



## SYLLABUS ON THE EDUCATIONAL DISCIPLINE «CLINICAL PHARMACY AND PHARMACEUTICAL CARE»

<b>1. General information</b>	
<b>Faculty</b>	Faculty of Pharmacy
<b>Study program</b> (branch of study, specialty, degree, form of study)	22 Healthcare, 226 Pharmacy, industrial pharmacy, the second (master's) degree of the Higher Education Standard, full time
Academic year	2023-2024
<b>Subject, code</b> ( <i>URL directory on the website of Danylo Halysky Lviv National Medical University</i> )	Clinical pharmacy and pharmaceutical care, code OC 29, <a href="https://cutt.ly/UKbTzT8">https://cutt.ly/UKbTzT8</a>
Department ( <i>name, address, phone number, e-mail</i> )	Department of Healthcare Management, Pharmacotherapy and Clinical Pharmacy, 69 Pekarska str., Lviv, 79010, Ukraine, phone. +38 (032)2587410, phone/fax: +38(032)2944748, 11 Mykolaichuk str., Lviv, 79059, Ukraine, e-mail: kaf_clinicalpharm@meduniv.lviv.ua
Head of the Department ( <i>contact e-mail</i> )	Zimenkovsky Andriy Borysovyh, Doctor of Science, Professor, Honored Science and Technics Leader of Ukraine <a href="mailto:azimenkovsky@ukr.net">azimenkovsky@ukr.net</a>
Year of study ( <i>discipline study</i> )	IV, V
Semester ( <i>discipline study</i> )	7-8-9
Type of course/module ( <i>compulsory/ optional</i> )	Compulsory
Professors	Lopatynska O.I., PhD, associated professor, <a href="mailto:Oksana.lo@gmail.com">Oksana.lo@gmail.com</a> Nastyuha Yu.S., PhD, associated professor, <a href="mailto:y.nastyukha@gmail.com">y.nastyukha@gmail.com</a>
Erasmus Yes/No	No
The person responsible for the syllabus	Lopatynska Oksana, PhD, associated professor, <a href="mailto:Oksana.lo@gmail.com">Oksana.lo@gmail.com</a>
ECTS credits	9
Number of hours	270 (Lectures – 20 hours, Practical Classes – 115 hours, Individual Work – 135 hours)
Language of study	English
Information about consultations	Consultations take place on the approved schedule, both offline (face-to-face) and online, using available for students and teachers information and communication technologies
Address, telephone and regulations of the clinical base, office	
<b>2. Short annotation to the course</b>	
<p>«Clinical Pharmacy and Pharmaceutical Care» belongs to the cycle of disciplines of professional training of students by specialty «Pharmacy, industrial pharmacy». It is an integrative applied science that combines pharmaceutical and clinical aspects of medicines study, the main task of which is to create a reliable theoretical fundamentals and methodological approaches to the rational use of drugs. The discipline lays the foundations for the pharmacists' participation in the rational pharmacotherapy and quality provision of pharmaceutical care. The Syllabus plays the preliminaries for the pharmacist's involvement in the delivery of rational pharmacotherapy and qualitative pharmaceutical care provision.</p>	

### 3. The aim and objectives of the educational discipline

1. The aim of the course is forming of the theoretical knowledge and practical skills of students for the pharmacotherapy optimization through control of the rational drugs use and safety of pharmacotherapy, prevention of the drug-related problems (DRPs) and polypharmacy, and also provision of the special professional services, particularly the patient-directed pharmaceutical care, required for the safe and effective pharmacotherapy.

2. The objectives of discipline:

- Study and mastering of the symptoms and syndromes of the most widespread clinical conditions;
- Study of the main signs of disorders that are treated with the over-the-counter (OTC) medicines within the concept of responsible self-medication;
- Mastering of the main principles of symptomatic pharmacotherapy of disorders and pathological conditions where the responsible self-medication is possible;
- Mastering of the principles and skills of pharmaceutical care of patients provision during the OTC and prescription medicines dispensing;
- Studying of the signs and symptoms that require the physician's intervention;
- Studying of the general principles of diagnostics and differential diagnostics of the internal organs disorders;
- Mastering of the general principles of the examination results interpretation;
- Identification, control, and implementation of the appropriate pharmacotherapy plan adapted to the needs of the particular patient, taking into account the condition of the body and the properties of medicines;
- Studying of the risk factors and clinical signs of the adverse drug reactions (ADRs); mastering of the main approaches to the ADRs prevention in the individual patients
- Studying of the main principles of combined medicines use and prevention of the undesirable outcomes of drug interactions;
- Mastering of the safety and efficacy evaluation in the use of some special pharmacological groups or certain medicines;
- Mastering the skills of finding, obtaining, analyzing, interpreting and presenting evidence-based information about medicines;
- Mastering the principles of medical deontology, ethical standards of behavior of a pharmacist in healthcare settings in cooperation with physicians, pharmacists, clinical pharmacists, nursing staff, patients, and their relatives.

3. According to the requirements of the Higher Education Standart the discipline «Clinical Pharmacy ra Pharmaceutical Care» provides mastering by the students the competences as follows:

– **integral:**

The ability to apply the acquired general and professional competencies to solve complex problems in professional pharmaceutical activities, including those of a research and innovation nature; realization of professional activities by the relevant position, including the manufacture/development of drugs, their storage, quality control, delivery, distribution, dispensing, and supplying of drugs, as well as consulting, providing information on drugs, and monitoring side effects and/or ineffectiveness of drug therapy; implementation of innovations.

– **general:**

GC 1. The ability to abstract thinking, analysis and synthesis.

GC 2. The knowledge and understanding of the subject and profession.

GC 3. Ability to communicate in the national language both orally and in writing.

GC 4. The ability to communicate in a foreign language (mainly English) at a level that ensures effective professional activity.

GC 5. The ability to assess and ensure the quality of work.

GC 6. The ability to work as a team.

GC 8. The ability to save and increase moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society, and the development of society, techniques and technology, to use different types and forms of physical activity for active recreation and a healthy

lifestyle.

GC 9. The ability to apply information and communication technologies.

– **special (professional, substantive):**

SC 1. The ability to integrate knowledge and solve complex pharmacy/industrial pharmacy problems in broad or multidisciplinary contexts.

SC 3. The ability to solve pharmacy problems in new or unfamiliar conditions with incomplete or limited information, taking into account aspects of social and ethical responsibility.

SC 4. The ability to clearly and unambiguously convey one's own knowledge, conclusions, and arguments in the pharmacy field to specialists and non-specialists, in particular to people who are learning.

SC 5. The ability to demonstrate and apply communication skills and fundamental principles of pharmaceutical ethics and deontology in practical activities.

SC 7. The ability to conduct sanitary and educational work among the population to prevent common diseases, dangerous infections, viruses and parasitic diseases, as well as to promote the timely determination and maintenance of adherence to the treatment of these diseases according to their medical-and-biological characteristics and microbiological properties.

SC 8. The ability to provide rational use and consulting concerning prescription and OTC medicines and other pharmaceutical products, pharmaceutical care when choosing and dispensing of medicines by the evaluation of risk/benefit correlation, compatibilities, in accordance with their biopharmaceutical, pharmacokinetic, pharmacodynamics and physicochemical and chemical properties, indications/contraindications, based on the health condition of a certain patient.

SC 9. The ability to provide first aid for patients and victims in extreme situations and emergencies.

SC 10. The ability to monitor the effectiveness and safety of the drug use based on their clinical and pharmaceutical characteristics.

SC 15. The ability to analyze the socio-economic processes in pharmacy, forms, methods and functions of the pharmaceutical supply system and its components in the world practice, indicators of need, efficiency and availability of pharmaceutical care in terms of healthcare insurance and reimbursement of the drugs.

#### 4. Pre-details of the course

The study of the educational discipline “Clinical Pharmacy and Pharmaceutical Care” is based on the subjects of the natural-scientific direction. They include: “Anatomy”, “Physiology”, “Biology with the basics of genetics”, and the professionally directed disciplines as follows: “Information Technologies in Pharmacy”, “Microbiology with the basics of immunology”, “Ethics and Deontology in Pharmacy”, “Pathological Physiology”, “Pharmacology”, “Pharmacotherapy with Pharmacokinetics”, “Drug Technology”, “Organization and Economics in Pharmacy”.

#### 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>Kn – knowledge, Sk – skills, C – communication, R – responsibility, PR - Program learning outcomes (results)</i>		
<i>Kn-1</i>	To know social and civil rights and responsibilities.	<i>PR-1; PR-3; PR-26; PR-27</i>
<i>Kn-2</i>	To know methods of knowledge implementation in solving practical issues.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-26</i>
<i>Kn-3</i>	To know the current development trends of the branch and to analyze them.	<i>PR-1; PR-2; PR-3; PR-26</i>
<i>Kn-4</i>	To know the features of the contemporary professional environment and professional activity.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-8; PR-26; PR-27</i>
<i>Kn-5</i>	To know the structure and features of professional activities.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-26; PR-27</i>
<i>Kn-6</i>	To know the production and social adaptation elements and factors of successful adaptation to a	<i>PR-1; PR-2; PR-3; PR-4; PR-6; PR-8</i>

	new environment.	
<i>Kn-7</i>	To have deep knowledge of the information and communication technologies used in professional activities.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8;PR-9; PR-10;PR-26; PR-27</i>
<i>Kn-8</i>	To know the tactics and strategies of communication, laws, and ways of communicative behavior.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-8;PR-9; PR-10; PR-27</i>
<i>Kn-9</i>	To know methods for evaluation of work quality.	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8</i>
<i>Kn-10</i>	To know the components of the healthcare system, research planning, and evaluation.	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-26</i>
<i>Kn-11</i>	To know the moral, cultural, scientific values and achievements of society based on understanding the history and regularities of pharmacy, its place in the general system of knowledge about nature and culture, and the development of society, technology types, and forms of physical activity for active recreation and a healthy lifestyle.	<i>PR-1; PR-2; PR-3; PR-5; PR-8; PR-10; PR-27</i>
<i>Kn-12</i>	To know the legislation base of the government strategy concerning to fight against dangerous infectious diseases (tuberculosis, HIV infection) and parasitic diseases; principles of compiling pharmaceutical information and creating information products.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-8;PR-9; PR-10; PR-26</i>
<i>Kn-13</i>	To know the symptoms and syndromes, options for the course of the disease that may require the use of OTC medicines; regulatory documents governing the release (dispensing) of the OTC medicines at the pharmacy; pharmacokinetics and pharmacodynamics of the OTC medicines; chronopharmacological specifics of the OTC medications; the influence of food ingredients on the pharmacokinetics and pharmacodynamics of the OTC medications; types of effects and routes of administration of medicines; pharmacokinetic and biopharmaceutical factors that influence the choice of the dosage form; clinical aspects on the proper selection of the dosage form; methods of application for the modern transdermal, inhaled, and oral dosage forms; the efficacy criteria for pharmacotherapy with the OTC drugs; deontological aspects of the patient–pharmacist relations.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8;PR-9; PR-11; PR-12; PR-13;PR-26; PR-27</i>
<i>Kn-14</i>	To know the causes of emergencies, the main clinical manifestations of crises, and the algorithm for first aid provided in emergencies.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8;PR-9; PR-12; PR-26; PR-27</i>
<i>Kn-15</i>	To know chemical structure of medicines; the main groups of plants biological active substances; the relationship "chemical structure - pharmacological action"; mechanism of action, pharmacological effects, indications for medicines use; characteristic features of certain pharmacological and pharmacotherapeutic groups; clinical-and-biopharmaceutical features of different dosage	<i>PR-1; PR-2; PR-3; PR-8;PR-11; PR-12; PR-13; PR-24;PR-26</i>

