Level: Specialist studies

Course title: Water protection (advanced course)

Status: elective

ECTS: 5

Requirements: none

Learning objectives

Improving students knowledge for management and process control in water protection, quality control of natural water and waste water management and wastewater treatment.

Learning outcomes

Students will acquire highly specialized knowledge of ecosystem processes in water in order to protect water, as well as specialized knowledge on control and design processes for water protection.

Syllabus

Theoretical instruction

Studying the hydrological balance. Indicators of the quality of natural waters. Processes in natural waters. The processes leading to chemical, biological and thermal water pollution. Specific chemical pollutants in water. Wastewater. Mechanical, chemical and biological processes for wastewater tretament. Treatment and disposal of sludge from the wastewater treatment process. The joint treatment of municipal and industrial wastewater. Control operation of a wastewater tretament plant. Economic and legal basis for regulating water protection.

Practical instruction

Computational exercises related to the relevant areas of water protection. Use of a software package for calculating the process parameters for the purification of waste water. Sampling, measurement methods and the amount of wastewater, definitions and parameters for analysis. Control operation of a wastewater tretament plant. Term paper (theoretical and practical) on the specific topic of water protection.

Weekly teaching load				Other:
Lectures: 30	Exercises: 30	Other forms of teaching:	Student research:	