

THEMATIC PLAN
Organic chemistry
lectures for the 2nd Year students of the Pharmaceutical Faculty
(Autumn semester)

№	Theme of lecture	Hours
Thematic module 1. Nomenclature, classification, methods of identification and purification of the organic compounds. Reactivity of the hydrocarbons.		
1	Introduction to the organic chemistry. Chemical bond and atoms interaction in the organic compounds.	2
2	Methods of the identification of the organic compounds structures. Spatial (stereo) structure of the organic compounds. Classification of the organic reactions and reagents.	2
3	Saturated hydrocarbons. Unsaturated hydrocarbons. Aromatic compounds.	2
Thematic module 2. Halogen-, oxygen-, sulfur- and nitrogen-containing organic compounds.		
4	Halogen-derivatives of the hydrocarbons. Mechanisms of the nucleophilic substitution and elimination. Hydroxy derivatives of hydrocarbons and thio-analogs (alcohols, thioles, phenols).	2
5	Nitrogen-containing organic compounds (amines, nitro-, diazo-, azocompounds, azodyes). Acidic and basic properties of organic compounds.	2
Total hours		10

Head of the Department of Pharmaceutical,
Organic and Bioorganic Chemistry, prof.

R. Lesyk

THEMATIC PLAN
*of practical classes of “Organic chemistry” for the 2-d year students
of the Pharmaceutical Faculty*
(Autumn semester)

№	Theme	Hours
Thematic module 1. Nomenclature, classification, methods of identification and purification of the organic compounds. Reactivity of the hydrocarbons.		
1	Classification, nomenclature, and structural isomerism of the organic compounds.	4
2	Types of the chemical bonds and atoms interactions in the molecules of the organic compounds. Laboratorial equipments.	4
3	Methods of the purification of the organic compounds. Determination of the physic-chemical constants of the organic compounds.	4
4	Stereochemistry of the biologically active compounds.	4
5	Determination of the organic compounds' structures. Classification of the organic reactions and reagents.	4
6	Saturated hydrocarbons. (Alkanes and cycloalkanes). Unsaturated hydrocarbons (Alkenes, alkynes, alkadienes).	4
7	Mononuclear aromatic compounds. Polynuclear aromatic compounds. Final test.	4
Thematic module 2. Halogen-, oxygen-, sulfur- and nitrogen-containing organic compounds.		
8	Halogen-derivatives of the hydrocarbons. Mechanisms of the nucleophilic substitution and elimination. The methods of halogenation.	4
9	Mono alcohols, ethers. The methods of halogenation (continuation).	4
10	Polyalcohols, phenols, naphtols. Thioalcohols.	4
11	Amines. Acidic and basic properties of organic compounds. Nitro-compounds. The methods of nitration of the organic compounds	4
12	Diazo- and azocompounds. The methods of nitration of the organic compounds (continuation). Azo-dyes. The methods of diazotation and azo-coupling. Final test.	4
Total hours		48

Head of the Department of Pharmaceutical,
Organic Bioorganic Chemistry, prof.

R. Lesyk

THEMATIC PLAN
*of out-classes work of “Organic chemistry” for the 2-d year students
of the Pharmaceutical Faculty*
(Autumn semester)

№	Theme	Hours
Thematic module 1. Nomenclature, classification, methods of identification and purification of the organic compounds. Reactivity of the hydrocarbons.		
1	Types of the chemical bonds. Types of hybridization of atomic orbitals (Nitrogen, Oxygen). The main characteristics of covalent σ - and π -bonds.	4
2	Methods of separation and purification of organic compounds.	4
3	Conformers and isomers. Newman and Fischer projections. Enantiomers and diastereomers.	4
4	Physical methods of determination of organic compounds structures.	4
5	Mechanisms of reactions in organic chemistry. Types of chemical reactions.	5
6	Reaction of polymerization and polycondensation.	4
7	Stability of aromatic compounds (polycyclic arenes), non-benzene aromatic systems.	4
8	Triphenylmethane dyes.	4
Thematic module 2. Halogen-, oxygen-, sulfur- and nitrogen-containing organic compounds.		
9	Reactivity of halogen-derivatives of the hydrocarbons.	4
10	Synthesis and properties of naphtoles.	4
11	Methods of the identification of aromatic and aliphatic amines.	4
12	Physical bases of chromophore-auxochrome theory. Structure of azo dyes.	5
13	Hard and soft acids and bases.	4
14	Red-ox reactions of different classes of the organic compounds.	4
15	Relation between acidic and basic properties of organic compounds.	4
	Total	62

Head of the Department of Pharmaceutical,
Organic and Bioorganic Chemistry, prof.

R. Lesyk