



SYLLABUS FOR "Pharmaceutical Chemistry"

1. General information	
Faculty	Faculty of Pharmacy
Program	22 Healthcare, 226 Pharmacy, the second (master's) level, full-time
Academic year	2021-2022
Subject	Pharmaceutical chemistry, OK 27
Department	Pharmaceutical, organic and bioorganic chemistry, Pekarska str. 69, tel. +38 (032) 275-59-66, 275-59-77, 278-64-3, 79010 Kaf_pharmchemistry@meduniv.lviv.ua
Head of Department	Roman Lesyk, professor, dr_r_lesyk@org.lviv.net
Year of study	3-4
Semester	5-8
Type of course / module	Required
Professors	Roman Lesyk, professor (dr_r_lesyk@org.lviv.net, roman.lesyk@gmail.com), Volodymyr Horishny, associate professor, (vgor58@ukr.net), Semenciv Hryhoriy, associate professor, Olha Novikevych, senior lecturer (ola.novikevych@gmail.com), Mykhailo Lebyak, senior lecturer, Inna Demchuk, associate professor, (Inna4dem@gmail.com), Anna Kryshchyshyn-Dylevych, associate professor, (kryshchyshyn.a@gmail.com), Andriy Lozynskyj, associate professor, (lozynskyiandrii@gmail.com), Sergii Holota, associate professor, (golota_serg@yahoo.com), Oksana Ivantsiv, assistant (ivantsiv.o.b@gmail.com), Ihor Yushyn, assistant (ihor.yushyn@gmail.com)
Erasmus yes/no	No
The person responsible for the syllabus	Olha Novikevych, senior lecturer ola.novikevych@gmail.com

Number of credits ECTS	14
Number of hours	420 (lectures -52, practical -216, out-work class -152)
Language of study	Ukrainian, English
Information about consultations	Consultations every Thursday at 13 ⁰⁵ -15 ²⁰
Address, telephone and regulations of the clinical base, office ... (if necessary)	
2. Short annotation to the course	
<p>The discipline "Pharmaceutical Chemistry" belongs to the obligatory disciplines of the cycle of professionally-oriented training of specialists in the specialty "Pharmacy". Pharmaceutical chemistry, as a science based on the general laws of chemical sciences, studies the methods of production and creation, structure, chemical and physical properties of drugs, the relationship between chemical structure and action on the body, methods of quality control and changes in storage. The discipline "Pharmaceutical Chemistry" is the basis for the study of drugs, understanding their action and practical activities of specialists in pharmaceutical specialties.</p>	
3. The purpose and objectives of the course	
<ol style="list-style-type: none"> 1. 1. The purpose of teaching the discipline "Pharmaceutical Chemistry" is: to provide systematic knowledge about the structure of drugs, methods of their extraction, identification and quantification, physical, physicochemical and chemical properties, chemical factors of pharmacological action, patterns of relationship structure - biological / pharmacological activity and metabolic transformations, studies of purity, use and storage, as well as approaches to the creation of new synthetic drugs and biologically active substances. 2. 2. Learning objectives - acquiring skills in providing quality pharmaceutical care to patients, taking into account knowledge of physical, physicochemical and chemical properties of drugs, the basic patterns of dependence "structure-activity", avoiding possible interaction of drugs in their manufacture and use, establishing the quality of individual drugs, their multicomponent mixtures and ensuring their proper storage, acquiring knowledge of the basic methods of synthesis of drugs or extraction from natural raw materials; in the field of pharmaceutical analysis. 3. Competences and learning outcomes, the formation of which provides the study of the discipline (general and special competencies). 4. In accordance with the requirements of the Standard of Higher Education, the discipline provides students with the acquisition of competencies: <ul style="list-style-type: none"> - general: 3K2; 3K6; 3K11; 3K12. - professional: ФК 4; ФК 7; ФК 12; ФК 19; ФК 20 	
4. Pre-details of the course	
<p>Basic knowledge and learning outcomes are based on the study of the chemical structure of drugs, their physical and chemical properties; the relationship between chemical structure and action on the body, methods of quality control and changes that occur during storage and metabolism, as well as methods of production and purification of drugs, biologically active compounds and their metabolites.</p> <p>Interdisciplinary links: general and inorganic chemistry, organic and bioorganic chemistry, analytical chemistry, biophysics, biology, biological chemistry, normal physiology, pathological physiology, pharmacology, toxicological chemistry, pharmacognosy, drug technology, clinical pharmacy, drug standardization.</p>	
5. Program learning outcomes	
List of learning outcomes	

Learning outcome code	The content of the learning outcome	Reference to the code of the competence matrix
<i>3H-1</i>	Chemical and pharmacological classification of drugs;	<i>PP2, PP3</i>
<i>3H-2</i>	International non-proprietary names of medicinal substances and preparations of which they are a part	<i>PP5, PP7,</i>
<i>3H-3</i>	The basic laws of the relationship "structure-activity", approaches to adequate replacement of drugs	<i>PP12, PP15,</i>
<i>3H-4</i>	The main pathways of drug metabolism, optimal conditions for the action of prodrugs	<i>PP16, PP17,</i>
<i>3H-5</i>	The most common hazards of chemical interactions of drugs with each other and with food, which may impair bioavailability, safety and efficacy	<i>PP18, PP19,</i>
<i>3H-6</i>	chemical bases of rational use of medicines	<i>PP20</i>
<i>3H-7</i>	state regulation of the quality of medicines	
<i>3H-8</i>	methods of qualitative and quantitative analysis of drugs qualitative analysis of cations and anions; - elemental analysis and analysis by functional groups; - functional analysis of organic compounds by functional groups; - chemical titrimetric methods of analysis; - chromatographic methods of identification, gravimetric method of analysis; - spectral methods of analysis, etc.);	
<i>3H-9</i>	purity research methods;	
<i>3H-10</i>	methods of prevention and rapid detection of possible falsification of drugs	
<i>VM-1</i>	Determine the affiliation of the drug to the pharmacological group, taking into account the chemical structure, make recommendations for possible replacement of the drug within the pharmacological group	

