

NAME OF THE COURSE		Chemistry Education I				
Code	PMC210	Year of study	1st year; graduate study			
Course teacher	Dr.sc. Roko Vladušić	Credits (ECTS)	4,0			
Associate teachers		Type of instruction (number of hours)	P	S	V	T
			30	30		
Status of the course	Obligate	Percentage of application of e-learning	10			
COURSE DESCRIPTION						
Course objectives	The aim of course is to provide opportunities for construction of theoretical and practical knowledge about teaching and learning chemistry. Also, students will be taught how to investigate and recognize the lawfulness of chemistry instruction.					
Course enrolment requirements and entry competences required for the course	There are no prerequisites for enrolment in the course; starting competencies are related to the adequate knowledge of chemistry.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>Students:</p> <ul style="list-style-type: none"> - based on historical features of the development of chemistry and chemistry education, will be able to see the importance and necessity of the experimental approach to the chemistry teaching, - will be able to explain the position of Chemistry Education in the area of Science and Education, as well as the object of its research, - will be able to analyse the purposefulness and effectiveness of different approaches to teaching and learning chemistry in dependence of the content specifics, - will be able to safely and properly apply the theoretical knowledge in experiment's preparation and implementation in the chemistry instruction, - will be able to analyse students' knowledge regarding to the levels and types of knowledge and - will be able to explain and organise instruction related to the fundamental chemical laws, theories and concepts, as part of their Pedagogical content knowledge. 					
Course content broken down in detail by weekly class schedule (syllabus)	<ol style="list-style-type: none"> 1. History of Chemistry and Chemistry Education (3 Lectures + 1 Seminar) 2. Presentation of selected content issues in Chemistry Education (1 L + 3 S) 3. The place of Chemistry education in science (4 L) 4. Explanations of fundamental chemical laws (4 S) 5. Sources of knowledge in chemistry instruction (6 L + 4 S) 6. Safety and protection in experimental work (2 L) 7. Strategies, methods and procedures in Chemistry instruction (4 L + 4 S) 8. Learning outcomes in Chemistry Instruction ((2 L + 4 S) 9. Pedagogical content knowledge (2 L + 6 S) 10. The role of taxonomy of knowledge in Chemical Education in evaluation processes (2 L + 4 S) 					
Format of instruction	<input checked="" type="checkbox"/> lectures <input checked="" type="checkbox"/> seminars and workshops <input 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 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	Class attendance	2	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar	0,5	(Other)	

ECTS credits is equal to the ECTS value of the course)			essay			
	Tests		Oral exam	1,5	(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student work in class and at the final exam	Individual assignments 20 %, Pre-exam, 20 %, Oral exam 60 %					
Required literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media	
	Sikirica, M. (2004). Metodika nastave kemije, Školska knjiga, Zagreb.			1		
	Mrklić, Ž. (1998). Metodika nastave kemije (internal script), Split.				+	
Optional literature (at the time of submission of study programme proposal)	<p>Chemistry textbooks approved by Ministry of Science, education and sport.</p> <p>Holyman, S. (2006). Teacher's book- GCSE Chemistry, Nelson Thornes Ltd, Cheltenham.</p> <p>Pienta, N. J., Cooper, M., M. and Thomas J. Greenbowe (2005). Chemists' guide to effective teaching, Pearson education, New Jersey.</p> <p>Bucat, B. and Fenshman, P. (1995). Selected papers in chemical education research, IUPAC.</p>					
Quality assurance methods that ensure the acquisition of exit competences	Personal consultations, Individual tasks analysis, Internal evaluation of learning outcomes achievement; Institutional evaluation at the end of the semester.					
Other (as the proposer wishes to add)						