Course ID: HFH244	**Course name: PHYSICAL CHEMISTRY II**		
Cycle: FIRST	**Year: SECOND**	**Semester: IV**	**ECTS credits: 8**
Course status: MANDATORY		**Total course hours: 120** Lectures: 45 Auditory: 30 Laboratory: 45	
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**		
Prerequisite for enrollment:	-		
Course aims:	The objectives of the course are contained in the fact that Physical Chemistry deals with the physical principles on which chemistry is based. The aim of the course is to acquire knowledge about chemical thermodynamics, kinetic theory of gases, etc.		
Thematic course units:	1. Physical transformations of pure substances 2. Phase transformations, phase equlibria 3. Thermodynamics of ideal mixture 4. Chemical potential of ideal solution – colligative properties 5. Gibbs phase rule, phase diagrams for pure substance, the lever rule 6. Phase diagrams for mixtures, distillation 7. Motion in liquid phase, structure of liquid phase, viscosity, diffusion 8. Surface tension, adsorption 9. Chemical equilibrium, spontaneous chemical reactions. Effects of pressure and temperature on chemical equilibrium 10. Molecular motion in gases, transport properties. 11. Formal chemical kinetics, rate of chemical reaction 12. Rate law, rate constant, order and molecularity of chemical reaction 13. Effects of temperature on rate of chemical reaction. Elementary and complex chemical reactions 14. Catalysis and catalysts		
Learning outcomes:	Knowledge: Acquired knowledge of phase equilibria, chemical equilibrium, adsorption, chemical kinetics. Skills: Students will be able to use exact thermodynamic methods as a basis for understanding the essence of chemical processes. Competences: Application of thermodynamic methods in other branches of chemistry.		
Teaching methodology:	Lectures (oral presentation and interactive classes) Auditory exercises Laboratory exercises		

Assessment methods and grading system[1]:

Grading criteria		
Criteria	Maximal score	Required score
1. Class attendance	0	0
2. Class activities	15	8
3. Midterms	2 × 20	2× 11
4. Final exam	45	25
Total	100	55

Scores and grading		
Score	Grade (BiH)	Grade (ECTS)
< 55	5	F, FX
55–64	6	E
65–74	7	D
75–84	8	C
85–94	9	B
95–100	10	A

Literature[2]:

Mandatory literature:

1. Đorđević S., Dražić V., Fizička hemija, Tehnološko-metalurški fakultet, Beograd
2. Cacan M., Korać F: Zbirka zadataka iz fizikalne hemije (odabrana poglavlja) 2005.
3. Korać F., Gutić S., Gojak S., Islamović S., Ostojić J.: Praktikum iz fizikalne hemije I i II, (2013)

Supplementary literature:

1. P. W. Atkins, Physical Chemistry, Oxford University Press
2. D. Minić, A. Antić-Jovanović, Fizička hemija,Beograd, 2005.

[1] The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[2] The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton