

Level: master				
Course title: Analytical Spectrometry (IHA-501)				
Status: elective				
ECTS: 7				
Requirements: none				
Learning objectives Extending the acquired theoretical and practical knowledge of possible applications in atomic and molecular spectroscopy in the qualitative and quantitative chemical analysis. Developing the skills of handling optical instruments. The acquired knowledge should prepare the students to solve/assessment complex analytical problems from the domain of analytical spectroscopy. The students learn to use optical and combined instruments in various fields of chemical industry, pharmaceutical industry, the environment analysis etc. The students will get the knowledge about developmental trends in this area.				
Learning outcomes Students should know: <ul style="list-style-type: none"> • The application of methods of analytical spectrometry in practice; • To list the factors and interpret their effect on spectrometric measurements; • To demonstrate independence in planning experimental conditions for spectrophotometric measurements; • To clearly and accurately analyze and interpret the results of the analysis; and • To suggest/formulate modern and suitable analytical approach to solving specific, complex analytical problems by using modern and appropriate spectroscopic techniques. 				
Syllabus <i>Theoretical instruction</i> Molecular absorption spectrometry. UV-Vis and IR spectrometry. Fluorescence spectrometry. Raman spectrometry. NMR spectrometry. Atomic absorption and emission spectrometry. Atomic fluorescence spectrometry. Atomic X-ray spectrometry. Radioanalytical methods. Hyphenated techniques. Automatic spectrometric systems. Precision and sensitivity of spectrometric measurements. <i>Practical instruction</i> Practical instruction follows the theoretical instruction.				
Weekly teaching load				Other:
Lectures: 2	Exercises: 4	Other forms of teaching:	Student research:	