

Study Programme: Chemistry, Biochemistry			
Course Unit Title: Physical Chemistry I			
Course Unit Code: Z-201			
Name of Lecturer(s): Associate professor Bransilav Jović; Assistant professor Vesna Despotović			
Type and Level of Studies: Bachelor Academic Studies			
Course Status (compulsory/elective): Compulsory			
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: 8			
Prerequisites: None			
Learning objectives			
<ul style="list-style-type: none"> To provide students with the necessary theoretical and practical knowledge in selected topics of physical chemistry as a basis for further understanding and application in other fields of chemistry. Development skills of students to apply the concepts learned in practical work with chemical systems. Development of practical skills for students to perform experiments by adopting an appropriate methodology of work. 			
Learning outcomes			
<p>Upon successful completion of this course, the student will be able to:</p> <p>Apply obtained knowledge in solving problems in different fields of physical chemistry (intermolecular interactions, chemical thermodynamics, etc.). Measure and monitoring the important physical-chemical properties of the substances with relevant instruments, and the obtained results will associate with the theory to solve practical problems on the field of physical chemistry. Apply basic experimental techniques and correctly handle basic equipment and instruments during the performance of <u>physico</u>-chemical experiments.</p>			
Syllabus			
<i>Theoretical instruction</i>			
Molecular systems. Aggregate states (solid and liquid state, ideal and real gases). Principles of chemical thermodynamics (I, II and III law and application). Equilibrium (chemical equilibrium and phase equilibrium).			
<i>Practical instruction</i>			
Determination of molecular parameters by instrumental spectroscopic methods. Determination of <u>physico</u> -chemical properties of liquids. Determination of thermodynamic parameters of some <u>physico</u> -chemical systems.			
Required Reading:			
1. P. W. Atkins: Physical Chemistry, Oxford University Press, Oxford, 1998			
Weekly Contact Hours: 105	Lectures: 45	Practical work: 45+15	
Teaching Methods:			
Lectures and laboratory work			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Activity	10	Test	20
Lab exercises	10	Written exam	20
		Oral exam	40