
		UNIVERSITY OF EAST SARAJEVO					
		Faculty of Technology Zvornik					
		Study programme: Chemical Engineering and Technology					
		CYCLE I		YEAR III			
Course title		TECHNOLOGY OF PROTECTIVE NON-METALLIC COATINGS					
Department		Department for Physical Chemistry, Electrochemical Engineering and Materials– Faculty of Technology Zvornik					
Course code		Course status		Semester		ECTS	
04-2-068-8-4-2-2		Elective		VII		5	
Teacher		Milorad Tomić, PhD, full professor					
Teaching assistant		Marija Mitrović, PhD, assistant professor					
Number of hours/ teaching workload (per week)			Individual student workload (in hours per semester)			Student workload coefficient S ₀	
Lectures	Auditory exercises	Laboratory exercises	Lectures	Auditory exercises	Laboratory exercises	S ₀	
2	0	2	30	0	30	1,0	
2*15 + 0*15 + 2*15 = 60hours			(2*15*1 + 0*15*1 + 2*15*1)=60 hours				
Total course workload 90 + 120 = 210 hours per semester							
Learning outcomes		After finishing the course, students will be able to: <ol style="list-style-type: none"> analyze problems, design and conceptualize solutions for the technological processes of protecting metals from corrosion with non-metallic coatings, use various experimental techniques to determine the corrosion stability of non-metallic coatings, clearly formulate and present the task, the way of solving it and the results of the work. 					
Prerequisites		No prerequisites					
Teaching methods		Lectures, laboratory classes, seminar paper, practical work, industry visit.					
Syllabus outline per week		<i>List of teaching units per weeks</i> <ol style="list-style-type: none"> Introduction. Conversion coatings as a base for applying non-metallic coatings. Phosphate coatings. Oxide coatings. Chromatic coatings. Oxalate coatings. Aluminum anodizing. Composition, properties and testing methods of non-metallic coatings. The composition of priming agents before application on a substrate and the relationship between the priming agent and the solid surface. Physico-chemical basis of formation of organic coatings. Physical-mechanical and electrical properties of organic coatings and methods for their testing. Examination of the protective properties of organic coatings using electrochemical methods. Mid-term test/colloquium I Procedures for applying organic protective coatings. Dispersion procedure. Application procedure using the roller system. Electrophoretic deposition procedure. Brush application procedure. Drying. Cataphoretic deposition of organic protective coatings. Cationic polymers. The influence of deposition parameters on the protective properties of cataphoretic coatings Visit to the industry Mid-term test/colloquium II 					
Main literature							
Author		Title, publisher		Year	Pages		
Wicks Z.W., Jones, F.,N., Pappas,P., Wicks,D.A.		Organic Coatings: Science and Technology		2007	1-744		
Khanna, A.S		High Performance Organic Coatings: Selection, Application and Evaluation		2008	1-429		

Forsgren, A	Corrosion Control Through Organic Coatings	2006	1-167	
Additional reading				
Author	Title, publisher	Year	Pages	
Wit, J. H. W., Weijde, D. H., Ferrari, G.	Organic Coatings, chapter in Corrosion Mechanisms in Theory and Practice	2002	1-48	
Obligations, assessment methods and grading system	Type of student evaluation		Grade points	Percentage
	Pre-exam obligations			
	Attendance		6	6 %
	Laboratory exercises		20	20 %
	Tests/colloquia		44	44 %
	Final examination (oral)		30	30 %
Total		100	100 %	
Web page	www.tfzv.ues.rs.ba			
Date	2023			