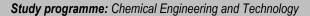


UNIVERSITY OF EAST SARAJEVO

Faculty of Technology Zvornik



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 _o		
Lectures	Auditory exercises	Laboratory exercises	Lecture	es	Auditory exercises	Laboratory exercises	S。
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

After finishing the course, students will be able to:

- 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.

- 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

Syllabus outline per week

- 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. lodimetry, 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						
Autiloi	Title, publisher	i eai	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		1-184			
		Additional reading					
Author		Title, publisher			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		
		Type of student evaluation		Grade points	Percentage		
	Pre-exam obligations						
Obligations, assessment methods and grading system		Atten	6	6 %			
	Laboratory exercises			18	18 %		
		Two mid-term tests - theory			20 %		
	Two mid-term tests - computational				26%		
	Final examination						
		Final examination (oral)			30 %		
	Total			100	100 %		
Web page	www.tfzv.ue	es.rs.ba					