



<b>Course ID:</b> HNMI12	<b>Course name: ADVANCED COURSE IN DEMONSTRATION EXPERIMENTS IN CHEMISTRY</b>		
<b>Cycle: SECOND</b>	<b>Year: FIRST</b>	<b>Semester: I</b>	<b>ECTS credits: 4</b>
<b>Course status: MANDATORY</b>		<b>Total course hours: 60</b> Lectures: 30 Laboratory: 30	
<b>Teaching participants:</b>	<b>Teachers and associates with expertise in the field to which the subject belongs</b>		
<b>Prerequisite for enrollment:</b>	-		
<b>Course aims:</b>	Emphasizing the importance of experimental work in chemistry for the development of cognitive processes, creativity and innovation. Introduction to the equipment science student kit and the use of chemicals in microquantities.		
<b>Thematic course units:</b>	1. Importance of experiments in chemistry teaching 2. Demonstration experiments and importance in chemistry teaching 3. Development of experimental techniques and skills 4. Optical projection of chemical experiments 5. "Low-cost" chemical experiments 6. Microscience 7. Technique of performing small-scale chemistry experiments		
<b>Learning outcomes:</b>	Knowledge: <ul style="list-style-type: none"><li>• Select and perform low-cost chemistry experiments using appropriate apparatus (Microscience)</li></ul> Skills: <ul style="list-style-type: none"><li>• Apply the POE (Predict-Observe-Explain) technique</li></ul> Competences: <ul style="list-style-type: none"><li>• Design a set of chemical demonstration experiments for classroom use</li></ul>		
<b>Teaching methodology:</b>	Oral presentation Discussion Research		

<b>Assessment methods and grading system<sup>1</sup>:</b>	<b>Grading criteria</b>		
	Criteria	Maximal score	Required score
	1. Class attendance	5	3
	2. Class activities	15	8
	3. Midterm	25	14
	4. Seminar	15	8
	5. Final exam	40	22
	Total	100	55
	<b>Scores and grading</b>		
	Score	Grade (B&H)	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	
<b>Literature<sup>2</sup>:</b>	<p>Supplementary literature:</p> <ol style="list-style-type: none"> <li>Shakhashiri, B. Z. (2011). <i>Chemical demonstrations: A handbook for teachers of chemistry</i> (Vol. 5). University of Wisconsin Press.</li> <li>Caret, R.L., Denniston, K.J., Topping, J.J. (1997). <i>Principles and Applications of Inorganic, Organic &amp; Biological Chemistry</i>. Boston: WCB/McGraw-Hill.</li> <li>Lister, T. (1996). <i>Classic Chemistry Demonstrations</i>. London: The Royal Society of Chemistry.</li> <li>Beran, J.A. (1996). <i>Chemistry in the Laboratory, A Study of Chemical and Physical Changes</i>. Toronto, Canada: John Wiley and Sons Inc.</li> <li>Beran, J.A. (1994). <i>Laboratory Manual for Principles of General Chemistry</i>. Toronto, Canada: John Wiley and Sons Inc.</li> <li>Shakhashiri, B. Z. (1992). <i>Chemical demonstrations: A handbook for teachers of chemistry</i> (Vol. 4). University of Wisconsin Press.</li> <li>Shakhashiri, B. Z. (1989). <i>Chemical demonstrations: A handbook for teachers of chemistry</i> (Vol. 3). University</li> </ol>		

<sup>1</sup> The 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

<sup>2</sup> The 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

of Wisconsin Press.