

**Thematic plan of seminar-type classes
in discipline «Chemistry»
for students of 2025 year of admission
under the educational programme
31.05.01 General medicine,
specialisation (profile) General medicine
(Specialist's degree),
form of study - full-time
for the 2025-2026 academic year**

№	Thematic blocks	Hours (academic year)
1 semester		
1.	Safety rules in a Chemical Laboratory. Methods expressing concentration. Volumetric analysis ² . Labwork “Standardization of HCl solution”.	4
2.	Chemical Thermodynamics and Chemical equilibrium. Labwork :Determination of the thermal effect of a reaction”.	4
3.	Protolytic processes. Colligative properties of solutions ¹ . Chemical equilibrium and processes in a living matter. Buffers ² . Labwork “ Preparation of a buffer with exact concentration and its properties ”.	4
4.	Control of knowledge, skills and abilities 1 (intermediate control)	4
5.	Chemical kinetics ¹ . Catalysis ² . Labwork “The rate of a chemical reaction. Catalysis”	4
6.	Coordination compounds (Complexes) ¹ . Stability of complexes. Complexes in medicine and clinical investigations. Chelation therapy ² . Labwork “Complexes and their properties”.	4
7.	Physical Chemistry of surface phenomena ¹ . Adsorption of on the liquid and solid phases ² . Labwork “Adsorption on the activated carbon”.	4
8.	Physical Chemistry of surface phenomena ¹ . Colloids. Colloids in the body ² . Labwork “Determination of Critical Coagulation Concentration(CCC)”.	4
9.	Control of knowledge, skills and abilities2 (intermediate control)	4
10.	Metabolites and precursors of drugs and medicines ¹ . Heterofunctional compounds: amino alcohols, hydroxyl acids, oxo acids ² . Labwork “Test reactions to detect heterofunctional compounds”.	4
11.	Metabolites and precursors of drugs and medicines ¹ . Heterofunctional compounds: amino acids. Peptides and proteins ² . Labwork “Test reactions to detect amino acids and peptides”.	4
12.	Carbohydrates ¹ (saccharides, sugars): monosaccharides, disaccharides, polysaccharides. Structure. Properties and metabolism ² . Labwork “Test reactions to detect sugars”.	4
13.	Metabolites and precursors of drugs and medicines. Heterocyclic biologically active compounds ¹ . Nucleosides, nucleotides, nucleic acids. Participation in biochemical processes ² . Labwork “Test reactions to detect heterocyclic compounds”.	4

14.	Control of knowledge, skills and abilities³ (intermediate control)	4
	Final testing.	
Итого		56

1 – topic

2 – essential content

3 – one thematic block includes several classes, the duration of one class is 45 minutes, with a break between classes of at least 5 minutes

Considered at the department meeting of Chemistry, protocol of «30» May 2025 y. # 10.

Head of the Department of Chemistry



A.K. Brel