<i>Y_M-2</i>	provide qualified pharmaceutical care to patients taking into account the physical, physicochemical and chemical properties of drugs
<i>Y_M-3</i>	to determine the possible interaction of drugs in their combined use and provide recommendations for its prevention
<i>Y_M-4</i>	provide information to the patient about possible adverse effects on the action of the food medicinal product
<i>Y_M-5</i>	Determine the optimal conditions for storage of drugs
<i>Y_M-6</i>	Provide recommendations to the pharmacist in the manufacture of drugs on possible chemical incompatibilities and ways to avoid it
<i>Y_M-7</i>	Use analytical documentation that regulates the quality of medicines (State Pharmacopoeia, International Pharmacopoeia, national and regional pharmacopoeias, AND, relevant orders and instructions);
<i>Y_M-8</i>	use industry standards, guidelines for the implementation of methods of quality control of substances and drugs
<i>Y_M-9</i>	use chemical, physical, physico-chemical methods in quality control of medicines
<i>Y_M-10</i>	to choose and perform express methods of qualitative and quantitative analysis of dosage forms of intra-pharmacy manufacturing
<i>Y_M-11</i>	to give a qualified assessment of the quality of medicines in accordance with the results of the analysis
<i>K-1</i>	establish links with practitioners
<i>K-2</i>	To form a communication strategy in professional activity
<i>K-3</i>	Establish connections to ensure quality work
<i>K-4</i>	Use information data from scientific sources
<i>K-5</i>	Obtain the necessary information from identified sources to ensure the

	conditions for quality and safe pharmaceutical care	
<i>K-6</i>	Carry out constant monitoring of proper storage of medicines and medical devices at pharmaceutical enterprises	
<i>K-7</i>	To form conclusions and professionally apply laws and regulations	
<i>K-8</i>	Carry out quality control of medicines and their certification	
<i>K-9</i>	Develop methods of quality control of pharmaceutical products	
<i>AB-1</i>	Be responsible for the timeliness of decisions	
<i>AB-2</i>	Be responsible for professional development with a high level of autonomy	
<i>AB-3</i>	Be responsible for the quality of work	
<i>AB-3</i>	Be responsible for the development and implementation of planned projects	
<i>AB-4</i>	Be responsible for the soundness of management decisions to improve the quality of pharmaceutical care	
<i>AB-5</i>	Be responsible for the storage of medicines and medical devices in accordance with Good Storage Practice (GSP) in healthcare facilities	
<i>AB-6</i>	Be responsible for the quality and timely use of regulations in professional activities	
<i>AB-7</i>	Be responsible for certifying and preventing the spread of counterfeit medicines	
<i>AB-8</i>	Be responsible for the validity of the developed quality control methods	
6. Format and scope of the course		
Format of the course <i>full-time, part-time</i>	Full-time course	
Format of the course	Hours	Groups
lectures	52	16
practical	216	16

seminars		-		
out of class work		152		16
7. Topics and content of the course				
Class type code	Topic	Content of training	Code of result of training	Professor
ЛІ-1 (lecture -1)	Subject and tasks of pharmaceutical chemistry, history of development. Drug quality assessment system. State Pharmacopoeia of Ukraine, its structure.	To acquaint students with the subject and tasks of pharmaceutical chemistry, the system of quality assessment of medicines	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,
ЛІ-2	Physico-chemical methods of analysis in the identification of drugs	To acquaint students with physicochemical methods of analysis in the identification of drugs	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,
ЛІ-3	Methods of drug identification	To acquaint students with the methods of drug identification	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,
ЛІ-4	Methods of quantitative analysis of drugs	To acquaint students with the methods of quantitative analysis of drugs	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,
ЛІ-5	Express analysis of drugs. Current trends in the development of pharmaceutical analysis.	To acquaint students with the methods of rapid analysis of drugs	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,
ЛІ-6	Principles of classification of drugs, their nomenclature. The structure-activity relationship in the development and analysis of drugs funds. Creation of innovative medicines Main ways	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, PhD, Associate Professor,

	<p>drug metabolism. Underlying chemical reactions metabolic transformations. Metabolic phases. Influencing factors on metabolic processes. Prodrugs.</p>	<p>action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>		
Л-7	<p>Nonsteroidal anti-inflammatory drugs, narcotic analgesics and their analogues</p> <p>Characteristics, classification, relationship between structure and</p> <p>pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, PhD, Associate Professor,</p>
Л-8	<p>Drugs for anesthesia. Psychotropic and hypnotic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, PhD, Associate Professor,</p>
Л-9	<p>Anticonvulsants and antiepileptics. Remedies parkinsonism. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism,</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism,</p>	<p><i>ЗН 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, PhD, Associate Professor,</p>

	methods of production, methods of analysis, application in medicine.	methods of production, methods of analysis, use of drugs in medicine.		
JI-10	Vomiting and antiemetics. Antitussives. Nootropic Medicines. Antihistamines. Characteristics, classification, connection between structure and pharmacological action, metabolism, mechanism actions, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, PhD, Associate Professor,
JI-11	Agents affecting the afferent nervous system. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, methods of obtaining, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, PhD, Associate Professor,
JI-12	Drugs that affect the efferent nervous system. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production,	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, PhD, Associate Professor,

		methods of analysis, use of drugs in medicine.		
Л-13	Cardiotonic, Antiarrhythmic drugs. Improving remedies blood supply to organs and tissues. Peripheral vasodilators. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, PhD, Associate Professor,
Л-14	Calcium ion antagonists. Antioxidants. Drugs that affect the renin-angiotensin system. Hypo- and hypertensive drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.
Л-15	Drugs that affect the excretory system (diuretics). Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.