	forms; novel dosage forms of sustained release; therapeutic drug delivery systems; the character of types of effects and routes of administration of medicines; influence of endogenous factors (genetic, age and gender, anatomical and physiological features, diseases of specific organs and systems) on the pharmacokinetics and pharmacodynamics (pharmacological and toxicological properties) of medicines; fundamentals of pharmacogenetics; role of hereditary (genetic) pathology in mechanisms of individual drug tolerance; fundamentals of chronopharmacology; influence of natural and circadian rhythms of a person on the therapeutic efficacy of medicines; interaction of medicinal substances (drugs) with food at the stages of absorption, metabolism and excretion; concept of the bioequivalence of medicines and principles of their clinical investigation; concept of innovative (original) drugs and generics; requirements to the generic medications; contemporary schemes and directions of pharmacotherapy of the most common diseases; phenomena induced by the repeated and prolonged administration of medications; pharmacological groups of drugs that may cause drug dependence and mechanisms of its development; basic constitutional types and their anomalies; peculiarities of organs and systems functioning at the typical pathological processes; clinical features (symptoms and syndromes) of diseases for which medicines are prescribed.	
<i>Kn-16</i>	To know adverse/side pharmacological effects of drugs; principles of clinical, laboratory and instrumental assessment of efficacy/inefficacy and safety of medicines; principles of pharmacovigilance system activity and process of registration of information concerning adverse reactions and/or absence of efficacy of the drug in medical use.	<i>PR-1; PR-2; PR-3; PR-8; PR-9; PR-10; PR-11; PR-13; PR-24; PR-26</i>
<i>Kn-17</i>	To know the basic needs for medicines, the methods of determining the availability of pharmaceutical supplies in terms of health insurance and reimbursement, and the main mechanisms of drug reimbursement.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-9; PR-11; PR-26</i>
<i>Kn-18</i>	To know the fundamentals of the pharmaceutical legislation system, the main mechanisms of state regulation of pharmaceutical activity, the principles of organization of providing pharmaceutical assistance; the basic principles of organization of pharmaceutical supplying; legal and ethical standards of pharmaceutical activity.	<i>PR-1; PR-2; PR-3; PR-5; PR-26</i>
<i>Kn-19</i>	To know the legal and ethical standards of professional behavior and responsibility.	<i>PR-1; PR-2; PR-3; PR-5; PR-26</i>
<i>Sk-1</i>	To form civil consciousness and to act according to it.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-10;</i>

		<i>PR-27</i>
<i>Sk-2</i>	To be able to use professional knowledge for solving practical issues.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-27</i>
<i>Sk-3</i>	To analyze professional information, make reasoned decisions, and acquire up-to-date knowledge.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-9; PR-10; PR-11</i>
<i>Sk-4</i>	To display the initiative, constantly search for new opportunities outside the existing resources, and engage in self-development and self-realization.	<i>PR-2; PR-3; PR-6; PR-8</i>
<i>Sk-5</i>	To be able to carry out professional activities that require updating and integration of knowledge.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-10; PR-26; PR-27</i>
<i>Sk-6</i>	To form an effective strategy of personal adaptation to new conditions.	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-9</i>
<i>Sk-7</i>	To use information and communication technologies in professional activities that require updating and integrating knowledge.	<i>PR-1; PR-2; PR-3; PR-4; PR-8; PR-9; PR-10</i>
<i>Sk-8</i>	To be able to choose ways and strategies of communication to provide effective teamwork.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-27</i>
<i>Sk-9</i>	To be able to ensure the competent performance of professional activities.	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8</i>
<i>Sk-10</i>	To search for scientific sources of information; to choose methods of scientific research conducting; to use methods of mathematical analysis and modeling, theoretical and experimental investigation in pharmacy.	<i>PR-1; PR-2; PR-3; PR-6; PR-8</i>
<i>Sk-11</i>	To use moral, cultural, and scientific values and achievements of society based on understanding the history and regularities of the development of pharmacy in practice.	<i>PR-1; PR-2; PR-3; PR-4; PR-5</i>
<i>Sk-12</i>	To compose and systematize advertising and informational materials for permanent and thematic exhibitions of medicines for presentations.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-8; PR-9; PR-10; PR-27</i>
<i>Sk-13</i>	To provide advice on the use of new dosage forms; to consult patients on the rational use of the OTC medicines of the different pharmacotherapeutic groups (therapeutic effects, time and route of administration, interactions with food etc.); to provide information about the regimen, terms and requirements for the storage of medicines in different dosage forms at home according to the list 4 using the knowledge of chemical and physical properties of drugs; to provide the information on compatibility, indications and contraindications to the use of medicines considering their biopharmaceutical, pharmacokinetic, and pharmacodynamic properties.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-11; PR-12; PR-13; PR-26; PR-27</i>
<i>Sk-14</i>	To determine the signs of diseases and pathological conditions that require obligatory medical intervention, which is not subject to elimination at the stage of first aid at the pharmacy or manufacture and use of the necessary measures (anesthesia and jute, etc.) at the prehospital setting; to apply	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-12; PR-26; PR-27</i>

	<p>different types of bandages, aseptic bandages; to temporarily stop bleeding; to conduct the transport immobilization using standard tires and improvised means; to evaluate the functional condition of the patient (blood pressure, heart rate, etc.); to provide first aid for burns and frostbite, trauma, angina, myocardial infarction, asthma attacks, strokes, hyper- and hypoglycemic coma, epileptic seizures, shock, poisoning, insect and animal bites, sudden births, etc., using typical manipulations; to provide first aid in case of poisoning by drugs or chemical reagents and poisonous plants.</p>	
<i>Sk-15</i>	<p>To conduct the comparative analysis of the medicines that belong to the 1B list, accounting for the chemical structure, mechanism of action and pharmacological properties, to determine the advantages and disadvantages of certain medicines; to present the comparative analysis of the original (novel) medicines (brands) and their copies – generic drugs, based on the clinical-and-pharmacological research data, pharmacoeconomic indicators and drug database to prove the optimal drug choice; to determine the advantages and disadvantages of a particular dosage form of specific drugs of different pharmacological groups accounting for the biopharmaceutical, pharmacokinetic and pharmacological features of the medicinal products, as well as the anatomical and physiological characteristics of the patient (age, gender, physical condition, etc.); to determine the influence of factors that depend on the condition and features of the human body (physiological, pathological, etc.) on the drug absorption, distribution, deposition, metabolism, and excretion based on the results of the interviewing and anamnesis analysis; to determine the optimal mode of drugs administration (time, frequency of application, duration of treatment) based on the anatomical and physiological features, pharmacological properties of drugs, and the dosage form; to determine the possible effect of food on the pharmacokinetics and pharmacological properties of drugs (time and amount of absorption, duration of action, route of withdrawal, the risk of ADRs etc.) to increase the effectiveness and reduce the ADRs; based on the pharmacological and toxicological properties of medicines, to determine the possible adverse effects of drugs (allergy, hematotoxicity, hepatotoxicity, tolerance, addiction etc.) and prevent them.</p>	<p><i>PR-1; PR-2; PR-3; PR-8; PR-11; PR-12; PR-13; PR-24; PR-26</i></p>
<i>Sk-16</i>	<p>To collect, recognize and identify from various sources, analyze and interpret information about adverse reactions and/or absence of drug efficacy; to fill the notification card on the adverse reaction</p>	<p><i>PR-1; PR-2; PR-3; PR-8; PR-9; PR-10; PR-11; PR-13; PR-24; PR-26</i></p>

	and/or absence of drug efficacy in medical use.	
<i>Sk-17</i>	To determine the advantages and disadvantages of the reimbursement system in Ukraine; to use legislation concerning reimbursement in Ukraine.	<i>PR-1; PR-2; PR-3; PR-6; PR-8; PR-9; PR-11; PR-26</i>
<i>Sk-18</i>	To use the legislation that regulated pharmaceutical activity in Ukraine; to track and identify changes and additions to native Ukrainian pharmaceutical legislation; to determine relationships with patients and physicians to meet WHO ethical criteria and good pharmacy practices to minimize abuse and misuse of medicines.	<i>PR-1; PR-2; PR-3; PR-5; PR-26</i>
<i>Sk-19</i>	To use moral, cultural, and scientific values and achievements of society based on understanding the history and regularities of the development of pharmacy in practical activity.	<i>PR-1; PR-2; PR-3; PR-5; PR-26</i>
<i>C-1</i>	The ability to prove a social and civil position.	<i>PR-1; PR-3; PR-4; PR-5; PR-9; PR-10; PR-26; PR-27</i>
<i>C-2</i>	To establish contacts with entities of practical activities.	<i>PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-27</i>
<i>C-3</i>	To establish appropriate contacts for achieving the goals.	<i>PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-27</i>
<i>C-4</i>	To apply the qualities of a leader to establish links with various subjects of professional activity.	<i>PR-3; PR-4; PR-5; PR-6; PR-8; PR-9</i>
<i>C-5</i>	To form a communication strategy in the professional activities.	<i>PR-3; PR-4; PR-5; PR-8; PR-9; PR-10</i>
<i>C-6</i>	To contact a wide range of the public (colleagues, administration, professionals of other branches) in case of new situations with unpredictable elements.	<i>PR-3; PR-4; PR-5; PR-6; PR-8; PR-9</i>
<i>C-7</i>	To use the information and communication technologies in the professional activities.	<i>PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9</i>
<i>C-8</i>	To use communication strategies and interpersonal skills.	<i>PR-2; PR-3; PR-4; PR-5; PR-6; PR-8</i>
<i>C-9</i>	To establish contacts for assurance of competent performance of activities.	<i>PR-2; PR-3; PR-5; PR-6; PR-8</i>
<i>C-10</i>	To use information from scientific sources.	<i>PR-1; PR-2; PR-3; PR-4; PR-6; PR-8</i>
<i>C-11</i>	To communicate using established norms of native and foreign language, moral, cultural, scientific values, and achievements of society.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8</i>
<i>C-12</i>	To conduct prophylactic work for the prevention of diseases.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-12; PR-27</i>
<i>C-13</i>	To consult and provide pharmaceutical care when OTC medicines are dispensed.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-11; PR-13; PR-24; PR-26; PR-27</i>
<i>C-14</i>	To make conclusions about the victim's condition based on the preliminary examination. Interaction with specialists in practical medicine.	<i>PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-12; PR-24; PR-27</i>
<i>C-15</i>	To obtain the information from the identified sources to provide quality and safe pharmaceutical aid conditions.	<i>PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-26; PR-27</i>
<i>C-16</i>	To make the conclusions based on the analysis of	<i>PR-1; PR-2; PR-3; PR-</i>



