Level: Specialist academic studies in Chemistry

Course title: Advanced Course of Bioanalytical Chemistry

Status: elective

ECTS: 5

Requirements: none

Learning objectives

Providing insight into the courses of development of bioanalytical chemistry. Introducing students to select specific methods of bioanalytical chemistry and to apply them in solving complex analytical problems.

Learning outcomes

Master the specialized knowledge which will help to solve the specific problems in bioanalytical chemistry using modern instrumental techniques.

Syllabus

Theoretical instruction.

Biomolecules in analytical chemistry. Biomarkers. New materials in bioanalytical chemistry. Contemporary aspects of the mass spectrometry in bioanalytical chemistry. Contemporary aspects of the methods of separation in bioanalytical chemistry. Contemporary spectroscopic methods in bioanalytical chemistry. Molecular recognition in bioanalytical chemistry. Amplification and sequencing. The directions of development of biosensors. Digital bioanalysis and microfluidics. Selected complex examples of the application of bioanalytical chemistry. Validation and uncertainty assessment of bioanalytical methods. The directions of development of bioanalytical chemistry.

Practical instruction.

Comparing the performance of different bioanalytical techniques for the characterization and determination of selected analytes. Bioanalytical determination in the presence of a complex matrix. Bioanalysis using flow systems.

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