

**Bioorganic Chemistry**  
**Academic plan of lectures for students of FS faculty**  
**II semester of 2021-2022 st. year**

1. The influence of atoms & ways of its transfer in organic molecules. Conjugation. Aromaticity. Electronic effects.
2. Classification and mechanisms of organic reactions. Fundamentals of organic compounds reactivity. Homolytic (free radical) and heterolytic (ionic) reactions. Reactions of free radical substitution ( $S_R$ ) & electrophilic addition ( $A_E$ ) of saturated and unsaturated hydrocarbons.
3. Acid-base properties of organic compounds, ionization. The role of ionization in realization of biological activity.
4. Nucleophilic addition reactions ( $A_N$ ) on  $sp^2$ -hybridized carbon atoms of biologically important carbonyl compounds. Oxidation and reduction of organic compounds. Antioxidants.
5. Lipids, classification, individual representatives. Phospholipids as structural components of biological membranes. Lipids peroxidation.
6. Amino acids and peptides. Structure, properties and biological role. The strategy of artificial peptides synthesis. Proteins. Methods of primary structure determining for peptides and proteins.

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