	information on side effects of drugs.	8;PR-9; PR-10; PR-11; PR-13; PR-24;PR-26
C-17	To establish connections necessary to function the pharmaceutical supply system.	PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-27
C-18	To make conclusions and professionally apply laws and regulations.	PR-1; PR-2; PR-3; PR-5; PR-26
C-19	To show communication skills in practice, to set and develop social-and-work relations.	PR-1; PR-2; PR-3; PR-5; PR-26
R-1	To be responsible for civil status and activity.	PR-1; PR-3; PR-26; PR-27
R-2	To be responsible for the timely taken decision.	PR-1; PR-2; PR-3; PR-6; PR-8; PR-26
R-3	To be responsible for the timely acquisition of up-to-date knowledge.	PR-1; PR-2; PR-3; PR-26
R-4	To be responsible for the disclosed initiatives.	PR-2; PR-3; PR-6; PR-8
R-5	To be responsible for professional growth with a high level of autonomy.	PR-1; PR-2; PR-3; PR-6; PR-8; PR-10; PR-26; PR-27
R-6	To be responsible for making decisions.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-9
R-7	To be responsible for the development of professional knowledge and skills.	PR-1; PR-2; PR-3; PR-6; PR-8; PR-27
R-8	To be responsible for the choice and tactics of communication.	PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8; PR-9; PR-10; PR-27
R-9	To be responsible for competent performance of activities.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8
R-10	To be responsible for the development and implementation of planned projects.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-27
R-11	To be responsible for the observance of moral, cultural and scientific values.	PR-1; PR-2; PR-3; PR-5; PR-8; PR-10; PR-27
R-12	To be responsible for the quality and timeliness of preventive measures.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8
R-13	To be responsible for the provided pharmaceutical care in case of the OTC medicines dispensing.	PR-1; PR-2; PR-3; PR-4; PR-5; PR-6; PR-8;PR-9; PR-11; PR-12; PR-13;PR-26; PR-27
R-14	To be responsible for the consistency and timeliness of first aid.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-12; PR-26; PR-27
R-15	To be responsible for the soundness of management decisions to improve the quality of pharmaceutical care.	PR-2; PR-3; PR-5; PR-6; PR-8
R-16	To be responsible for analyzing information on the efficacy and safety of medicines.	PR-1; PR-2; PR-3; PR-4; PR-6; PR-8
R-17	To be responsible for conducting socio-economic processes in pharmacy.	PR-1; PR-2; PR-3; PR-5; PR-6; PR-8; PR-26; PR-27
R-18	To be responsible for the quality and timely use of regulatory documents in professional activities.	PR-1; PR-2; PR-3; PR-5; PR-26
R-19	To be responsible for compliance with ethical standards of professional behavior and the quality of	PR-1; PR-2; PR-3; PR-5; PR-26

	communication skills.			
<b>6. Format and scope of the course</b>				
Format of the course	Очный			
Type of lessons	Number of hours	Number of groups		
lectures	20	1		
Practical classes	115	1		
seminars	–	–		
Individual works	135	1		
<b>7. Topics and content of the course</b>				
Class type code	Topic	Content of training	Code of learning outcomes	Professor
L – lectures, P – practical classes, IW – individual work (outclasses work)				
<i>L-1</i>	Objects and tasks of the discipline «Clinical pharmacy and pharmaceutical care». Concept of pharmaceutical care. Clinical-and-pharmaceutical and clinical-and-pharmacological principles of medicines choice for rational pharmacotherapy. Evidence-based medicine as one of the main tools for ensuring the rationality of pharmacotherapy. Principles of clinical trials of medicines.	The concept of clinical pharmacy. Objectives of clinical pharmacy. The fundamental principles of clinical pharmacy. The factors influencing the drugs selection. Principles of drug selection. The nomenclature and classification of drugs. Dosage forms, their classifications, selection criteria. Pharmaceutical care. Algorithm for presenting information about medicines. The sources of information in medicine and pharmacy. Prerequisites for the evidence-based medicine. The concept of evidence. The level of evidence. Criteria for selecting of evidence sources. Cochrane Library. The stages of drug evaluating. Preclinical drugs investigation. Clinical trials, requirements, legislation. Types of clinical trials. Phases of clinical trials. The concept of bioavailability and bioequivalence of drugs. Assessment of drug equivalence.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>L-2</i>	Drug interaction in the combined pharmacotherapy. Clinical manifestations of drug interaction, principles of detection and prevention of the dangerous drug	Prerequisites and reasons for prescribing combination pharmacotherapy. The concept of rational, irrational and potentially dangerous combinations. Pharmaceutical, pharmacokinetic and pharmacodynamic drug	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-</i>	Assoc. prof. Oksana Lopatynska

	interactions.	interactions. Interaction of drugs with food, herbs, nicotine, alcohol.	<i>15, C- 19, R-2, R-3, R-5, R- 7, R- 9, R-10, R-12, R-15, R-19</i>	
<i>L-3</i>	Side effects and adverse drug reactions. Principles of the ADRs prediction. Pharmacovigilance system. Drug-induced disorders as a consequence of irrational use of medicines.	Adverse drug reaction (side effect). Factors influencing drugs side effects. Classification of adverse reactions. Drugs illness. Pharmacovigilance system. Submission of information on drugs side effects.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk- 16, Sk-19, C- 2, C-3, C-5, C- 7, C-9, C-10, C-12, C-15, C- 16, C- 19, R-2, R-3, R- 5, R- 7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>L-4</i>	Safety of medicines use in special physiological conditions (during pregnancy, lactation).	Conditions that require medication during pregnancy. Embryotoxic / embryoletal, teratogenic and fetotoxic effects of drugs. Changes in the drugs pharmacokinetics during pregnancy and lactation. Risk categories for the drugs use in pregnancy (by the FDA). Principles of pharmacotherapy of the most common diseases during pregnancy and lactation.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-7, Sk-9, Sk-10, Sk-12, Sk- 15, Sk-16, Sk- 19, C-2, C-3, C-5, C- 7, C-9, C- 10, C-12, C-15, C- 16, C- 19, R-2, R-3, R- 5, R-7, R-9, R- 10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>L-5</i>	Age-specific features of medication use. Clinical-and-pharmacological approaches to medicine use in pediatrics, neonatology, and geriatrics.	Childhood periods. Features of pharmacokinetics in pediatrics. Routes of administration and types of dosage forms in pediatrics. Principles of drugs dose calculating in pediatrics. Pharmaceutical care in pediatric practice. Features of pharmacokinetics in elderly patients. Principles of drugs dose calculating in geriatrics. Pharmaceutical care in geriatrics.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk- 16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C- 16, C- 19, R-2, R-3, R- 5, R- 7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>L-6</i>	Clinical-and-pharmaceutical aspects of responsible self-medication. The role of pharmaceutical care in rational use of the OTC medicines.	Legislation on self-medication and over-the-counter dispensing of medicines. Symptoms and syndromes in which self-medication is possible. Algorithm for over-the-	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-</i>	Assoc. prof. Yuliya Nastyuha

		counter drug selection. Pharmaceutical care when dispensing over-the-counter drugs. Signs and symptoms required physician attention.	<i>15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	
<i>L-7</i>	Clinical-and-pharmaceutical approaches to antibiotics, antiviral and antifungal agents use.	Clinical pharmacology of antimicrobial medicines. Features of pharmacokinetics of antibacterial drugs of different pharmacological and chemical groups. Side effects of antibacterial drugs. Selection of the optimal route of administration and dosing regimen. Approaches to the rational choice of antibacterial drugs in various diseases. The basic principles of antibacterial therapy. Prevention of antibiotic resistance. Pharmaceutical care in antibacterial drugs use.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>L-8</i>	Principles of clinical-and-pharmaceutical approach to the treatment of allergic disorders.	The concept of allergy and the mechanisms of allergic reactions. Types of allergies. Factors that cause predisposition to allergies. Clinical manifestations of systemic and local allergies and basic principles of treatment. Etiology, pathogenesis, symptoms, directions of pharmacotherapy. Modern anti-allergic drugs, advantages, and disadvantages of different generations, and the principles of rational choice.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>L-9</i>	Clinical-and-pharmaceutical approaches to treatment of the respiratory and ENT-disorders.	The main signs and features of the course of diseases of the respiratory and ENT organs. Approaches to the rational choice of drugs. Clinical and pharmaceutical characteristics of the main groups of drugs. Combined use of medicines. Side effects	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-</i>	Assoc. prof. Yuliya Nastyuha

		of drugs. Prognosis, clinical manifestations, prevention, and elimination. Criteria for efficacy and safety of pharmacotherapy. Pharmaceutical care in the selection and use of drugs.	7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19	
L-10	Principles of clinical-and-pharmaceutical approach to the treatment of gastric, intestinal, bowel, liver, and pancreas disorders.	Symptoms and syndromes of gastrointestinal disorders. Approaches to the rational selection of medicines for the treatment of GIT disorders. Combined pharmacotherapy for GIT disorders; interaction with other pharmacotherapeutic groups. Features of the use of medications in gastroenterology in the concomitant pathology. Modern unique dosage forms used for diseases of the stomach and intestines (suspensions, gels for oral administration, tablets for chewing, capsules with mini spheres, etc.), their clinical and bio-pharmaceutical features, rules, and conditions of rational use. Principles of pharmaceutical care for patients with gastric and intestinal diseases. Symptoms and syndromes of significant diseases of the hepatobiliary system and pancreas. Approaches to the treatment of diseases. The combined use of medicines that affect the function of the hepatobiliary system and pancreas; interaction with drugs of other pharmacological groups; peculiarities of medication use in concomitant pathology. Drugs with toxic effects on the pancreas and liver. ADRs of medicines used in the pharmacotherapy of pancreatic and liver diseases. Prediction, clinical manifestations, prevention, and remedies. Modern unique	Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19	Assoc. prof. Yuliya Nastyuha

		dosage forms used in diseases of the hepatobiliary system, their clinical and biopharmaceutical features, rules, and conditions for rational use. Efficacy and safety criteria for the pharmacotherapy of pancreatic and liver diseases. Principles of pharmaceutical care for patients with pathology of pancreas and liver.		
<i>P-1</i>	The subject and main tasks of clinical pharmacy. The fundamentals of pharmaceutical care. Medication (drug) intake behavior of the patient. Features of pharmaceutical care in ensuring and maintaining a high level of adherence.	Clinical pharmacy and its objectives. The role of clinical pharmacy in the system of pharmaceutical education. The World experience of clinical pharmacy development. Ethics and deontology in medicine and pharmacy. Deontological aspects of the pharmacist-physician, pharmacist-patient, pharmacist-pharmacy visitor relationships. Management of the patient's drug-related behavior. Compliance and adherence as the components of the patient's drug-related behavior.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-2</i>	Evidence-based medicine as a tool for ensuring the rationality of pharmacotherapy. The principle of drug choice for pharmacotherapy.	The structure of the systematic review. Evidence-based databases. Principles of evidence-based information retrieval. Levels of evidence. Evaluation of the effectiveness and safety of medicines from the standpoint of evidence-based medicine.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-3</i>	Principles of	The principles of the clinical	<i>Kn-1, Kn-2, Kn-3,</i>	Assoc. prof.

