

**Thematic lesson plan of lectures
in the discipline "General pharmaceutical chemistry"
for students of the educational program
specialist degree
in the specialty of training 33.05.01 Pharmacy
direction (profile) Pharmacy,
form of study full-time (face to face)
for the 2023-2024 academic year**

№	Topics of lectures	Hours (academic)
4 term		
1	Subject and tasks of pharmaceutical chemistry ¹ . Basics of legislation. Terminology in pharmaceutical chemistry, nomenclature. Classification of medicines ² .	2
2	Computer modeling of drugs ¹ . Computer-aided drug design ²	2
3	Metrology in pharmacy ¹ . Basic concepts of metrology. Medical Metrology. Metrology in pharmacy ² .	2
4	Purity of medicines ¹ . Impurities in medicines and their sources. Requirements for medicines ² .	2
5	Quality control of medicines in pharmacies at all stages of product manufacturing and dispensing ¹ . Types of intra-pharmacy drug control ²	2
6	Pharmacist-analyst of a pharmacy ¹ . Professional and job requirements for a pharmacist-analyst of a pharmacy. Equipment for the control and analytical room (table). Nomenclature of titrated solutions, reagents, indicators ² .	2
7	Pharmaceutical incompatibility of medicines ¹ . Classification Chemical incompatibility of drugs ² .	2
5 term		
1	Chemical methods of pharmacopoeial analysis - identification of drugs of organic nature (identification of functional groups). Identification of organoelement drugs ¹ . Identification of primary aromatic aminogroup. Identification of aromatic nitrogroup. Identification of alcohols. Identification of phenols. Aldehyde and keto group identification reactions. Identification of carboxyl, ester and amide groups. Identification of the secondary amino group in the composition of imide, sulfamide, hydrazide functional groups and in some heterocyclic compounds. Detecting multiple bonds. Sulfur detection. Detection of organically bound halogens. Detection of organically bound phosphorus. ²	2
2	Methods for the determination of heavy metal and arsenic impurities in medicinal products ¹ . The definition of heavy metals. Detection methods of heavy metals. Determination of heavy metals in pharmaceutical solutions. Arsenic, Methods for detecting arsenic impurities. ²	2
3	Chemical methods of pharmacopoeial analysis. Neutralisation ¹ . Alkalimetry. Acidimetry. Titration in non-aqueous solution ² .	2
4	Chemical methods of pharmacopoeial analysis. Argentometry ¹ . Mohr, Volhard, Fajans methods ² .	2

5	Chemical methods of pharmacopoeial analysis. Oxidimetry (part 1) ¹ . Permanganometry. Cerimetry. Iodometry ² .	2
6	Chemical methods of pharmacopoeial analysis. Oxidimetry (part 2). Bromatometry. Nitritometry ² .	2
7	Chemical methods of pharmacopoeial analysis. Complexometry. Determination of nitrogen in drugs. Kjeldahl method. Elemental analysis ¹ .	2
6 term		
1	Viruses. Classification. Peculiarities of chemotherapy of viral infections. Targets for antiviral agents.	2
2	General Pharmaceutical Analysis of anti-HIV drugs	2
3	General pharmaceutical analysis of anti-hepatitis B and C drugs	2
4	General pharmaceutical analysis of anti-herpetic and anticytomegalovirus agents	2
5	General pharmaceutical analysis of agents for the treatment of coronavirus infection.	2
	Total	38

¹ -Subject

² - essential content (if necessary)

Considered at the meeting of the department of Pharmaceutical and Toxicological Chemistry "27" may 2023, protocol No9

Head of the Department



Ozerov A.