1. Introduction to the planning of water technology plants.
Objectives: Understanding of the responsibilities and duties of a water utility.
Realisation of the different phases of planning, tendering and construction supervision.
Contents: Basic duties of a water supplier. Overview of the different service phases from planning, tendering to construction supervision. 2.
2. Water delivery and water demand/dimensioning.
Objectives: Understanding of the basic principles of water demand planning. Ability to dimension water supply systems.
Contents: Principles of water demand planning. Procedures and criteria for dimensioning water supply systems.
3. Pipelines and fluidic processes.
Objectives: Understand hydraulics and fluid mechanics in pipelines. Apply knowledge of sizing and behaviour of fluids in pipes.
Contents: Fundamentals of hydraulics and fluid mechanics. Determining factors and characteristics of fluid flow in pipelines. 4.
4. Valves and fittings in water engineering systems.
Objectives: Knowledge of the different types of valves and their functions. Ability to select suitable valves based on application areas.
Contents: Overview of different types of valves. Function, selection criteria and application areas of valves. 5.
5. Pumping of liquids
Objectives: Understanding of fluid pumping mechanisms and techniques. Ability to select and apply appropriate pumping systems for specific applications.
Contents: Basic principles of liquid transfer. Types of pumps, their working methods and areas of application. 6.
6. Measurement techniques
Objectives: Understanding of the basics and techniques of measurement technology. Ability to select and use appropriate measuring instruments for water engineering applications.
Contents: Basics of measurement technology. Instruments and methods for measuring water parameters and qualities. 7.
7. Control technology for water engineering systems.
Objectives: Knowledge in the basics of control engineering. Ability to implement and adapt control systems in water engineering plants.
Contents: Introduction to control engineering. Applications and implementations of control systems in water engineering plants. 8.
8. Technical drawing for water engineering plants.
Objectives: To learn the specific principles and techniques of technical drawing for P&I schemes. Ability to produce detailed and standard P&I schemes for water engineering systems.
Contents: Introduction to the specific symbols and standards for P&I diagrams for water engineering systems.
Practical application and creation of P&I diagrams for various water engineering components and systems. Overview of common software tools and platforms for technical drawing of P&I schemes. 9.
9. Materials and corrosion in water engineering systems.
Objectives: Understanding of different materials and their properties. Knowledge of corrosion mechanisms and protection methods in water engineering systems.
Contents: Introduction to the different materials and their applications. Mechanisms of corrosion and their protection in water engineering plants. 10.
10. Planning of an industrial water treatment plant.
Objectives: Understanding of the steps and criteria in planning an industrial water treatment plant. Ability to assess and analyse planning decisions.
Contents: Introduction to the planning of industrial water treatment plants. Criteria, methods and best practices in planning such plants.