	preclinical and clinical trials of medicines. Study of bioavailability and bioequivalence of drugs.	trials of medicines. The regulatory documents for conducting clinical trials of drugs. Rules for planning and conducting clinical trials. Information support for the clinical research process of drugs. Assessment of bioequivalence and bioavailability of medicines. Interpretation of clinical trial results.	<i>Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Oksana Lopatynska
<i>P-4</i>	Drug interactions, principles of their classification. Pharmaceutical care which directed at preventing the undesirable effects of drug interactions.	Principles of combining medicines in pharmacotherapy. Rational and irrational drug combinations. Changes in drug in case of combining pharmacokinetics and pharmacodynamics when using combined pharmacotherapy. Differences in pharmacotherapeutic effects of medicines when using combined pharmacotherapy. Principles of drug interactions prevention for their rational use. Interactions of drugs with food, alcohol, and nicotine	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-5</i>	Adverse drug reactions and side effects. Types of ADRs, risk factors for their occurrence, and clinical manifestations. Pharmacovigilance system. Drug-induced disorders as a result of irrational use of medicines.	Classification of adverse drug reactions. Types of adverse drug reactions and their clinical features. Factors that determine ADRs while using medicines. Principles of ADRs prevention. Correction of ADRs. System of Pharmacovigilance. Drug-induced disorder, its specifics, clinical signs, prevention. Principles of irrational drug use prevention.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-6</i>	Clinical-and-pharmaceutical	Physiological and biochemical changes of the	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i>	Assoc. prof. Oksana

	approaches to use of medicines during pregnancy and lactation. The role of pharmaceutical care in the rational management of pregnancy.	female body during pregnancy and breastfeeding and their influence on drug pharmacokinetics and pharmacodynamics. Principles of medicines use during pregnancy and lactation. Assessment of drug safety and efficacy during pregnancy and lactation. Teratogenic, embryotoxic and fetotoxic effects of medicines. Peculiarities of medicines use during delivery. Pharmaceutical care of pregnant and lactating women.	<i>10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Lopatynska
<i>P-7</i>	Clinical-and-pharmaceutical approaches to use of medicines in pediatrics and neonatology. Pharmaceutical care of newborns and children of different age groups. Features of its implementation for physicians, nursing staff, patients, and their relatives.	Physiological and biochemical peculiarities of the child's body. Specifics of pharmacokinetics and pharmacodynamics in pediatrics. Principles of medicine use in children of different age groups. Assessment of drug safety and efficacy in pediatrics. Factors that determine rational drug and dosage form choice in pediatrics. Pharmaceutical care in pediatrics and neonatology	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-8</i>	Principles of clinical-and-pharmaceutical approach to the rational use of drugs in geriatrics. Features of pharmaceutical care of elderly patients.	Age specifics of physiological and biochemical processes in the body of elderly patients. Specifics of pharmacokinetics and pharmacodynamics for elderly patients. Principles of medicines use in geriatrics. Assessment of drug safety and efficacy in geriatrics. Factors that determine rational drug and dosage form choice in geriatrics. Pharmaceutical care in geriatrics	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>P-9</i>	Responsible self-medication, the current regulatory and judicial framework for its provision. Participation of the	Prescription and over-the-counter medications. Regulatory, judicial framework for self-medication. Principles of responsible self-medication.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10,</i>	Assoc. prof. Yuliya Nastyuha



	<p>pharmacist in responsible self-medication. OTC-medications, principles of their choice for self-medication of gastrointestinal disorders and. Pharmaceutical care for the OTC-medicines use.</p>	<p>The directions and medicines for symptomatic pharmacotherapy. The main signs and symptoms of GI disorders (heartburn, constipation, diarrhea, flatulence, dysbiosis) and local circulatory disorders (varicose veins of the lower extremities, hemorrhoids). Life-threatening symptoms that require obligatory physician's intervention. Algorithm of the pharmacist's actions when providing pharmaceutical care for OTC medicines. Contemporary dosage forms and peculiarities of their use. Interactions of the OTC medicines for symptomatic pharmacotherapy with food and alcohol; features of their use at different ages; requirements for storing medication at home. Criteria for the efficacy of pharmacotherapy with the OTC medicines. Non-pharmacological methods of symptom elimination.</p>	<p><i>Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	
<i>P-10</i>	<p>Conditions for self-medication. OTC-medicines, their selection for self-medication in case of cold, cough, rhinitis, the pain of different origin, fever. Pharmaceutical care for the OTC-medicines.</p>	<p>The main symptoms of colds (cough, rhinitis, sore throat, fever, etc.) allow using OTC medicines within responsible self-medication. Skin lesions: microtraumas (cuts, abrasions, scratches), thermal and chemical damage to the surface layers of the skin (burns, frostbite), acne, infectious damage (cold sores, mycoses, scabies, pediculosis), seborrhea. OTC medicines are allowed under responsible self-medication. "Dangerous" symptoms of colds and skin lesions require mandatory medical intervention. An algorithm for providing the pharmacist with correct information about an over-the-counter drug within the scope of</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		<p>pharmaceutical care. Modern dosage forms and features of their use. Interaction of OTC medicines used for symptomatic treatment with food, alcohol; peculiarities of their use in different ages; requirements for storage of medicines at home.</p> <p>Performance criteria for over-the-counter pharmacotherapy. Non-pharmacological methods of elimination of symptoms.</p>		
<i>P-11</i>	<p>Conditions for self-medication. OTC-medicines, their selection for self-medication of the local circulatory disorders, acne, burns, scabies, traumatic skin disorders, wounds, etc. Pharmaceutical care for the OTC-medicines.</p>	<p>Skin lesions: microtraumas (cuts, abrasions, scratches), thermal and chemical damage to the surface layers of the skin (burns, frostbite), acne, infectious damage (cold sores, mycoses, scabies, pediculosis), seborrhea. OTC medicines are allowed under responsible self-medication. An algorithm for providing a pharmacist with proper information about an over-the-counter drug within the scope of pharmaceutical care. Modern dosage forms and features of their use. Interaction of OTC medicines used for symptomatic treatment with food, alcohol; peculiarities of their use in different ages; requirements for storage of medicines at home. Performance criteria for over-the-counter pharmacotherapy. Non-pharmacological methods of elimination of symptoms.</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>
<i>P-12</i>	<p>Clinical-and-pharmaceutical approaches to antibacterial agents use.</p>	<p>Clinical pharmacology of antimicrobials (Penicillins, Cephalosporins, Carbapenems, Macrolides, Fluorchinolones, Tetracyclines, Aminoglycosides, Lincosamides, Glycopeptide antibiotics, Chloramphenicol). Specifics of the pharmacokinetics of</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15,</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		antibiotics of different pharmacological and chemical groups. ADRs of antibiotics. Specific ADRs of antibiotics of different pharmacological and chemical groups. Prediction, clinical presentation, prevention, and treatment. Selection of the optimal route, dosage, and regimen of administration.	<i>C- 16, C- 19, R-2, R-3, R- 5, R- 7, R- 9, R-10, R-12, R-13, R-15, R-16, R-19</i>	
<i>P-13</i>	The role of pharmaceutical care in rational antibiotic pharmacotherapy.	Approaches to the rational selection of antibiotics for different infectious diseases. Principles of antibiotic pharmacotherapy. Prevention of antibiotic resistance. Factors that influence the clinical efficacy of antibiotics. Pharmaceutical care for antibiotics use. Combined antibiotic pharmacotherapy. Interactions of antibiotics and other groups of medicines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C- 15, C- 16, C- 19, R-2, R-3, R- 5, R- 7, R- 9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-14</i>	Clinical-and-pharmaceutical approaches to antiviral medicine use. Pharmaceutical care.	The conditions needed to treat with antiviral medicines. Classification of the antiviral medicines. Clinical-and-pharmaceutical characteristics of antiviral medicines. Assessment of efficacy and safety of antiviral medicines. Structure and functions of the immune system. Active and passive immunization. Sepsis, septic shock. Medicines for the pharmacotherapy of sepsis and septic shock. Features of medicines in sepsis. Vaccination. Types of vaccines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C- 15, C- 16, C- 19, R-2, R-3, R- 5, R- 7, R- 9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-15</i>	Clinical-and-pharmaceutical approaches to antifungal medicine use. Pharmaceutical care.	The conditions needed to treat with antifungal medicines. Classification of the antifungal medicines. Clinical-and-pharmaceutical characteristics of antifungal medicines. Assessment of efficacy and safety of	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19,</i>	Assoc. prof. Yuliya Nastyuha

		antifungal medicines.	<i>C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	
<i>P-16</i>	Clinical-and-pharmaceutical approaches to the treatment of allergic disorders. Systemic allergic reactions. The role of pharmaceutical care in the prevention and treatment of allergic reactions.	The mechanisms of allergic reactions. Types of allergy (immediate and delayed-type). Factors causing allergy predisposition. Clinical manifestations of allergy and basic principles of drug treatment. Etiology, pathogenesis, clinical picture, directions of pharmacotherapy of urticaria, Quincke's edema, anaphylactic and anaphylactoid shock, Lyell's and Stevens-Johnson syndromes. Modern antiallergic medicines, advantages and disadvantages of some generations, and principles of rational choice. Drugs for anaphylactic shock reduction, their application.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-17</i>	Clinical-and-pharmaceutical approaches to the treatment of allergic disorders. Local allergic reactions. The role of pharmaceutical care in the prevention and treatment of allergic reactions.	Clinical manifestations of allergy and basic principles of drug treatment. Food and drug allergy. Specifics of clinical syndromes and pharmacotherapy. Allergology anamnesis, its importance for the rational medicines selection for pharmacotherapy. Modern antiallergic medicines, advantages and disadvantages of some generations, and principles of rational choice. Drugs for anaphylactic shock reduction, their application	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-18</i>	Clinical-and-pharmaceutical approaches to treating ENT disorders (acute and chronic tonsillitis,	The main signs of diseases of ENT-organs. Clinical symptoms and features of tonsillitis, pharyngitis, laryngitis, and sinusitis.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3,</i>	Assoc. prof. Yuliya Nastyuha

	pharyngitis, laryngitis, sinusitis, otitis). The role of pharmaceutical care in rational medicine use.	Approaches to the rational choice of medicines. Clinical-and-pharmaceutical characteristics of major groups of medicines. Combined use of medicines for the ENT diseases; interaction with other pharmacotherapeutic groups. ADRs of medicines for the treatment of ENT disorders. Prediction, clinical manifestations, prevention, and ways of reduction. Efficacy and safety criteria for pharmacotherapy.	<i>Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	
<i>P-19</i>	Pharmaceutical care for patients with bronchial asthma.	Clinical signs and features of bronchial asthma. Approaches to pharmacotherapy. Clinical-and-pharmaceutical characteristics of major groups of medicines. Interactions with other pharmacotherapeutic groups. Side effects of medicines used for the treatment of bronchial asthma. Prediction, clinical manifestations, prevention, and medicines. Modern unique dosage forms are used in treating bronchial asthma, and their clinical and biopharmaceutical features, rules, and conditions for rational use. Efficacy and safety criteria for pharmacotherapy	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-20</i>	Clinical-and-pharmaceutical approaches to treating respiratory organ diseases (bronchitis, respiratory failure). The role of pharmaceutical care in the rational use of medicines.	Symptoms and syndromes of respiratory diseases: cough, shortness of breath (dyspnea), chest pain, fever, cyanosis, bronchial obstruction syndrome, and respiratory failure syndrome. Clinical signs and symptoms of bronchitis and respiratory failure. Approaches pharmacotherapy of bronchitis and respiratory failure. Clinical-and-pharmaceutical characteristics of the main groups of medicines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-</i>	Assoc. prof. Yuliya Nastyuha

