Level: Bachelor

Course title: Drinking water quality

Status: elective

ECTS: 8

Requirements: none

Learning objectives

Introduce students to chemical, microbiological, biological and health aspects of drinking water. Mastering the technology of water treatment.

Learning outcomes

Students should know how to control the preparation and distribution of drinking water.

Syllabus

Theoretical instruction

The following areas are studied: drinking water resources, the chemical aspects of drinking water, microbiological, biological and health aspects of drinking water quality control, separation methods for the preparation of drinking water (sedimentation, filtration and membrane separation), chemical methods of drinking water treatment (coagulation, flocculation, oxidation processes, the use of ozone, enhanced oxidation processes); diffusion methods in the preparation of drinking water, water disinfection, oxidation by-products; removal of specific organic and inorganic substances from drinking water, bottled water. Case studies are used to verify the knowledge gained.

Practical instruction

Computational exercises in the area of determining the toxicity of chemicals in drinking water, and filtration deposition, diffusion method in the preparation of drinking water. Experimental determination of toxic metals and toxic organic chemicals. Microbiological and biological analysis of drinking water. Control of drinking water quality. Experimental determination of the performance of membrane filtration technology. Chemical methods in the preparation of drinking water. Diffusion method in the preparation of drinking water. Disinfection of water. Determination of disinfection by-products. Experimental determination of technological parameters of iron and manganese in drinking water.

Weekly teaching load				Other:
Lectures: 45	Exercises: 60	Other forms of teaching:	Student research:	