

Module M1311: Sustainable Water Management and Microbiology of Water Supply

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Supply

Learning Objectives

Course I: Sustainable Water Management

The students are capable of

- Explaining the relevance of the local and national water cycles
- Identifying basic water quality parameters and their significance for sustainable water management
- Separating into conventional and advanced water treatment processes
- Preparing combinations of naturally-based as well as technical water treatment processes
- Calculating decisive parameters of treatment pathways for a water recycling study

Course II: Microbiology of Water Supply

The students are capable to

- Differentiate between natural and hygienically relevant bacterial
- Know modern microbiological methods
- Categorize the diverse microbiological in drinking water treatment and supply
- Know legal regulations of the microbiological drinking water quality

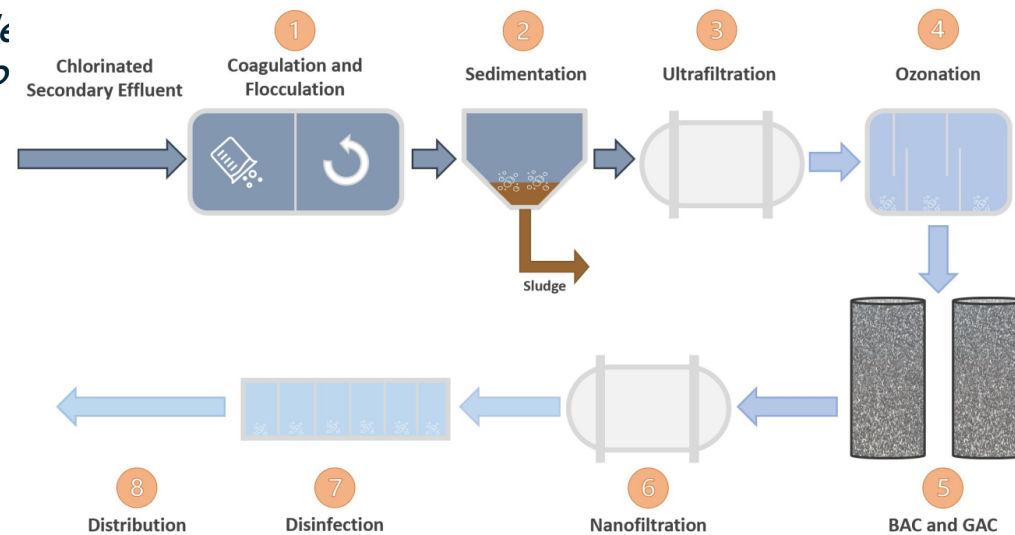
Course 1: Sustainable Water Management

Initial Situation

- Nr. of participants= 19
- Hail from different countries including India, Pakistan, Turkey, Switzerland and France
- 'In presence lessons' planned but later decided to implement online teaching platforms (e.g., ZOOM)
- Students from various regions form small groups (5-7 students)
- Through EUIC Project, digitalization was integrated into this module

Focus of Innovation

- Course “Sustainable Water Management” is designed to engage students actively through Project-Based Learning
- Each group, representing a Consulting Firm, solves the assigned project
- Each consulting firm develops a solution for the client (Course Tutor)
- Using this innovative learning approach, students are able to present their Firm (strategic goals and objectives)
- Find creative solutions for water recycling concepts (Figure) to promote sustainable water management



Structure

- Complete course spread over 16 weeks
- One class (90 min)/week
- Each group discusses and develops a water treatment train using gained knowledge through this course
- Student discussions through ZOOM
- Required support was provided by responsible teacher (ZOOM and Discord)
- Prepare presentations and disputise their conceptual project design (25 % grade of total examination)

Feedback and Future Improvements

Teaching Staff:

- ...

Students:

- ...