Course ID: COB410	**Course name: CHEMISTRY OF HETEROCYCLIC COMPOUNDS**		
Cycle: FIRST	**Year: FOURTH**	**Semester: VIII**	**ECTS credits: 3**
Course status: ELECTIVE		**Total course hours: 45** Lectures: 30 Laboratory: 15	
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**		
Prerequisite for enrollment:	NO		
Course aims:	Introducing students with the structure, synthesis and reactivity of heterocyclic compounds.		
Thematic course units:	1. Introduction. Structure and physical properties of heterocyclic compounds. 2. Reactivity of heterocyclic compounds. 3. Synthesis of heterocyclic compounds. 4. Pyridines - reaction and synthesis. 5. Quinolines - synthesis and reactions. 6. Pyroni and Benzopyrones - reactions and synthesis. 7. Diazines - reactions and synthesis. 8. Pyrroles - reaction and synthesis. 9. Thiophene - reaction and synthesis. 10. Furans - reactions and synthesis. 11. Indoles - reaction and synthesis. 12. Benzofurans and benzothiophenes - reaction and synthesis. 13. Purines - reaction and synthesis. 14. Heterocyclic compounds with more heteroatoms in the molecule. 15. Saturated heterocyclic compounds.		
Learning outcomes:	Knowledge: Acquisition of knowledge about the structure, properties, reactivity and synthesis of selected heterocyclic compounds, and their application in many branches of industry. Skills: Acquiring knowledge about the properties and types of reactions involved in heterocyclic compounds, both through the theoretical basis and through practical work in the laboratory.		

<table>
<tr><td></td><td>Competences: The student is able to independently synthesize heterocyclic compounds.</td></tr>
<tr><td>Teaching methodology:</td><td>Classroom lectures and laboratory exercises</td></tr>
<tr><td>Assessment methods and grading system[1]:</td><td>
<table>
<tr><th colspan="3">Grading criteria</th></tr>
<tr><th>Criteria</th><th>Maximal score</th><th>Required score</th></tr>
<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>
</table>
</td></tr>
<tr><td>Literature[2]:</td><td>Mandatory literature:
1. Gazivoda Kraljević, T., Hranjec, M. (2020) Osnove kemije heterocikličkih spojeva, Zagreb.
2. Sainsbury, M. (2005) Heterocyclic Chemistry (Basic Concepts in Chemistry), Wiley.
3. Li, J. (2002) Name Reactions in Heterocyclic Chemistry; Wiley.

Supplementary literature:
1. Pozharskii, F., Soldatenkov, A., Katritzky, A.R. (2011) Heterocycles in Life and Society: An Introduction to Heterocyclic Chemistry, Biochemistry and Applications, 2nd Edition, John Wiley & Sons.
2. Članci naučne literature (Journal of Heterocyclic chemistry, Heterocycles, Journal of American Chemical Society, Synlett, Chemistry of Heterocyclic Compounds)</td></tr>
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[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