		drugs in medicine.		
Л-16	Antibiotics. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>Зн 1-4,6,8,9</i> <i>Ум 1,5,7-9,10,11</i>	Roman Lesyk, prof.
Л-17	Antimicrobial drugs. Sulfanilamides. Derivatives of naphthyridine and quinolonocarboxylic acids. Derivatives of 8-oxyquinoline, quinoxaline and nitrofur. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>Зн 1-4,6,8,9</i> <i>Ум 1,5,7-9,10,11</i>	Roman Lesyk, prof.
Л-18	TB drugs. Antiviral and antimalarial drugs. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>Зн 1-4,6,8,9</i> <i>Ум 1,5,7-9,10,11</i>	Roman Lesyk, prof.

		drugs in medicine.		
ЛІ-19	Drugs for the treatment of cancer. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.
ЛІ-20	Antifungal drugs. Drugs for the treatment of protozoal infections. Anthelmintics. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.
ЛІ-21	Antiseptics and disinfectants. Antipediculosis and acaricides. Characteristics, classification, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.

		drugs in medicine.		
ЛІ-22	Drugs of thyroid hormones, antithyroid drugs. Antidiabetic drugs. Drugs of pancreatic hormones, Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.
ЛІ-23	Steroid hormones and their analogues. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.
ЛІ-24	Sex hormones, anabolic steroids and their analogues. Birth control. Estrogens of non-steroidal structure. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Roman Lesyk, prof.

		drugs in medicine.		
ЛІ-25	Vitamins. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗМ 1-4,6,8,9 УМ 1,5,7-9,10,11	Roman Lesyk, prof.
ЛІ-26	Anorexigenic drugs. Sorbents, antidotes and complexes. Antiulcer drugs. Remedies for alcoholism. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗМ 1-4,6,8,9 УМ 1,5,7-9,10,11	Roman Lesyk, prof.
ПІ-1 (practical 1)	Subject and tasks of pharmaceutical chemistry. Drug quality assessment system. Consistency of the composition as a necessary condition for all stages of existence of the drug. Peculiarities of pharmaceutical analysis are related to the purpose of drugs and the professional responsibility of the pharmacist. Pharmacopoeial	To acquaint students with the subject and task of pharmaceutical chemistry	ЗМ 1-4,6,8,9 УМ 1,5,7-9,10,11	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana

	analysis			Ivantsiv, assistant
II-2	Analysis of physicochemical properties of drugs as one of the elements of drug quality assessment.	To acquaint students with the analysis of physicochemical properties of medicines	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-3	The use of spectroscopic and chromatographic methods in the identification of drugs; features of use of standard samples of medicinal substances and standard spectra.	Introduce students to the use of spectroscopic and chromatographic methods in the identification of drugs	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-4	Identification of medicinal substances of inorganic nature by cations.	To acquaint students with the identification of medicinal substances of inorganic nature	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor,

		by cations		Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-5	Identification of medicinal substances of inorganic nature by anions.	To acquaint students with the identification of medicinal substances of inorganic nature by anions	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-6	Identification of drugs of organic nature by functional groups (functional analysis).	To acquaint students with the identification of medicinal substances of organic nature	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant

<p>II-7</p>	<p>Causes that cause changes in the structure of the drug (exposure to light, moisture, temperature and other factors provided by the conditions and terms of storage). Nature and nature of impurities, methods of their detection.</p>	<p>To acquaint students with the reasons that cause changes in the structure of the drug</p>	<p><i>ЗН 5, 9, 10</i> <i>УМ 2,3,4,6</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>II-8</p>	<p>Methods of quantitative analysis of drug content. Gravimetry.</p>	<p>To acquaint students with the methods of quantitative analysis of the content of drugs</p>	<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>II-9</p>	<p>Titrimetric methods of analysis, part 1</p>	<p>To acquaint students with titrimetric methods of quantitative analysis of the content of drugs</p>	<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota,</p>

				Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-10	Titrimetric methods of analysis, part 2		<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-11	Titrimetric methods of analysis, part 3		<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant

<p>П-12</p>	<p>Optical methods in quantitative analysis of drugs</p>		<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>П-13</p>	<p>Chromatographic methods, electrophoresis. Methods based on thermodynamic properties of substances: Combination of extraction, chromatographic and optical methods in the analysis of dosage forms.</p>		<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>П-14</p>	<p>Express analysis of drugs. Current trends in the development of pharmaceutical analysis.</p>		<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor,</p>

				Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-15	Express analysis of monocomponent drugs.		<i>ЗН 1-4,6,8,9</i> <i>УМ 1,2,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-16	Express analysis of multicomponent drugs. Final control.		<i>ЗН 1-4,6,8,9</i> <i>УМ 1,2,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-17	Principles of classification of drugs, their nomenclature.		<i>ЗН 1-4,5,6,8,9</i>	Volodymyr Horishny, Associate

