

ENV382 Water Treatment Plant Design

Department of Environmental Science and Engineering - Compulsory Course

Credit: 4 ECTS:6



Course Description: The "Water Treatment Plant Design" course is designed to provide students with a comprehensive understanding of the design principles and processes involved in treating and purifying water for safe consumption. The course covers various aspects of water treatment, from selecting water source sites to distributing clean water. Students will learn about key components such as intake structures, screening, aeration, coagulation, flocculation, sedimentation, filtration, disinfection, and water stabilization. Additionally, the course addresses safety, environmental considerations, and the removal of contaminants like iron, manganese, and hardness. The design of water treatment plants is crucial for ensuring access to clean and safe drinking water.

Course Outcomes:

- Understand water treatment fundamentals and its importance for clean water.
- Select suitable water source sites, considering sustainability and environmental impact.
- Design intake structures and aeration systems to improve water quality.
- Implement coagulation and flocculation techniques for impurity removal.
- Optimize filtration and disinfection methods for clean and safe water.
- Manage water storage and equitable distribution.
- Promote water stabilization and responsible residual processing.
- Emphasize safety and environmental considerations.
- Address contaminant removal, including iron, manganese, and hardness.
- Develop design documents for effective communication.