

	UNIVERSITY OF CRIMINAL INVESTIGATION AND POLICE STUDIES		
	11080 ZEMUN, 196, CARA DUŠANA ST.		
	Accreditation of the study program		
	BACHELOR'S DEGREE STUDIES (UNDERGRADUATE ACADEMIC STUDIES)		
	Forensic Engineering		

Standard 05. - Curriculum

Table 5.2 Course description

Teaching course:		Physical Chemistry					
Course code: 2.17							
Number of ECTS: 7							
Teacher:		Koturević M. Biljana					
Course status:		Mandatory					
Number of active teaching hours (per week)							
Lectures:		Exercises:	Other forms of teaching:	Research study paper:	Other classes:		
3		3	0	0	0		
Course prerequisites							
No.	Course code	Course title			Has to be attended	Has to be passed	
1.	2.12	Introduction to Chemistry			Yes	Yes	
Conditions:							
1. Learning objective: Providing basic knowledge of chemical and physical principles of analytical chemistry. Providing students with the fundamentals of qualitative and quantitative chemical analysis. Providing fundamentals for understanding of analytical methods through theoretical and experimental work. Mastering the methodology during problem solving in analytical chemistry.							
2. Learning outcomes (Acquired knowledge): Students acquire theoretical knowledge in manifestation forms of substances in gaseous and liquid states, defining thermodynamic quantities related to consideration of balance and spontaneity of physical changes. Students master the fundamentals of formal kinetics of homogeneous chemical reactions in closed systems. Students apply the acquired knowledge in solving tasks from selected areas of physical chemistry. Students master the theoretical foundations of spectroscopic methods for determining the structure of molecules, as a basis for further study of instrumental analytical methods, as well as mastering experimental techniques and methods of processing physicochemical data.							
3. Course content/structure: Theoretical teaching: States of matter (gaseous state: kinetic theory, ideal and real behavior; liquid state: theory of flow, intermolecular interactions). Fundamentals of chemical thermodynamics and thermochemistry. Chemical equilibrium and phase equilibrium (in one-component and two-component homogeneous and heterogeneous systems). Adsorption, and chemical kinetics. Practical training: Determining physicochemical properties of liquids. Determining viscosity and the effect of temperature on liquid viscosity. Determining refractive index. Cryoscopy (determining the molar mass of a dissolved substance and the degree of dissociation of a weak electrolyte). Determining adsorption parameters. Determining the chemical reaction rate law. Determining kinetic parameters of a chemical reaction.							
4. Teaching methods: PowerPoint presentations, interactive theoretical teaching, practical work with students in laboratory, calculation tasks.							
Knowledge grading (maximum number of points is 100)							
Pre-exam requirements		Mandatory	Points	Final exam		Mandatory	Points
Student's activity during lectures		Yes	5,00	Written exam		Yes	20,00
Practical teaching		Yes	15,00	Oral exam		Yes	30,00
Test		Yes	30,00				
Tectbook(s)							
No.	Author(s)		Title		Publisher		Year
1.	Peter Atkins and Julio de Paula		Physical Chemistry		Oxford University Press		2006
2.	P. W. Atkins; C. A. Trapp; M. P. Cady; C. Giunta		Student's solutions manual to accompany Physical Chemistry		Oxford University Press		2006
3.	Anić, S. ; Stanisavljev, D. ; Vukelić, N.		Izabrana poglavlja iz fizičke hemije		Beograd : Fakultet za fizičku hemiju		2007
4.	Ристић, М. ; Пашти, И. ; Цекић-Ласковић, И.		Практикум из Општег курса физичке хемије		Београд : Факултет за физичку хемију		2010
5.	Holclajtner-Antunović, I.[et al.]		Radna sveska iz fizičke hemije		Beograd : Fakultet za fizičku hemiju		2011
6.	Максимовић, Радојица; Бошковић, Мићо; Тодорић, Угљеша		Методe физике, хемије и физичке хемије у криминалистици		Београд : Полицијска академија		1998