		Efficacy and safety criteria for pharmacotherapy.	<i>14, R-15, R-16, R-19</i>	
<i>P-21</i>	Clinical-and-pharmaceutical approaches to treating respiratory organ diseases (pneumonia, lung tuberculosis). The role of pharmaceutical care in the rational use of medicines.	Clinical signs and symptoms of pneumonia and lung tuberculosis. Approaches pharmacotherapy for pneumonia and lung tuberculosis. Clinical-and-pharmaceutical characteristics of the main groups of medicines. Efficacy and safety criteria for pharmacotherapy.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-22</i>	Pharmaceutical care for patients with gastrointestinal disorders (gastritis, gastroenteritis, colitis, enteritis). Clinical-and-pharmaceutical approaches for medicines selection.	Symptoms and syndromes of gastrointestinal disorders. Approaches to pharmacotherapy of the GIT disorders. Approaches to rational choice of medicines. Combined pharmacotherapy for GIT disorders; interaction with other pharmacotherapeutic groups. Features of the use of medicines in gastroenterology in the presence of concomitant pathology. Drugs that have a toxic effect on the condition of the gastrointestinal tract. Influence of the functional state of the stomach and intestines on the clinical efficacy of medicines. Side effects of medicines used in diseases of the stomach and intestines. Prediction, clinical manifestations, prevention, and remedies. Modern unique dosage forms used for diseases of the stomach and intestines (suspensions, gels for oral administration, tablets for chewing, capsules with mini spheres, etc.), their clinical and bio-pharmaceutical features, rules and conditions of	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha

		rational use. Efficacy and safety criteria for pharmacotherapy in gastroenterology. Principles of pharmaceutical care for patients with gastric and intestinal diseases.		
<i>P-23</i>	Pharmaceutical care of patients with peptic ulcer. Clinical-and-pharmaceutical approaches for medicines selection.	<p>Symptoms and syndromes of the peptic ulcer.</p> <p>Complications of diseases of the gastrointestinal tract: bleeding, penetration, perforation, malignancy, stenosis, vitamin B12-deficiency anemia.</p> <p>Approaches to pharmacotherapy of the GIT disorders. Approaches to rational choice of medicines for the treatment of GIT disorders. Combined pharmacotherapy for GIT disorders; interaction with other pharmacotherapeutic groups. Features of the use of medicines in gastroenterology in the presence of concomitant pathology. Drugs that have a toxic effect on the condition of the gastrointestinal tract. Influence of the functional state of the stomach and intestines on the clinical efficacy of medicines. Side effects of medicines used in diseases of the stomach and intestines. Prediction, clinical manifestations, prevention, and remedies. Modern special dosage forms used for diseases of the stomach and intestines (suspensions, gels for oral administration, tablets for chewing, capsules with mini spheres, etc.), their clinical and bio-pharmaceutical features, rules and conditions of rational use. Efficacy and safety criteria for pharmacotherapy in gastroenterology. Principles of pharmaceutical care for</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha

		patients.		
<i>P-24</i>	Pharmaceutical care for patients with gastrointestinal disorders (hepatitis, cirrhosis, liver failure). Clinical-and-pharmaceutical approaches for medicines selection.	Symptoms and syndromes of diseases of the hepatobiliary system. Approaches to drug treatment of liver diseases. The combined use of medicines that affect the function of the hepatobiliary system; interaction with medicines of other pharmacological groups; peculiarities of medication use in the presence of concomitant pathology. Drugs with toxic effects on the condition of the liver. Influence of functional state of liver on bioavailability and clinical efficacy of medicines. ADRs of medicines used in the pharmacotherapy of liver diseases. Prediction, clinical manifestations, prevention. Modern unique dosage forms used in diseases of the hepatobiliary system, their clinical and biopharmaceutical features, rules and conditions for rational use. Efficacy and safety criteria for the pharmacotherapy of liver diseases. Principles of pharmaceutical care for patients with pathology of the liver.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-25</i>	Pharmaceutical care for patients with gastrointestinal disorders (cholelithiasis, pancreatitis). Clinical-and-pharmaceutical approaches for medicines selection.	Symptoms and syndromes of diseases of the hepatobiliary system and pancreas. Approaches to drug treatment of gallbladder and pancreatic diseases. The combined use of medicines that affect the function of the hepatobiliary system and pancreas; interaction with medicines of other pharmacological groups; peculiarities of medication use in the presence of concomitant pathology. Drugs with toxic effects on the pancreas. ADRs of medicines used in	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha



		<p>the pharmacotherapy of pancreatic diseases. Prediction, clinical manifestations, prevention. Modern unique dosage forms used in diseases of the hepatobiliary system, their clinical and biopharmaceutical features, rules and conditions for rational use. Efficacy and safety criteria for the pharmacotherapy of pancreatic diseases. Principles of pharmaceutical care for patients with pathology of the pancreas.</p>		
<i>P-26</i>	<p>Diseases caused by intestinal bacteria (salmonellosis, shigellosis, cholera, botulism). Pharmaceutical care for infectious intestinal diseases.</p>	<p>Infectious diseases of the gastrointestinal tract. Approaches to the rational choice of the optimal medicines for pharmacotherapy. Combined use of medicines; interaction with other pharmacotherapeutic groups; peculiarities of the use of medicines in the presence of concomitant pathology. Medicines are contraindicated in bacterial intestinal infections. Influence of the functional state of the gastrointestinal tract on the bioavailability and clinical efficacy of drugs. Disruption of water-electrolyte balance in intestinal infections approaches to its correction. Salt solutions, and pharmaceutical care when used. Side effects of medicines for drug treatment of intestinal infections. Prediction, clinical manifestations, prevention and remedies. Efficacy and safety criteria for intestinal pharmacotherapy. General principles of pharmaceutical care for patients with infectious</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		intestinal diseases.		
<i>P-27</i>	Clinical-and-pharmaceutical approaches to treating helminthiasis (nematodes, cestodes, trematodes). Pharmaceutical care for infectious intestinal diseases.	Symptoms and syndromes of lesions of different types of helminths (nematodes, cestodes, trematodes). Combined use of medicines; interaction with medicines of other pharmacotherapeutic groups; peculiarities of the use of medicines in the presence of concomitant pathology or complications of helminthiasis. Influence of functional state of internal organs on bioavailability and clinical efficacy of anthelmintics. Side and toxic effects of anthelmintic (antivermicular) medicines. Prediction, clinical manifestations, prevention and remedies. Safety and efficacy criteria for helminthiasis drug therapy. Principles of pharmaceutical care for patients with anthelmintic medicines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-28</i>	Pharmaceutical care in ischemic heart disease (angina pectoris, acute myocardial infarction). Clinical-and-pharmaceutical approaches medicines choice.	Epidemiology of ischemic heart disease. Risk factors for development. Clinical forms of ischemic heart disease (angina pectoris, acute myocardial infarction, postinfarction cardiosclerosis, sudden cardiac death). The main directions of pharmacotherapy for stable angina. Concepts of basic antianginal drugs: nitrates, $\beta$ -adrenoreceptor blockers, calcium channel blockers, lipid-lowering, etc. Antiplatelet pharmacotherapy. Modern dosage forms of antianginal medicines, principles of rational choice and application. Clinical efficacy criteria for antianginal medicines. General principles of rational pharmacotherapy for patients	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha

		<p>with myocardial infarction. The main groups of medicines are: painkillers, antithrombotic, thrombolytic, antiplatelet agents, <math>\beta</math>-blockers, angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARB), lipid-lowering agents. Clinical-and-pharmacological approaches to their rational selection and application, precautions for the use of certain groups. Clinical efficacy criteria for antianginal pharmacotherapy and indicators of its rationality (quality).</p>		
P-29	<p>Clinical-and-pharmaceutical approaches to the treatment of hypertension and dysrhythmias. Principles of pharmaceutical care of patients with cardiovascular disorders.</p>	<p>Concept of arterial hypertension: essential arterial hypertension (primary) and secondary (symptomatic) arterial hypertension. Etiology, pathogenesis and diagnostic criteria of the disease. Stages of arterial hypertension, degree of arterial hypertension, cardiovascular risk assessment. Principles of pharmacotherapy for hypertension, mono- and combined pharmacotherapy. Classification and characterization of modern antihypertensive medicines, clinical and pharmacological approaches to their rational choice. The concept of hypertensive crisis, medicines for its elimination. Criteria for clinical efficacy of antihypertensive therapy and indicators of its rationality (quality). Approaches to the rational choice of drugs for the treatment of diseases of the cardiovascular system. The combined use of medicines used in diseases of the cardiovascular system; interaction with medicines of</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		<p>other pharmacotherapeutic groups; peculiarities of medication use in the presence of concomitant pathology. Drugs that have a negative effect on the condition of the cardiovascular system. Side effects of drugs used in cardiology. Prediction, clinical manifestations, prevention, and remedies. Modern dosage forms used in cardiology (retarded, the modified release of the active substance), their clinical and biopharmaceutical features, rules and conditions of rational use. Efficacy and safety criteria for pharmacotherapy in cardiology. Causes, mechanisms of development and types of disorders of heart rhythm and conduction, clinical manifestations, diagnostic criteria. Areas of pharmacotherapy for heart rhythm disorders. Classification and characterization of medicines, clinical and pharmacological approaches to their rational choice. Clinical efficacy criteria for pharmacotherapy and indicators of its rationality (quality). Principles of pharmaceutical care for patients with the cardiac profile</p>		
<i>P-30</i>	<p>Clinical-and-pharmaceutical approaches to treating acute and chronic heart failure and atherosclerosis. The role of pharmaceutical care in the rational drug choice and application.</p>	<p>Etiology, pathogenesis of acute and chronic heart failure. Clinical features, diagnostic criteria, classification of chronic heart failure (stages and functional classes). Main directions of pharmacotherapy for chronic heart failure. First-line drugs for chronic heart failure pharmacotherapy, principles of choice, clinical effectiveness criteria.</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		<p>Etiology and pathogenesis of atherosclerosis. The concept of dyslipidemia. Areas of pharmacotherapy for atherosclerosis. lipid-lowering drugs, their clinical-and-pharmacological characteristics, principles of rational choice, features of use, ADRs. Criteria for the clinical efficacy of hypolipidemic medicines, safety assessment of their use.</p>	<p>19, R-2, R-3, R-5, R- 7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</p>	
P-31	<p>Clinical-and-pharmaceutical approaches to the treatment of blood disorders. Treatment of anemia, thrombosis.</p>	<p>Thrombosis and anemia. General information about factors of development, etiology, pathogenesis, clinical picture, diagnostic criteria. Pulmonary embolism and (lower extremity) deep vein thrombosis. Pharmacotherapy. The main groups of medicines are as follows: antiplatelets, thrombolytic agents, anticoagulants, their clinical and pharmacological characteristics, features of action and use. Evaluation of the clinical efficacy of thrombolytic pharmacotherapy. Thrombophlebitis. Varicose veins of the lower extremities. Etiology, pathogenesis, clinical manifestations of the disease, stages of development. General principles of pharmacotherapy. Main groups of medicines: angioprotective agents and capillary stabilizing agents, principles of choice. Local and systemic drugs. Evaluation of the clinical efficacy of pharmacotherapy. Ferrum containing medicines</p>	<p>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C- 14, C- 15, C- 16, C- 19, R-2, R-3, R-5, R- 7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</p>	<p>Assoc. prof. Yuliya Nastyuha</p>
P-32	<p>Pharmaceutical care for patients with kidney and genitourinary disorders (urolithiasis,</p>	<p>Symptoms and syndromes of major kidney and urinary tract diseases. Complications of kidney disease. Approaches to</p>	<p>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3,</p>	<p>Assoc. prof. Yuliya Nastyuha</p>

	cystitis, urethritis, renal failure). Clinical-and-pharmaceutical approaches to rational pharmacotherapy.	pharmacotherapy for kidney disease and the urinary system. Approaches to the rational choice of medicines for the treatment of kidney disease and the urinary system. The combined use of medicines that affect kidney function and the urinary system; interaction with other pharmacotherapeutic groups. Features of the use of drugs used in nephrology, in the presence of concomitant pathology. Drugs that have a toxic effect on the condition of the kidneys. Influence of the functional state of the kidneys on the clinical efficacy of medicines, especially the correction of dosage and administration. Principles of treatment of complications of kidney diseases. Side effects of medicines used in the treatment of diseases of the urinary system. Prediction, clinical manifestations, prevention, and remedies. Efficacy and safety criteria for pharmacotherapy in nephrology.	<i>Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	
<i>P-33</i>	Pharmaceutical care in the pharmacotherapy of excretory system and connective tissue disorders of immune origin (glomerulonephritis, pyelonephritis). Clinical-and-pharmaceutical approaches to rational pharmacotherapy.	General characteristics of connective tissue diseases of the immune origin. Etiology, pathogenesis, clinical manifestations, course and diagnostic criteria, their importance for the rational choice of treatment. The main areas of pharmacotherapy. Principles of rational choice of medicines, their application, criteria of efficacy and safety. Principles of pharmaceutical care for patients with immune connective tissue disorders.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-34</i>	Pharmaceutical care in the pharmacotherapy	General characteristics of connective tissue diseases of	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i>	Assoc. prof. Yuliya