	<p>Relationship structure-activity in the creation and analysis of drugs.</p> <p>The main ways of drug metabolism. Chemical reactions that underlie metabolic transformations.</p> <p>Metabolic phases.</p> <p>Factors influencing metabolic processes.</p> <p>Prodrugs.</p>		<p><i>УМ 1,5,7-9,10,11</i></p>	<p>Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
II-18	<p>Nonsteroidal anti-inflammatory drugs.</p> <p>Part 1. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
II-19	<p>Nonsteroidal anti-inflammatory drugs.</p> <p>Part 2. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of</p>	<p><i>ЗН 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior</p>

		drugs in medicine.		lecturer, Oksana Ivantsiv, assistant
II-20	Narcotic analgesics and their analogues. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-21	Hypnotics. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine. means.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-22	Remedies for anesthesia. Characteristics, classification, the relationship between structure and	To acquaint students with the connection between the structure and pharmacological	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj,

	pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	l action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-23	Psychotropic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-24	Psychotropic drugs. Part 2. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv,

				assistant
II-25	Psychotropic drugs. Part 3 Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-26	Anticonvulsants and antiepileptics. Remedies for parkinsonism. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-27	Vomiting and antiemetics. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism,	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii

	methods of production, methods of analysis, application in medicine.	action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-28	Remedies for cough. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
П-29	Nootropic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant

<p>П-30</p>	<p>Antihistamines. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>П-31</p>	<p>Agents affecting the afferent nervous system. Agents that stimulate the receptors of afferent nerve fibers. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
<p>П-32</p>	<p>Means that reduce the sensitivity of afferent nerve fibers. Means for local anesthesia. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production,</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of</p>	<p><i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor,</p>

	methods of analysis, application in medicine.	production, methods of analysis, use of drugs in medicine.		Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-33	Drugs that affect the efferent nervous system. Agents acting on cholinergic processes. Part 1. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-34	Agents acting on cholinergic processes. Part 2. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-35	Means that act mainly on adrenergic processes.	To acquaint students with the connection	<i>ЗН 1-4,6,8,9</i>	Volodymyr Horishny, Associate

	Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>VM 1,5,7-9,10,11</i>	Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
II-36	Cardiotonic drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-37	Antiarrhythmic drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

П-38	Drugs that improve blood supply to organs and tissues. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-39	Peripheral vasodilators. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-40	Calcium ion antagonists. Potassium channel activators. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-41	Drugs affecting the renin-angiotensin	To acquaint students with	<i>ЗН 1-</i>	Olha Novikevych

	system Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	4,6,8,9 <i>УМ 1,5,7-9,10,11</i>	h, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-42	Antihypertensive (antihypertensive) drugs. Hypertensive drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-43	Angioprotectors. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-44	Antioxidants. Characteristics, classification, connection between	To acquaint students with the connection between the	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-</i>	Olha Novikevych, senior lecturer,

	structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	9,10,11	Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-45	Hypolipidemic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-46	Diuretics. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-47	Agents that affect platelet aggregation and blood clotting. Characteristics, classification, connection between structure and pharmacological action,	To acquaint students with the connection between the structure and pharmacological	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk,

	mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	1 action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor, Andriy Lozynskyj, Associate Professor
II-48	Antibiotics of heterocyclic structure. B-lactamase inhibitors. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine..	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-49	Tetracycline antibiotics and macrolides. Characteristics, classification, connection between structure and action, mechanism of action, methods of metabolism, production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-50	Aminoglycoside antibiotics, amphenicols, other groups of antibiotics. Characteristics, classification, connection between structure and action,	To acquaint students with the connection between the structure and pharmacological action of drugs,	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor,

	mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Andriy Lozynskyj, Associate Professor
II-51	Sulfanilamides. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-52	Derivatives of naphthyridine and quinolonecarboxylic acids. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-53	Derivatives of 8-oxyquinoline, quinoxaline and nitrofuran. Characteristics, classification, the relationship between structure and action, mechanism of action, metabolism, methods of	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action,	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj,

	production, methods of analysis, application in medicine.	metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor
II-54	TB drugs. Characteristics, classification, the relationship between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-55	Drugs used to treat cancer (alkaloids, antibiotics, hormonal agents and their antagonists, other groups). Characteristics, classification, the relationship between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-56	Examples of targeted (targeted) anticancer drugs (drugs of different chemical groups). Characteristics, classification, connection between structure and action, mechanism of action, methods of production, methods of analysis,	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate

	application in medicine.	production, methods of analysis, use of drugs in medicine.		Professor
II-57	Antiviral drugs. Characteristics, classification, connection between structure and action, mechanism of action, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-58	Antimalarial drugs. Characteristics, classification, connection between structure and action, mechanism of action, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-59	Drugs for the treatment of protozoal infections. Characteristics, classification, connection between structure and action, mechanism of action, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

		analysis, use of drugs in medicine.		
П-60	Anthelmintics. Antifungal drugs Characteristics, classification, the relationship between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-61	Antipediculosis and acaricides. Antiseptics and disinfectants Characteristics, classification, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
П-62	Drugs of thyroid hormones, antithyroid drugs. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

		drugs in medicine.		
П-63	Drugs of pancreatic hormones, Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor
П-65	Antidiabetic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor
П-66	Steroid hormones and their analogues. Corticosteroids. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor

		drugs in medicine.		
II-67	Androgens, anabolic steroids and their analogues. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-68	Progestogens, estrogens. Birth control. Estrogens of non-steroidal structure. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-69	Water-soluble and fat-soluble vitamins. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine..	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

		drugs in medicine.		
II-70	Drugs that affect the immune system (immunotropic drugs). Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-71	Anorexigenic drugs. Sorbents, antidotes and complexes. Antiulcer drugs. Remedies for alcoholism. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	ОЗ To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
II-72	X-ray contrast and other diagnostic tools. Characteristics, classification, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

