes - Softening and/or blending.
- Performance/Operation criteria for evaporative cooling systems.
- Concentration factor - Calcium balance - Temperature difference operation regime.
- Health and Safety considerations for evaporative cooling systems.
- Legionellosis.
- Prevention and Control.

Conclusion:

The field of water treatment engineering is essential for ensuring the availability of safe and clean water for various applications. Water treatment engineers play a critical role in managing water resources effectively, applying advanced techniques and processes to treat water and remove contaminants.

Through this water treatment training course, participants have gained valuable insights into the water treatment process, including key techniques and best practices. This knowledge equips them to pursue careers as water treatment operators or engineers, contributing to water treatment and management efforts globally.

Obtaining a water treatment certificate or certification through this course validates the expertise and skills acquired, demonstrating proficiency in water treatment operations. This certification is recognized within the industry and enhances career prospects for individuals seeking employment in water treatment and related fields.

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As water treatment continues to evolve with advancements in technology and increasing environmental challenges, ongoing training and professional development in water treatment are crucial. This course has empowered participants to be proactive in addressing water quality issues and implementing sustainable water treatment solutions.

In essence, the completion of this water treatment training course marks the beginning of a journey toward becoming proficient water treatment professionals who are dedicated to ensuring access to clean and safe water for communities and industries alike.