	of connective tissue disorders. Clinical-and-pharmaceutical approaches to rational drug choice and application for the treatment of rheumatic fever and its complications.	the immune origin. Etiology, pathogenesis, clinical manifestations, course and diagnostic criteria, their importance for the rational choice of treatment. The main areas of pharmacotherapy. Principles of rational choice of medicines, their application, criteria of efficacy and safety.	<i>10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Nastyuha
<i>P-35</i>	Clinical-and-pharmaceutical approaches to the treatment of connective tissue disorders (systemic lupus erythematosus, systemic scleroderma).	Etiology, pathogenesis, features of the clinical picture, diagnostic criteria for systemic lupus erythematosus. Principles of complex pharmacotherapy, the prognosis of treatment. Systemic scleroderma as a multiple-syndrome disease, diagnostic criteria, directions of complex pharmacotherapy. The main groups of medicines, the principles of rational choice. Measures to reduce the ADRs of certain medicines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>P-36</i>	Clinical-and-pharmaceutical approaches to the treatment of connective tissue and musculoskeletal disorders (gout, osteoarthritis, osteoporosis, rheumatoid polyarthritis).	Etiology, pathogenesis, clinical manifestations of gout. Areas of pharmacotherapy. The main groups of medicines are for pathogenetic (purine metabolism) and symptomatic (non-steroidal anti-inflammatory drugs, glucocorticosteroids) pharmacotherapy. Principles of rational choice and peculiarities of application of certain drugs. Classification, etiology, pathogenesis, clinical manifestations of osteoarthritis. Areas of pharmacotherapy. Drugs for pathogenetic and symptomatic pharmacotherapy, clinical and pharmacological approaches to their choice.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha

		<p>Evaluation of the clinical efficacy of pharmacotherapy. Classification, etiology, pathogenesis, clinical manifestations of osteoporosis. Areas of pharmacotherapy. Drugs for pathogenetic (calcium and vitamin D drugs; basic anti-osteoporotic drugs: bone resorption inhibitors; bone stimulating drugs) and symptomatic (non-narcotic analgesics) pharmacotherapy. Evaluation of the clinical efficacy of pharmacotherapy. Etiology, pathogenesis, clinical picture, diagnostic criteria for rheumatoid arthritis, classification, modern approaches to pharmacotherapy. The importance of anti-inflammatory drugs, basic therapy drugs, antimetabolites and immunosuppressants in the rational pharmacotherapy of rheumatoid arthritis. Principles of pharmaceutical care for patients with connective tissue and musculoskeletal disorders.</p>		
P-37	<p>Clinical-and-pharmaceutical approaches to the treatment of endocrine disorders. Treatment of diseases of the pituitary and adrenal glands. Hypo- and hyperthyroidism treatment.</p>	<p>Etiology and pathogenesis, the main clinical features, diagnostic criteria of the pituitary and adrenal gland diseases. General principles of treatment. The main areas of pharmacotherapy. Principles of rational choice of medicines and their application. Principles of rational choice of medicines and pharmacological and non-pharmacological therapy. Etiology and pathogenesis, the main clinical manifestations, diagnostic criteria for thyroid disease, general principles of treatment. The main areas of pharmacotherapy. Principles</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>



		of rational choice of medicines, features of the application. Causes, mechanisms of development, diagnostic criteria and the main directions of pharmacotherapy of diffuse toxic goiter, hypothyroidism. Principles of rational choice of medicines and application of drug and non-drug types of therapy		
P-38	Clinical-and-pharmaceutical approaches to the treatment of endocrine disorders. Pharmaceutical care for patients with diabetes mellitus type 1 and 2.	Etiology and pathogenesis, the main clinical manifestations, diagnostic criteria for type 1 and type 2 diabetes, general principles of treatment. The main directions of pharmacotherapy for diabetes. Principles of insulin therapy in type 1 diabetes pharmacotherapy. Insulin preparations of different duration of action. Principles of rational choice, features of the application. Oral antidiabetic agents for type 2 diabetes pharmacotherapy. Principles of rational choice and features of application. Concepts of hypo- and hyperglycemic coma: causes, clinical picture, the main directions of pharmacotherapy. Complications of diabetes and directions of their rational pharmacotherapy	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
P-39	Clinical-and-pharmaceutical aspects of hormone replacement therapy. Pharmaceutical care for oral contraceptive medications use.	Principles of hormone replacement therapy. Hormones as medicines. Principles of choice for hormone replacement therapy. Evaluation of the efficacy and safety of medicines. Contemporary contraceptives, evaluation of their efficacy and safety. The mechanism of action of drug contraceptives. Principles of their rational application. Features of interactions of	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-</i>	Assoc. prof. Yuliya Nastyuha

		oral contraceptives with other medicines, food, alcohol, and nicotine. The algorithm of pharmaceutical care for the release of contraceptives at the community pharmacy.	19	
P-40	Pharmaceutical care when treating neurological disorders (ischemic stroke, brain hemorrhage). Clinical-and-pharmaceutical approaches to rational drug choice and application	The main symptoms and syndromes of neurological diseases. Concepts and directions of pharmacotherapy of major neurological diseases associated with acute and chronic disorders of the cerebral circulation (hemorrhagic and ischemic strokes). Features of rational selection and application. The side effects of pharmacotherapy, the approach to prevention and correction of the ADRs. Principles of pharmaceutical care for patients with the most common neurological diseases	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
P-41	Pharmaceutical care when treating neurological disorders (epilepsy, parkinsonism, neuritis, multiple sclerosis). Clinical-and-pharmaceutical approaches to rational drug choice and application	The main symptoms and syndromes of neurological diseases. Etiology, pathogenesis, clinical features and the main directions of pharmacotherapy of major neurological diseases (neuritis, epilepsy, parkinsonism, multiple sclerosis), complications of these diseases and approaches to emergency pharmacotherapy in neurology. Principles of rational choice of medicines for the pharmacotherapy of major neurological diseases. The side effects of pharmacotherapy, the approach to prevention and correction of the ADRs. Principles of pharmaceutical care for patients with the most common neurological diseases.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
P-42	Clinical-and-pharmaceutical	The main symptoms and syndromes of oncological	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i>	Assoc. prof. Yuliya

	approaches to the treatment of oncology disorders	diseases. Etiology, pathogenesis, clinical features and the main directions of pharmacotherapy of major oncological diseases, complications of these diseases and approaches to emergency pharmacotherapy in oncology. Principles of rational choice of medicines for the pharmacotherapy of major oncological diseases. The side effects of pharmacotherapy, the approach to prevention and correction of the ADRs. Principles of pharmaceutical care for patients with the most common oncological diseases.	<i>10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Nastyuha
<i>IW-1</i>	Basic medical terminology. Legal aspects of pharmacist's activity related to pharmacotherapy.	Clinical pharmacy and its objectives. The role of clinical pharmacy in the system of pharmaceutical education. The World experience of clinical pharmacy development. Ethics and deontology in medicine and pharmacy. Deontological aspects of the pharmacist-physician, pharmacist-patient, pharmacist-pharmacy visitor relationships.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-10, Kn-11, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-10, Sk-11, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-10, C-11, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-10, R-11, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>IW-2</i>	Medication intake behavior (drug behavior) of the patient. Features of pharmaceutical care in ensuring and maintaining a high level of adherence.	Management of the patient's drug-related behavior. Compliance and adherence as the components of the patient's drug-related behavior.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-10, Kn-11, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-10, Sk-11, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-10, C-11, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-10, R-11, R-18,</i>	Assoc. prof. Oksana Lopatynska

			<i>R-19</i>	
<i>IW-3</i>	Searching for evidence-based medicine information on the drug's use.	The structure of the systematic review. Evidence-based databases. Principles of evidence-based information retrieval. Levels of evidence. Evaluation of the effectiveness and safety of medicines from the standpoint of evidence-based medicine.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>IW-4</i>	Clinical drug evaluation. Good clinical practice.	The principles of the clinical trials of medicines. The regulatory documents for conducting clinical trials of medicines. Rules for planning and conducting clinical trials. Information support for the clinical research process of medicines. Assessment of bioequivalence and bioavailability of medicines. Interpretation of clinical trial results.	<i>Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-18, R-19</i>	Assoc. prof. Oksana Lopatynska
<i>IW-5</i>	Factors affecting the effect and interactions of drugs. Adverse drug reactions and side effects: types, methods of assessment. Pharmacovigilance system and its main tasks.	Principles of combining medicines in pharmacotherapy. Rational and irrational drug combinations. Changes in drug in case of combining pharmacokinetics and pharmacodynamics when using combined pharmacotherapy. Changes in pharmacotherapeutic effects of medicines when using combined pharmacotherapy.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-</i>	Assoc. prof. Oksana Lopatynska

		<p>Principles of drug interactions prevention for their rational use. Interactions of drugs with food, alcohol, and nicotine.</p> <p>Classification of adverse drug reactions. Types of adverse drug reactions and their clinical features. Factors that determine ADRs while using medicines. Principles of ADRs prevention.</p> <p>Correction of ADRs. System of Pharmacovigilance. Drug-induced disorder, its specifics, clinical signs, prevention. Principles of irrational drugs use prevention.</p>	<i>15, R-16, R-19</i>	
<i>IW-6</i>	<p>Clinical-and-pharmaceutical approaches to medicine use during pregnancy, childbirth (delivery), and breastfeeding. The main principles of pharmaceutical care.</p>	<p>Physiological and biochemical changes of the female body during pregnancy and breastfeeding and their influence on drug pharmacokinetics and pharmacodynamics.</p> <p>Principles of medicines use during pregnancy and lactation. Assessment of drug safety and efficacy during pregnancy and lactation.</p> <p>Teratogenic, embryotoxic and fetotoxic effects of medicines. Peculiarities of medicines use during delivery. Pharmaceutical care of pregnant and lactating women.</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	<p>Assoc. prof. Oksana Lopatynska</p>
<i>IW-7</i>	<p>Age-related features of pharmacotherapy. Principles of medicine use in pediatrics and geriatrics. The main principles of pharmaceutical care.</p>	<p>Physiological and biochemical peculiarities of the child body. Specifics of pharmacokinetics and pharmacodynamics in pediatrics. Principles of medicines use in children of different age groups.</p> <p>Assessment of drug safety and efficacy in pediatrics.</p> <p>Factors that determine rational drug and dosage form choice in pediatrics.</p> <p>Pharmaceutical care in pediatrics and neonatology.</p> <p>Age specifics of</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-15, R-16, R-19</i>	<p>Assoc. prof. Oksana Lopatynska</p>

