

		UNIVERSITY OF EAST SARAJEVO					
		Faculty of Technology Zvornik					
		Study programme: Chemical Engineering and Technology					
		Cycle I		Year II			
Course title		Analytical chemistry					
Department		Department of Chemistry– Faculty of Technology Zvornik					
Course code		Course status		Semester		ECTS	
04-1-013-3		Compulsory		III		6	
Teacher		Zoran Obrenović, PhD, Associate Professor					
Teaching assistant		Milomirka Obrenović, MSc, Senior Teaching Assitant					
Number of classes/ 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	3	42	0	63	1.40	
2*15+0*15+3*15=75 hours			(2*15*1.40+0*15*1.40+3*15*1.40)=105 hours				
Total course workload 75 + 105=180 hours per semester							
Learning outcomes		<p>After finishing the course, students will be able to:</p> <ol style="list-style-type: none"> 1. demonstrate and utilize the knowledge of the principles and procedures of qualitative and quantitative analysis 2. choose the appropriate analytical procedure and equipment for the required analytical test 3. conduct correct sampling, preparation of the sample, and performs the analytical procedure 4. correctly present the results of the analysis in the prescribed units 					
Prerequisites		None.					
Teaching methods		Lectures, experimental exercises, calculations, mid-term tests (colloquia), consultations.					
Syllabus per week		<ol style="list-style-type: none"> 1. Introduction, Non-polar and polar solvents 2. Theory of acids and bases, acid-base reactions and protolytic theory 3. Equilibrium constant, Protolysis of monoprotic and polyprotic acids; rN-value 4. Calculation of rN-value in solutions of acids, salt bases, Buffers 5. Precipitation reactions, formation of precipitates, Influence of common ion on solubility of difficult-soluble precipitate; 6. Controlled deposition and separation of sulfides and hydroxides; Qualitative chemical analysis, 7. Division of cations into analytical groups, group analysis, anion analysis 8. Quantitative chemical analysis; Gravimetric method, I colloquium 9. Specificities of deposition in gravimetry, gravimetric procedure and calculation 10. Volumetrics, titration curve, role and importance, standard solutions, calculations; 11. Acidimetry and alkalimetry, acid-base indicators, 12. Oxido-reduction method, indicators in redox titrations, permanganometry 13. Iodimetry, iodometry and bromatometry 14. Complexometry, titration tool, types of titrations, indicators in complexometry, complexometric determinations 15. Precipitation titrations, Folhard's and More's method of chloride determination. II Colloquium. 					
Obligatory reading							
Author		Title, publisher			Year	Pages	
Станојевић, Д.		Аналитичка хемија, "Српска књига", Рума-Београд			2007	1-200	
Станојевић, Д., Антонијевић-Николић, М.		Збирка задатака из аналитичке хемије, "Српска књига", Рума-Београд			2005	1-95, 108-165	

Обреновић З., Дошић А.	Збирка задатака из аналитичке хемије, Технолошки факултет, Зворник	2018	1-184	
Additional reading				
Author	Title, publisher	Year	Pages	
Савић, Ј., Савић, М.	Основи аналитичке хемије, "Свјетлост", Сарајево	1990	170-350	
Рајаковић, Љ., и други	Квантитативна аналитичка хемија, практикум, ТМФ Београд	2000	43-226	
Harvey, D.	Modern Analytical chemistry, The McGraw Hill Co, New York	2000	135-367	
Obligations, assessment methods and grading system	Type of student evaluation		Grade points	Percentage
	Pre-exam obligations			
	Attendance		6	6 %
	Laboratory exercises		18	18 %
	Two mid-term tests - theory		10+10	20 %
	Two mid-term tests - computational		13+13	26%
	Final examination			
	Final examination (oral)		30	30 %
Total		100	100 %	
Web page	www.tfzv.ues.rs.ba			
Date	2023			