		drugs in medicine.		
CPC-1 (<i>out class work 1</i>)	Subject and tasks of pharmaceutical chemistry. Drug quality assessment system. Consistency of the composition as a necessary condition for all stages of existence of the drug. Peculiarities of pharmaceutical analysis are related to the purpose of drugs and the professional responsibility of the pharmacist. Pharmacopoeial analysis	To acquaint students with the use of spectroscopic and chromatographic methods in the identification of drugs	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-2	Analysis of physicochemical properties of drugs as one of the elements of drug quality assessment.	To acquaint students with the use of spectroscopic and chromatographic methods in the identification of drugs	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-3	The use of spectroscopic and chromatographic methods in the identification of drugs; features of use of standard samples of medicinal substances and standard spectra.	To acquaint students with the use of spectroscopic and chromatographic methods in the identification of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii

		drugs		Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-3	Identification of drugs of inorganic nature	To acquaint students with the identification of medicinal substances of inorganic nature	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-4	Identification of drugs of organic nature by functional groups (functional analysis).	To acquaint students with the identification of medicinal substances of organic nature	<i>ЗМ 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant

CPC-5	Causes of changes in the structure of the drug (exposure to light, moisture, temperature and other factors. The nature and nature of impurities, methods of their detection.	To acquaint students with the reasons for changes in the structure of the drug	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-6	Methods of quantitative analysis of drug content. Gravimetry.	To acquaint students with the methods of quantitative analysis of the content of drugs	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-7	Titrimetric methods of analysis: Mercurimetry, permanganometry, bromatometry, iodometry, iodatometry, cerimetry, dichromatometry, nitritometry. Potentiometric titration. Determination of nitrogen in organic	To acquaint students with titrimetric methods of analysis	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor,

	compounds			Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-8	Titrimetric methods of analysis: Method of acid-base titration in aqueous and non-aqueous media, argentometry, complexometry.	To acquaint students with titrimetric methods of analysis	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-9	Optical methods in quantitative analysis: refractometry, polarimetry, UV and IR spectrophotometry, photometry in the visible region of the spectrum.	To acquaint students with optical methods of analysis	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-10	Chromatographic methods. Methods based on	To acquaint students with chromatographi	<i>ЗН 1-4,6,8,9</i>	Volodymyr Horishny, Associate

	thermodynamic properties of substances. Combination of extraction, chromatographic and optical methods in the analysis of dosage forms.	c methods of analysis	<i>УМ 1,5,7-9,10,11</i>	Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-11	Express analysis of drugs. Current trends in the development of pharmaceutical analysis.	To acquaint students with the express analysis of medicines	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-12	Express analysis of monocomponent drugs.	To acquaint students with the express analysis of multicomponent medicines	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior

				lecturer, Oksana Ivantsiv, assistant
CPC-13	Express analysis of multicomponent drugs.	To acquaint students with the express analysis of multicomponent medicines	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-14	Express analysis of drugs. Analysis of an unknown drug	Introduce students to rapid analysis	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-15	Subject and tasks of pharmaceutical chemistry. Drug quality assessment system. Consistency of the composition as a	To acquaint students with the principles of classification of medicines	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj,

	<p>necessary condition for all stages of existence of the drug.</p> <p>Peculiarities of pharmaceutical analysis are related to the purpose of drugs and the professional responsibility of the pharmacist.</p> <p>Pharmacopoeial analysis</p>			<p>Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
CPC-16	<p>Principles of classification of drugs, their nomenclature.</p> <p>Relationship structure-activity in the creation and analysis of drugs.</p> <p>The main ways of drug metabolism. Chemical reactions that underlie metabolic transformations.</p> <p>Metabolic phases.</p> <p>Factors influencing metabolic processes.</p> <p>Prodrugs.</p>	To acquaint students with the main ways of drug metabolism	<p><i>ЗМ 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant</p>
CPC-17	<p>Nonsteroidal anti-inflammatory drugs.</p> <p>Part 1. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.</p>	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<p><i>ЗМ 1-4,6,8,9</i></p> <p><i>УМ 1,5,7-9,10,11</i></p>	<p>Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv,</p>

				assistant
CPC-18	Nonsteroidal anti-inflammatory drugs. Part 2. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-19	Narcotic analgesics and their analogues. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, production methods, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-20	Hypnotics. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production,	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii

	methods of analysis, application in medicine. means.	action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-21	Remedies for anesthesia. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-22	Psychotropic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant

CPC-23	Psychotropic drugs. Part 2. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-24	Psychotropic drugs. Part 3 Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-25	Anticonvulsants and antiepileptics. Remedies for parkinsonism. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production,	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor,

	methods of analysis, application in medicine.	production, methods of analysis, use of drugs in medicine.		Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-26	Vomiting and antiemetics. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-27	Remedies for cough. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-28	Nootropic drugs. Characteristics, classification,	To acquaint students with the connection	<i>ЗН 1-4,6,8,9</i>	Volodymyr Horishny, Associate

	relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>УМ 1,5,7-9,10,11</i>	Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-29	Antihistamines. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-30	Agents affecting the afferent nervous system. Agents that stimulate the receptors of afferent nerve fibers. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior

	medicine.	drugs in medicine.		lecturer, Oksana Ivantsiv, assistant
CPC-31	Means that reduce the sensitivity of afferent nerve fibers. Means for local anesthesia. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-32	Drugs that affect the efferent nervous system. Agents acting on cholinergic processes. Part 1. Characteristics, classification, the relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj, Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-33	Agents acting on cholinergic processes. Part 2. Characteristics, classification, the relationship between structure and	To acquaint students with the connection between the structure and pharmacological	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Volodymyr Horishny, Associate Professor, Andriy Lozynskyj,

	pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	1 action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor, Sergii Holota, Associate Professor, Mykhailo Lebyak, senior lecturer, Oksana Ivantsiv, assistant
CPC-34	Cardiotonic drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-35	Antiarrhythmic drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-36	Drugs that improve blood supply to organs and tissues. Characteristics,	To acquaint students with the connection between the	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-</i>	Olha Novikevych, senior lecturer,

	classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>9,10,11</i>	Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor
CPC-37	Peripheral vasodilators. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor
CPC-38	Calcium ion antagonists. Potassium channel activators. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskij, Associate Professor
CPC-39	Drugs affecting the renin-angiotensin system Characteristics, classification, the relationship between structure and	To acquaint students with the connection between the structure and pharmacological	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk,

	pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	l action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-40	Antihypertensive (antihypertensive) drugs. Hypertensive drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-41	Angioprotectors. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-42	Antioxidants. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism,	To acquaint students with the connection between the structure and pharmacological action of drugs,	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor,

	methods of production, methods of analysis, application in medicine.	mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Andriy Lozynskyj, Associate Professor
CPC-43	Hypolipidemic drugs. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-44	Diuretics. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-45	Agents that affect platelet aggregation and blood clotting. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action,	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj,

	medicine.	metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor
CPC-46	Antibiotics of heterocyclic structure. B-lactamase inhibitors. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-47	Tetracycline antibiotics and macrolides. Characteristics, classification, connection between structure and action, mechanism of action, methods of metabolism, production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-48	Aminoglycoside antibiotics, amphenicols, other groups of antibiotics. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate

	in medicine.	production, methods of analysis, use of drugs in medicine.		Professor
CPC-49	Sulfanilamides. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-50	Derivatives of naphthyridine and quinolonecarboxylic acids. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-51	Derivatives of 8-oxyquinoline, quinoxaline and nitrofurans. TB drugs. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor

	production, methods of analysis, application in medicine.	analysis, use of drugs in medicine.		
CPC-52	Drugs used to treat cancer (alkaloids, antibiotics, hormonal agents and their antagonists, other groups). Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-53	Examples of "target" (target) anticancer drugs (drugs of different chemical groups). Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-54	Antiviral drugs. Characteristics, classification,	To acquaint students with the connection	<i>ЗН 1-4,6,8,9</i>	Olha Novikevych, senior

	connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>VM 1,5,7-9,10,11</i>	lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-55	Antimalarial drugs. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-56	Drugs for the treatment of protozoal infections. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine..	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-57	Anthelmintics. Characteristics, classification, connection	To acquaint students with the connection between the	<i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-</i>	Olha Novikevych, senior lecturer,

	between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine..	structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	9,10,11	Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-58	Antifungal drugs. Characteristics, classification, connection between structure and action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-59	Antipediculosis and acaricides. Characteristics, classification, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-60	Antiseptics and disinfectants Characteristics, classification, mechanism of action,	To acquaint students with the connection between the structure and pharmacological	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk,

	metabolism, methods of production, methods of analysis, application in medicine.	l action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-61	Drugs of thyroid hormones, antithyroid drugs. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-62	Drugs of pancreatic hormones, Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-63	Antidiabetic drugs., Characteristics, classification, relationship between structure and pharmacological action, mechanism	To acquaint students with the connection between the structure and pharmacological action of drugs,	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor,

	of action, metabolism, methods of production, methods of analysis, application in medicine.	mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.		Andriy Lozynskyj, Associate Professor
CPC-64	Steroid hormones and their analogues. Corticosteroids. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-65	Androgens, anabolic steroids and their analogues. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-9,10,11</i>	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-66	Progestogens, estrogens. Birth control. Estrogens of non-steroidal	To acquaint students with the connection between the	<i>ЗН 1-4,6,8,9</i> <i>УМ 1,5,7-</i>	Olha Novikevych, senior lecturer,

	structure. Characteristics, classification, relationship between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine	structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	9,10,11	Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-67	Water-soluble vitamins. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-68	Fat-soluble vitamins. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.	To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.	ЗН 1-4,6,8,9 УМ 1,5,7-9,10,11	Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor
CPC-69	Drugs that affect the immune	To acquaint students with	ЗН 1-	Olha Novikevych

	<p>system (immunotropic drugs). Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine.</p>	<p>the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p>4,6,8,9 <i>VM 1,5,7-9,10,11</i></p>	<p>h, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor</p>
CPC-70	<p>Anorexigenic drugs. Sorbents, antidotes and complexes. Antiulcer drugs. Remedies for alcoholism. Characteristics, classification, connection between structure and pharmacological action, mechanism of action, metabolism, methods of production, methods of analysis, application in medicine..</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of production, methods of analysis, use of drugs in medicine.</p>	<p><i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i></p>	<p>Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate Professor</p>
CPC-71	<p>X-ray contrast and other diagnostic tools. Characteristics, classification, mechanism of action, metabolism, methods of production, methods of analysis,</p>	<p>To acquaint students with the connection between the structure and pharmacological action of drugs, mechanism of action, metabolism, methods of</p>	<p><i>ЗН 1-4,6,8,9</i> <i>VM 1,5,7-9,10,11</i></p>	<p>Olha Novikevych, senior lecturer, Inna Demchuk, Associate Professor, Andriy Lozynskyj, Associate</p>