		<p>physiological and biochemical processes in the body of elderly patients. Specifics of pharmacokinetics and pharmacodynamics for elderly patients. Principles of medicines use in geriatrics. Assessment of drug safety and efficacy in geriatrics. Factors that determine rational drug and dosage form choice in geriatrics. Pharmaceutical care in geriatrics.</p>		
<i>IW-8</i>	<p>Responsible self-medication and its concept. Principles of pharmaceutical care for OTC medicines use.</p>	<p>Prescription and over-the-counter medications. Regulatory judicial framework for self-medication. Principles of responsible self-medication. The directions and medicines for symptomatic pharmacotherapy. The main signs and symptoms of the GI disorders (heartburn, constipation, diarrhea, flatulence, dysbiosis) and local circulatory disorders (varicose veins of the lower extremities, hemorrhoids). Life-threatening symptoms that require obligatory physician's intervention. Algorithm of the pharmacists actions when providing pharmaceutical care for the use of OTC medicines. Contemporary dosage forms and peculiarities of their use. Interactions of the OTC medicines for symptomatic pharmacotherapy with food, and alcohol; peculiarities of their use in different age; requirements to the storage of medicines at home. Criteria for efficacy of pharmacotherapy with the OTC medicines. Non-pharmacological methods of symptoms elimination.</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>
<i>IW-9</i>	<p>Pharmaceutical care in rational use of</p>	<p>Clinical pharmacology of antimicrobals. Specifics of</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i></p>	<p>Assoc. prof. Yuliya</p>

	antibacterial, antiviral, and antifungal agents.	<p>pharmacokinetics of antibiotics of different pharmacological and chemical groups.</p> <p>ADRs of antibiotics. Specific ADRs of antibiotics of different pharmacological and chemical groups.</p> <p>Prediction, clinical presentation, prevention, and treatment.</p> <p>Selection of the optimal route, dosage, and regimen of administration. Approaches to rational selection of antibiotics for different infectious diseases.</p> <p>Principles of antibiotic pharmacotherapy. Prevention of antibiotic resistance.</p> <p>Factors that influence on clinical efficacy of antibiotics.</p> <p>Pharmaceutical care for antibiotics use.</p> <p>Combined antibiotic pharmacotherapy.</p> <p>Interactions of antibiotics and other groups of medicines.</p> <p>The conditions that must be treated with antifungal medicines. Classification of the antifungal medicines.</p> <p>Clinical-and-pharmaceutical characteristics of antifungal medicines. Assessment of efficacy and safety of antifungal medicines.</p>	<p><i>10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	Nastyuha
<i>IW-10</i>	<p>Immunization.</p> <p>General principles of immunization. Sepsis, septic shock.</p> <p>Vaccination.</p>	<p>Structure and functions of the immune system. Active and passive immunization.</p> <p>Sepsis, septic shock.</p> <p>Medicines for pharmacotherapy of sepsis, septic shock. Features of medicines in sepsis.</p> <p>Vaccination. Types of vaccines.</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	Assoc. prof. Yuliya Nastyuha

<i>IW-11</i>	Pharmaceutical care in the treatment of allergic disorders. Medications, classification, and characteristics.	<p>The mechanisms of allergic reactions. Types of allergy (immediate and delayed type). Factors causing allergy predisposition.</p> <p>Clinical manifestations of allergy and basic principles of drug treatment.</p> <p>Etiology, pathogenesis, clinical picture, directions of pharmacotherapy of urticaria, Quincke's edema, anaphylactic and anaphylactoid shock, Lyell's and Stevens-Johnson syndromes.</p> <p>Modern antiallergic medicines, advantages and disadvantages of some generations, principles of rational choice. Drugs for anaphylactic shock reduction, their application. Clinical manifestations of allergy and basic principles of drug treatment.</p> <p>Food and drug allergy. Specifics of clinical syndromes and pharmacotherapy.</p> <p>Allergologic anamnesis, its meaning for the rational medicines selection for pharmacotherapy.</p> <p>Modern antiallergic medicines, advantages and disadvantages of some generations, principles of rational choice. Drugs for anaphylactic shock reduction, their application</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-12</i>	Pharmaceutical care in the use of medicines for the treatment of ENT disorders.	<p>The main signs of diseases of ENT-organs. Clinical signs and features of tonsillitis, pharyngitis, laryngitis, sinusitis. Approaches to the rational choice of medicines.</p> <p>Clinical-and-pharmaceutical characteristics of major groups of medicines.</p> <p>Combined use of medicines for the ENT diseases; interaction with other pharmacotherapeutic groups.</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9</i>	Assoc. prof. Yuliya Nastyuha



		ADRs of medicines for treatment of ENT-disorders. Prediction, clinical manifestations, prevention and ways of reduction. Efficacy and safety criteria for pharmacotherapy..	9, R-10, R-12, R-13, R-15, R-16, R-19	
<i>IW-13</i>	Pharmaceutical care in the treatment of respiratory disorders.	Symptoms and syndromes of respiratory diseases: cough, shortness of breath (dyspnea), chest pain, fever, cyanosis, bronchial obstruction syndrome, respiratory failure syndrome. Clinical signs and symptoms of bronchitis, respiratory failure. Approaches pharmacotherapy of bronchitis, respiratory failure. Clinical-and-pharmaceutical characteristics of the main groups of medicines. Efficacy and safety criteria for pharmacotherapy.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-14</i>	Pharmaceutical care in the treatment of gastric, intestinal, and bowel disorders. General principles of diagnostics and treatment of GIT disorders.	Symptoms and syndromes of the main gastrointestinal disorders. Approaches to pharmacotherapy of the GIT disorders. Approaches to rational choice of medicines. Combined pharmacotherapy for GIT disorders; interaction with other pharmacotherapeutic groups. Features of the use of medicines in gastroenterology in the presence of concomitant pathology. Drugs that have a toxic effect on the condition of the gastrointestinal tract. Influence of the functional state of the stomach and intestines on the clinical efficacy of medicines. Side effects of medicines used in diseases of the stomach and intestines. Prediction, clinical manifestations, prevention, and remedies. Modern special dosage forms used for diseases of the	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha

		<p>stomach and intestines (suspensions, gels for oral administration, tablets for chewing, capsules with mini spheres, etc.), their clinical and bio-pharmaceutical features, rules and conditions of rational use.</p> <p>Efficacy and safety criteria for pharmacotherapy in gastroenterology.</p> <p>Principles of pharmaceutical care for patients with gastric and intestinal diseases.</p>		
<i>IW-15</i>	Pharmaceutical care in the treatment of liver disorders. General principles of diagnostics and treatment of GIT disorders.	<p>Symptoms and syndromes of major diseases of the hepatobiliary system.</p> <p>Approaches to drug treatment of liver diseases. The combined use of medicines that affect the function of the hepatobiliary system; interaction with medicines of other pharmacological groups; peculiarities of medication use in the presence of concomitant pathology.</p> <p>Drugs that have toxic effects on the condition of liver.</p> <p>Influence of functional state of liver on bioavailability and clinical efficacy of medicines.</p> <p>ADRs of medicines used in pharmacotherapy of liver diseases. Prediction, clinical manifestations, prevention and remedies.</p> <p>Modern special dosage forms used in diseases of the hepatobiliary system, their clinical and biopharmaceutical features, rules and conditions for rational use.</p> <p>Efficacy and safety criteria for pharmacotherapy of liver diseases.</p> <p>Principles of pharmaceutical care for patients with pathology of the liver.</p>	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-16</i>	Pharmaceutical care in the treatment of GIT	Infectious diseases of the gastrointestinal tract.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i>	Assoc. prof. Yuliya

	infections	<p>Approaches to the rational choice of the optimal medicines for pharmacotherapy. Combined use of medicines; interaction with medicines of other pharmacotherapeutic groups; peculiarities of the use of medicines in the presence of concomitant pathology. Medicines contraindicated in bacterial intestinal infections. Influence of the functional state of the gastrointestinal tract on the bioavailability and clinical efficacy of drugs. Disruption of water-electrolyte balance in intestinal infections, approaches to its correction. Salt solutions, pharmaceutical care when used. Side effects of medicines for drug treatment of intestinal infections. Prediction, clinical manifestations, prevention and remedies. Efficacy and safety criteria for intestinal pharmacotherapy. General principles of pharmaceutical care for patients with infectious intestinal diseases. Symptoms and syndromes of lesions of different types of helminths (nematodes, cestodes, trematodes). Combined use of medicines; interaction with medicines of other pharmacotherapeutic groups; peculiarities of the use of medicines in the presence of concomitant pathology or complications of helminthiasis. Influence of functional state of internal organs on bioavailability and clinical efficacy of anthelmintics. Side and toxic effects of anthelmintic (antivermicular) medicines. Prediction,</p>	<p><i>10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	Nastyuha
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		<p>clinical manifestations, prevention and remedies. Safety and efficacy criteria for helminthosis drug therapy.</p> <p>Principles of pharmaceutical care for patients with anthelmintic medicines</p>		
<i>IW-17</i>	<p>Pharmaceutical care when treating cardiovascular (ischemic heart disease, arterial hypertension, dysrhythmias, heart failure, atherosclerosis) and blood disorders. General diagnostics and treatment principles.</p>	<p>Epidemiology of ischemic heart disease. Risk factors for development. Clinical forms of ischemic heart disease (angina pectoris, acute myocardial infarction, postinfarction cardiosclerosis, sudden cardiac death). The main directions of pharmacotherapy for stable angina. Concepts of basic antianginal drugs: nitrates, <math>\beta</math>-adrenoreceptor blockers, calcium channel blockers, lipid-lowering, etc. Antiplatelet pharmacotherapy. Modern dosage forms of antianginal medicines, principles of rational choice and application. Clinical efficacy criteria for antianginal medicines.</p> <p>General principles of rational pharmacotherapy for patients with myocardial infarction. The main groups of medicines are: painkillers, antithrombotic, thrombolytic, antiplatelet agents, <math>\beta</math>-blockers, angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARB), lipid-lowering agents. Clinical-and-pharmacological approaches to their rational selection and application, precautions for the use of certain groups. Clinical efficacy criteria for antianginal pharmacotherapy and indicators of its rationality (quality). Concept of arterial hypertension:</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		<p>essential arterial hypertension (primary) and secondary (symptomatic) arterial hypertension. Etiology, pathogenesis and diagnostic criteria of the disease. Stages of arterial hypertension, degree of arterial hypertension, cardiovascular risk assessment. Principles of pharmacotherapy for hypertension, mono- and combined pharmacotherapy. Classification and characterization of modern antihypertensive medicines, clinical and pharmacological approaches to their rational choice. The concept of hypertensive crisis, medicines for its elimination. Criteria for clinical efficacy of antihypertensive therapy and indicators of its rationality (quality). Approaches to the rational choice of drugs for the treatment of diseases of the cardiovascular system. The combined use of medicines used in diseases of the cardiovascular system; interaction with medicines of other pharmacotherapeutic groups; peculiarities of medication use in the presence of concomitant pathology. Drugs that have a negative effect on the condition of the cardiovascular system. Side effects of drugs used in cardiology. Prediction, clinical manifestations, prevention, and remedies. Modern dosage forms used in cardiology (retarded, the modified release of the active substance), their clinical and biopharmaceutical features, rules and conditions of rational use. Efficacy and safety criteria for pharmacotherapy in</p>		
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		<p>cardiology. Causes, mechanisms of development and types of disorders of heart rhythm and conduction, clinical manifestations, diagnostic criteria. Areas of pharmacotherapy for heart rhythm disorders.</p> <p>Classification and characterization of medicines, clinical and pharmacological approaches to their rational choice.</p> <p>Clinical efficacy criteria for pharmacotherapy and indicators of its rationality (quality).</p> <p>Principles of pharmaceutical care for patients with the cardiac profile</p>		
<i>IW-18</i>	<p>Medications for the treatment of kidney and genitourinary tract disorders. General principles of diagnostics and treatment.</p>	<p>Symptoms and syndromes of major kidney and urinary tract diseases. Complications of kidney disease.</p> <p>Approaches to pharmacotherapy for kidney disease and the urinary system. Approaches to the rational choice of medicines for the treatment of kidney disease and the urinary system. The combined use of medicines that affect kidney function and the urinary system; interaction with other pharmacotherapeutic groups.</p> <p>Features of the use of drugs used in nephrology, in the presence of concomitant pathology. Drugs that have a toxic effect on the condition of the kidneys. Influence of the functional state of the kidneys on the clinical efficacy of medicines, especially the correction of dosage and administration.</p> <p>Principles of treatment of complications of kidney diseases.</p> <p>Side effects of medicines used in the treatment of diseases of the urinary system. Prediction, clinical</p>	<p><i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i></p>	<p>Assoc. prof. Yuliya Nastyuha</p>

