Level: bachelor
Course title: Integrated Methods of Analytical Chemistry
Status: elective
ECTS: 7
Requirements: none

Learning objectives:

Enabling students to solve complex problems in chemical analysis. Comparison of separation methods for isolation, detection or/and determination of a mixture components. The influence of possible errors on the selection of method for analysis. Preparing students to understand combination of different analytical methods to obtain acceptable results of analysis. Teach teamwork.

Learning outcomes:

After completing the course, students should be able to understand criteria in selecting the most adequate method for analysis of multi-component systems, prepare samples for analysis, use up-to-date instrumental separation techniques, understand principles for selecting and/or combining different methods for detection/determination, co-operate as a team member with professionals in different fields, adequately interpret and present the results of analysis.

Syllabus

Theoretical instruction: up-to-date instruments and/or instruments for automated chemical analysis. Coupled techniques. Choosing adequate technique for analysis. Elaborate method of sampling, sample preparation and separation/purification. Methods for standardization and calibration. Evaluation and interpretation of results. Errors of determination and their impact on the result. Applying the results of analysis and present those according to the problem related to the primary task.

Practical instruction: methods and tools for acquiring information related to obtaining, processing, and communicating information about the composition of the sample. Processing the selected experimental data. Adequate presentation and interpretation of experimental results.

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