

NAME OF THE COURSE		Chemistry Education II					
Code	PMC212	Year of study	2nd year of graduate study				
Course teacher	Dr.sc. Roko Vladušić	Credits (ECTS)	5,0				
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 goal of the course is development of scientific type of thinking as foundation for heuristic chemistry instruction based on experiments, research and problem solving. The students' knowledge constructed during this course will enable quality preparation and implementation of teaching process.						
Course enrolment requirements and entry competences required for the course	Chemistry Education I obligations completed (except exam); starting competencies are related to the adequate knowledge of Chemistry, Pedagogy, Didactic and Educational Psychology.						
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- explain the criteria for selected teaching strategies related to the chemical content,</li> <li>- design and develop high-quality Chemistry lessons' preparation sheets,</li> <li>- apply appropriate teaching materials and techniques,</li> <li>- make a valid evaluation instruments,</li> <li>- define the levels of chemistry triplet and properly use them during teaching,</li> <li>- organize active learning of Chemistry,</li> <li>- correctly interpret the meaning of key concepts relevant to the curriculum,</li> <li>- explain the importance of proper language usage of in chemistry instruction,</li> <li>- prepare and perform chemistry lesson according to the quality teaching principles and</li> <li>- explain the concept of the Pedagogical (Chemistry) content knowledge and support it with examples.</li> </ul>						
Course content broken down in detail by weekly class schedule (syllabus)	<ol style="list-style-type: none"> <li>1. Types of work in Chemistry instruction (2 Lectures + 2 Seminars/workshops)</li> <li>2. Types of teaching lessons in Chemistry instruction (1 L)</li> <li>3. The role of exercise in Chemistry instruction (2 L)</li> <li>4. Teaching technique in Chemistry instruction (1 L)</li> <li>5. Evaluation of knowledge (4 L)</li> <li>6. The models and modelling in Chemistry (2 L)</li> <li>7. Development of evaluation instruments (2 L + 2 S)</li> <li>8. Micro-articulation of chemistry lesson (2 L + 4 S)</li> <li>9. Chemistry curriculum (4 L)</li> <li>10. Chemistry triplet (4 L)</li> <li>11. Active learning in Chemistry instruction (2 L + 2 S)</li> <li>12. The role and importance of language in chemistry instruction (2 L)</li> <li>13. Design, organization and implementation of selected chemistry topics (2 L + 6 S)</li> <li>14. Pedagogical content knowledge (II) – analysis of chemistry content knowledge and its translation into chemistry for teaching (14 S)</li> </ol>						
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 classes, to accomplish individual tasks, to develop written preparation for teaching, to conduct a lesson.						
Screening student work (name the	Class attendance	2	Research		Practical training		

<i>proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)</i>	Experimental work		Report		Teaching lesson simulation	1
	Essay		Seminar essay	0,5	(Other)	
	Tests		Oral exam	1,5	(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student work in class and at the final exam	Seminar work 20 % Teaching lesson simulation 20 % Oral exam:60 %					
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>
	Šikirica, 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> <p>Taber, K. (2002). Chemical misconceptions – prevention, diagnosis and cure, Volume 1: Theoretical background, London.</p> <p>Taber, K. (2002). Chemical misconceptions – prevention, diagnosis and cure, Volume 2: Classroom resources, London.</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)						