



УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ  
UNIVERSITY OF BANJA LUKA  
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ  
FACULTY OF NATURAL SCIENCES AND MATHEMATICS



CHEMISTRY DEPARTMENT

FIRST CYCLE OF STUDY

Chemistry/Chemistry Education

Course name	<b>Physical Chemistry 3</b>			
Course code	Course status	Semester	Hours of instruction	ECTS
1C16HOS1110	required	VI	2+2	5
Teacher(s)	<b>Prof. Dijana Jelić, PhD</b>			

Prerequisite course(s)	Entry requirements
Physical Chemistry 1, Physical Chemistry 2	passed

<b>Course goals</b>
The aim of the course Physical Chemistry 3 is to teach the students with about events at the phase boundary and the study of surface phenomena. Then the study of colloidal disperse systems, their structure and physicochemical properties, as well as introduction to the basics of radiochemistry such as radioactive decay, ionizing and non-ionizing radiation, fission.

<b>Learning outcomes</b>
The student is able to independently understand events at the phase boundary and surface phenomena, as well as to apply adsorption isotherms to boundary phenomena. To understand and determine the structure of a colloidal particle and its behavior. The student knows the basic concepts of radiochemistry, to explain radioactive decays, to understand the units used in radiological examinations.

<b>Course content</b>
Adsorption. Adsorption equilibria. Adsorption isotherms. Fundamentals of colloid chemistry: colloidal systems, structure, structure of colloidal particles, kinetic, optical and electrical properties, stability and coagulation of colloids. Basics of radiochemistry: natural and artificial activity, ionizing radiation, radiation doses. <i>Experimental part</i> Construction of absorption isotherms for different adsorbate / adsorbent systems.

<b>Teaching methods</b>
Lectures, computational exercises, laboratory exercises, oral exam

<b>Books and other learning materials</b>
N. Čegar, J. Penavin-Škundrić, B. Škundrić, Osnovi hemijske termodinamike, Banjaluka, 2006 I. D. Holclajtner Antunović, Opšti kurs fizičke hemije, Zavod za udžbenike i nastavna sredstva, Beograd, 2000 D. Malešev, Odabrana poglavlja fizičke hemije, Farmaceutski fakultet, Beograd, 2003 P. W. Atkins, Physical Chemistry, Oxford, University Press, M. Juranji, Fizička hemija, Zbirka rješениh zadataka, Univerzitet u Novom Sadu, Edicija Univerzitetski udžbenik, Novi Sad 1998

<b>Course activities and grading method</b>
Laboratory exercises are a condition for taking the exam. Students take two tests (theory and calculations – 51%). The first test is in the field of Adsorption. The second test is from Colloid Chemistry. Oral exam.

Laboratory exercises	10	Test - Theory	15
Test - calculations	15	Final exam	60

<b>Additional course notes</b>
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Name of the teacher who prepared this form	Prof. dr Dijana Jelić, PhD
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