MERCURY

Training on Water Analysis and Filtration System Design for Custom Solutions

27 - 31 Jul 2026
Madrid (Spain)

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Training on Water Analysis and Filtration System Design for Custom Solutions

Ref.: 15993_1001798 **Date:** 27 - 31 Jul 2026 **Location:** Madrid (Spain) **Fees:** 6200 **Euro**

Introduction to Water Analysis and Filtration System Design for Custom Solutions:

Ensuring clean and safe water is essential for public health, industrial applications, and environmental sustainability. This water analysis and filtration system design training course equips participants with the skills to assess water quality and design efficient filtration solutions tailored to specific requirements. It bridges the gap between theoretical knowledge and real-world applications in water treatment and filtration.

Participants will learn fundamental water chemistry, including key parameters such as pH levels, turbidity, and dissolved solids. The Water Analysis and Filtration System Design for Custom Solutions course covers modern filtration technologies, from mechanical and chemical filtration to advanced solutions like membrane filtration and reverse osmosis.

Through hands-on learning, case studies, and industry best practices, participants in this Water Analysis and Filtration System Design for Custom Solutions training will develop the expertise to design custom water filtration systems. They will explore system integration, energy efficiency, and long-term maintenance strategies to ensure optimal performance.

This Water Analysis and Filtration System Design for Custom Solutions program is ideal for professionals in water treatment, environmental science, and engineering who seek to enhance their expertise in water filtration system design. Attendees will have the skills to assess water quality, select appropriate filtration methods, and implement effective filtration systems in various applications.

Targeted Groups:

This Training on Water Analysis and Filtration System Design for Custom Solutions targets professionals seeking specialized knowledge and skills.

- Water treatment specialists aiming to enhance their expertise in water analysis and filtration system design.
- Engineers and technical professionals involved in designing and implementing filtration systems.
- Environmental scientists and researchers working on water quality improvement projects.
- Facility managers are responsible for overseeing water treatment and filtration systems.
- Municipal and industrial water professionals managing large-scale water filtration solutions.
- Consultants and policymakers involved in water quality regulations and standards.
- Academics and students interested in advanced water treatment technologies.
- Homeowners and community leaders looking to improve local water filtration solutions.

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Course Objectives:

Participants will achieve the following objectives by completing the Water Analysis and Filtration System Design for Custom Solutions course:

- Analyze water quality using key parameters such as pH, turbidity, dissolved solids, and contaminants.
- Evaluate different water treatment filtration systems, including mechanical, chemical, and biological filtration.
- Design customized water filtration solutions based on specific water quality needs.
- Select appropriate water analysis equipment for accurate water quality testing.
- Assess the efficiency and sustainability of various filtration technologies.
- Integrate filtration systems with other water treatment processes for improved performance.
- Implement quality control measures to ensure compliance with water safety standards.
- Develop troubleshooting skills for diagnosing and resolving common water filtration issues.
- Optimize energy efficiency in water filtration system design and operation.
- Understand future trends in water treatment and filtration system advancements.

Targeted Competencies:

Participants will gain the following competencies during the Water Analysis and Filtration System Design for Custom Solutions program:

- Analytical skills to assess water quality and select appropriate filtration systems.
- Technical expertise in water analysis and treatment methods.
- Problem-solving skills for troubleshooting and optimizing filtration systems.
- Design proficiency in creating custom water filtration solutions.
- Regulatory knowledge of water quality standards and compliance measures.
- Operational efficiency in managing water treatment filtration systems.
- Maintenance and quality assurance in long-term filtration system performance.

Course Content:

Unit 1: Water Quality Analysis and Chemistry:

- Key water quality parameters: pH, turbidity, dissolved solids, and hardness.
- Chemical composition of water: Ions, heavy metals, and organic contaminants.
- Microbiological contaminants: Bacteria, viruses, and protozoa in water.
- Sampling techniques: Best practices for collecting and handling water samples.
- Laboratory testing methods: Chemical, physical, and microbiological analysis.
- Regulatory standards: Compliance with WHO, EPA, and national water quality guidelines.

Unit 2: Fundamentals of Filtration in Water Treatment:

- Overview of filtration in water treatment and its significance.
- Mechanical filtration methods: Screens, sand filters, and sedimentation.
- Chemical filtration technologies: Activated carbon, ion exchange, and coagulation.
- Biological filtration: Biofilters, bioreactors, and slow sand filtration.
- Membrane filtration: Microfiltration, ultrafiltration, and nanofiltration.
- Comparative analysis of filtration technologies for different applications.

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Unit 3: Designing Custom Water Filtration Systems:

- Assessing water quality needs for designing filtration solutions.
- Selecting appropriate filtration systems based on contaminants and application.
- Integration of multiple filtration technologies for enhanced efficiency.
- Developing cost-effective and energy-efficient filtration designs.
- Ensuring compliance with industry and regulatory filtration standards.
- Scaling filtration systems for residential, commercial, and industrial applications.

Unit 4: Implementation and Maintenance of Filtration Systems:

- Installation best practices for various filtration systems.
- Operational procedures for effective water treatment filtration systems.
- Monitoring and quality control for consistent water analysis and treatment.
- Common filtration system failures and troubleshooting techniques.
- Preventative maintenance strategies to extend system lifespan.
- Environmental impact of filtration methods and sustainability practices.

Unit 5: Advanced Water Treatment Filtration Systems and Emerging Trends:

- Reverse osmosis systems for desalination and purification.
- Ultraviolet UV treatment for microbial disinfection.
- Nanotechnology in filtration for ultra-purification.
- Innovations in water filtration system design for efficiency and cost reduction.
- Smart water treatment systems using IoT and automation.
- Future trends in water filtration solutions for sustainable water management.

Final Insights & Key Takeaways:

Effective water analysis and filtration system design is crucial for ensuring clean and safe water across industries. This Water Analysis and Filtration System Design for Custom Solutions training program provides an understanding of water chemistry, filtration technologies, and system integration. Participants will gain practical expertise in designing and maintaining custom water filtration solutions. By applying the knowledge and skills acquired, professionals can enhance water treatment processes and contribute to improved water quality globally.

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Registration form on the :
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code: 15993 **From:** 27 - 31 Jul 2026 **Venue:** Madrid (Spain) **Fees:** 6200 **Euro**

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