UNIVERSITY OF NOVI SAD
FACULTY OF MEDICINE

Study program: Integrated Academic Studies in Pharmacy

Course title: Colloid Chemistry

Teacher: Veljko S. Krstonošić, Dejan M. Ćirin

Course status: elective

ECTS Credits: 3

Condition: -

Course aim

Theoretical and practical knowledge about the properties, structures, preparation and behavior of colloidal systems.

Expected outcome of the course:

Fundamental knowledge regarding the behavior of colloidal systems which are basis for the pharmaceuticals.
Application of theoretical knowledge in practice

Course description

Theoretical education

1. The subject of the study and definition of colloid chemistry.
2. The classification of colloid systems.
3. Purification and separation of colloids.
4. Micellar colloids. Molecular structure surface active substances. Micelles formation. Solubilisation.
5. General structural properties and chemical structure of macromolecules. Formation of complex macromolecular structures.
6. The size, size distribution and shape of the colloids.
7. Kinetic properties of colloid systems. Diffusion, osmosis, sedimentation.
8. The optical phenomenon of the colloid system.
9. Surface phenomenon. Surface tension. Wetting, overflowing.
10. Viscosity of dilute colloid solutions and methods of measurements.
11. Rheology of colloidal systems and methods of measurement.
12. Electrical phenomena in colloids.
13. Coagulation of colloids.
14. Gels and membranes.

Practical education

1. Preparation of dispersed systems (emulsions and suspensions).
2. Determination of the type of emulsion.
3. Determination of the size and particle size distribution of the emulsion.
4. Determination of the critical micelle concentration.
5. Determination of the molecular weight of macromolecules by viscometric method.

Literature

Compulsory

1. Birdi KS. Handbook of Surface and Colloid Chemistry. CRC Press/Taylor & Francis; 2008.

Number of active classes	**Theory:** 30	**Practice:** 15

Teaching methods

Lectures and practice

Student activity assessment (maximally 100 points)

Pre-exam activities	**points**	**Final exam**	**points**
Lectures	5	Written	50
Practices		Oral	
Colloquium	25	.....	
Essay	20		