



Course ID: HODNM23	Course name: STRUCTURING CHEMICAL CONCEPTS		
Cycle: THIRD	Year: FIRST	Semester: II	ECTS credits: 10
Course status: ELECTIVE		Total course hours: 60 Lectures: 30 Laboratory: 30	
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs		
Prerequisite for enrollment:	-		
Course aims:	<ul style="list-style-type: none">• Application of concept maps to create and evaluate adequate educational materials for the purposes of teaching chemistry.• Developing teaching skills based on the conceptualization of chemical phenomena.		
Thematic course units:	<ol style="list-style-type: none">1. The nature of chemical knowledge2. Concepts in chemistry3. Concepts and conceptions4. Concept maps in chemistry teaching5. Creating and understanding concept maps6. Cognitive levels in chemistry7. Misconceptions from natural sciences8. Development and assessment of progress in the formation of chemical concepts		
Learning outcomes:	<p>Knowledge:</p> <ul style="list-style-type: none">• Present the results of analyzing concept maps in science education• Assess student misconceptions <p>Skills:</p> <ul style="list-style-type: none">• Design concept maps for the purpose of science education <p>Competences:</p> <ul style="list-style-type: none">• Analyze concept maps• Evaluate the effectiveness of designing and understanding cognitive levels in chemistry		
Teaching methodology:	Oral presentation Discussion Research		

Assessment methods and grading system¹:	Grading criteria		
	Criteria	Maximal score	Required score
	1. Class attendance	-	-
	2. Class activities	-	-
	3. Midterm	20	11
	4. Seminar	3x10	3x6
	5. Final exam	50	26
	Total	100	55
	Scores and grading		
	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	
Literature²:	<p>Mandatory literature:</p> <ol style="list-style-type: none"> 1. Ausubel, D. P. (2000). <i>The Acquisition and Retention of Knowledge: A Cognitive View</i>. Dordrecht, Netherlands: Kluwer Academic Publishers 2. Barke H.-D., Hazari A., Yitbarek S. (2009). <i>Misconceptions in Chemistry-Addressing Perceptions in Chemical Education</i>. Berlin Heidelberg: Springer Verlag 3. Taber, K. S. (2002). <i>Chemical Misconceptions: Prevention, Diagnosis, and Cure: Classroom Resources, Part 1</i>. Cambridge, UK: Royal Society of Chemistry 4. Taber, K. S. (2002). <i>Chemical Misconceptions: Prevention, Diagnosis, and Cure: Classroom Resources, Part 2</i>. Cambridge, UK: Royal Society of Chemistry 5. Halloun, I. A. (2006). <i>Modeling Theory in Science Education</i>. Dordrecht: Springer. 		

¹ 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

² 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