



Course ID: HFHI23	Course name: ELECTROCHEMISTRY OF REDOX ENZYME		
Cycle: SECOND	Year: FIRST	Semester: I	ECTS credits: 4
Course status: ELECTIVE		Total course hours: 60 Lectures: 30 Laboratory: 30	
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 familiarize the student with the basic electrochemical processes that occur between the appropriate electrode and the enzyme.		
Thematic course units:	<ol style="list-style-type: none"> 1. Redox potential of enzymes 2. Examples of soluble mediators 3. Development of voltammetry protein-film and electrochemistry of enzymes 4. Transmission of electrons 5. Transfer of electrons between electrodes and enzymes 6. Enzymes in solution 7. Voltammetry enzyme-film: Basic theory 8. Adsorption and co-absorption of enzymes 9. Mediators for electrocatalytic oxidation 10. Carbon paste and gold nanoparticles 11. Enzymes on carbon electrodes from carbon nanotubes 		
Learning outcomes:	Knowledge: Students will gain knowledge of the electrochemical processes between the electrode surface and the enzyme. Skills: Students will be able to interpret electrochemical methods in enzyme inhibition. Competences: Application of electrochemical processes to redox enzymes.		
Teaching methodology:	Lectures (oral presentation and interactive classes) Laboratory exercises		
Assessment methods and grading system¹:	Grading criteria		
		Criteria	Maximal score
	1.	Class attendance	5
	2.	Class activities	15
	3.	Midterms	2 × 20
			Required score
			3
			8
			2 × 11

¹The 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

	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
Literature²:	<p>Supplementary literature:</p> <ol style="list-style-type: none"> 1. P.N. Bartlett, Bioelectrochemistry, Fundamentals, Experimental Techniques and Applications, Wiley Inc.USA, 2008 2. H.Bisswanger, Enzyme Kinetics, Principles and Methods, Wiley Inc.USA, 2008 3. K.Drauz, H.Waldmann, Enzyme Catalysis in Organic Synthesis, Wiley Inc.USA, 2002 4. H. J. Smith, C. Simons, Enzymes and Their Inhibition, Drug Development, Cambridge University Press, 2005 5. R.A.Copeland, Evaluation of enzyme inhibitors in drug discovery, Wiley Inc.USA, 2005 		

²The 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