



Course ID: HOB233	Course name: ORGANIC CHEMISTRY I		
Cycle: FIRST	Year: SECOND	Semester: III	ECTS credits: 6
Course status: MANDATORY		Total course hours: 75 Lectures: 30 Laboratory: 45	
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs		
Prerequisite for enrollment:	-		
Course aims:	Students will be introduced to the types of reactions and intermediates that most often occur in organic chemistry, electronic and steric effects, and reactions to compounds containing a carbonyl group as well as the reaction at a saturated carbon atom.		
Thematic course units:	<ol style="list-style-type: none">1. Types of reactions, intermediates, resonance effects, tautomerization, hyperconjugation, inductive effect, steric effect2. Nucleophilic addition to carbonyl group, aldehydes and ketones. Reactivity of carbonyl group.3. C, N, O, S, hydrides, C as nucleophiles4. Nucleophilic substitution to Carbonyl Group-the Carboxylic Acid5. Reactivity of carboxyl acid, esters, halides and anhydrides6. O or S as nucleophiles, esters and carboxylic acid7. N as nucleophile – amides8. Hydrides as nucleophile – reduction9. Acylating an enolate anion-Claisen reactions10. SN at saturated C atom, reaction mechanism, stereochemistry of SN,11. Variables in SN (leaving groups, nucleophiles, the site of substitution, the effect of solvent)12. Halides, O, S, N, C, hydrides as nucleophiles (SN)13. Elimination Reactions-Alkenes and alkynes, reaction mechanism14. Stereochemistry and direction of elimination, forming of alkenes and alkynes		

Learning outcomes:	<p>Knowledge: Acquisition of knowledge from elimination reactions, additions, substitutions, conditions of the mentioned reactions, intermediates in organic reactions such as carbocations, carbonions, carbens and free radicals. Students will be introduced to the effects of resonance, hyperconjugation, inductive effect, and steric effect.</p> <p>Skills: The student will be able to synthesize organic compounds with an explanation of the mechanisms of these syntheses. They will also be able to compare the conditions under which organic reactions of elimination, addition and substitution take place, and assess the specifics of these reactions.</p> <p>Competences: The student is able to independently solve problems from the provided material, write and explain the mechanism of these reactions, as well as practically synthesize organic compounds.</p>																																													
Teaching methodology:	Auditory lectures and laboratory exercises																																													
Assessment methods and grading system¹:	<table border="1"> <thead> <tr> <th colspan="3">Grading criteria</th> </tr> <tr> <th>Criteria</th> <th>Maximal score</th> <th>Required score</th> </tr> </thead> <tbody> <tr> <td>1. Class attendance</td> <td>5</td> <td>3</td> </tr> <tr> <td>2. Class activities</td> <td>10</td> <td>5</td> </tr> <tr> <td>3. Midterms</td> <td>45</td> <td>25</td> </tr> <tr> <td>4. Final exam</td> <td>40</td> <td>22</td> </tr> <tr> <td>Total</td> <td>100</td> <td>55</td> </tr> <tr> <th colspan="3">Scores and grading</th> </tr> <tr> <th>Score</th> <th>Grade (B&H)</th> <th>Grade (ECTS)</th> </tr> <tr> <td>< 55</td> <td>5</td> <td>F, FX</td> </tr> <tr> <td>55–64</td> <td>6</td> <td>E</td> </tr> <tr> <td>65–74</td> <td>7</td> <td>D</td> </tr> <tr> <td>75–84</td> <td>8</td> <td>C</td> </tr> <tr> <td>85–94</td> <td>9</td> <td>B</td> </tr> <tr> <td>95–100</td> <td>10</td> <td>A</td> </tr> </tbody> </table>	Grading criteria			Criteria	Maximal score	Required score	1. Class attendance	5	3	2. Class activities	10	5	3. Midterms	45	25	4. Final exam	40	22	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
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Literature²:	<p>Mandatory literature:</p> <ol style="list-style-type: none"> Volhardt, K.P.C., Schore, N.E. (2004) ORGANSKA HEMIJA: struktura i funkcija, IV izdanje, Data status, Beograd, 2004 Wade, L. G. (2017) ORGANSKA KEMIJA, Školska knjiga Zagred. Čopra-Janićijević, A., Klepo, L., Topčagić, A. (2013) PRAKTIKUM ORGANSKE HEMIJE, PMF, Sarajevo. 																																													

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

Supplementary literature:

1. Pine, S.H. (1994) ORGANSKA HEMIJA, Školska knjiga Zagreb
2. Maksimović, M., Čopra-Janićijević, A., Vidic, D., Topčagić, A., Klepo, L., Dizdar, M., Čulum D. (2019) OSNOVE ORGANSKE HEMIJE – Zbirka zadataka, PMF, Sarajevo.
3. Maksimović, M. (2003) KARBOHIDROGENI-Zadaci i rješenja iz organske hemije, PMF, Sarajevo