

The subject "Water Treatment 2", is a supplement to the subject "Water Treatment 1" and describes more advanced technologies for drinking water and sludge treatment. Like "Water Treatment 1", the course gives students a solid foundation in recognising process units, describing their function and performing basic calculations for the preliminary design of a drinking water treatment plant. The overall objective is to enable students to understand and effectively apply the various aspects of water treatment in practice.

1. Oxidation

Objectives: To understand the role of oxidation in drinking water treatment, recognise its impact on water quality and be able to implement it in the treatment process.

Contents: Basics of oxidation, different oxidants, areas of application, advantages and limitations, effects on water constituents.

2. Disinfection

Objectives: Knowledge of the methods and importance of disinfection to ensure water quality.

Contents: Disinfection methods, mechanisms and efficiency, selection of disinfectants, dosage and effects on microorganisms.

3. Gas exchange

Objectives: Understanding the importance of gas exchange in water treatment and its role in quality control.

Contents: Mechanisms of gas exchange, applications in water treatment, control of gas contents in water.

4. Ion exchange

Objectives: Knowledge of the ion exchange process and its application to improve water quality.

Contents: Basics of ion exchange, ion exchange resins and their applications, regeneration processes, effects on water constituents.

5. Sludge treatment

Objectives: Expertise in the treatment and disposal of sludge from water treatment.

Contents: Formation and composition of sludge, treatment processes, disposal methods, environmental impacts and standards.

6. Water analysis

Objectives: Ability to perform and interpret water analyses to assess water quality.

Contents: Methods of water analysis, parameters and their significance, interpretation of analysis results, quality assurance.