	application in medicine.	production, methods of analysis, use of drugs in medicine.		Professor
8. Verification of learning outcomes				
Current control				
is carried out during training sessions and aims to check the assimilation of students of educational material (it is necessary to describe the forms of current control during training sessions). Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. The final grade for the current educational activity is set on a 4-point (national) scale				
Learning outcome code	Code of type of lessons	Verification of learning outcomes	Criteria for evaluating current learning activities	
<i>3H 1-10</i> <i>YM 1-11</i> <i>K 1-9</i> <i>AB 1-8</i>	<i>Л-1-26</i> <i>П-1-72</i> <i>CPC1-71</i>	<p>Types of educational activities of students are:</p> <p>a) lectures</p> <p>b) practical classes</p> <p>c) independent work of students (VTS)</p> <p>Thematic plans of lectures, practical classes, VTS ensure the implementation in the educational process of all topics included in the content of the program.</p> <p>The lecture course consists of 26 lectures. The topics of the lecture course reveal the problematic issues of the relevant sections of pharmaceutical chemistry. During lectures, students develop theoretical basic knowledge, provides a motivational component and a general-indicative stage of mastering scientific knowledge</p>	<p>Criteria for evaluating current learning activities:</p> <p>A grade of "5" (excellent) is given to a student who actively participated in the discussion of the most difficult questions on the topic of the lesson, gave at least 90% correct answers to standardized test tasks, answered written tasks without errors, did practical work and drew up a protocol.</p> <p>Grade "4" (good) is given to the student who participated in the discussion of the most difficult questions on the topic, gave at least 75% correct answers to standardized test tasks, made some minor mistakes in answering written tasks, did practical</p>	

	<p>during independent work. The lecture course makes maximum use of various didactic tools - multimedia presentations, educational films, slides.</p> <p>Practical classes are aimed at controlling the assimilation of theoretical material, the formation of practical skills and abilities, as well as the ability to analyze and apply the acquired knowledge to solve practical problems.</p> <p>Each lesson begins with a test to assess the initial level of knowledge and determine</p> <p>The degree of readiness of students for classes. The teacher determines the purpose of the lesson and creates a positive cognitive motivation; answers questions from students who arose during the VTS on the topic of the lesson.</p> <p>The main stage of the lesson is to perform practical work. Students conduct qualitative and quantitative analysis of drugs according to SPU.</p> <p>At the final stage of the lesson in order to assess the student's mastery of the topic he</p>	<p>work and drew up a protocol.</p> <p>Grade "3" (satisfactory) is given to a student who did not participate in the discussion of the most difficult questions on the topic, gave at least 60% correct answers to standardized test tasks, made significant mistakes in answering written tasks, did practical work and drew up a protocol.</p> <p>Grade "2" (unsatisfactory) is given to a student who did not participate in the discussion of the most difficult questions on the topic, gave less than 60% of correct answers to standardized test tasks, made gross mistakes in answering written tasks or did not answer them at all. performed practical work and did not draw up a protocol.</p>
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		<p>is asked to answer the situational tasks.</p> <p>The teacher summarizes the lesson, gives students tasks for independent work, points out the main issues of the next topic and offers a list of recommended reading.</p> <p>The duration of the practical lesson is three academic hours.</p>	
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Current educational activity

<p>Current control is carried out during practical classes and aims checking the assimilation of educational material by students. Forms of current control are:</p> <ul style="list-style-type: none"> a) test tasks with the choice of one correct answer, with the definition of the correct sequence of actions, with the definition of conformity, with the definition of a certain area in the photo or diagram ("recognition"); The control is carried out using the Misa training platform. b) individual oral examination, interview; c) solving typical situational problems; e) control of practical skills; <p>When assessing the mastery of each topic for current learning activities the student is graded on a 4-point (traditional) scale. This takes into account all types of work provided by the discipline program.</p> <p>Scores on the traditional scale are converted into points.</p> <p>The student's independent work is assessed in practical classes and is part of the final assessment of the student.</p>	<p>Current control is carried out during practical classes and aims checking the assimilation of educational material by students. Forms of current control are:</p> <ul style="list-style-type: none"> a) test tasks with the choice of one correct answer, with the definition of the correct sequence of actions, with the definition of conformity, with the definition
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of a certain area in the photo or diagram ("recognition"); The control is carried out using the Misa training platform.

b) individual oral examination, interview;

c) solving typical situational problems;

e) control of practical skills;

When assessing the mastery of each topic for current learning activities

the student is graded on a 4-point (traditional) scale. This takes into account all types of work provided by the discipline program.

Scores on the traditional scale are

			converted into points. The student's independent work is assessed in practical classes and is part of the final assessment of the student.
General evaluation system			
General evaluation system	Conducted upon completion of the discipline in the form of a written exam.		
Rating scales	traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale		
Conditions of admission to the final control	The student attended all practical classes and received at least 72 points for current performance		
Type of final control	Exam	Enrollment criteria	
Examination criteria / differentiated test			
Exam	<p>The exam is a form of final control of the student's mastering of theoretical and practical material in the discipline. The final control is carried out in writing, using the Misa training platform, according to the schedule. Lasts 2 academic hours.</p> <p>The semester exam includes:</p> <p>Test tasks (80), compiled in accordance with the topics of the sections of the discipline "Pharmaceutical Chemistry";</p>		<p><i>Maximum number of points - 80 (1 point for each test task);</i></p> <p><i>Lasts 90 minutes.</i></p> <p><i>In total - 80 points.</i></p>
Differentiated offset			
<p>The maximum number of points that a student can score for the current academic activity for admission to the exam is 120 points.</p> <p>The minimum number of points that a student must score for the current academic activity for admission to the exam is 72 points.</p> <p>The calculation of the number of points is based on the student's score on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places.</p>			

