

NAME OF THE COURSE		Laboratory in Chemistry Education II				
Code	PMC214	Year of study	2nd year of graduate study			
Course teacher	Dr.sc. Roko Vladušić	Credits (ECTS)	3,0			
Associate teachers		Type of instruction (number of hours)	P	S	V	T
					45	
Status of the course	Obligate	Percentage of application of e-learning	5			
COURSE DESCRIPTION						
Course objectives	The goal of the course is to prepare students for design and implementation of secondary schools' chemistry experiments in chemistry instruction. Special attention is paid to the development of the awareness how important role experiments do play in chemistry instruction.					
Course enrolment requirements and entry competences required for the course	Laboratory in Chemistry Education I obligations completed (except exam); starting competencies are related to the knowledge of chemistry and ability to work with chemicals in secure and economic way.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	According to the secondary schools curriculum, students will be able to: - design and develop worksheets for implementation and evaluation of experimental work, - prepare and implement demonstrational and laboratory types of experiments, - create experimental situations in which pupils should make conclusions based on observations and theoretical knowledge, - perform all laboratory procedures related to experiments listed in Chemistry curriculum for elementary school, - demonstrate practical work skills and - analyse the flow and results of an experiment with focus on the cause-effect relationships.					
Course content broken down in detail by weekly class schedule (syllabus)	1. Carbohydrates (5 hours) 2. Organic compounds with oxygen (5 hours) 3. Biologically important compounds (6 hours) 4. Polymers (4 hours) 5. Chemical bonding and crystals (5 hours) 6. Types of dispersion systems (5 hours) 7. Changes of energy in reaction systems (5 hours) 8. Chemical equilibrium (5 hours) 9. Electrochemistry (5 hours)					
Format of instruction	<input type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input checked="" type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input checked="" type="checkbox"/> partial e-learning <input type="checkbox"/> field work		<input checked="" type="checkbox"/> independent assignments <input checked="" type="checkbox"/> multimedia <input checked="" type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)			
Student responsibilities	To attend laboratory exercises, to design and perform experiments, to develop worksheet for experiment implementation in classroom.					
Screening student work (name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)	Class attendance		Research		Practical training	
	Experimental work	1,5	Report		Individual laboratory tasks	0,5
	Essay		Seminar essay		Problem analysis	1
	Tests		Oral exam		(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student	Preparation, implementation and analysis of experiments - 100 % (or final experimental exam – 80 %; creating worksheets, structuring experiments and					

work in class and at the final exam	experimental skills – 20 %).		
Required literature (available in the library and via other media)	<b>Title</b>	<b>Number of copies in the library</b>	<b>Availability via other media</b>
	Sikirica, M. (2011). Zbirka kemijskih pokusa za osnovnu i srednju školu, Školska knjiga, Zagreb.	4	
	Chemistry textbooks applied by Ministry of science and education	5	
Optional literature (at the time of submission of study programme proposal)	Sikirica, M. (2004). Metodika nastave kemije, Školska knjiga, Zagreb.		
Quality assurance methods that ensure the acquisition of exit competences	Personal consultations, individual tasks analysis, group conversation, institutional evaluation at the end of the semester.		
Other (as the proposer wishes to add)			