	UNIVERSITY OF EAST SARAJEVO Faculty of Technology Zvornik	
	Study programme: *Chemical Engineering and Technology*	
	Cycle I / Year III	

Course title	**Colloid Chemistry**
Department	Department for Physical Chemistry, Electrochemical engineering and materials– Faculty of Technology Zvornik

Course code	**Course status**	**Semester**	**ECTS**
	Compulsory	V	6

Teacher	Dragan Tošković, full professor
Teaching assistant	Danijela Rajić, senior assistant

Number of classes/ teaching workload (per week)			**Individual student workload (in hours per semester)**			**Student workload coefficient S_o**
Lectures	**Auditory exercises**	**Laboratory exercises**	**Lectures**	**Auditory exercises**	**Laboratory exercises**	**S_o**
3	0	2	45	0	30	1.40
3*15+0*15+2*15=75 hours			(3*15*1.4+0*15*1.4+2*15*1.4)=105 hours			
Total course workload 75 + 105=180 hours per semester						

Learning outcomes	After finishing the course, students will be able to: 1. demonstrate knowledge and understanding of basic terms, laws and principles in the field of colloidal chemistry, 2. govern the basic laws in colloidal systems, 3. demonstrate skills in characterizing and setting properties in different colloidal systems, 4. practically apply acquired knowledge in food and other production systems, 5. logically connect theoretical, experimental and computational knowledge, effective learning, teamwork, use of literature.
Prerequisites	
Teaching methods	Lectures, auditory and laboratory exercises, mid-term tests (colloquia).
Syllabus outline per week	1. Introduction to colloidal chemistry. Basic definitions of dispersed, macromolecular and micellar colloids. 2. Dispersing methods. Condensation and peptization methods. 3. Purification of colloids. Membrane techniques: dialysis, electrodialysis, ultrafiltration and reverse osmosis. 4. Centrifugation, gel filtration. Lyophilization and fractional precipitation. 5. Size and shape of colloidal particles. 6. Physico-chemical structure of colloids. 7. Surface phenomena: surface tension, adsorption. 8. Viscosity of colloidal solutions. 9. Kinetic phenomena in colloids: Brownian movement, diffusion, sedimentation and osmotic pressure. 10. Optical phenomena in colloids: refraction, scattering and absorption of light. 11. Electrical phenomena in colloids. 12. Electro-kinetic phenomena in colloids. 13. Rheological properties of colloids. 14. Stability and coagulation of colloids. 15. Specific colloidal systems: emulsions, foams and gels. Mid-term tests are taken after the 8th week and the 15th week. Semester verification is required after the 15th week.

Obligatory reading

Author	**Title, publisher**	**Year**	**Pages**
Lj. Đaković	Colloidal Chemistry, Institute for textbooks and teaching aids, Belgrade	2006	1-380

Lj. Đaković, P. Dokić	Practicum of colloidal chemistry, Institute for textbooks and teaching aids, Belgrade; Faculty of Technology, Novi Sad	2003	1-53

Additional reading			
Author	**Title, publisher**	**Year**	**Pages**
Myers, D.	Surfaces, Interfaces and Colloids, Wiley,	1999	

	Type of student evaluation	**Grade points**	**Percentage**
Obligations, assessment methods and grading system	Pre-exam obligations		
	Attendance	6	6%
	Mid-term test (colloquium) – theory	30	30 %
	Laboratory exercises	20	20%
	Seminar	14	14%
	Final examination		
	Final examination (oral)	30	30 %
	Total	100	100 %
Webpage	www.tfzv.ues.rs.ba		
Date	2023		