Speciality "General Medicine"

ACADEMIC DISCIPLINE "BIOORGANIC CHEMISTRY"
CHEMICAL MODULE

Academic discipline outline	Classification and nomenclature of organic compounds. Spatial structure of organic molecules. Chemical bonding and mutual influence of atoms in an organic molecule. Reactivity of hydrocarbons. Reactivity of aldehydes and ketones. Reactivity of carboxylic acids and their functional derivatives. Reactivity of alcohols, phenols, thiols, amines. Acid-base properties of organic compounds. Poly- and heterofunctional compounds involved in the processes and being the basis of the most important groups of medicines. Biologically active heterocyclic compounds. Saponifiable lipids. Structure and properties of monosaccharides, di-, oligo- and polysaccharides. Amino acids. Peptides and proteins. Nucleic acids. Low molecular weight bioregulators
Resulting skills	Assess the properties of natural and synthetic organic compounds, including those potentially dangerous to the human body, and predict their behavior in biological environments
Learning outcomes	A student must: **know:** the classification of organic compounds; the general principles of reactivity of organic compounds; molecular basis of the action of antiseptics and disinfectants, which are alcohols, phenols, aldehydes, quaternary ammonium compounds, etc.; biologically important heterofunctional and heterocyclic compounds; chemical properties and biological significance of the main classes of organic compounds involved in life processes; structural components of biopolymers; **be able to:** classify organic compounds by the structure of the carbon skeleton and the nature of the functional groups; describe the basic mechanisms of chemical transformations and the features of the spatial structure of bioactive compounds; analyze the acid-base properties of organic compounds involved in life processes; identify the relationship between the structure of biologically important molecules and their biological properties; analyze and formalize experimental results; **master:** methods for determining the main functional groups of

	organic compounds; basic techniques for describing the structure of molecules of organic compounds; safe work practices in a chemical laboratory; methods for conducting chemical experiments.
Semester(s)	2 semester
Prerequisite	Chemistry (school course)
Credit value	3 credits
Academic hours	108 academic hours, of which: 66 class hours
Forms of midterm attestation	Differentiated credit