Course ID: HFH402	**Course name: ENZYME CATALYSIS**		
Cycle: FIRST	**Year: FOURTH**	**Semester: VII**	**ECTS credits: 3**
Course status: ELECTIVE		**Total course hours: 45** Lectures: 30 Laboratory: 15	
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**		
Prerequisite for enrollment:	-		
Course aims:	The aim of the module is to explain the kinetics and mechanism of enzyme-catalyzed chemical reactions, as well as to gain knowledge of some aspects of enzyme application in biotechnology, pharmaceutical and food industries.		
Thematic course units:	1. Introduction to enzymology and enzymatic catalysis 2. Biocatalysts, structure, functions and catalytic properties 3. Simple catalase reaction enzymes 4. Michaelis-Menten mechanism kinetics 5. Inhibition of enzymatic activity 6. The effect of pH on enzymatic activity 7. The influence of temperature on enzymatic activity 8. Multi-substrate enzyme systems 9. Kinetics of regulatory enzymes 10. Acquired enzymatic systems 11. Experimental methods in enzymatic kinetics 12. Analysis of experimental data in enzymatic kinetics 13. Some aspects of enzyme application 14. Enzyme application in industry 15. Introduction to clinical enzymology		
Learning outcomes:	Knowledge: Students will gain knowledge of the kinetics and mechanism of enzymes of catalyzed chemical reactions. Skills: Students will be able to use experimental methods in enzyme kinetics. Competences: Application of enzymes in biotechnology, pharmaceutical and food industries.		
Teaching methodology:	Lectures (oral presentation and interactive classes) Laboratory exercises		

Assessment methods and grading system[1]:

Grading criteria		
Criteria	Maximal score	Required score
1. Class attendance	5	3
2. Class activities	15	8
3. Midterms	2 × 20	2× 11
4. Final exam	40	22
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. J. E. House, Principles of Chemical Kinetics, second edition, Elsevier, 2007
2. J. Paloine, A. P. MacCabe, Industrial Enzymes, Springer, 2007
3. R.A.Copeland, Evaluation of enzyme inhibitors in drug discovery, Wiley Inc.USA, 2005

Supplementary literature:

1. H.Bisswanger, Enzime Kinetics, Principles and Methods, Wiley Inc.USA, 2008

[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