

Study Programme: Master Academic Studies in Chemistry			
Course Unit Title: Physical methods in inorganic chemistry			
Course Unit Code: IHN-502			
Name of Lecturer(s): Associate professor Berta Barta Holló, Associate professor Mirjana Radanović			
Type and Level of Studies: Master of Science Degree			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: Improvement of knowledge about applications of physical methods for characterization of inorganic compounds. Qualifying students to choose the adequate physical method for determining the physical and structural properties of the analyzed compound. Combination of physical and physicochemical methods for fully characterization of inorganic compounds.			
Learning Outcomes: After completing this course, student is able to: - Apply X-ray diffraction data for determining the crystal structure - Apply spectroscopic techniques for structural characterization of inorganic compounds - Apply magnetic and conductometric measurements - Apply thermoanalytical techniques - Interpret the results obtained by mentioned techniques			
Syllabus: <i>Theory</i> Basic principles and possible applications of physical methods for characterization of inorganic compounds. Spectroscopic (FTIR, UV-Vis) and magnetic methods (magnetic susceptibility, NMR), conductometry, thermoanalytical techniques and X-ray diffraction. <i>Practice</i> Synthesis and characterization of complex compounds.			
Required Reading: 1. Principles of Thermal Analysis and Calorimetry, P. J. Haines (ed.), RSC Paperbacks, 2002. 2. Comprehensive Analytical Chemistry, Vol. XII. Thermal Analysis, J. Paulik, F. Paulik (W.W.Wendlandt (advisory ed.), Elsevier, 1981.			
Weekly Contact Hours:		Lectures: 3 (45)	Practical work: 2(30)
Teaching Methods: Lectures, laboratory work, desk study projects, seminar(s)			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	10	oral exam	50
Practical work	10		
Preliminary exam(s)	30	