MERCURY

Intermediate Water Treatment, Operating, and Troubleshooting Techniques

19 – 23 September 2027
Dubai (UAE)



Dubai - UAE: +971 4 450 5697
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Intermediate Water Treatment, Operating, and Troubleshooting Techniques

Ref: 15855_1056106 **Date:** 19 – 23 September 2027 **Location:** Dubai (UAE) **Fees:** 4900 Euro

Introduction:

This Intermediate Water Treatment, Operating, and Troubleshooting Techniques course provides an in-depth exploration of advanced water treatment processes. It focuses on the operation and troubleshooting techniques used in industrial and municipal water systems. Participants will gain practical knowledge of key water treatment processes, such as filtration, chemical dosing, disinfection, and membrane technologies.

Emphasis is placed on understanding system operations, diagnosing issues, and applying effective solutions to ensure optimal performance and regulatory compliance. In this Intermediate Water Treatment, Operating, and Troubleshooting Techniques training, participants will be equipped with the skills to identify and resolve operational challenges, enhancing the efficiency and reliability of water treatment facilities.

The Intermediate Water Treatment, Operating, and Troubleshooting Techniques course advances participants' knowledge of water treatment techniques. It provides water treatment operator training, focusing on fundamental and advanced water treatment techniques. They will gain practical insights into industrial water treatment systems and become proficient in troubleshooting common issues faced in water treatment plants.

Participants will learn about water treatment operators or aim to refine their skills. This Intermediate Water Treatment, Operating, and Troubleshooting Techniques training offers the expertise for a successful career.

Targeted Groups:

- Water treatment plant operators.
- Environmental engineers and technicians.
- Maintenance personnel in water treatment facilities.
- Facility managers and supervisors.
- Water quality analysts and specialists.
- Industrial water system operators.
- Utility and municipal service providers.
- Technical staff involved in water treatment troubleshooting.

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Course Objectives:

At the end of this Intermediate Water Treatment, Operating, and Troubleshooting Techniques course, the participants will be able to:

- Understand the principles of advanced water treatment processes.
- Learn to operate and optimize key water treatment systems effectively.
- Develop troubleshooting skills to identify and resolve common water treatment issues.
- Gain proficiency in chemical dosing and filtration techniques.
- Master membrane filtration technologies, including reverse osmosis.
- Enhance knowledge of system monitoring and performance evaluation.
- Apply regulatory standards and safety protocols in water treatment operations.
- Improve preventive maintenance strategies for long-term system reliability.
- Analyze water quality data to optimize treatment processes.

Targeted Competencies:

By the end of this Intermediate Water Treatment, Operating, and Troubleshooting Techniques training, the participants competencies will:

- Advanced water treatment process operation.
- Troubleshooting and diagnostic skills for water systems.
- Chemical dosing and water quality optimization.
- Membrane filtration and reverse osmosis management.
- Preventive maintenance and system performance monitoring.
- Regulatory compliance and safety in water treatment.
- Data analysis for water treatment efficiency.
- Equipment calibration and fault identification.
- Effective problem-solving in water treatment systems.

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Course Content:

Unit 1: Advanced Water Treatment Processes:

- Overview of advanced water treatment methods.
- Understanding coagulation, flocculation, and sedimentation.
- Introduction to membrane filtration technologies: reverse osmosis, ultrafiltration.
- Chemical dosing techniques and their importance in water treatment.
- UV disinfection systems and their applications.
- The role of activated carbon in water purification.
- Identifying and controlling biological contaminants.
- Understanding ion exchange and its role in softening and demineralization.
- Optimizing the use of chemicals for cost-effective treatment.

Unit 2: Operating Water Treatment Systems:

- Operating filtration systems for various water sources.
- Managing water treatment plants for large-scale operations.
- Procedures for startup, shutdown, and maintenance of equipment.
- Understanding pump and valve operations in water systems.
- Control systems and SCADA integration for remote monitoring.
- Monitoring pressure, flow rates, and water levels.
- Proper handling and operation of storage tanks and reservoirs.
- Role of automation in streamlining operations.
- Key operational parameters for maintaining water quality.

Unit 3: Troubleshooting Water Treatment Systems:

- Identifying common problems in water treatment systems.
- Diagnostic techniques for filtration issues.
- Troubleshooting chemical dosing and imbalance.
- Managing scaling, fouling, and membrane degradation in reverse osmosis systems.
- Addressing pump failures, leaks, and mechanical issues.
- Recognizing signs of biological contamination and treatment failure.
- Problem-solving strategies for operational inefficiencies.
- Dealing with power outages and system alarms.
- Using diagnostic tools for identifying faults in instrumentation.

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Unit 4: Preventive Maintenance and System Optimization:

- Developing a preventive maintenance plan for water treatment systems.
- Routine checks for equipment calibration and performance.
- Best practices for cleaning and maintaining filters and membranes.
- Scheduling maintenance for pumps, valves, and motors.
- Identifying early signs of wear and tear to prevent breakdowns.
- Optimizing chemical usage to reduce costs and improve efficiency.
- Improving energy efficiency in water treatment operations.
- Monitoring system performance to detect inefficiencies.
- Implementing condition-based monitoring to predict failures.

Unit 5: Regulatory Compliance and Safety in Water Treatment:

- Understanding water treatment regulations and standards.
- Compliance with local and international water quality standards.
- Health and safety protocols in water treatment plants.
- Handling hazardous chemicals and materials safely.
- Emergency response procedures in case of water contamination.
- The role of training and certification in maintaining safety.
- Documentation and reporting for regulatory audits.
- Environmental considerations and sustainable practices.
- Ensuring proper disposal of waste and by-products.