The resulting value is converted into points on a multi-point scale as follows:

$$x = \frac{CA \times 120}{5}$$

For convenience, the table of recalculation on a 200-point scale is given:

Recalculation of the average grade for current activity in a multi-point scale for disciplines culminating in the exam

4-point scale	200-point scale	4.95	119	4.79	115	4.62	
		4.91	118	4.75	114	4.58	
		4.87	117	4.7	113	4.54	
5	120	4.83	116	4.66	112	4.5	
4.45	107	3.95	95	3.58	86	3.2	
4.41	106			3.54	85	3.16	
4.37	105			3.49	84	3.12	
4.33	104			3.45	83	3.08	
4.29	103	3.91	94	3.41	82	3.04	
4.25	102	3.87	93			3	
4.2	101	3.83	92			Less than 3	Not enough
4.16	100	3.79	91				
4.12	99	3.74	90	3.37	81		

The grade for the discipline that ends with the exam is defined as the sum of the points

for current educational activity (not less than 72) and points for the exam (not less than 50).

Points from the discipline are independently converted into both the ECTS scale and the 4-point (national) scale. ECTS scale scores are not converted to a 4-point scale and vice versa.

The scores of students studying in one specialty, taking into account the number of scores scored in the discipline are ranked on the ECTS scale as follows:

ECTS Mark	Statistical index
A	Top 10% of students
B	Next 25% of students
C	Next 30% of students
D	Next 25% of students
E	Last 10% of students

Ranking with assignments of grades "A", "B", "C", "D", "E" is carried out for students of this course who study in one specialty and have successfully completed the study of the discipline.

Discipline scores for students who have successfully completed the program are converted into a traditional 4-point scale according to the absolute criteria, which are given in the table below:

Points from discipline	Mark by 4-point rate
From 170 to 200 points	5
From 140 to 169 points	4
From 139 to the minimum number of points which student must get	3
Below the minimum number of points which student must get	2

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

9. Course policy

The policy of the course is determined by the system of requirements for the student in the study of the discipline

"Pharmaceutical Chemistry" and is based on the principles of academic integrity. Students are explained the value of acquiring new knowledge, the need for independent performance of all types of work, tasks provided by the work program of this discipline. Lack of references to used sources, fabrication of sources, writing off, interference in the work of other students are examples of possible academic dishonesty. Detection of signs of academic dishonesty in the student's work is the basis for its non-enrollment by the teacher, regardless of the extent of plagiarism or deception. Literary sources may be provided by the teacher exclusively for educational purposes without the right to transfer to third parties. Students are encouraged to use other literature sources not provided by the recommended list.

10. Literature

Required

1. Державна фармакопея України: в 3 т. / Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів». – 2-е вид. – Харків: Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів». 2014. – Т.1. – 1128 с.; – Т.2. – 724 с.; – Т.1. – 732 с.
2. Фармацевтична хімія / П.О. Безуглий, В.А. Георгіянц, І.С. Гриценко, І.В. та ін.: за ред. П.О. Безуглого. – Вінниця: Нова книга, 2017. – 456 с.
3. Медична хімія: навч. посіб. для студентів вищих навчальних закладів / І.С. Гриценко, С.Г. Таран, Л.О. Перехода та ін.; за заг ред. І.С. Гриценка. – Харків: НФаУ: Золоті сторінки, 2017. – 552с.
4. Цуркан О.О. Фармацевтична хімія. Аналіз лікарських речовин за функціональними групами: навч. посіб. / О.О. Цуркан, І.В. Ніженковська, О.О. Глушаченко. – К.: ВСВ «Медицина», 2012. – 152 с.
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3. В.Г. Беликов. Фармацевтическая химия. – М.: «МЕДпресс-информ», 2008. – 615 с.
4. Фармацевтическая химия: за ред. А.П. Арзамасцева. – 3-е изд. – М.: ГЭОТАРМедиа, 2006. – 635 с. 50
5. Скакун М.П., Посохова К.А. Фармакологія. Підручник. – Укрмедкнига, 2003. - 740 с.
6. Орлов В.Д., Липсон В.В., Иванов В. В. Медицинская химия // Фолио. – 2005.- 464 с.
7. Граник В.Г. Основы медицинской химии. – М.: Вузовская книга, 2001. – 384 с.
8. Логинова Н.В., Полозов Г.И. Введение в фармацевтическую химию [Электронный ресурс] - Электрон. текст. дан. (968 Кб). - Мн.: “Электронная книга БГУ”, 2004. —
Режим доступа: <http://anubis.bsu.by/publications/elresources/Chemistry/Loginova.pdf>.

11. Equipment, logistics and software of the discipline / course

Methodical support:

- Working curriculum of the discipline;
- Multimedia support of lectures,
- Abstracts of lectures on the discipline;
- Methodical recommendations and developments for the teacher;
- Misa learning platform;
- Methodical instructions for practical classes for students;
- Methodical materials that provide independent work of students;
- Test and control tasks for practical classes;
- - Questions and tasks for the final control (exam).

12. Додаткова інформація

Responsible for the educational process at the department – Inna Demchuk, as. prof.

There is a scientific circle at the department. Meetings take place in the auditorium. №1.

Practical classes are held in the classrooms of the department at st. Pekarska, 69. Building of pharmaceutical chemistry.

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Syllabus compilers:

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(Signature)

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Organic and Bioorganic chemistry
Prof. Roman Lesyk

(Signature)