# Thematic plan of seminars
# in the discipline«Fundamentals of design and drug's chemistry»
# for students of the educational program
# specialist
# in the specialty 33.05.01 Pharmacy,
# direction (profile) Pharmacy,
# form of study full - time
# for the 2023-2024 academic year

| № | Thematic blocks | Hours (academic) |
|---|---|---|
| 1. | Conducting instructions on safety rules when working in a chemical laboratory. | 1 |
| | Design of the structure of synthetic drugs based on the principle of chemical modification to simulate their biological activity.[1] Derivatives of aromatic compounds.[2] | 2 |
| 2. | To study modern approaches to the design of synthetic drugs based on the principle of chemical modification to simulate their biological activity.[2] | 2 |
| | Laboratory practical work «Derivatives of aromatic compounds». | 1 |
| 3. | Design of the structure of synthetic drugs based on the principle of chemical modification to simulate their biological activity.[1] Derivatives of heterocyclic compounds with one heteroatom.[2] | 1 |
| | To study modern approaches to the design of synthetic drugs based on the principle of chemical modification to simulate their biological activity.[2] | 1 |
| | Laboratory practical work «Derivatives of heterocyclic compounds» | 1 |
| 4. | Design of medicinal substances of natural origin to simulate their biological activity.[1] Alkaloids.[2] | 1 |
| | Изучить современные подходы к дизайну лекарственных веществ природного происхождения для моделирования их биологической активности.[2] | 1 |
| | Laboratory practical work «Alkaloids.». | 1 |
| 5. | Design of medicinal substances of natural origin to simulate their biological activity.[1] Glycosides.[2] | 1 |
| | To study modern approaches to the design of medicinal substances of natural origin to simulate their biological activity.[2] | 1 |
| | Laboratory practical work «Glycosides.» | 1 |
| 6. | To study modern approaches to the design of medicinal substances of natural origin to simulate their biological activity.[1] Amino acids, peptides, proteins.[2] | 1 |
| | Explore the empirical basis of prodrug design to model their biological activity.[2] | 1 |
| | Laboratory practical work « Amino acids, peptides, proteins ». | 1 |
| 7. | To study modern approaches to the design of medicinal substances of natural origin to simulate their biological activity.[1] Nucleic acids.[2] | 1 |
| | Explore the empirical basis of prodrug design to model their biological activity.[2] | 1 |
| | Laboratory practical work « Nucleic acids». | 1 |
| 8. | To study modern approaches to the design of medicinal substances of natural origin to simulate their biological activity.[1] Heterofunctional compounds.[2] | 2 |
| | Laboratory practical work «Heterofunctional compounds». | 1 |
| 9. | The importance of functional groups in the design of the structure of new drug candidates.[1] Functional groups in drugs.[2] | 2 |
| | Laboratory practical work « Novocaine (2-(diethylamino)-ethyl-4-aminobenzoate)». | 1 |
| 10. | Concluding test 1 «Modern research in the field of drug design for the treatment of various diseases» | 2 |
| | Concluding test 1 «Modern research in the field of drug design for the treatment of various diseases» Checking protocols. | 1 |
| 11. | Analytical methods for confirming the structure of synthesized drugs: titrimetric analysis.[1] Consider titrimetric methods: acid-base titration.[2] | 2 |
| | Laboratory practical work «Titrimetric methods of analysis» | 1 |

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| 12. | Analytical methods for confirming the structure of synthesized drugs: titrimetric analysis.[1] Consider titrimetric methods: redox titration.[2] | 2 |
| | Laboratory practical work «Titrimetric methods of analysis» | 1 |
| 13. | Analytical methods for confirming the structure of synthesized drugs: titrimetric analysis.[1] Consider titrimetric methods: complexometric titration.[2] | 1 |
| | Consider titrimetric methods: precipitation titration.[2] | 1 |
| | Laboratory practical work «Titrimetric methods of analysis» | 1 |
| 14. | Analytical methods for confirming the structure of synthesized drugs.[1] Analytical methods for confirming the structure of synthesized drugs: electrochemical methods of analysis. [2] | 1 |
| | Consider the basic electrochemical methods of analysis.[2] | 1 |
| | Laboratory practical work « Physico-chemical methods of analysis » | 1 |
| 15. | Analytical methods for confirming the structure of synthesized drugs.[1] Analytical methods for confirming the structure of synthesized drugs: optical methods of analysis. Colorimetry.[2] | 1 |
| | Consider optical analysis methods. Photocolorimetry.[2] | 1 |
| | Laboratory practical work « Colorimetry, photocolorimetry ». | 1 |
| 16. | Analytical methods for confirming the structure of synthesized drugs.[1] | 1 |
| | Analytical methods for confirming the structure of synthesized drugs: optical methods of analysis.[2] | 1 |
| | Consider optical analysis methods. Spectrophotometry.[2] | |
| | Laboratory practical work «Spectrophotometry». | 1 |
| 17. | Spectral methods of analysis.[1] | 1 |
| | Spectral characteristics.[2] | 1 |
| | Spectral analysis methods to confirm the structure of synthesized substances.[2] | 1 |
| 18. | Concluding test 2 «Analytical methods for confirming the structure of synthesized drugs: Instrumental methods of analysis». [1] | 2 |
| | «Fundamentals of design and drug's chemistry»[1]<br>Final test | 1 |
| | Intermediate certification | 2 |
| | **Total** | **56** |

[1] -Subject
[2] - essential content

Considered at the meeting of the department of «26» May 2023, protocol No10

Head of the Departmen  A.K.Brel'