Advanced Water Treatment Training

Aquasolve College of Science & Technology (ACST)

Programme Overview

Duration: 10 days (80 hours)
Level: Advanced
Prerequisites: Basic Water Treatment Training or 2+ years plant operation experience

Advanced Coagulation Chemistry

• Zeta potential and particle destabilisation
• Optimising coagulation across pH ranges
• Polymer flocculant aids
• Coagulation in high-turbidity waters (> 500 NTU)
• Cost optimisation: coagulant selection

Iron & Manganese Removal

• Chemistry of iron and manganese oxidation
• Greensand, birm, and catalytic media
• Aeration systems for iron removal
• Sequestration vs removal strategies
• Troubleshooting black water and red water issues

Membrane Technology

• Microfiltration, ultrafiltration, nanofiltration, RO
• Membrane materials and configurations
• Fouling mechanisms and prevention
• Cleaning-in-place (CIP) protocols
• Membrane autopsy and performance analysis

Advanced Disinfection

• Breakpoint chlorination calculations
• Chloramine formation and control
• UV disinfection: dose, intensity, transmittance
• Disinfection by-products (DBPs) and mitigation
• Ozone generation and safety

Water Quality Modelling

• Mass balance calculations
• Blending strategies for water quality management

- Langelier Saturation Index (LSI)
- Predictive modelling for treatment optimisation
- Case studies: Ghana municipal systems

Certification & Fee

ACST Advanced Water Treatment Certificate. Fee: GHS 4,800 per participant.