Faculty of Technology Zuomik Study programme: Chemical Engineering and Technology Course title TECHNOLOGY OF NATURAL POLYMERS Department Department for Chemical Technologies – Faculty of Technology Zuomik Od-2-066-8 Elective VIII 4 Course code Course status Semester ECTS Od-2-066-8 Elective VIII 4 Teaching assistant Zoran Petrović, PhD, Assoc. Prof. Number of classes/ exercises Student workload (per Individual student workload (in hours per Student workload semester) Student workload coefficient S, exercises Lectures Auditory Laboratory exercises Course student workload (per Individual student workload (in hours per semester) Learning outcomes Auditory exercises, experimental exercises, inclusion of natural polymers, their structure, physical and chemical properties. 2 do 2 do 3 do 3 do 3 do 3 do 3 do 3 do	A LONG		UNIVE								
Oyde I Year IV Course title TECHNOLOGY OF NATURAL POLYMERS Department Department for Chemical Technologies–Faculty of Technology Zvornik Course code Course status Semester ECTS 04-2-066-8 Elective VIII 4 Teaching assistant Zoran Petrovic, PhD, Assoc. Prof. Semester ECTS 04-2-066-8 Elective VIII 4 Teaching assistant Classee/ teaching workload (per exercises Individual student workload (in hours per sercises Student workload coefficient S. Lectures Auditory Laboratory Leboratory Eaboratory Student workload coefficient S. 2 0 2 30 0 100 2151-0154-215-0160 2 . . . Auditory Laboratory Lectures 4 1. 2 0 <t< th=""><th></th><td>Stud</td><th></th><td></td><th>•</th><td>nology</td><td></td></t<>		Stud			•	nology					
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Teaching methods Lectures, auditory exercises, experimental exercises, industrial visits. 1. Basic facts about polymers and polymeric materials (composition and structure of natural polymers, importance of renewable sources of raw materials, biological cycle of natural polymers). 2. Classification of natural polymers (biopolymers) (functions of biopolymers, molecular and supramolecular structure of natural polymers). 3. Polysaccharides (classification and structure of polysaccharides). 4. Structure and properties of cellulose, molecular and supramolecular structure of cellulose, crystalline modifications of cellulose, physico-chemical properties of cellulose, application of cellulose, esters, cellulose derivatives (regenerated cellulose, microcrystalline cellulose, cellulose esters, cellulose antaral and cellulose fibers). 6. Structure of lignin, properties and application of starch (starch polysaccharides, primary structure, properties and separation of starch fractions, starch extraction procedures from starch raw materials, starch-based products). 8. Polysaccharides of animal origin (chitin, chitosan, glycosaminoglycan, extraction procedures and separation). 9. Structure, properties and application of keratin (structure of keratin fibers, mechanical and physiological properties of keratin fibers, application). 10. Structure, properties and application of callege (structure, characteristics, primary and supramolecular structure, elastin, primary structure fibroin and sericin, conformation (supermolecular structure, properties and application of callege (structure, phase transformation, application). 11. Structure, properties and application of callegen (structure,	outcomes	 demonstrate and consolidate knowledge and understanding of the origin, division of natural polymers, their structure, physical and chemical properties. demonstrate and utilize knowledge about the extraction of natural polymers from natural resources and ways of their modification. 									
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Obligatory reading	 Syllabus outline per week outline per vee per per vee per										
	Author					Voor	Dages				
Petrović, S., Mijin, D., Hemija prirodnih organskih jedinjenja, Tehnološko- 2009			-lemija prirod				Fayes				

Stojanović, N.		metalurški faakultet Beograd							
Andričić, B.		Prirodni polimerni materijali, priručnik, Sveučilište u Splitu, Split	2008						
Petrović, Z., Dugić, P. Aleksić, V.		Fizičko-hemijska ispitivanja u procesima organske industrije, Univerzitet u Istočnom Sarajevu, Tehnološki fakultet Zvornik, Zvornik	2011						
		Additional reading							
Author		Title, publisher	Year		Pages				
Stojanović, N. i saradnici		Hemija prirodnih organskih jedinjenja - belančevine, Tehnološko-metalurški fakultet Beograd	1991						
Jovanović. R.		Celulozna prirodna i hemijska vlakna, Građevinska knjiga, Beograd	1989						
Rogovin, M.		Технология целулозе и её производство, Наука, Москва							
		Type of student evaluation		Grade points	Percentage				
	Pre-exam obligations								
Obligations, assessment methods and grading system		Atten	dance	6	6 %				
		Mid-term test (Colloqu		27	27 %				
		Mid-term test (Colloqu	/	27	27 %				
		Laboratory exe	10	10 %					
	Final examination								
		Final examination	i (oral)	30	30 %				
	Total			100	100 %				
Web page	www.tfzv.ue	s.rs.ba							
Date	2023								