

Level: PhD				
Course title: Selected Topics of Water Protection (DSH-619)				
Status: Elective				
ECTS: 15				
Requirements: None				
Learning objectives Training students with a comprehensive overview of water pollution problems, water protection management and control, quality control of natural and waste waters and wastewater treatment processes management.				
Learning outcomes After completing the course, students should expand the knowledge gained through the Water Protection course in previous studies of the chemical processes in aquatic ecosystems relevant to water protection; acquire advanced knowledge on the treatment of industrial and municipal wastewater; be able to independently apply the acquired knowledge for management of wastewater treatment systems.				
Syllabus <i>Theoretical instruction</i> Indicators of the quality of natural waters. Classification of natural waters. Processes in natural waters. Water pollution - biological, thermal and chemical pollution of water. The origin and dynamics of wastewater. Municipal wastewater. Industrial wastewater. Urban wastewater. Characterization of wastewater. Mechanical, chemical and biological processes of wastewater treatment. Wastewater treatment from different industries. Final purification of waste water, reuse and wastewater discharges. Treatment and disposal of sludge from the wastewater treatment process. Joint treatment of industrial and municipal wastewater. Management of wastewater treatment systems. Pilot studies of an industrial wastewater treatment plant. Economic and legal basis for regulating water protection.				
Weekly teaching load				Other:
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5	