

Study Programme: Master Academic Studies in Chemistry			
Course Unit Title: Applied Infra-Red Spectroscopy			
Course Unit Code: IHN-511			
Name of Lecturer(s): Associate professor Branislav Jović			
Type and Level of Studies: Master of Science Degree			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Summer			
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: To introduce students to the technical aspects of the transmission and reflection infra red spectroscopy, as well as the conditions for recording infrared spectra. Training students for solving problems in the field of application of infrared spectroscopy. Analysis of different physical and chemical properties of materials. Application of mathematical and computational methods for processing and interpretation of infrared spectra.			
Learning Outcomes: Student will be able to describe and explain the theoretical principles of modern infrared spectroscopy and explain the possibility of extracting chemical information from the infrared spectra. Apply mathematical equations and software for processing of infrared spectra. Properly measure transmission and reflection spectra of samples in different forms.			
Syllabus: <i>Theory</i> The theoretical basis of IR spectroscopy, transmission techniques, attenuated total reflection techniques ATR, diffusion reflection technique DRIFT, Near Infrared region, the far-infrared region, IR spectroscopy and chemometrics. The application of infrared spectroscopy for the identification of compounds and structural analysis. IR spectroscopy in quantitative analysis.			
Required Reading: B.P.Straughan, S. Walker, Spectroscopy vol 2, Wiley, New York,1976			
Weekly Contact Hours:		Lectures: 2	Practical work: 2
Teaching Methods: Lectures, laboratory work			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	20
Practical work	10	oral exam	40
Preliminary exam(s)	20	