Level: Master

Course title: Drinking water process design

Status: elective

ECTS: 6

Requirements: Technological processes in the control of water quality

Learning objectives

Gaining necessary knowledge and skills in designing processes used in the treatment of drinking water in drinking water treatment plants.

Learning outcomes

Demonstrate understanding of the role and importance of obtaining hygienic quality drinking water in overall water supply issues, the process of water treatment, and how to design an appropriate treatment process for water in water treatment plants to meet the required drinking water quality.

Syllabus

Theoretical instruction

Characteristics and quality standards for drinking water quality. The choices of unit during drinking water treatment, alternative processing lines (technology) in water treatment. The conceptual design process and the preparation of plants for treatment of drinking water. Elements of the project processes and systems. The design phase of water treatment: aeration and air stripping, mixing, coagulation, flocculation, sedimentation, filtration (filters with granular backfill), membrane separation, oxidation and disinfection, lime softening, ion exchange, activated carbon processes, handling chemicals, instrumentation and process control. Environmental aspects: preparation of process waste streams, their treatment and disposal. Operator training and initial installation. Safety at the treatment plant.

Practical instruction

Practical teaching follows theoretical lessons.

Weekly teaching load				Other:
Lectures: 3	Exercises: 2	Other forms of teaching:	Student research:	