ENV431

Department of Environmental Science and Engineering - Compulsory Course

Credit: 4 ECTS: 6

Course Description: Students who complete this course will have the knowledge and abilities to design effective wastewater treatment plants, aligning with Sustainable Development Goal 6. The important topics that students will study are the formulation of sustainable project requirements, regulatory frameworks, centralized versus decentralized systems, and selecting suitable treatment procedures and mechanical components. By comprehending these fundamental components, students will participate in the larger global endeavour to guarantee clean and sustainable water resources for communities globally.

Course Outcomes:

- Understand legal frameworks for wastewater and sludge management
- Evaluate centralized and decentralized wastewater treatment plants
- Develop sustainable project criteria for environmentally sound designs
- Design effective wastewater treatment plants aligned with SDG 6 (Clean Water and Sanitation)
- Study biofilm and combined systems for innovative treatment approaches
- Gain insights into anaerobic treatment processes for energy-efficient solutions
- Conduct cost analyses for economically viable wastewater treatment projects
- Integrate construction management functions, including project management and cost analysis
- Acquire in-depth knowledge of activated sludge systems and final settler units
- Learn techniques for the control of treatment sludges and conduct mass balance assessments
- Develop proficiency in constructional and hydraulic design for effectively implementing wastewater treatment solutions.