Course ID: HBOII3	**Course name: POLYMER WASTE DISPOSAL AND RECYCLING**		
Cycle: SECOND	**Year: FIRST**	**Semester: I**	**ECTS credits: 5**
Course status: ELECTIVE		**Total course hours: 75** Lectures: 45 Laboratory: 30	
Teaching participants:	**Teachers and associates with expertise in the field of polymer waste**		
Prerequisite for enrollment:	-		
Course aims:	Specific competencies: the students acquire knowledge and skills about certain types of polymers, their syntheses, and specific recycling technologies for different types of polymers, as well as for performing the recycling process independently. The students also gain insight into the usability of polymer waste as raw material, as well as knowledge in the field of polymer waste disposal.		
Thematic course units:	1. Introduction in polymer chemistry. 2. Nomenclature of polymers, division of polymers, basic properties of polymers, miscibility of polymers. 3. Synthesis of polymers. 4. Application of polymers. 5. Types of polymer waste. 6. Share of polymer waste in waste. 7. Basic principles of polymer waste disposal. 8. Pretreatment procedures of polymer waste: separation, washing, and grinding. 9. Mechanical recycling: technological procedures. 10. Chemical recycling: technological procedures. 11. Incineration: technological procedures. 12. Rubber recycling. 13. Biodegradable polymers. 14. Sustainable development and polymer materials. 15. UV stability of recycled polymers		
Learning outcomes:	*Knowledge:* The student will get acquainted with the types of polymer waste, ways of recycling, and its disposal. Also, the student will learn basic concepts about production of biodegradable polymers, their stability and use. *Skills:* The student will be trained to manage polymer waste, suggest appropriate recycling or disposal procedures. *Competences:* The student will acquire competences on the proper disposal of polymer waste, specific recycling		

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<tr><td></td><td>technologies for different types of polymer waste, and competences on the production of biodegradable polymers.</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. Scheirs, J. (1998) Polymer Recycling: Science, Technology and Applications, John Wiley & Sons, Chichester.
2. Azapagic, A., Emsley, A., Hamerton, I. (2003) Polymers, The Environment and Sustainable Development, Wiley.

Supplementary literature:
1. La Mantia, F.P. (1996) Recycling of PVC and Mixed Plastic Waste, ChemTec Publishing.</td></tr>
</table>

[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