		manifestations, prevention, and remedies. Efficacy and safety criteria for pharmacotherapy in nephrology.		
<i>IW-19</i>	Pharmaceutical care in the treatment of diabetes mellitus type 1 and type 2. Contemporary insulins and oral hypoglycemic medications.	Etiology and pathogenesis, the main clinical manifestations, diagnostic criteria for type 1 diabetes, general principles of treatment. The main directions of pharmacotherapy for diabetes. Principles of insulin therapy in type 1 diabetes pharmacotherapy. Insulin preparations of different duration of action. Principles of rational choice, features of the application. Concepts of hypo- and hyperglycemic coma: causes, clinical picture, the main directions of pharmacotherapy. Complications of diabetes and directions of their rational pharmacotherapy. Etiology and pathogenesis, the main clinical manifestations, diagnostic criteria for type 2 diabetes, general principles of treatment. The main directions of pharmacotherapy for diabetes. Oral antidiabetic agents for type 2 diabetes pharmacotherapy. Principles of rational choice and features of application.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-20</i>	Pharmaceutical care in the treatment of the thyroid, pituitary, and adrenal gland disorders. Principles of prophylactic and treatment. Contemporary medicines and peculiarities of their use.	Etiology and pathogenesis, the main clinical manifestations, diagnostic criteria for thyroid disease, general principles of treatment. The main areas of pharmacotherapy. Principles of rational choice of medicines, features of the application. Causes, mechanisms of development, diagnostic criteria and the main directions of pharmacotherapy of diffuse	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-</i>	Assoc. prof. Yuliya Nastyuha

		toxic goiter, hypothyroidism. Principles of rational choice of medicines and application of drug and non-drug types of therapy. Etiology and pathogenesis, the main clinical features, diagnostic criteria of the pituitary and adrenal gland diseases. General principles of treatment. The main areas of pharmacotherapy. Principles of rational choice of medicines and their application. Principles of rational choice of medicines and pharmacological and non-pharmacological therapy.	<i>13, R-15, R-16, R-19</i>	
<i>IW-21</i>	Pharmaceutical care in hormone therapy of connective tissue, skin, and musculoskeletal system disorders.	Etiology, pathogenesis, features of the clinical picture, diagnostic criteria for systemic lupus erythematosus. Principles of complex pharmacotherapy, the prognosis of treatment. Systemic scleroderma as a multiple-syndrome disease, diagnostic criteria, directions of complex pharmacotherapy. The main groups of medicines, the principles of rational choice. Measures to reduce the ADRs of certain medicines.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-22</i>	Pharmaceutical care for the use of oral contraceptives. Hormone replacement therapy.	Contemporary contraceptives, evaluation of their efficacy and safety. The mechanism of action of drug contraceptives. Principles of their rational application. Features of interactions of oral contraceptives with other medicines, food, alcohol, and nicotine. The algorithm of pharmaceutical care for the release of contraceptives at the community pharmacy.	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19</i>	Assoc. prof. Yuliya Nastyuha
<i>IW-23</i>	Pharmaceutical care for the use of	The main symptoms and syndromes of neurological	<i>Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-</i>	Assoc. prof. Yuliya



	medicines in neurology.	diseases. Concepts and directions of pharmacotherapy of major neurological diseases. Features of rational selection and application. The side effects of pharmacotherapy, the approach to prevention and correction of the ADRs. Principles of pharmaceutical care for patients with the most common neurological diseases.	10, Kn-12, Kn-13, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-15, R-16, R-19	Nastyuha
IW-24	Pharmaceutical care in oncology.	The main symptoms and syndromes of oncological diseases. Etiology, pathogenesis, clinical features and the main directions of pharmacotherapy of major oncological diseases, complications of these diseases and approaches to emergency pharmacotherapy in oncology. Principles of rational choice of medicines for the pharmacotherapy of major oncological diseases. The side effects of pharmacotherapy, the approach to prevention and correction of the ADRs. Principles of pharmaceutical care for patients with the most common oncological diseases.	Kn-2, Kn-3, Kn-5, Kn-7, Kn-9, Kn-10, Kn-12, Kn-13, Kn-14, Kn-15, Kn-16, Kn-19, Sk-2, Sk-3, Sk-5, Sk-9, Sk-10, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-19, C-2, C-3, C-5, C-7, C-9, C-10, C-12, C-13, C-14, C-15, C-16, C-19, R-2, R-3, R-5, R-7, R-9, R-10, R-12, R-13, R-14, R-15, R-16, R-19	Assoc. prof. Yuliya Nastyuha

### 8. Verification of learning outcomes

#### Current control

*Current control includes an assessment of theoretical knowledge, practical skills, and independent work. Ongoing control is carried out during the practice lesson according to specific objectives. Objective control of theoretical training and practical skills is applied. Forms of the current educational activities assessment are standardized and include the control of theoretical and practical training in the form of MCQ-testing (written, computer).*

*During the topic assimilation assessment grades for the current educational activity are given to the student according to a 4-point (national) scale. This considers all types of work provided by the discipline program. Independent student's work (ISW) is evaluated during the current control of practical training.*

Learning outcome code	Code of the type of classes	Method of verification of learning outcomes	Enrollment criteria
Kn-1, Kn-2, Kn-3, Kn-4, Kn-5, Kn-6, Kn-7, Kn-8, Kn-9, Kn-10, Kn-11, Kn-12, Kn-13,	L-1, P-1, IW-1, IW-2, IW-3, P-2, IW-4, L-2, P-3, IW-5, L-3, P-4, IW-6, P-5, IW-7, P-6, IW-8,	Current control includes an assessment of theoretical knowledge, practical skills, and	<b>The minimal amount</b> of answers – 10. <b>Test evaluation criteria:</b>

<p><i>Kn-14, Kn-15, Kn-16, Kn-17, Kn-18, Kn-19, Sk-1, Sk-2, Sk-3, Sk-4, Sk-5, Sk-6, Sk-7, Sk-8, Sk-9, Sk-10, Sk-11, Sk-12, Sk-13, Sk-14, Sk-15, Sk-16, Sk-17, Sk-18, Sk-19, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, C-14, C-15, C-16, C-17, C-18, C-19, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19</i></p>	<p><i>L- 4, P-7, IW-9, IW- 10, P-8, IW-11, L-5, P-9, IW-12, IW-13, L-6, P-10, IW-14, IW-15, IW-16, L-7, P-11, P- 12, IW-17, P-13, IW-18, P-14, IW-19, L-8, P-15, IW-20, IW-21, IW-22, P-16, IW-23, IW-24</i></p>	<p>independent work. Ongoing control is carried out during the practice lesson according to specific objectives. Objective control of theoretical training and practical skills is applied. Forms of the current educational activities assessment are standardized and include the control of theoretical and practical training in the form of MCQ-testing (written, computer). In each practical classes student answers a test of 20 questions, which includes questions of the 1st and 2nd level (situational task) of complexity. Each test on the topic of the relevant practical classes includes standardized questions concerning the material of the lecture course and independent work.</p>	<p>0-9 answers – «2». 10-13 answers – «3» 14-17 answers – «4» 18-20 answers – «5»</p>
<b>Final control</b>			
General evaluation system	Participation in the work during the semester / exam - 60% / 40% on a 200-point scale		
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	Methods of final control	Enrollment criteria	
Exam	<p>The final control is provided as an exam on the educational material, determined in the syllabus in terms according to the educational plan (student's individual educational plan). Semester exam is the type of final control of the obtained knowledge and practical skills during the semester and is provided as a control measure. The student is admitted to the semester exam on the educational discipline if he had attended all the required classes, fulfilled all types of work according to the syllabus on this particular discipline, and had gained enough points not less than minimal. Semester Exam in the discipline «Clinical pharmacy ra pharmaceutical care» is provided in the written</p>	<p>The answer is estimated at 2 points for each correct answer. The maximum number of points that a student can score when passing the exam is 80. The minimum number of points in the exam - not less than 50.</p>	

	<p>form during the exam session according to the timetable. The mode of the exam is standardized. It includes theory and practical skills control in the form of the MCQ-test.</p>	
<p><b>The maximum amount</b> of points that a student can earn for his / her current educational activity while studying the discipline equals 120 points.</p>		
<p><b>The minimal amount</b> of points that a student must earn for his / her current educational activity while studying to enroll in the discipline equals 72 points.</p>		
<p><b>The number of points</b> is calculated based on the student's grades according to the 4-point (national) scale while studying the discipline, calculating the arithmetic mean (AM) rounded to two digits after the decimal point. The resulting value is converted into points according to the multi-point scale as follows:</p> $x = \frac{AM \times 120}{5}$		
<p><b>9. Course policy</b></p>		
<p>The student must independently complete homework, training exercises and tests, tasks of current and final control. It is not allowed to spy on another student's work, write off, use a textbook, notebook or mobile phone while writing a test, final or exam paper, use cheat sheets, copy your work by other students. Omissions of practical classes are not allowed. If a student misses classes for good reasons, which are documented, he has the right to practice them.</p>		
<p>Whithin educational environment as participants of academic proesses students, teachers and administration authorities act in accordance with:  Regulation on organization of the educational process (<a href="https://cutt.ly/3ySk64r">https://cutt.ly/3ySk64r</a>);  Regulation on evaluation criteria and rules (<a href="https://cutt.ly/lySlyw0">https://cutt.ly/lySlyw0</a>);  Regulation on Academic Integrity (<a href="https://cutt.ly/EySkNHu">https://cutt.ly/EySkNHu</a>)</p>		
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### **11. Equipment, logistics and software of the discipline**

To provide a high level of training for future professionals in mastering of the discipline "Clinical pharmacy and pharmaceutical care" modern interactive methods of teaching are used. Lectures are given as multimedia presentations, on-line access to resources is provided. Systems of current knowledge control are fully automated and conducted as open computer testing. A specially equipped computer and simulation class operates. Students have the opportunity to use the library of textbooks, guidelines and manuals, periodicals, and the electronic database.

### **12. Additional information**

Responsible for the educational process at the department – Kovalska Iryna Mykhaylivna, senior lecturer, e-mail: [kovalskaira@gmail.com](mailto:kovalskaira@gmail.com).

Department teachers and professors supervise members of the students research group, oriented towards the studies of development of clinical and pharmaceutical approaches to the rational use of medicines in common and socially significant diseases treatment.

Students must wear medical gowns during lectures and practical classes.

Course training classes are held at the department location at:

Mykolaychuk str., 11, Lviv

Web-page of the department: <https://new.meduniv.lviv.ua/en/kafedry/kafedra-menedzhmentu-v-ohoroni-zdorov-ya-farmakoterapiyi-i-klinichnoyi-farmatsiyi/>

Syllabus head instructor and author

Lopatynska Oksana Ivanivna,  
PhD, associated professor

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Head of the Department

Zimenkovsky Andrii Borysovykh  
DSc, MD, Professor

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