



Form SP2

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UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE Department of Chemistry

Course ID: HOB412	Course name: PO	urse name: POLYMER WASTE AND ITS DISPOSAL				
Cycle: FIRST	Year: FOURTH	Semester: VIII	ECTS credits: 3			
Course status: MANDATORY		Total course hours: 45 Lectures: 30 Laboratory: 15				
Teaching participant	ts: Teachers and polymer wast	and associates with expertise in the field of vaste				
Prerequisite for enrollment:	-					
Course aims:	polymers and on environme	Introducing students to the concept of polymer, types of polymers and the polymerization process. Acquiring knowledge on environmental pollution by plastic waste, and methods for plastic waste treatment.				
Thematic course uni	Definition of p Basic structur configuration, molecules, pol Polymerization molecular wei Environmenta ts: toxic chemical and water. B heterogeneous used plastic chloride, polye processes. Pa recycling mixe of waste. Biode	Definition of polymer; natural and synthetic polymers. Basic structures of the polymer chain; chain conformation and configuration, polymer morphology, arrangement of solid molecules, polymer cristallinity. Polymerization reactions; dependence of chain structure and molecular weight on polymerization conditions. Environmental pollution with plastic materials, accumulation of toxic chemicals from the process of plastic production in soil and water. Basic terms on recycling of homogeneous and heterogeneous plastics. Recycling of PVC products; recycling of used plastic containers made of polyethylene, polyvinyl-chloride, polyethylen terephthalate by chemical and mechanical processes. Packaging waste management. New process for recycling mixed plastic waste; mechanical-biological treatment of waste. Biodegradable polymers. Sustainable development and				
Learning outcomes:	Knowledge: The polymer wast student will biodegradable Skills: The student suggest appropriate Competencies: production o	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. Competencies: The student will acquire competencies on the production of biodegradable polymers, different types of recycling of polymer waste, as well as ways to safely dispose of				

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Teaching methodology:	Classroom lectures and laboratory exercises.					
	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		
1.	l	Total	100	55		
Assessment methods	Scores and grading					
and grading system ¹ :		Score	Grade	Grade		
			(B&H)	(ECTS)		
	l	< 55	5	F, FX		
	l	55–64	6	<u>E</u>		
	l	65–74	7	D		
		75–84	8	С		
		85–94	9	В		
		95–100	10	A		
	Mandatory literature:					
	1. Goodship, V. (2007) Introduction to Plastics Recycling,					
Literature ² :	Second Edition, Smithers Rapra Technology Limited					
Literature2:	1					
	Supplementary literature:					
	1. La Mantia, F.P. (1996) Recycling of PVC and Mixed Plast					
	Waste, ChemTec Publishing.					

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