

NAME OF THE COURSE		Advanced Laboratory Course in Biochemistry					
Code	PPC208	Year of study				1st	
Course teacher	Viljemka Bučević, Assistant Professor	Credits (ECTS)				2	
Associate teachers	Matilda Šprung, Assistant Professor	Type of instruction (number of hours)				L	S
						E	F
Status of the course	elective	Percentage of application of e-learning				10%	
COURSE DESCRIPTION							
Course objectives	Getting acquainted with the instruments and methods used in modern biochemical laboratories.						
Course enrolment requirements and entry competences required for the course	<p>There are no prerequisites for enrolment.</p> <p>Entry competencies needed for following the course:</p> <ol style="list-style-type: none"> 1. knowledge of the basics of practical work in the biochemistry laboratory 2. knowledge of chemical properties of biomolecules 3. understanding fundamental biochemical processes in living cells 						
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>After completing the exam, the student will be able to:</p> <ol style="list-style-type: none"> 1. Compare different techniques for determining the concentration of biological macromolecules, purification of proteins and measuring fluorescence/phosphorescence of biological macromolecules 2. Perform basic protein/amino acid analysis in a given biological sample 3. Compare method applications of various instruments used during practical 4. Present and interpret the results obtained in laboratory work 						
Course content broken down in detail by weekly class schedule (syllabus)	<p>EXERCISES:</p> <ol style="list-style-type: none"> 1. Determination of concentration of biological macromolecules. (4 hours) 2. Protein purification techniques by FPLC method. (4 hours) 3. Using microtiter plate readers in biochemical measurements. (4 hours) 4. Intrinsic fluorescence and phosphorescence of biological macromolecules. (4 hours) 5. Fluorescence/phosphorescence quenching. (4 hours) 6. Monitoring denaturation of biological macromolecules. (2 hours) 7. Western-blotting protein analysis. (4 hours) 8. Amino acid analysis by HPLC. (4 hours) 						
Format of instruction	<input type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input type="checkbox"/> partial e-learning <input type="checkbox"/> field work		<input type="checkbox"/> independent assignments <input type="checkbox"/> multimedia <input checked="" type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)				
Student responsibilities	Attending classes, entry quizzes, final exam						
Screening student work (name the proportion of ECTS)	Class attendance	1.0	Research		Practical training		
	Experimental		Report		(Other)		

credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)	work						
	Essay		Seminar essay		(Other)		
	Tests	0.25	Oral exam		(Other)		
	Written exam	0.75	Project		(Other)		
Grading and evaluating student work in class and at the final exam	Quizzes – 20% Final exam – 80%						
Required literature (available in the library and via other media)	Title					Number of copies in the library	Availability via other media
	Advanced Biochemistry Practical (laboratory manual)						available
Optional literature (at the time of submission of study programme proposal)	Price, Nairn: Exploring proteins: a student's guide to experimental skills and methods, Oxford University Press, 2009. Wilson, Walker: Principles and Techniques of Biochemistry and Molecular Biology, Cambridge University Press, 2010.						
Quality assurance methods that ensure the acquisition of exit competences	The quality of teaching will be monitored by collecting feedback from students through personal consultations, joint conversations and anonymous student surveys. The students' performance in the final exam will be analyzed and used to improve the teaching performance in the next academic year.						
Other (as the proposer wishes to add)							

