TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000436

PROD019 - Water treatment and wastewater treatment



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

The "Water Treatment and Wastewater Treatment" training program covers the comprehensive water treatment system, a complex of standard treatment facilities operating according to water treatment methods, composition, and design parameters of the treatment facilities. Based on the principle of water mass movement in the treatment facilities, they are classified into gravity and pressure systems. The final stage of preparing water for drinking purposes is disinfection, carried out through chlorination, ozonation, bactericidal irradiation, ultraviolet rays, silver compounds, and other methods.

This course will cover modern water purification technologies with multiple disinfection stages and post-treatment using granular activated carbon filters. It will also address the principles of sanitary standards, the latest methods for quality control, and the treatment and preparation of technical and drinking water.

Who it is for and how it helps

- On-duty personnel
- Mechanics
- Instrumentation and control engineers (I&C)
- Company personnel servicing the system
- Process engineers
- Shift supervisors
- Technical managers.

What you will learn

- Understand how the water treatment and purification system functions and its components
- Timely and correctly respond to malfunctions and take preventive measures
- Safely and competently maintain the equipment
- Assess the operational status of the water treatment and purification system

Curriculum

Modules 01–04

01 Regulatory Documentation, Drinking Water Quality Requirements

- Control methods
- Disinfection and microbiological control using oxidizing agents
- The effect of active chlorine on microflora, conditions of the process
- Oxidative action of sodium hypochlorite in the iron removal process
- Clarifying filters
- Removal of mechanical impurities using rapid filters with granular media
- Operation and methods to intensify performance
- Sorption filter
- Removal of organic compounds and active chlorine using activated carbon
- Operation and maintenance features
- Ultraviolet disinfection and oxidation, principles of radiation exposure
- Operating conditions for UV lamps, possible malfunctions, and troubleshooting

02 Technology for Treating Industrial and Stormwater Effluents

- Equalization of composition and flow of wastewater
- Separation of mechanical impurities by gravity methods
- Coagulation and flotation, process conditions, reagents, and parameters

03 Technology for Treating Domestic Wastewater

- Microbiological treatment of wastewater in aeration tanks with activated sludge
- Settling, stabilization, and dewatering of activated sludge

04 Operation of Disinfection, Filtration, and Sorption Units

- Technical characteristics and principles of water disinfection units, including chlorination, ozonation, and ultraviolet irradiation methods
- Overview of various filter types, including sand, carbon, and membrane filters, their working principles, and application areas
- Detailed study of the sorption process using activated carbon for removing organic contaminants from water

Curriculum

Module 04 — continued

- Guidelines for the operation, tuning, and preventive maintenance of disinfection, filtration, and sorption equipment
- Methods for diagnosing and troubleshooting common issues in the operation of disinfection, filtration, and sorption units
- Overview of safety norms and rules, as well as managing environmental risks when working with chemical reagents and disinfectants

Joining the programme

Contact the Academy and quote course code 000436 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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