ENV471 Water Resources Engineering

Department of Environmental Science and Engineering - Compulsory Course

Credit: 4 ECTS: 6

Course Description: The "Water Resources Engineering I" course introduces students to fundamental concepts in water resources engineering, focusing on groundwater and the design of water distribution systems. Students will explore the importance of water resource management and learn to investigate technologies related to the basic theory and applications of water resources engineering. Additionally, the course educates students about groundwater's occurrence, sources, and movement and the design of pipelines and water distribution systems. It emphasizes the significance of research and presentation skills in water resources engineering.

Course Outcomes:

- Understand the importance of water resource management and its alignment with.
- Investigate major technologies in water resources engineering and their applications to support clean water access.
- Examine groundwater's occurrence, sources, and movement, including Darcy's Law for velocity determination.
- Analyze different types of aquifers, their properties, and equations governing their behavior.
- Determine aquifer yield through measurement techniques and equations.
- Address interference among wells, well loss, and specific capacity to ensure efficient groundwater management.
- Study water transmission through pipelines, emphasizing hydraulics and clean water distribution.
- Design water distribution systems to provide equitable access to clean water.
- Apply population forecasting for urban areas and various water requirements to support sustainable cities and communities.
- Develop research skills and the ability to present scientific findings, contributing to partnerships for sustainable development.