



Water Supply Design Operations Commissioning and Maintenance Course

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Overview

Water Supply Design Operations Commissioning and Maintenance Course is a five-day course for utility, engineering, commissioning, operations, and maintenance teams who need an integrated lifecycle plan. Participants connect demand, treatment, hydraulics, pumping, controls, start-up, asset care, reliability, water quality, energy use, and service continuity through structured instruction, technical explanation, and case-based analysis. Agile Leaders Training Center presents water supply lifecycle practice.

Who Should Attend

The course is intended for:

- Water planning and design teams
- Treatment, pumping, storage, and network teams
- Commissioning and handover teams
- Operations and maintenance teams
- Asset and performance teams

The course assumes water-infrastructure experience and excludes software instruction and equipment certification.

Departments and Industries

The course supports organizations responsible for water assets.

- Municipal utilities and water authorities
- Treatment and distribution departments
- Engineering consultancies and contractors
- Industrial water-service teams
- Commissioning, maintenance, and asset functions

Learning Objectives

By the end of this course, participants will be able to:

- Apply demand, pressure, quality, and resilience criteria.
- Analyze treatment, network, storage, and pump choices.
- Build testing, start-up, and handover plans.
- Diagnose leakage, quality, and energy problems.
- Prioritize maintenance by condition, criticality, and risk.
- Evaluate reliability, service, cost, and lifecycle performance.

Course Agenda

The course agenda progresses from design foundations to maintenance and lifecycle management.

Day 1: Water Supply Planning and System Design

- Source-to-Consumer Water Supply Lifecycle Map
- Municipal Water System Component Diagram
- Demand, Peak Flow, and Growth Forecasting Method
- Source Quality and Resilience Criteria
- Capacity, Service, Reliability, Redundancy, Sustainability, and Lifecycle Cost Checklist

Day 2: Treatment Distribution and Pipeline Design

- Raw-Water Quality and Treatment Objective Matrix
- Treatment-Process Selection and Plant Configuration Method
- Coagulation, Sedimentation, Filtration, and Disinfection Train
- Flow, Pressure, Velocity, and Headloss Calculation Method
- Pipeline, Reservoir, Pressure Zone, Valve, Meter, and Hydrant Design Checklist

Day 3: Pump Stations Controls and System Commissioning

- Pump Type, System Curve, and Operating Point Analysis
- Pump Capacity, Configuration, and Redundancy Selection
- Cavitation, Surge, and Water-Hammer Control Method
- Motor, Drive, Instrumentation, Alarm, and SCADA Architecture
- Commissioning, Testing, Flushing, Disinfection, and Acceptance Checklist

Day 4: Water Supply Operations and Performance Control

- Source-to-Customer Operations Control Map
- Treatment Monitoring and Corrective-Action Procedure
- Pump Scheduling, Reservoir Control, and Continuity Plan
- SCADA and Field-Data Performance Review
- Leakage, Demand, Energy, Handover, and Incident-Response Dashboard



Day 5: Maintenance and Lifecycle Management

- Maintenance Strategy Selection Principles
- Pump, Motor, Drive, and Valve Maintenance Requirements
- Treatment Plant and Network Maintenance Requirements
- Asset Condition, Criticality, Risk, and Renewal Prioritization
- Integrating Reliability, Quality, Energy, Cost, and Service Performance

FAQs

Who suits Water Supply Design Operations Commissioning and Maintenance?

Professionals who already work with water infrastructure suit the course.

How does water supply lifecycle training differ from treatment-only training?

It connects treatment with networks, pumps, commissioning, operations, and assets.

How does water system commissioning support readiness?

It verifies inspections, tests, controls, start-up, acceptance, and handover.

How does water utility asset management guide maintenance?

It combines condition, criticality, risk, cost, and renewal priorities.

Conclusion

The course provides a structured framework for improving the water supply lifecycle. It links design, commissioning, controls, maintenance, and renewal to support clearer handover, faster fault diagnosis, coordinated maintenance, defensible renewal priorities, reliable operations, controlled energy use, and consistent service decisions.



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