Course title: Water analysis

Specialty	Semester	Number of ECTS	Number of hours in the class	Form
Foreign students	**winter**	**3**	**45**	**Lab – 30 h Lecture – 15 h**

Name of lecturer: dr Aleksandra Bielicka-Giełdoń

Objective of the course (expected learning outcomes and competences to be acquired)

- familiarizing students with all issues listed in the seminar program content,

Prerequisites:

none

Teaching methods:

- thematic presentations
- laboratory experiments

Course contents

A. Water as a chemical compound. Water cycle in nature. Legal requirements of water quality according to their purpose. Physicochemical and sanitary control of water quality. Usefulness of water for consumption and for economic purposes. General classification of water quality. Industry standards for waters used in various industries. The use of reference methods in water analysis. Standardized physicochemical and bacteriological indicators in water. Collection and preparation of water samples for physico-chemical analysis: water sampling devices; sources of potential changes in the composition of the tested water sample; sources of errors related to the stage of water sampling and treatment; principles and methods for fixing water samples before further stages of the analytical process. Physical and organoleptic parameters of water. Physico-chemical parameters.

B. Laboratory: analysis of physicochemical parameters of water in the laboratory and in the field: determination of total water hardness and calcium and magnesium content; orthophosphate by ammonium molybdate spectrometry. Organic pollutants in consumer waters - determination of the permanganate index; Determination of chloride content in water by argentometric method. Determination of anionic surfactants by measuring the methylene index.

Recommended reading:

1. Hermanowicz W., Fizyczno-chemiczne badanie wody i ścieków, Wydawnictwo Arkady, Warszawa 1999
2. Dojlido J.R., Instrumentalne metody badania wody i ścieków, Wydawnictwo Arkady, Warszawa 1980
3. Namieśnik J., Jamrógiewicz Z., Fizykochemiczne metody kontroli zanieczyszczeń Środowiska,Wydawnictwa Naukowo-Techniczne, Warsza wa 1998
4. Kowal A.L., Świderska-Bróż M., Oczyszczanie wody, Wydawnictwo Naukowe PWN, Warszawa 2007

Assessment methods:

- Oral presentation
- Lab report

Language of instruction: English

Contact: